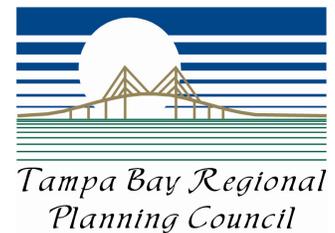




# **Volume 1-8 Tampa Bay Region Technical Data Report**

## **CHAPTER V**

### **REGIONAL SHELTER ANALYSIS**



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# CHAPTER V

## REGIONAL SHELTER ANALYSIS

### A. Overview

An essential element of any evacuation plan is the ability to shelter the relocated residents throughout the duration of the event. Evacuees will seek several alternative forms of shelter at various distances from their origin. These alternatives may include a local public shelter, a hotel or motel, a friend or relative's home, and destinations in an adjacent county or outside of the region. Shelter destination tendencies of potential evacuees must be identified for two major reasons. First, so that adequate public shelter facilities can be provided for the numbers of evacuees expected to seek them. Secondly, the shelter analysis is needed to more accurately simulate the expected destination assignments and vehicle volume movement in the quantification of evacuation times.



Shelter preparedness is a very crucial element in the Statewide Regional Evacuation Study (RES) because of the vast numbers of evacuees and the potential number of vulnerable residents seeking shelter. While other types of hazards (flooding, wildfire, hazardous materials and terrorism/civil disturbances) may result in the need for mass care and shelter operations, the event which is both the most probable and potentially most challenging is an approaching hurricane.

Historically, major disasters result in large scale shelter operations. For example, operations during the Hurricane Andrew evacuation in August 1992 resulted in the largest county shelter operation in US history (approximately 200,000 sheltered). One of the largest regional evacuation shelter operations in the U.S. occurred in the Tampa Bay region in response to Hurricane Elena in 1985 (350,000 sheltered). In 2005 when hurricanes threatened the Gulf Coast, Red Cross disaster relief workers and local governments were preparing hundreds of evacuation shelters. The organization pre-positioned supplies, including kitchens, prepackaged meals and emergency response vehicles (ERVs). Nearly 500,000 evacuees of Hurricanes Katrina, Rita and Wilma stayed in Red Cross shelters ([www.redcross.org](http://www.redcross.org)).

Pre-storm evacuation shelter demand has significantly decreased in Tampa Bay as well as other areas. Public education in Florida has stressed to evacuees that the choice to go to a public shelter should not be the first choice in destinations. Other options – especially the homes of friends and relatives and hotel/motels in non-evacuation zones – provide a more comfortable alternative for most residents. According to the behavioral surveys conducted in 2006 and 2008 for the Statewide Regional Evacuation Study Program, part of that message is getting across to residents. The majority of evacuees go to the homes of friends or relatives (50 – 65%). Approximately 5% - 20% will seek a hotel or motel for refuge depending on age, income and other demographic characteristics. Hotel availability will also be a key factor.

## B. Hotel Availability

In the Tampa Bay Region there are a total of 45,412 hotel/motel rooms (April 2006). These facilities are identified in the Critical facility Inventory database and their locations within vulnerable areas (tropical storms and hurricanes, flood zone, wildfire and hazardous materials) are identified.

More than half of the inventory in Manatee and Pinellas counties is within Evacuation Level A/ Category 1 storm surge area so it would not be available for any hurricane evacuation scenario. However, only about 10-15% of the inventory in Pasco and Hillsborough is that vulnerable. Regionally, in a category 5 hurricane threat, approximately 14,726 rooms should be available. (See Table V-1 below)

Some of the Tourist and Visitors Bureaus in major metropolitan areas currently have a mechanism in place to track available units throughout a regional evacuation. This capability is essential to assist those evacuees looking for hotel/motel units. (Although it should be strongly recommended that families seeking accommodations make those reservations before they begin their evacuation trip.) In a major evacuation, the State Tourism and Development Council will seek to consolidate and augment this local information in real time. The second major challenge is to then communicate hotel/motel availability within the region and the state to evacuees locally as well as those on the road. This may reduce the trip of those searching for hotel/motels in the vicinity; thereby, hopefully reducing the evacuation congestion and clearance times.

Table V-1 Hotel Availability in Hurricane Evacuation Scenarios

Storm Surge Area (Category)	Hillsborough Room Availability	Manatee Room Availability	Pasco Room Availability	Pinellas Room Availability	Regional Room Availability
A	15863	1670	1968	10421	29922
B	13241	1351	1415	7987	23994
C	10063	1257	1253	5929	18502
D	8808	1115	1222	4812	15957
E	8251	750	1222	4503	14726

Source: Florida Dept. of Professional and Business Regulations, 2007

## C. Providing Public Shelter

Although there are other options for most evacuees, there will always be a demand for public shelter. The demand for public shelter has the potential to be significant in the Tampa Bay region because of the magnitude of the evacuation population, the demographics of the population and limited ability to evacuate out of the region.

Public shelter demand is the result of several factors:

- Evacuees may not have friends or relatives in a safe location.
- Evacuees may not have the means to evacuate to a hotel/motel or out of the region.
- Evacuees may not be able to locate vacant hotel/motel rooms outside of evacuation zones in the region. (Space is limited and demand will be high.)
- Evacuees may not plan ahead or understand their options.
- Some evacuees choose public shelter because they feel it is safer there than in their home.
- Some evacuees may wish to be with others.
- Evacuees may not evacuate in a timely fashion or may get stuck in evacuation traffic and may have to seek public shelter at the last minute as a last resort.

## D. Criteria for Hurricane Evacuation Shelter Selection

Shelter selection involves a number of factors - structural and non-structural - and requires close coordination with local officials responsible for public safety. Technical information contained in evacuation studies, storm surge and flood mapping, and other data can now be used to make informed decisions about the suitability of shelters. Accordingly, an interagency group under American Red Cross leadership, has prepared criteria for the selection of shelters and printed as *ARC 4496, July 1992*.

In the experience of the Red Cross and emergency management officials, the majority of people evacuating because of a hurricane threat generally provide for themselves and seek hotels or motels or stay with friends and relatives. However, for those who do seek public shelter, safety from hazards associated with hurricanes is paramount. These hazards include surge inundation, rainfall flooding, high winds, and hazardous materials.

Recommended guidelines for each of these hazards follow:

### 1. Storm Surge Inundation

In general, hurricane evacuation shelters should not be located in areas vulnerable to hurricane surge inundation. The National Hurricane Center SLOSH model for the Tampa Bay Region is very helpful in determining the potential level of surge inundation in this area. Within ARC 4496, the guidelines state the following:

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

To determine whether particular public shelter structures are vulnerable to future potential storm surge, an analysis of each structure's elevation and geographic location in relation to surge was conducted utilizing the SLOSH model.

The results of this analysis for each county are presented on Tables 48-51. The magnitude of the storm surge values shown in each hurricane category column on the tables are in relation to mean sea level. They represent the predicted maximum height of surge from that particular category of hurricane on the Saffir-Simpson Scale. Additionally, the surge height values were increased by one-foot for the expected tidal anomaly as well as a one-foot addition for a potential high astronomical tide (total 2 feet).

Although most sites were not projected to receive storm surge flooding under any evacuation scenario, in some areas, because of potential shelter shortage, shelters remain on primary shelter inventories even though they will not be utilized in the most severe of storms (evacuation levels D and E).

## **2. Freshwater Flooding**

While it is not historically considered life-threatening, rainfall flooding should be considered in the hurricane evacuation shelter selection process. Riverine inundation areas shown on Flood Insurance Rate Maps (FIRMs), as prepared by the National Flood Insurance Program, should be reviewed. FIRMs should also be reviewed in locating shelters in inland areas. ARC Guidelines state:

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

The appropriate flood plain designation is identified on the tables along with the storm surge analysis. While locating facilities outside of the 100-year floodplain is a priority, this is very difficult in the Tampa Bay region. Therefore, measures such as documenting the elevation of the first floor above the base flood elevation (BFE), meeting NFIP regulations and the provision of adequate emergency supplies sufficient to meet the immediate response needs until flood waters recede, etc. are ensured. Please note: The ARC 4496 guidelines also recommend avoiding the 500-year floodplain.

### **3. Wind Hazards Vulnerability**

Consideration of any facility for use as a hurricane evacuation shelter must take into account wind hazards. Both design and construction problems may preclude a facility from being used as a shelter. Structural Considerations identified in ARC 4496 include:

*Avoid uncertified buildings of the following types:*

- *Buildings with long or open roof spans, i.e., gymnasiums and cafeterias*
- *Un-reinforced masonry buildings*
- *Pre-engineered (steel pre-fabricated) buildings built before the mid-1980s*
- *Buildings that will be exposed to the full force of hurricane winds*
- *Buildings with flat or lightweight roofs*

*Give preference to the following:*

- *Buildings with steep-pitched, hipped roofs, or with heavy concrete roofs*
- *Buildings more than one story high (if lower stories are used for shelter)*
- *Buildings in sheltered areas not subject to "lay down" hazards*
- *Buildings whose access routes are not tree lined nor subject to flooding*

The State of Florida has an aggressive survey program for all structures considered for public shelter use. State and County work with local school boards and emergency management agencies to identify structures for retrofit and to implement the requirements of the Enhanced Hurricane Protection Areas (EHPA) in new school construction. The requirements and retrofit projects have dramatically increased the public shelter capacity in the region since 2000.

