Appendix H:
Data Forms and Worksheets

1. 2014 Shelter Retrofit Proposal Submittal Form
2. 2014 Shelter Retrofit List Report Form
3. 2014 Project Priority Worksheet
Instructions and Clarifications

1. Please review ARC 4496 (found in Appendix C, 2012 Statewide Emergency Shelter Plan) before beginning the project identification process. The Division’s interpretation of the ARC 4496 hurricane safety criteria can be found at the following web address:

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

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

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

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

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

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

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

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

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

7. These additional limitations shall be applied to 2014 Shelter Retrofit Report projects:
   a) $350 per hurricane evacuation shelter space; or
   b) Up to 10% of the total construction costs in the case of a project that is upgrading the design of new construction to meet high wind and flood sections of the enhanced hurricane protection area (EHPA) codes, to include additional 40 mph in design wind speed, or ICC 500 storm shelter standards; or
   c) A maximum of $300,000 total per project (excluding generators/electrical work); or
   d) Generators/electrical work shall be considered separately from hurricane wind and flood retrofit construction. Generators/electrical work shall be considered separately from the $300,000 limit in item c) above. Generators/electrical work shall also be limited to $300,000 total per project site/campus. (Thus potentially a limit of $300,000 in generators/electrical work, plus $300,000 in other construction/structural mitigation work, for a combined total limit of $600,000.)

8. For hurricane-resistance hardening of new construction, only pages 1, 6, 7 and Prelim Budget Worksheet(s) need to be prepared and submitted.
County: ___________________________
Latitude: ______________________          Longitude: _________________________________

Facility Name: ________________________________________________________________

Building Number or ID: __________________________________________________________

Address: ______________________________________________________________________

Current Ownership of Facility: (Public, Private) _______________________________________

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

If answer is No, why? ___________________________________________________________

_____________________________________________________________________________

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

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

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

1*  2  3  4  5  None   *  includes Tropical Storm

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

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

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

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

Additional comments concerning flooding issues: _____________________________________

_____________________________________________________________________________

Facility Name _______________________________________  Page    1       of _____
FACILITY DESCRIPTION:

Year Built _____________ , Major Addition(s) ______________ , ______________

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

Are construction drawings (architectural & structural) and specifications available?  Yes _________ No_________

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

- □ SBC or MBMA, Edition_______  □ ANSI A58.1-1982

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

- Light Steel Frame* ______
- Heavy Steel Frame ( I or W section)______
- Reinforced Concrete Frame ______
- Reinforced Concrete or Tilt-up Wall______
- Fully or Partially Reinforced Masonry ______
- Unreinforced Masonry wall-brg _______
- Heavy Timber or Glulam Frame ______
- Light Metal or Wood Stud wall-brg _______

*includes Preengineered Metal Building (PEMB) Frames.

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

- Reinforced Masonry (Rebar @ 4 ft. o.c. or closer) ______
- Light Wood or Metal Stud w/ ½ inch or thicker plywood _____
- Partially Reinforced Masonry (Rebar @ 8 ft. o.c. or closer) or reinforced pilasters @ 13.5 ft. o.c. ______
- Light Wood or Metal Stud w/ light nonplywood sheathing (Includes EIFS) ______
- Unreinforced Masonry (exceeds above listed spacings)/Rebar spacing unknown ______
- Large Panel Glass or other Glazed Panel or Block System ______
- Reinforced Concrete or Precast Concrete Panels (2" min. thickness) ______
- Metal Sheets or panels or other Light Architectural Panel Systems ______

Facility Name ________________________________  Page 2 of _____
FACILITY DESCRIPTION (cont'd):

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

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

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

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

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

Roof Construction, check only one response as appropriate:

- Cast-in-place Reinforced Concrete (standard wgt concrete, 3 inch min.) __________
- Plywood on wood or metal joist or truss __________

- Precast Concrete Panels ("T's", "Double T's", Planks, etc.) __________
- Wood boards or T & G deck on wood joist or truss __________

- Metal Decking w/ standard wgt concrete (3 inch min.) on metal joist, truss or beam __________
- Cement-fiber panels (i.e.,"Tectum"-type) on wood or metal joist or truss __________

- Other Metal Decking Systems (insulating concrete and/or rigid insulation or other light coverings) __________
- Poured Gypsum on Formboard Decking on wood or metal joist or truss __________

Roof Geometry, check appropriate response:

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

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

Facility Name _______________________________________  Page_3_of_
FACILITY DESCRIPTION (cont'd):

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

If yes, what is the maximum span?_______________

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

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

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

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

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

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

Facility Name _______________________________________  Page 4 of _____
FACILITY DESCRIPTION (cont'd):

Describe General Condition of the Building:

______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

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

______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

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

______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
FACILITY DESCRIPTION (cont'd):

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

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

Full Kitchen ________   Warming Kitchen _______   HomeEc clrm _______   None ________

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

Restaurant _________    Cafeteria _________   Other _________   None _________

Seating Capacity, if known? ____________________ persons

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

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Toilets  ____________ ____________ _______________

Showers  ____________ ____________ _______________

Potable Water  ____________ ____________  N/A

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

Public Utility _________   Onsite Well _________   Other _________

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

Public Utility _________   Onsite Septic _________   Other _________

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

_____________________________________________________________________________

_____________________________________________________________________________

____________________________________________________________________________

Facility Name _______________________________________  Page 6 of _____
FACILITY DESCRIPTION (cont'd):

SHELTER RETROFIT/MITIGATION PROJECT PROPOSAL:

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

<table>
<thead>
<tr>
<th>Project Description</th>
<th>Impact (safety/capacity)</th>
<th>Cost estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
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<tr>
<td>2.</td>
<td></td>
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<tr>
<td>3.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

If yes, is the project listed by specific building __________, or by campus only__________?