### **4. Hazardous Materials**

The possible impact from a spill or release of hazardous materials should be taken into account when considering any potential hurricane evacuation shelter. All facilities manufacturing, using, or storing hazardous materials (in reportable quantities) are required to submit Material Safety Data Sheets (emergency and hazardous chemical inventory forms) to the Local Emergency Planning Committee (LEPC) and the local fire department. These sources can assist in determining the suitability of a potential hurricane evacuation shelter or determining precautionary zones (safe distances) for facilities near potential shelters that manufacture, use, or store hazardous materials.

- *Facilities that store certain types or quantities of hazardous materials may be inappropriate for use as hurricane evacuation shelters.*
- *Hurricane evacuation shelters should not be located within the ten-mile emergency planning zone (EPA) of a nuclear power plant (not applicable in Tampa Bay region).*
- *Service delivery units must work with local emergency management officials to determine if hazardous materials present are a concern for potential hurricane evacuation shelters.*

Those (Section 302) facilities with extremely hazardous materials on-site have been identified in relation to schools and hospitals. This information is contained in the Critical Facilities Inventory database.

### **C. Hurricane Evacuation Shelter Selection Process**

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

1. Identify potential sites. Evacuation and transportation route models must be considered.
2. Complete a risk assessment for each potential site. Gather all pertinent data from the SLOSH model (storm surge), FIRM (flood hazard), facility base elevation, hazardous materials information, and previous studies concerning each building's suitability.
3. Inspect the facility and complete a *Red Cross Facility Survey Form* and a *Self-Inspection Work Sheet/Off-Premises Liability Checklist* in accordance with ARC 3031. Note all potential liabilities and the type of construction. Consider the facility as a whole; one weak section may seriously jeopardize the integrity of the building.
4. Have a structural engineer review the facility and rate its suitability.
5. Ensure that an exhaustive search for shelter space has been completed. Work with local emergency management officials and others to identify additional potential sites.
6. Review, on a regular basis, all approved hurricane evacuation shelters. Facility improvements, additions, or deterioration may change the suitability of a selected facility as a hurricane evacuation shelter. Facility enhancements may also enable previously rejected facilities to be used as hurricane evacuation shelters.
7. If possible, work with officials, facility managers, and school districts on mitigation opportunities. Continue to advocate that the building program for new public

buildings, such as schools, should include provisions to make them more resilient to possible wind damage. It may also be possible to suggest a minor modification of a municipal, community, or school building, such as the addition of window protection in the planning stages, to make for a more useful hurricane evacuation shelter site.

## D. Least Risk Decision Making

Safety is the primary consideration in providing hurricane evacuation shelters. When anticipated demands for hurricane evacuation shelter spaces exceed suitable capacity as defined by the preceding criteria, there may be a need to utilize *marginal* facilities. It is critical that these decisions are made carefully by a team including representatives from county emergency management agencies, the local chapter of the American Red Cross, School Board and engineering professionals.

### 1. The Selection Process

The process should include the following considerations:

- All hurricane evacuation shelters should be located outside of storm surge inundation areas. Certain exceptions may be necessary but only if there is a high degree of confidence that the level of wind, rain, and surge activities will not surpass established shelter safety margins.
- When a potential hurricane evacuation shelter is located in a flood zone, it is important to consider its viability. By comparing elevations of sites with FIRMs, one can determine if the shelter and a major means of egress are in any danger of flooding. It is essential that elevations be carefully checked to avoid unnecessary problems.
- In the absence of certification or ranking by a structural engineer, any building selected for use as a hurricane evacuation shelter must be in compliance with all local building and fire codes.
- The Red Cross and State of Florida use the planning guideline of 20 square feet of space per shelter resident. During hurricane conditions, on a short-term basis, shelter space requirements may be reduced. Ideally, this requirement should be determined using no less than 20 square feet per person; however, some counties use 10-15 square feet as the standard. Before and after the hurricane strike, evacuees will be allowed to use gymnasiums, auditoriums, etc. However, once a hurricane is affecting the area, all evacuees will be moved to safer areas of the shelter. For the duration of the storm, 8-10 hours, the 10-15 square foot per person may have to be adequate until additional shelter space becomes available. In addition, sufficient space must be set aside for registration, health services, and safety and fire considerations. On a long-term

recovery basis, shelter space requirements should follow guidelines established in ARC 3031, *Mass Care: Preparedness and Operations*.

## 2. Interior Building Safety Criteria During Hurricane Conditions

Based on storm data such as the arrival of tropical force winds (sustained 40 mph winds), a notification procedure developed with local emergency managers is implemented as to when to move the shelter population to pre-determined safer areas within the facility. The following guidelines are considered:

- *Do not use rooms attached to, or immediately adjacent to, un-reinforced masonry walls or buildings.*
- *Do not use gymnasiums, auditoriums, or other large open areas with long roof spans during hurricane conditions.*
- *Avoid areas near glass, unless the glass surface is protected by an adequate shutter. Assume that windows and roof will be damaged and plan accordingly.*
- *Use Interior corridors or rooms.*
- *In multi-story buildings use only the lower floors and avoid corner rooms. Avoid basements if there is any chance of flooding.*
- *Avoid any wall section that has portable or modular classrooms in close proximity, if these are used in the community.*

## E. Special Needs Shelters

A special needs shelter is a temporary emergency facility capable of providing care to residents whose medical condition exceeds the capabilities of the Red Cross Shelter but is not severe enough to require hospitalization. Health Department medical staff support these shelters.

The State of Florida Division of Emergency Management, Department of Health, local emergency management agencies, health care agencies have worked together over the last decade to establish Special Needs Shelter standards, protocols and technical assistance that can be integrated into the Florida Emergency Management System.

The mission is to develop a standardized, comprehensive, county and regional approach to Special Needs Shelter operation that ensures continuity in services and quality care to clients, caregivers and staff during their stay in a Special Needs Shelter.



<sup>1</sup> <http://www.doh.state.fl.us/PHNursing/SpNS/SpecialNeedsShelter.html>

## 1. Florida Statutes related to Special Needs Shelters

- a. [F.S. Ch. 252.355](#) - Registry of persons with special needs; notice.
- b. [F.S. Ch. 252.356](#) - Emergency and disaster planning provisions to assist persons with disabilities or limitations.
- c. [F.S. Ch. 381.0303](#)-Healthcare Practitioner Recruitment for Special Needs Shelters
- d. [FAC 64-3](#) - Florida Administrative Code related to Special Needs Shelter

## 2. Special Needs Registration

In order to accommodate residents who need evacuation assistance to a Special Needs Shelter, **it is most important that they register prior to June 1st in advance of hurricane season**. This will help in determining which shelter they should go to and what, if any, assistance they require to evacuate. This would include transportation disadvantaged residents who need transportation assistance only.

Residents who feel they may qualify are instructed to complete a [Special Needs Evaluation form](#). The forms should be mailed, e-mailed or faxed to the county office designated to maintain the special needs registration list.

When residents fill out a registration form the County Health Department determines if the special needs shelter is the most appropriate level of care and advises the resident directly or through the local emergency management or fire department.

## 3. Special Needs Population Criteria

- a. The individual meets the medical criteria for assignment to the Special Needs Shelters if:
  - They are unable to administer their own frequently required or daily injectable medicines.
  - They require daily or more frequent dressing changes because of moderate or copious drainage from ulcers, fistulas, or other similar problems.
  - They need assistance with ostomy management and indwelling catheters of any kind.
  - Activities of daily living are so restricted by immobility that others provide assistance to meet their basic needs and those people are

unavailable at this time. Please note that special needs shelters can not accept bedbound patients.

- They require daily assessment of a (stable) medical condition by professional nursing personnel or other similar conditions.
- They have a respiratory condition which requires special equipment such as monitors or oxygen. Counties may have a limit to the number of liters of oxygen at shelters.
- They have a terminal illness but are ambulatory and in need of professional assistance in administering heavy doses of pain medicine (HOSPICE).
- In some counties, individuals will receive notification by the County Health Department, assigning them to a Special Needs Shelter. ***People assigned to the Special Needs Shelter will need to take any medication, equipment or articles of comfort they routinely use.***
- They are elderly, homebound or alone and need assistance in relocating to a shelter.

**b. The following people SHOULD NOT go to a special needs shelter; unless otherwise stated, they should go to a hospital:**

- Pregnant woman within six weeks of estimated day of delivery, or who are in labor.
- Individuals suffering from acute infection or infestation.
- Those having an immediate medical or emergency condition.
- Bedridden patients
- Individuals with a tracheotomy that requires frequent suctioning
- Individuals on a ventilator

**c. When evacuating to a shelter, evacuees are told to bring the following:**

- **All Required Medications and Medical Support Equipment:** Wheel chair/walker, oxygen, dressings, feeding equipment, ostomy supplies, etc. Any specific medication or care instructions. Name, phone number of physician/home health agency/hospital where they receive care.
- **Special Dietary Needs:** Only regular meals will be provided.
- **Sleeping Gear:** Pillows, blankets, portable cot or air mattress, folding chairs.

- **Important Papers:** Insurance papers, doctors' orders.
- **Identification:** With photo and current address.
- **Cash:** Check cashing/credit card services may not be available for several days after the storm. However, please remember that there will be nowhere to secure money or valuables at the shelter.
- **Comfort items:** Personal hygiene items, snacks, small games, cards, etc.
- **Extra Items:** An extra set of comfortable clothing and a few extra sets of underwear, socks, towel, washcloths, soap, toothbrush and adult diapers.

#### 4. Transportation Assistance for Special Needs

Once enrolled, residents with medical special needs are the first to be evacuated. Timing is crucial during the first phases of an emergency and plays a critical role in assuring they get out long before disaster strikes. The type of evacuation transportation assistance is determined when the resident is registered.

#### 5. Standards for Hurricane Evacuation and Disaster Event Special Needs Shelter (Special Needs Shelter) Selection<sup>2</sup>

Facilities selected as special needs shelters should meet additional structural criteria as well as shelter management standards. New legislation has identified special criteria for Special Needs Shelters which prove to be a challenge for local governments. In addition to meeting the ARC 4496 hurricane safety criteria, Special Needs Shelters should have emergency power supported air-conditioning and have capacities based upon 60 square feet per client. The State Division of Emergency Management and local agencies are working together to address the challenges of the transition to meeting these expectations as well as the resolving problems related to Special Needs Shelter.

##### a. Special Needs Shelter Design Criteria

Department of Health (DOH) guidance for design and selection of facilities to be used as a Special Needs Shelters (Special Needs Shelter) in a hurricane/disaster event shall be consistent with the American Red Cross publication "MASS CARE—Preparedness and Operations (ARC 3041)" and "Mass Care Facility Form 6564." The Special Needs Shelter facility must also meet all Florida Building Code (FBC) and Americans with Disabilities Act (ADA) accessibility requirements.

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<sup>2</sup> Created: 10/14/05

Revised: 11/16/05; 01/20/06

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**b. Special Needs Shelter Occupancy Period**

For planning purposes it is assumed that the Special Needs Shelter will be occupied at its maximum occupant capacity for, at a minimum, a continuous seventy-two (72) hour period during and post impact by a major hurricane (i.e., Category 3 or higher). It should also be assumed that the Special Needs Shelter may be occupied for 12 hours in advance of arrival of hurricane force winds.

**c. Special Needs Shelter Structural Requirements**

Special Needs Shelter Structural Requirements shall at a minimum be consistent with the *American Red Cross publication "Standards for Hurricane Evacuation Shelter Selection (ARC 4496)."* Preference shall be given to school facilities designed, constructed and inspected to comply with the public shelter design criteria, *Enhanced Hurricane Protection Area (EHPA)* requirements as set forth in section 423.25, Florida Building Code.

**d. Location and Site Requirements- Emergency Access**

Each Special Needs Shelter should have at least two (2) major means of access for emergency vehicles. The additional need for access is due to the potential for medical emergencies associated with the fragile health conditions of the Special Needs Shelter client population. The Special Needs Shelter openings provide a means of emergency access and/or evacuation. These openings should be well supervised to monitor for safety and/or security threat to the Special Needs Shelter occupants. All occupants of the building should be within a reasonable distance from these access/exit points, providing a choice in direction of escape in case of fire. All exits should be clearly marked and visible.

**e. Special Needs Shelter Capacity**

Calculations to determine the capacity of a Special Needs Shelter are identical to the EHPA calculations except that the number of square feet required for each occupant is 60 square feet.

**f. Plumbing and Sanitation**

(1) **Potable Water.** Given the planning assumption that the Special Needs Shelter will be open for a minimum of 72 hours during and post impact by a major hurricane, the Special Needs Shelter should have a minimum of five (5) gallons of potable water per person per day for all uses (i.e., drinking water, hygiene, food preparation, etc.)

(2) **Toilets, Sinks, Showers, Waste Water and Garbage Disposal.** Requirement criteria remain equal to ARC 3041 and EHPA requirements, with the exception of the waste water reservoir capacity and garbage disposal plan shall be based on a 72-hour design occupant capacity.

(3) **Electrical and Emergency Power Systems.** It should be assumed that utility power outages will occur and may continue for the duration of Special Needs Shelter operation. Due to the fragile health and medical condition of the Special Needs Shelter clients, it is imperative that the Special Needs Shelter have back-up emergency electric power system.

- The emergency electric power system shall be capable of supporting life safety, branch outlet and lighting circuits, air conditioning and other systems that are critical to the well-being of the clients, staff and caregivers. The absence of air conditioning can result in the deterioration of the Special Needs Shelter client's health status. Clients with chronic lung disease deteriorate at a rapid pace as the increase of temperature leads to increased breathing difficulty.
- The power grid and backup emergency electric power capability must also be sufficient to power receptacles utilized to run oxygen concentrators, oxygen nebulizers and other medical equipment. (Note: Oxygen concentrators draw an average of 3.5-5.5 amps per unit. Nebulizers are used intermittently and have a negligible power draw.) Additional lighting (fixed or mobile) may be needed for providing client care (i.e., wound care, dressing change, etc.) and should be considered when determining power capacity.
- Appropriately trained and equipped personnel should be present and on site at all times during the Special Needs Shelter occupancy to operate, maintain and repair the generator(s). Sufficient supplies chosen by appropriately trained personnel must be available to route the power to where it is needed, (i.e., extension cords of adequate size, plug strips, tape to secure cords to the floor, etc.).
- Sufficient fuel stores should be available for 72-96 hours of continuous generator use at full load.
- Generators should be tested after each significant incident and on a monthly basis or as recommended by manufacturer if more frequent. Sites on facility grounds (i.e., lift stations) should have quick connects (as appropriate) to provide for utilization of backup power generation equipment.

### **g. Emergency Management Considerations**

(1) **Posting Special Needs Shelter floor plan.** A copy of the floor plan must be posted for planning purposes.

(2) **Food service planning** should provide for the assumption of a minimum of 72 hours for Special Needs Shelter occupancy. Additional consideration for clients with special dietary/metabolic health issues should be factored into food service planning; however it is very difficult to predict all the different types of dietary restrictions. Residents are told to bring their own food supply if they have a special or restrictive diet.

(3) **Supplemental Space Allocations.** Additional space allocations should be considered for the following:

- Safe play areas for children.
- Special Needs Shelter clients with ambulatory difficulties may need additional space for assistive devices (i.e., wheelchairs and walkers). These clients may also need to be provided space allocation on the ground floor or in areas free from level changes.
- Special Needs Shelter clients with service animals may need to be provided a separate area or away from the general Special Needs Shelter client population.
- Quarantine areas for clients requiring isolation precautions. Respiratory isolation areas to be designated and assigned at each Special Needs Shelter prior to occupancy by appropriately trained/experienced personnel.
- Appropriate space should be provided for the safe storage and movement of compressed gasses (i.e., oxygen tanks, liquid oxygen) or other Special Needs Shelter equipment and supplies.

## **6. Estimating Special Needs Shelter Demand**

Estimating the demand for special needs shelter space is challenging for state and local emergency management officials. Certain key assumptions must be made and complexities addressed:

### **a. County and Regional Profiles**

The demographics of the county and region must be considered, especially age, disability and income. Typically, the older the overall population of the county/region, the older the shelter population and greater the demand for public shelter. Historically, the demographics of the general and special needs shelter populations have been skewed based on age, disability and income. Therefore, the shelter populations may reflect trends but will not match the overall demographic profile of

the county or region. Both the general shelter population and, more definitively, the special needs population, will tend to be much older, with more disabilities and with fewer financial resources.

Below is a table which reflects the demographics of the county and region (See Chapter I Population and Demographics). Please note the differences between counties in the region. The differences in age and percentage with disabilities will impact the potential demand for special needs shelter.

**Table V-2 Population Demographics Affecting Special Needs Shelter Demand**

Jurisdiction	Percentage 65+ 2010 <sup>3</sup>	Percentage 65+ 2015 <sup>4</sup>	Percentage with Disabilities <sup>5</sup>	Percentage with Disabilities age 65 +	Percentage with Disabilities age 75+
Hillsborough	12.30%	14.00%	15.40%	32%	54%
Manatee	22.16%	23.14%	15.28%	24%	42%
Pasco	23.40%	24.90%	18.63%	31%	48%
Pinellas	21.20%	21.31%	17.80%	26%	48%
Region	17.97%	19.37%	16.67%	28%	48%

**b. Special Needs Population Data from the Behavioral Survey**

<sup>3</sup> EDR1a

<sup>4</sup> EDR1a

<sup>5</sup> The data on disability status were derived from answers to two long-form questionnaire items. The first was a two-part question that asked about the existence of the following long-lasting conditions: (a) blindness, deafness, or a severe vision or hearing impairment (sensory disability) and (b) a condition that substantially limits one or more basic physical activities, such as walking, climbing stairs, reaching, lifting, or carrying (physical disability). This question was asked of a sample of the population 5 years old and over. The second was a four-part question that asked if the individual had a physical, mental, or emotional condition lasting 6 months or more that made it difficult to perform certain activities. The four activity categories were: (a) learning, remembering, or concentrating (mental disability); (b) dressing, bathing, or getting around inside the home (self-care disability); (c) going outside the home alone to shop or visit a doctor’s office (going outside the home disability); and (d) working at a job or business (employment disability). Categories (a) and (b) were asked of a sample of the population 5 years old and over; (c) and (d) were asked of a sample of the population 16 years old and over. For data products that use a disability status indicator, individuals were classified as having a disability if any of the following three conditions were true: (1) they were 5 years old and over and had a response of “yes” to a sensory, physical, mental or self-care disability; (2) they were 16 years old and over and had a response of “yes” to going outside the home disability; or (3) they were 16 to 64 years old and had a response of “yes” to employment disability.

The behavioral survey of Florida residents completed as part of the Statewide Regional Evacuation Study contained four questions designed to elicit information regarding the prevalence of “special needs” households:

- In an evacuation, would you or anyone in your household require assistance in order to evacuate?
- Would the person just need transportation, or do they have a disability or medical problem that would require special assistance?
- Would that assistance be provided by someone within your household, by an outside agency, or by a friend or relative outside your household?
- Is that person registered with the County as a person who would have special needs during a hurricane evacuation?

Responses to all four questions are reported in the Statewide Regional Evacuation Study Behavioral Survey Reports for each planning region of Florida. In those reports responses are shown by region, county, evacuation zone, and housing type. The tables below show responses for the entire statewide sample. However, the responses do not constitute a statewide random sample of households. In every coastal county, regardless of population, 400 interviews were completed. In every non-coastal county 150 interviews were completed. Therefore smaller counties were “over-represented” statistically when the data is aggregated statewide.

**(1) Households with Special Needs**

Statewide 6.1% of the interviewees said that someone in their home had a disability or medical problem that would require special assistance, beyond requiring just transportation (Table V-3). The figure included people with those needs but who also needed transportation. Those needs were greater in mobile homes than in site-built homes. In site-built homes the needs were lower in category 1 evacuation areas than in other evacuation zones.

**Table V-3**

Percentage of households having someone with a disability or medical condition requiring assistance in order to evacuate (by evacuation zone and housing)

Type of Housing	Evacuation Zone						
	Cat 1	Cat 2	Cat 3	Cat 4-5	Coastal Non-Surge	Non-Coastal	All Zones
Site Built Homes	4.4	6.3	6.0	6.1	5.9	6.5	5.6
Mobile Homes	8.7	6.3	13.9	8.1	8.1	8.2	8.6
All Housing	5.0	5.8	7.4	6.3	6.3	6.9	6.1

**(2) Households Registered as Having Special Needs**

Approximately 2.2% of the surveyed households indicated that anyone in the home was registered with their county as a person with special needs in a hurricane evacuation (Table V-4). The figure was higher for mobile home residents than site-built residents, but there was no clear trend with respect to evacuation zone. **However, from the list of registrants with the county emergency management agencies or county departments of health, there are less than 1% of the general population registered for special needs and transportation assistance. In fact, the actual number of registrants is less than 24% of the number answering that they are registered as a person with (medical) special needs.**

**Table V-4**

Percentage of households having someone with a disability or medical condition requiring assistance in order to evacuate **AND** registered with county as special needs (by evacuation zone and housing)

Type of Housing	Evacuation Zone						
	Cat 1	Cat 2	Cat 3	Cat 4-5	Coastal Non-Surge	Non-Coastal	All Zones
Site Built Homes	1.6	2.1	1.3	2.5	1.8	2.5	2.0
Mobile Homes	3.6	1.9	3.7	4.0	4.1	3.0	3.3
All Housing	1.9	2.0	1.7	2.7	2.2	2.6	2.2

**(3) Households Needing Agency Assistance**

Two percent of all households said that assistance from an agency (rather than assistance from a friend or relative) would be needed to help a person with a disability or medical problem evacuate (Table V-5). Some respondents said they didn't know who would provide the assistance. Both calculations were higher for mobile homes than for site-built homes.

**Table V-5**

Percentage of households having someone with a disability or medical condition requiring assistance in order to evacuate **AND** requiring assistance from an agency (by evacuation zone and housing)

Type of Housing	Evacuation Zone						
	Cat 1	Cat 2	Cat 3	Cat 4-5	Coastal Non-Surge	Non-Coastal	All Zones
Site Built Homes	1.4	1.8	1.6	1.8	2.0	2.5	1.9
Mobile Homes	3.2	1.3	3.3	3.0	3.9	2.2	2.7
All Housing	1.6	1.7	1.9	1.9	2.3	2.4	2.0

**(4) Households with Special Needs Using Public Shelters**

One of the questions asked specifically about special needs sheltering. However, all respondents were asked if they would go to a public shelter when they evacuated. 1.4% of the interviewees said BOTH that they would evacuate to a public shelter AND that they had someone in the home with a disability or medical problem who would require evacuation assistance. Residents in mobile homes were twice as likely as residents in site-built homes to reply affirmatively to both questions. Among those in site-built homes the rate increased as evacuation zones progressed inland. Among people mobile homes the spatial trend was less consistent but the rate was greater inland of the category 1 and 2 zones.

**Table V-6**

Percentage of households having someone with a disability or medical condition requiring assistance in order to evacuate **AND** intends to evacuate to a public shelter

Type of Housing	Evacuation Zone						
	Cat 1	Cat 2	Cat 3	Cat 4-5	Coastal Non-Surge	Non-Coastal	All Zones
Site Built Homes	.7	.8	1.5	1.3	1.4	1.9	1.2
Mobile Homes	1.4	1.3	3.7	3.0	2.0	3.2	2.5
All Housing	.8	.9	1.8	1.5	1.5	2.2	<b>1.4</b>
Hillsborough County							1.5%
Manatee County							2.8%
Pasco County							3.5%
Pinellas County							4.2%

It is difficult to determine the most appropriate way to use these survey results. While the study provided an estimate of demand for special needs shelter for the first time based on a statewide survey, there are concerns:

- The general public interviewed in the statewide survey does not understand the complexities of the concept of "special needs" as used in emergency shelter planning. While residents may have medical needs, they would need to be screened in order to determine the most appropriate type and level of care. For example, a hospital, nursing home, ALF, etc. may be a more appropriate setting.
- Historically, respondents over-estimate the demand for any public shelter option.
- Demand will vary by storm severity and evacuation rates.
- Demand will be higher based on housing type (MH), age and income.
- The number of respondents to these questions was very low at the county level.

## 7. Other considerations

A report was generated after the 2004 and 2005<sup>6</sup> hurricane seasons which identified that a significant portion of the registered special needs populations found alternative shelter and/or elected not to go to the special needs shelter during the event. This trend has been identified in many recent evacuations. The report stated that "the statewide total of registrants is about 38,500, but local emergency managers estimate that only about 14,000 clients will actually seek public Special Needs Shelters. In 2004 the DOH's maximum census (summation of all individual counties' highest single day totals, plus the Orlando super shelter and a SWF regional shelter) was 6,364 or about half of local emergency managers' best estimate of demand."

However, when an event threatens, local emergency management agencies and the Department of Health are typically flooded with additional requests for special needs shelter and transportation. This puts an additional burden on emergency management and responders to follow up with these clients to determine the most appropriate level of care and shelter option. Complicating the situation is the availability of appropriate space in assisted living facilities, skilled nursing facilities and hospitals immediately prior to the event. In prior (Frances and Jeanne) evacuations, the Governor issued an executive order waiving occupancy limits in those facilities in order to provide for continuity of care for those residents who require a higher level of care. This is a critically important element in special needs planning.

What was not reflected in the 2005 report or the table below was the impact of special needs population in the general shelter population. Depending on the demographics in the community, a significant portion of the general shelter population may have or develop (as the event proceeds and stress levels increase) serious health issues.

It is estimated that in the 2004 and 2005 shelter operations from 30-60% of the general shelter population either arrived at the shelter with conditions which warranted a higher level of health care or developed health issues which warranted care associated with a Special Needs Shelter or higher levels of care. There were reports of school principals administering oxygen, monitoring health issues and even changing adult diapers. For the most part, many of these citizens had driven themselves to the shelter and found their health deteriorate given the stress of the event and shelter environment. This situation is not unique to the 2004 or 2005 hurricane season. It has been documented in many other historical events. In addition the DOH reported that many caregivers began to experience health issues as the event progressed.

It was noted that while people may be able to care for themselves or their spouse in their home, combine a stressful evacuation, shelter environment (cots or air mattresses, lack of privacy, etc.) and storm conditions and the situation can become traumatic.

These issues may be mitigated through a continued push to pre-register special needs clients through an aggressive outreach program in the community. Coordination with

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<sup>6</sup> ***2005 Special Needs Shelter Report***, June 2005, DEM and DOH

local home health agencies and health care professionals has reduced this impact, but it remains an issue.

As indicated earlier, each county emergency management agency is responsible for maintaining the registry of persons with special needs. The names on those lists are protected; however, the number of registrants is available and reflects a starting point for determining demand within the county. It should be noted that the registry is fluid. It varies day to day (as does the clientele receiving home health care). It also varies by month as many special needs clients are seasonal residents.

Demographics within the community as well as hazard vulnerability, available health care resources, the extent and duration of power outages and presence of extended family support all impact the potential demand for Special Needs Shelter capacity. The table below identifies the current (July 2009) registrants, current shelter capacities and estimate of demand based on the survey findings balanced with knowledge of the county demographics and evacuee options.

**Table V-7  
Special Needs Shelter Demand Guidance<sup>7</sup>  
(2010 Base Scenarios)**

County	Number of Registrants (Medical)	Planning Percentage <small>(Assumed 25% Respondents indicating need)</small>	Existing Capacity (2009)	EVACUATION SCENARIO <small>(Demand based on percentage of evacuation population in Base Scenarios)</small>				
				A	B	C	D	E
Hillsborough	2200	.38%	1,850	1,015	1,327	1,707	1,996	2,446
Manatee	1203	.7%	400	735	949	1,268	1,796	2,193
Pasco	2448	.88%	759	1,383	1,692	2,339	2,595	2,810
Pinellas	3900	1.05%	3,350	3,275	4,428	5,835	6,738	7,436
Region	9,303		6,109	6,408	8,396	11,149	13,125	14,885

Obviously, most counties are transitioning toward the new requirements for Special Needs Shelters including the space requirement of 60 sq. ft. per person and the emergency power supported air-conditioning. As indicated, additional space must be provided for caregivers, family members, pets, medical equipment and supplies. Relocation of special needs clients long distances is dangerous as well as taxing on local resources; therefore, if there is not sufficient capacity within a county, a regional solution must be sought.

**8. Public Private Partnerships**

<sup>7</sup> FOR PLANNING PURPOSES ONLY

It was hoped that legislation in 2006 would bring more support to the local efforts to meet the challenges of addressing special needs in the community. Home health care agencies which provide care to special needs populations throughout the region have been tasked to provide continuity of care during disasters. It is hoped that this requirement will (1) provide earlier registration/ evaluation of special needs populations; (2) provide additional support for Departments of Health staff in the special needs shelters and (3) provide an overall benefit through private-public partnerships to ensure no one is "left behind."

While the courts interpreted the requirement for "continuity of care" to be provided by the home health agencies in disasters as the time contracted prior to the event, i.e., 2-4 hours a week, it was a step forward.

The legislation also recommended the identification of pediatric and other special units, provided funding for retrofit and generators at designated special needs shelters, where required, and brought together a host of state, local and private sector agencies to address the needs of their clients in a disaster situation.

## F. Pets and Evacuees

### 1. Pet Issues are People Issues

- Fifty-eight percent of U.S. households own animals.
- The media often reports the needs of animals, both domestic and wild, affected by disasters. Following Katrina thousands of pets were rescued although many did not survive.
- Some people are more concerned for their animals in disasters than they are for themselves. This may impair their ability to make sensible decisions about their own safety and that of rescue workers. Examples include evacuation failures and re-entry attempts, and unsafe rescue attempts.
- Following Hurricane Katrina some abandoned pets, hungry, disoriented and frightened became dangerous to rescue workers and returning residents. Packs of dogs – once beloved pets – had to be destroyed



In 2006, the Florida Legislature sought to address this serious concern. Chapter 252.3568, F.S. Emergency sheltering of persons with pets.--In accordance with s. 252.35, *the division shall address strategies for the evacuation of persons with pets in the shelter component of the state comprehensive emergency management plan and shall include the requirement for similar strategies in its standards and requirements for local comprehensive emergency management plans. The Department of Agriculture and*

*Consumer Services shall assist the Division in determining strategies regarding this activity.*

Therefore, the Division of Emergency Management has put forward the following policies:

## **2. Implementation Strategies**

- Step One: Establish Policy Guidelines
- Step Two: Develop Standard Operating Guides, Procedures, and Best Practices
- Step Three: Training & Implementation

## **3. Policy Guidance to Residents**

- Residents must include pets in family disaster plans.
- Take your pets with you when ordered to evacuate.
  - The best plan is to evacuate with your pets to friends and/or family.
  - Identify and promote pet friendly policies of hotels and motels during emergencies.
  - Shelters are life boats for both you and/or your pets.
- Evacuation support should include people with pets
  - Evacuation Routes
  - Buses
  - Special Needs
- Sheltering: no one with pets should be turned away from a shelter
  - Options
  - Co-located Pet Friendly Shelters
  - Centralized Pet Shelters
  - Boarding facilities and animal shelters, volunteer groups
- Shelters: Service animals should never be turned away or separated from their owner.
- Animal rescue teams should be integrated in ESF 9 - Search and Rescue (SAR)
- Animal SAR teams should be typed and credentialed for the level of service of which they are capable.

## **G. Shelter Inventories**

At the time of the Regional Hurricane Evacuation Study update in 2000 only the shelter inventory in Pasco County had been surveyed to determine wind vulnerability and compliance with ARC 4496 and ASCEI. As a result, the shelter capacity in Pasco County decreased from approximately 25,000 people to a mere 5,820. Since that time, the shelters in all four counties have been surveyed and “lost” much of their shelter capacity. In response, both the State of Florida and the counties aggressively sought funding to retrofit existing facilities as well as to monitor new construction/ design to reach the current inventories. Literally millions of

mitigation dollars have been spent to protect exterior windows and doors and install generators. New school construction meeting the requirements of the Enhanced Hurricane Protection Areas (EHPA) has increased the capacity in all counties as well.

It should be noted that the shelters listed are dynamic and their capacities are estimates. Shelter inventories change annually as facilities are added or drop out for retrofit, construction or repairs. They are constantly being evaluated to ensure that the safest facilities are used. The capacities are based on useable space and an estimated 20 sq. ft. per person. However, these estimates are, in fact, estimates and people never fit neatly into a 20 sq. ft. area.

**Table V-8A  
Hillsborough County Shelter Inventory and Surge Analysis**

NAME	ADDRESS	CITY	RISK CAP @ 20 sq ft <sup>8</sup>	Sp Needs Cap @60 sq ft	Pet Friendly	Agency Support	Function	Vulnerability			
								Surge	Evac Zone	Flood	Wild-fire
ADAMS MIDDLE	10201 NORTH BLVD	TAMPA	652		NO	ARC	SCHOOL				
ARMWOOD HIGH	12000 US. HWY 92	SEFFNER	912		NO	ARC	SCHOOL				
<b>BARTELS MIDDLE</b>	<b>9020 IMPERIAL OAK BLVD.</b>	<b>TAMPA</b>	<b>1595</b>		<b>YES</b>	<b>ARC</b>	<b>SCHOOL</b>				✓
BARRINGTON MIDDLE	5925 VILLAGE CENTER DR	LITHIA	1300		NO	ARC	SCHOOL				✓
BENITO MIDDLE	10101 CROSS CREEK BLVD	TAMPA	1811		NO	ARC	SCHOOL				✓
BEVIS ELEMENTARY	5720 OSPREY RIDGE DRIVE	LITHIA	822		NO	ARC	SCHOOL				✓
<b>BRANDON HIGH</b>	<b>1101 VICTORIA ST.</b>	<b>BRANDON</b>	<b>600</b>		<b>NO</b>	<b>ARC</b>	<b>SCHOOL</b>				
BRYANT ELEMENTARY	13910 NINE EAGLES RD	TAMPA	1169		NO	ARC	SCHOOL	<b>4</b>	<b>D</b>		✓
<b>BURNETT MIDDLE</b>	<b>1010 N KINGSWAY RD</b>	<b>SEFFNER</b>	<b>1328</b>		<b>YES</b>	<b>ARC</b>	<b>SCHOOL</b>				
CHILES ELEMENTARY	16541 TAMPA PALMS BLVD W	TAMPA	1458		NO	ARC	SCHOOL				
CIMINO ELEMENTARY	4329 CULBREATH RD	VALRICO	2132		NO	ARC	SCHOOL				✓
COLLINS ELEMENTARY	12424 SUMMERFIELD BLVD	RIVERVIEW	924		NO	ARC	SCHOOL				✓
CORK ELEMENTARY	3501 N CORK RD	PLANT CITY	528		NO	ARC	SCHOOL				✓
CRESTWOOD ELEMENTARY	7824 N MANHATTAN AVE	TAMPA	374		NO	ARC	SCHOOL				
DEER PARK ELEMENTARY	11605 CITRUS PARK DR	TAMPA	1341		NO	ARC	SCHOOL	<b>5</b>	<b>D</b>		✓
<b>DOBY ELEMENTARY</b>	<b>6720 COVINGTON GARDEN DR.</b>	<b>APOLLO BEACH</b>	<b>1488</b>		NO	ARC	SCHOOL				
ERWIN TECNICAL CENTER	2010 E HILLSBOROUGH AVE	TAMPA		750	NO	DOH	SCHOOL				
FOREST HILLS ELEMENTARY	10112 OLA AVE	TAMPA	1628		NO	ARC	SCHOOL				

<sup>8</sup> Estimated capacities for Barrington Middle, Steinbrenner High, Strawberry Crest High and Stowers Elementary

NAME	ADDRESS	CITY	RISK CAP @ 20 sq ft <sup>8</sup>	Sp Needs Cap @60 sq ft	Pet Friendly	Agency Support	Function	Vulnerability			
								Surge	Evac Zone	Flood	Wild-fire
<b>GRECO MIDDLE</b>	<b>6925 EAST FOWLER</b>	<b>TEMPLE TERRACE</b>	<b>437</b>		<b>NO</b>	<b>ARC</b>	<b>SCHOOL</b>				✓
<b>HAMMOND ELEMENTARY</b>	<b>8008 N. MOBLEY RD.</b>	<b>ODESSA</b>	<b>1306</b>		<b>NO</b>	<b>ARC</b>	<b>SCHOOL</b>				
JENNINGS MIDDLE	8799 WILLIAMS RD	SEFFNER	2049		NO	ARC	SCHOOL			✓	
KNIGHTS ELEMENTARY	4815 N KEENE RD	PLANT CITY	456		NO	ARC	SCHOOL				✓
LAKE MAGDALENE ELEMENTARY	2002 PINE LAKE DRIVE	TAMPA	769		NO	ARC	SCHOOL				
<b>LENNARD HIGH</b>	<b>2002 SHELL POINT RD.</b>	<b>RUSKIN</b>	<b>1030</b>		<b>NO</b>	<b>ARC</b>	<b>SCHOOL</b>		<b>E</b>		✓
MARSHALL MIDDLE	18 SOUTH MARYLAND AVE	PLANT CITY	366		NO	ARC	SCHOOL				
MCKITRICK ELEMENTARY	5503 LUTZ LAKE FERN RD	LUTZ	1451		NO	ARC	SCHOOL				✓
<b>MIDDLETON HIGH</b>	<b>4801 N 22ND ST</b>	<b>TAMPA</b>	<b>2298</b>		<b>NO</b>	<b>ARC</b>	<b>SCHOOL</b>				
MULRENNAN MIDDLE	4215 DURANT RD	VALRICO	2301		NO	ARC	SCHOOL				✓
NELSON ELEMENTARY	5413 DURANT RD	DOVER	1616		NO	ARC	SCHOOL				✓
OAK PARK ELEMENTARY	2716 N. 46 <sup>TH</sup> ST.	TAMPA	1397		NO	ARC	SCHOOL				
<b>PIZZO ELEMENTARY</b>	<b>11701 BULL RUN DR</b>	<b>TAMPA</b>	<b>1595</b>		<b>NO</b>	<b>ARC</b>	<b>SCHOOL</b>				
PRIDE ELEMENTARY	18271 KINNAN ST	TAMPA	1114		NO	ARC	SCHOOL				✓
REDDICK ELEMENTARY	325 WEST LAKE DR.	WIMAUMA	1660		NO	ARC	SCHOOL				
RIVERVIEW HIGH SCHOOL	11311 BOYETTE ROAD	RIVERVIEW		250	NO	DOH	SCHOOL				
<b>SESSUMS ELEMENTARY</b>	<b>11525 RAMBLE CREEK DR</b>	<b>RIVERVIEW</b>	<b>1564</b>		<b>NO</b>	<b>ARC</b>	<b>SCHOOL</b>				
SHEEHY (PAUL) ELEMENTARY	6402 N. 40TH STREET	TAMPA	996		NO	ARC	SCHOOL				
<b>SHIELDS, (BETH E.) MIDDLE</b>	<b>3908 19TH AVE NE</b>	<b>RUSKIN</b>	<b>1351</b>		<b>YES</b>	<b>ARC</b>	<b>SCHOOL</b>				
<b>SICKLES HIGH</b>	<b>7950 GUNN HIGHWAY</b>	<b>TAMPA</b>	<b>1067</b>		<b>YES</b>	<b>ARC</b>	<b>SCHOOL</b>				✓
<b>SIMMONS CAREER CENTER</b>	<b>1202 W GRANT ST</b>	<b>PLANT CITY</b>	<b>326</b>		<b>NO</b>	<b>ARC</b>	<b>SCHOOL</b>				

NAME	ADDRESS	CITY	RISK CAP @ 20 sq ft <sup>8</sup>	Sp Needs Cap @60 sq ft	Pet Friendly	Agency Support	Function	Vulnerability			
								Surge	Evac Zone	Flood	Wild-fire
<b>SMITH MIDDLE</b>	<b>14303 CITRUS POINTE DR.</b>	<b>CITRUS PARK</b>	<b>1964</b>		<b>NO</b>	<b>ARC</b>	<b>SCHOOL</b>				
STEINBRENNER HIGH	5575 LUTZ LAKE FERN RD	LUTZ	1750		NO	ARC	SCHOOL				✓
STOWERS ELEMENTARY	13915 BARRINGTON STOWERS DR	LITHIA	1000		NO	ARC	SCHOOL				
STRAWBERRY CREST HIGH	4691 GALLAGHER RD	DOVER	1750		NO	ARC	SCHOOL				
SUMMERFIELD CROSSINGS ELEMENTARY	11050 FAIRWAY MEADOWS DRI	RIVERVIEW	1025		NO	ARC	SCHOOL				✓
SYMMES ELEMENTARY	6280 WATSON RD	RIVERVIEW	1416		NO	ARC	SCHOOL				✓
TAMPA BAY BLVD ELEMENTARY	3111 TAMPA BAY BLVD	TAMPA	1761		NO	ARC	SCHOOL				
TOMLIN MIDDLE	501 N WOODROW WILSON	PLANT CITY	439		NO	ARC	SCHOOL				
TURNER ELEMENTARY	9190 IMPERIAL OAK BLVD	TAMPA	1379		NO	ARC	SCHOOL				✓
USF SUN DOME	4202 E FOWLER AVE	TAMPA		1500	NO	DOH	UNIVERSITY				
<b>VALRICO ELEMENTARY</b>	<b>609 SOUTH MILLER RD</b>	<b>VALRICO</b>	<b>776</b>		<b>NO</b>	<b>ARC</b>	<b>SCHOOL</b>				
<b>WALDEN LAKES ELEMENTARY</b>	<b>2800 TURKEY CREEK RD.</b>	<b>PLANT CITY</b>	<b>608</b>		<b>NO</b>	<b>ARC</b>	<b>SCHOOL</b>				
WHARTON HIGH	20150 BRUCE B DOWNS	TAMPA	550		NO	ARC	SCHOOL				
WILSON ELEMENTARY	702 ENGLISH ST	PLANT CITY	648		NO	ARC	SCHOOL				
<b>TOTAL</b>			<b>60,277</b>	<b>2,500</b>							

Schools **bolded** will open for storms of lower intensity. In addition to those shelters in **bold**, the rest of the shelters will open for storms of higher intensity.

Green-shaded = May not be available for category 4/5 hurricane events.

Orange-shaded = Special Needs Shelter

ARC = American Red Cross

DOH = County Health Department

SD = County School District

**Table V-8B  
Manatee County Shelter Inventory and Surge Analysis**

NAME	ADDRESS	CITY	RISK CAP @ 20	Sp Needs @ 60	Pet Friendly	Agency Support	Function	Vulnerability			
								Surge	Evac zone	Flood	Wild-fire
BAYSHAW ELEMENTARY	3515 MORGAN JOHNSON	BRADENTON	1820		NO	ARC	SCHOOL	5	D		
BAYSHORE ELEMENTARY	6120 26 <sup>TH</sup> ST. W.	BRADENTON	1764		NO	ARC	SCHOOL	5	E		
BRADEN RIVER HIGH	6545 SR 70 EAST	BRADENTON	3369		YES	ARC	SCHOOL	5	E		✓
BRADEN RIVER MIDDLE	6215 RIVER CLUB BLVD	BRADENTON	984		NO	ARC	SCHOOL				✓
BUFFALO CREEK MIDDLE	7320 69 <sup>TH</sup> STREET EAST	PALMETTO	1772		NO	ARC	SCHOOL				
DAUGHTREY ELEMENTARY	515 63 <sup>RD</sup> AVENUE EAST	BRADENTON	875		NO	ARC	SCHOOL	5	E		
FREEDOM ELEMENTARY	9515 STATE RD 64	BRADENTON	1766		NO	ARC	SCHOOL	5	E		✓
GULLETT ELEMENTARY	12125 44 <sup>TH</sup> AVENUE EAST	BRADENTON	1496		NO	ARC	SCHOOL				
HAILE MIDDLE SCHOOL	9501 STATE RD 64	BRADENTON	1632		NO	ARC	SCHOOL				✓
JOHNSON MIDDLE	2121 26th AVE E	BRADENTON	396		NO	ARC	SCHOOL				
KINNAN ELEMENTARY	3415 TALLEVAST ROAD	SARASOTA	675		NO	ARC	SCHOOL	5	E		✓
LEE MIDDLE	4000 53rd AV	BRADENTON	978		NO	ARC	SCHOOL				
LINCOLN MIDDLE	305 17TH STREET, EAST	PALMETTO	978		NO	ARC	SCHOOL	4	C		
MANATEE HIGH	1 HURRICANE LANE	BRADENTON	1853		YES	ARC	SCHOOL				
MANATEE TECHNICAL INSTITUTE EAST CAMPUS	5520 LAKEWOOD RANCH BLVD.	LAKEWOOD RANCH		191	NO	DOH	SCHOOL				✓
MCNEAL ELEMENTARY	6325 LORRAINE RD	BRADENTON	1766		NO	ARC	SCHOOL				
MILLER ELEMENTARY	4201 MANATEE AVENUE WEST	BRADENTON	2237		NO	ARC	SCHOOL				
MILLS ELEMENTARY	7200 69TH ST	PALMETTO	1484		YES	ARC	SCHOOL				
MYAKKA CITY ELEMENTARY	37205 MANATEE AVE	MYAKKA CITY	865		NO	ARC	SCHOOL				✓
NOLAN MIDDLE	6615 GREENBROOK BLVD	LAKEWOOD RANCH		570	YES	DOH	SCHOOL				

NAME	ADDRESS	CITY	RISK CAP @ 20	Sp Needs @ 60	Pet Friendly	Agency Support	Function	Vulnerability			
								Surge	Evac zone	Flood	Wild-fire
ONECO ELEMENTARY	5214 22ND STREET CT, EAST	BRADENTON	600		NO	ARC	SCHOOL				
PRINE ELEMENTARY	3801 SOUTHERN PARKWAY	BRADENTON	1764		NO	ARC	SCHOOL				
ROBERT WILLIS ELEMENTARY	14705 THE MASTERS	BRADENTON	1764		NO	ARC	SCHOOL				
ROGERS GARDEN ELEMENTARY	515 13 <sup>TH</sup> STREET EAST	BRADENTON	1450		NO	ARC	SCHOOL	5			
ROWLETT ELEMENTARY	3500 9TH STREET, EAST	BRADENTON	971		NO	ARC	SCHOOL				
SEA BREEZE ELEMENTARY	3601 71ST ST, W	BRADENTON	1966		NO	ARC	SCHOOL		E		
TILLMAN ELEMENTARY	1415 29TH ST	PALMETTO	675		NO	ARC	SCHOOL	5	E		
WILLIAMS (ANNIE LUCY) ELEMENTARY	3404 FT. HAMMER RD.	PARRISH	1450		NO	ARC	SCHOOL				
WITT ELEMENTARY	200 RYE RD	BRADENTON	1332		NO	ARC	SCHOOL		E		✓
<b>TOTAL CAPACITY</b>			<b>38,682</b>	<b>761</b>							

Green-shaded = May not be available for category 4/5 hurricane events.

Orange-shaded = Special Needs Shelter

ARC = American Red Cross

DOH = County Health Department

SD = County School District

**TABLE V-8C**

**Pasco County Shelter Inventory**

NAME	ADDRESS	CITY	RISK CAP. @ 20 sq ft	SP Needs Cap @60sq ft.	Pet Friendly	Agency Support	Function	Vulnerability			
								Surge	Evac Zone	Flood	Wild-fire
CALUSA ELEMENTARY	7520 ORCHID LAKE RD	NEW PORT RICHEY	181		NO	ARC	SCHOOL		E		✓
CENTENNIAL MIDDLE	38505 CENTENNIAL RD	DADE CITY	882		NO	ARC	SCHOOL				
CHASCO ELEMENTARY	7702 RIDGE RD	PORT RICHEY	850		NO	ARC	SCHOOL		E		✓
DENHAM OAKS ELEMENTARY	1422 OAK GROVE BLVD	LUTZ	1888		NO	ARC	SCHOOL				✓
DOUBLE BRANCH ELEMENTARY	31500 CHANCEY RD.	WESLEY CHAPEL	787		NO	ARC	SCHOOL				✓
J W MITCHELL HIGH	2323 LITTLE RD	NEW PORT RICHEY	2237		NO	ARC	SCHOOL	5	E		✓
LACOOCHEE ELEMENTARY	38815 CUMMER ROAD	DADE CITY	694		NO	ARC	SCHOOL				✓
LONGLEAF ELEMENTARY	3253 TOWN AVE	NEW PORT RICHEY	804		NO	ARC	SCHOOL				✓
NEW RIVER ELEMENTARY	4710 RIVER GLEN BLVD.	WESLEY CHAPEL	787		NO	ARC	SCHOOL				
OAKSTEAD ELEMENTARY	19925 LAKE PATIENCE RD.	LAND O' LAKES	775		NO	ARC	SCHOOL			✓	✓
PINE VIEW ELEMENTARY	5333 PARKWAY BLVD	LAND O LAKES	804		NO	ARC	SCHOOL				✓
PINE VIEW MIDDLE	1500 PARKWAY BLVD	LAND O'LAKES	74		NO	ARC	SCHOOL				✓
RAYMOND B. STEWART MIDDLE	38505 10th AVENUE	ZEPHYRHILLS	851		NO	ARC	SCHOOL				
SEN FASANO REGIONAL SHELTER	11611 DENTON AVE	HUDSON	500	250	NO	DOH	COMMUNITY CENTER	5			✓
RIVER RIDGE MIDDLE/HIGH	11645 TOWN CENTER RD	NEW PORT RICHEY	2984	455	NO	DOH	SCHOOL				✓
SAINT LEO COLLEGE	33701 STATE ROAD 52	ST LEO	1012		NO	ARC	SCHOOL			✓	
SCHRADER ELEMENTARY	11041 LITTLE RD	PORT RICHEY	850		NO	ARC	SCHOOL		E		✓
SEVEN OAKS ELEMENTARY	27633 MYSTIC OAK	WESLEY CHAPEL	804		NO	ARC	SCHOOL				

NAME	ADDRESS	CITY	RISK CAP. @ 20 sq ft	SP Needs Cap @60sq ft.	Pet Friendly	Agency Support	Function	Vulnerability			
								Surge	Evac Zone	Flood	Wild-fire
SEVEN SPRINGS MIDDLE	2441 LITTLE RD	NEW PORT RICHEY	834		NO	ARC	SCHOOL	5	E		✓
SUNLAKE HGH	3023 SUNLAKE BLVD.	LAND O'LAKES	2860		NO	ARC	SCHOOL				
THOMAS E WEIGHTMAN MIDDLE	30649 WELLS RD	WESLEY CHAPEL	2477		NO	ARC	SCHOOL				✓
TRINITY ELEMENTARY	2209 DUCK SLOUGH BLVD	NEW PORT RICHEY	755		NO	ARC	SCHOOL				
TRINITY OAKS ELEMENTARY	1827 TRINITY OAKS BLVD.	NEW PORT RICHEY	884		NO	ARC	SCHOOL	5	E	✓	✓
VETERANS ELEMENTARY	26940 PROGRESS PARKWAY	WESLEY CHAPEL	920		NO	ARC	SCHOOL				✓
WESLEY CHAPEL HIGH	30651 WELLS RD	WESLEY CHAPEL	2641		NO	ARC	SCHOOL				✓
WATERGRASS ELEMENTARY	32750 OVERPASS RD.	WESLEY CHAPEL	775		NO	ARC	SCHOOL				✓
WIREGRASS HIGH	2090 MANSFIELD BLVD.	WESLEY CHAPEL	2330		NO	ARC	SCHOOL				✓
<b>TOTAL</b>			<b>32,240</b>	<b>705</b>							

Green-shaded = May not be available for category 4/5 hurricane events.  
 Orange-shaded = Special Needs Shelter

ARC = American Red Cross  
 DOH = County Health Department  
 SD = County School District

**TABLE V-8D**

**Pinellas County Shelter Inventory and Surge Analysis**

NAME	ADDRESS	CITY	RISK CAP @ 10 sq ft	RISK CAP @ 20 sq ft	Special Needs @ 40 sq ft	Pet Friendly	Agency Support	Function	Vulnerability			
									Surge	Evac Zone	Flood	Wild-fire
BAUDER ELEMENTARY	12755 86TH AVENUE, N.	SEMINOLE	1159	579		NO	SD	SCHOOL				
BROOKER CREEK ELEMENTARY	3130 FORELOCK ROAD	TARPON SPRINGS	1389	695		NO	SD	SCHOOL	5	E		✓
CAMPBELL PARK ELEMENTARY	1051 7th AVE S	ST. PETERSBURG	2660	1330		NO	SD	SCHOOL				
(JOSEPH L.) CARWISE MIDDLE	3301 BENTLEY DRIVE	PALM HARBOR	4043	2021		NO	SD	SCHOOL				
CLEARWATER FUNDAMENTAL MIDDLE SCHOOL	1660 PALMETTO STREET	CLEARWATER	3512	1756		NO	SD	SCHOOL				
(DOUG) JAMERSON ELEMENTARY	1200 37TH STREET, SOUTH	ST. PETERSBURG	1347	674		NO	SD	SCHOOL				
DUNEDIN COMMUNITY CENTER	1920 PINEHURST RD.	DUNEDIN	800	400		NO	ARC	COMMUNITY CTR	4	B	500	
DUNEDIN ELEMENTARY	900 UNION ST.	DUNEDIN	3279	1640		NO	SD	SCHOOL		E		
DUNEDIN HIGHLAND MIDDLE	70 PATRICIA AVE	DUNEDIN			1996	YES	DOH/SD	SCHOOL		E		
EAST LAKE HIGH	1300 SILVER EAGLE DRIVE	TARPON SPRINGS	4041	2020		NO	SD	SCHOOL	5	D		✓
FAIRMOUNT PARK ELEMENTARY	575 41ST STREET, S.	ST. PETERSBURG	1157	574		NO	SD	SCHOOL				
GIBBS HIGH SCHOOL	850 34TH STREET, S.	ST. PETERSBURG	6550	3275		NO	SD	SCHOOL				
GULFPORT ELEMENTARY	2014 52ND ST S	GULFPORT	2660	1330		NO	SD	SCHOOL	5	E		
HIGH PONT ELEMENTARY	5921 150 <sup>TH</sup> AVE. N.	CLEARWATER	3325	1,663		NO	SD	SCHOOL	4	D		
JOHN HOPKINS MIDDLE	701 16 STREET S	ST. PETERSBURG			1113	NO	DOH/SD	SCHOOL				
LARGO HIGH SCHOOL	410 MISSOURI AVENUE	LARGO	1074	537		NO	SD	SCHOOL				
LEALMAN MIDDLE	4900 28TH STREET, N.	ST. PETERSBURG	3504	1752		NO	SD	SCHOOL				
MCMULLEN-BOOTH ELEMENTARY	3025 UNION STREET	CLEARWATER	1327	664		NO	SD	SCHOOL				
NEW HEIGHTS ELEMENTARY	3901 37 <sup>TH</sup> ST. NORTH	ST. PETERSBURG	3456	1728		NO	SD	SCHOOL				

NAME	ADDRESS	CITY	RISK CAP @ 10 sq ft	RISK CAP @ 20 sq ft	Special Needs @ 40 sq ft	Pet Friendly	Agency Support	Function	Vulnerability			
									Surge	Evac Zone	Flood	Wild-fire
NORTHSIDE BAPTIST CHURCH	6000 38TH AVE N	ST. PETERSBURG	758	379		NO	ARC	CHURCH	5	D	✓	
OAK GROVE MIDDLE	1370 S. BELCHER ROAD	CLEARWATER			2134	SpNS & PFS	DOH/SD	SCHOOL				
PALM HARBOR MIDDLE	1800 TAMPA ROAD	PALM HARBOR	2848	1424		NO	SD	SCHOOL				
PALM HARBOR UNIVERSITY HIGH SCHOOL	1900 OMAHA STREET	PALM HARBOR	3022	1511		NO	SD	SCHOOL				
PINELLAS PARK HIGH	6305 118TH AVENUE, NORTH	LARGO	4150	2075		NO	SD	SCHOOL	4	D		
ROSS NORTON RECREATION CENTER	1426 S. MARTIN LUTHER KING JR., AVE.	CLEARWATER	607	304		NO	ARC	COMMUNITY CTR				
SAFETY HARBOR MIDDLE	125 7TH STREET, N.	SAFETY HARBOR	7707	3854		NO	SD	SCHOOL	4	D		
SANDERLIN ELEMENTARY	2350 22ND AVENUE, SOUTH	ST. PETERSBURG	1255	627		NO	SD	SCHOOL				
(JOHN M.) SEXTON ELEMENTARY	1997 54TH AVE N	ST. PETERSBURG	1372	686		NO	SD	SCHOOL				
ST. PETERSBURG HIGH	2501 5TH AVENUE, N.	ST. PETERSBURG	2167	1084		NO	SD	SCHOOL				
TARPON SPRINGS MIDDLE	501 N. FLORIDA AVENUE	TARPON SPRINGS	2617	1309		NO	SD	SCHOOL	4	C		
THURGOOD MARSHALL MIDDLE	3901 22 AVE S	ST. PETERSBURG	6918	3459		PFS & GEN	SD	SCHOOL	4	D		
<b>TOTAL</b>			<b>78,704</b>	<b>39,350</b>	<b>5,243</b>							

Green-shaded = May not be available for category 4/5 hurricane events.  
 Orange-shaded = Special Needs Shelter

ARC = American Red Cross  
 DOH = County Health Department  
 SD = County School District

## H. Public Shelter Demand

The general response model, post-hurricane behavioral surveys of residents in the Tampa Bay region and past experience was used to determine public shelter demand. The number of evacuees who choose public shelter as their evacuation destination is based on demographic characteristics of the population including income and age, risk area and housing (mobile home vs. site built homes). The planning assumptions regarding anticipated shelter use were presented in the Regional Behavioral Analysis (See Chapter III, Appendices III-A, III-B, III-C, III-D), and were applied to the projected Hurricane Evacuation Population estimates for both the *Base Planning Scenarios* as well as the *Operational Scenarios*.

As discussed in Chapter IV, the Base Planning Scenarios assume 100% compliance of the vulnerable populations (surge-vulnerable and mobile home residents) plus the "shadow evacuation". The Operational Scenarios use the participation rates from the behavioral analysis to determine the evacuation rates.

**Table V-9  
Public Shelter Demand for Hurricane Evacuation  
Base Scenarios 2010**

Evacuation Level	Hillsborough	Manatee	Pasco	Pinellas	Region
Capacity <sup>9</sup>	<b>56,737</b>	<b>26,760</b>	<b>28,285</b>	<b>22,166</b>	<b>133,948</b>
A	15,547	7,061	15,078	22,892	60,578
B	19,185	9,187	16,744	28,795	73,911
C	25,787	12,153	23,449	37,063	98,451
D	35,921	17,551	26,005	43,849	123,327
E	49,641	21,634	28,137	49,806	149,217

Numbers in **Red** represent a shelter deficit.

<sup>9</sup> Capacity is reduced for shelter unusable in Evacuation Levels D and E.

**Table V-10  
Public Shelter Demand for Hurricane Evacuation  
Base Scenarios 2015**

Evacuation Level	Hillsborough	Manatee	Pasco	Pinellas	Region
Capacity <sup>10</sup>	<b>56,737</b>	<b>26,760</b>	<b>28,285</b>	<b>22,166</b>	<b>133,948</b>
A	16,559	6,825	15,477	23,301	62,162
B	20,504	8,780	17,194	29,374	75,852
C	27,695	11,526	24,359	37,838	101,417
D	38,619	16,558	27,049	44,826	127,051
E	53,447	20,389	29,469	50,888	154,192

Numbers in **Red** represent a shelter deficit.

**Table V-11  
Public Shelter Demand for Hurricane Evacuation  
Operational Scenarios 2010**

Evacuation Level	Hillsborough	Manatee	Pasco	Pinellas	Region
Capacity <sup>11</sup>	<b>56,737</b>	<b>26,760</b>	<b>28,285</b>	<b>22,166</b>	<b>133,948</b>
A	11,866	5,335	10,569	16,389	44,160
B	14,114	7,119	12,212	20,187	53,632
C	21,649	10,260	18,670	29,459	80,038
D	31,972	15,229	21,728	37,074	106,003
E	47,186	19,442	25,654	46,145	138,426

Numbers in **Red** represent a shelter deficit.

<sup>10</sup> Capacity is reduced for shelter unusable in Evacuation Levels D and E.

<sup>11</sup> Capacity is reduced for shelter unusable in Evacuation Levels D and E.

**Table V-12  
Public Shelter Demand for Hurricane Evacuation  
Operational Scenarios 2015**

Evacuation Level	Hillsborough	Manatee	Pasco	Pinellas	Region
Capacity <sup>12</sup>	<b>56,737</b>	<b>26,760</b>	<b>28,285</b>	<b>22,166</b>	<b>133,948</b>
A	12,710	5,139	10,930	16,683	45,462
B	15,127	6,791	12,599	20,574	55,091
C	23,295	9,731	19,468	30,061	82,554
D	34,416	14,380	22,666	<b>37,879</b>	109,341
E	50,838	18,343	26,914	<b>47,136</b>	<b>143,231</b>

Numbers in **Red** represent a shelter deficit.

Using the behavioral assumptions based on the General Response Model has a significant impact on the potential shelter demand calculations. As noted in Chapter III, Regional Behavioral Analysis, the use of public shelters for residents in site built homes ranges from 5% - 10% depending on age and income. Traditionally, a public shelter use rate of between 10%-25% was used for planning purposes. However, the trend for less reliance on public shelters has been recognized in past evacuations throughout the Gulf and Atlantic states.

As noted, in Hillsborough and Manatee counties which have experienced significant growth and have constructed new schools with the Enhanced Hurricane Protection Areas (EHPA) standards, there is no shelter deficit. Pasco County has experienced population growth, however, their demographics - including an older population - results in a deficit for the most intense storms. Pinellas County is a virtually built-out community with little growth and faces the most significant challenges as the most densely populated county with a large mobile home and senior population. If the shelter demand is approached regionally, the Tampa Bay area would appear to be in good shape. However, for Pinellas County evacuees to reach Hillsborough County shelters they would need to cross surge vulnerable causeways well inland.

<sup>12</sup> Capacity is reduced for shelter unusable in Evacuation Levels D and E.

Recognizing the trend toward a reduced reliance on public shelters, the emergency management community remains concerned that the assumption of such as drastic reduction in anticipated need does not take into consideration that many vulnerable residents will choose not to evacuate until there is no longer sufficient time to reach other destinations. This could logically result in a surge of evacuees to the public shelters in the closing hours of the evacuation. In addition if a major hurricane were to impact the region, there would be less capacity in public shelters for those residents who have no home to which to return.

In terms of community resiliency, without the requirement of EHPA standards, new schools may not be built to standards which would insure the schools would survive the hit of major hurricane. In addition the need for more special needs shelters must also be addressed in both State and local plans.

Therefore, local emergency management may use different assumptions for both public and special needs shelters within the operational plans as reflected in the County Comprehensive Emergency Management Plans.

## **I. Dealing with Shelter Shortfalls and Challenges**

Strategies have been implemented at the state and local level to address the shelter issues for the past ten years. Additional funding for shelter retrofit and generators for special needs shelters was allocated in 2006; however, the economic downturn has taxed federal, state and local resources.

- Public information, both before the emergency and during the evacuation, should stress that while evacuation out of the most vulnerable areas is critical, (1) residents should seek alternative types of refuge before and during the emergency if feasible; and (2) that persons on high ground offer their homes as refuge to friends/relatives in hurricane vulnerable areas.
- Impact fees for development within the Coastal High Hazard Area (CHHA) and the Hurricane Vulnerability Zone (Level C), Wildfire Urban Interface and the 100-year flood zone should be used to mitigate the impacts of further development in hurricane prone areas.
- Growth management strategies should minimize development which would increase allowable density or put people with special needs (critical facilities) in designated vulnerable areas.
- Both local governments and local school boards, in cooperation with local emergency management, should ensure that new schools are sited, designed and constructed to be disaster-resistant and appropriate for shelter use. In addition, windows in existing facilities should be protected/retrofitted to mitigate damage and provide more suitable public shelter. Funding to cover additional construction costs to the School Boards to upgrade to EHPA standards should be sought.

- Continue to encourage the State Legislature to fund the necessary retrofits (for both public and private facilities (particularly schools, hospitals and nursing homes) and mandate appropriate design/construction standards.
- Public outreach should stress that persons with pets prepare ahead for their pets and recognize the extremely limited capacity for pets at public shelters. Emergency management and local school boards need to continue to address this issue.
- Public outreach should stress that persons with special needs speak to their physician/health care provider and register with county emergency management if they require additional assistance.
- In a major evacuation and where necessary, the Governor's Office should, through Executive Order, waive capacity limits in assisted living facilities and nursing homes to ensure appropriate continuity of care and level of care is maintained in the region.
- It should be recognized that providing the appropriate level of care and continuity of care will take ongoing cooperation and communications between and among the public and private sector health care providers. Emergency management, the local health departments and health care providers should partner to develop the plans and shelter locations for our residents with special needs.
- Phase shelter openings: The shelter demand estimates may be higher depending on the strength and projected track of the threatening hurricane as well as the response of local government and State officials. The American Red Cross chapters, local emergency management agencies and local school boards developed strategies to phase the opening of selected public shelters depending on the evacuation level and projected shelter demand.

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