Can the project be completed in less than 18 months?  □ Yes  □ No

Facility Name _________________________________________  Page 7 of _____
# Project #1

**Descriptive Title:**
```
___________________________________________
```

<table>
<thead>
<tr>
<th>Line</th>
<th>Item Description</th>
<th>Cost Estimate</th>
</tr>
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<tbody>
<tr>
<td>A</td>
<td>Construction Contractual Services</td>
<td>$</td>
</tr>
<tr>
<td>B</td>
<td>Vendor Contractual Services</td>
<td>$</td>
</tr>
<tr>
<td>C</td>
<td>A &amp; E Service Fees</td>
<td>$</td>
</tr>
<tr>
<td>D</td>
<td>Materials</td>
<td>$</td>
</tr>
<tr>
<td>E</td>
<td>Installation/Force Account Labor</td>
<td>$</td>
</tr>
<tr>
<td>F</td>
<td>Permitting &amp; Inspections Fees</td>
<td>$</td>
</tr>
<tr>
<td>G</td>
<td>Packing &amp; Freight</td>
<td>$</td>
</tr>
<tr>
<td>H</td>
<td></td>
<td>$</td>
</tr>
<tr>
<td>I</td>
<td><strong>SUB-TOTAL</strong></td>
<td>$</td>
</tr>
<tr>
<td>J</td>
<td>Contingency (5% Maximum*)</td>
<td>$</td>
</tr>
<tr>
<td>K</td>
<td><strong>TOTAL ESTIMATED PROJECT COST</strong></td>
<td>$</td>
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*Contingency is limited to 1% unless detailed justification provided.

---

# Project #2

**Descriptive Title:**
```
___________________________________________
```

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</tr>
<tr>
<td>B</td>
<td>Vendor Contractual Services</td>
<td>$</td>
</tr>
<tr>
<td>C</td>
<td>A &amp; E Service Fees</td>
<td>$</td>
</tr>
<tr>
<td>D</td>
<td>Materials</td>
<td>$</td>
</tr>
<tr>
<td>E</td>
<td>Installation/Force Account Labor</td>
<td>$</td>
</tr>
<tr>
<td>F</td>
<td>Permitting &amp; Inspections Fees</td>
<td>$</td>
</tr>
<tr>
<td>G</td>
<td>Packing &amp; Freight</td>
<td>$</td>
</tr>
<tr>
<td>H</td>
<td></td>
<td>$</td>
</tr>
<tr>
<td>I</td>
<td><strong>SUB-TOTAL</strong></td>
<td>$</td>
</tr>
<tr>
<td>J</td>
<td>Contingency (5% Maximum*)</td>
<td>$</td>
</tr>
<tr>
<td>K</td>
<td><strong>TOTAL ESTIMATED PROJECT COST</strong></td>
<td>$</td>
</tr>
</tbody>
</table>

*Contingency is limited to 1% unless detailed justification provided.

---

Facility Name ________________________________     Page____ of _____
Attachment A

2014 Shelter Retrofit Report
Preliminary Budget Worksheet

<table>
<thead>
<tr>
<th>Line</th>
<th>Item Description</th>
<th>Cost Estimate</th>
</tr>
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<tbody>
<tr>
<td>A</td>
<td>Construction Contractual Services</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Vendor Contractual Services</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>A &amp; E Service Fees</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Materials</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>Installation/Force Account Labor</td>
<td></td>
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<tr>
<td>F</td>
<td>Permitting &amp; Inspections Fees</td>
<td></td>
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<tr>
<td>G</td>
<td>Packing &amp; Freight</td>
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<td>H</td>
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<tr>
<td>I</td>
<td>SUB-TOTAL</td>
<td></td>
</tr>
<tr>
<td>J</td>
<td>Contingency (5% Maximum*)</td>
<td></td>
</tr>
<tr>
<td>K</td>
<td>TOTAL ESTIMATED PROJECT COST</td>
<td></td>
</tr>
</tbody>
</table>

*-Contingency is limited to 5% unless detailed justification provided.
2014 Shelter Retrofit List Report  
Project Priority Worksheet

County: _______________________________

Building Name: _________________________

Address: _______________________________

<table>
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<tr>
<th>ITEM</th>
<th>MAX POINT</th>
<th>SCORE</th>
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<tbody>
<tr>
<td>1. Regional Shelter Deficit</td>
<td>(75)</td>
<td></td>
</tr>
<tr>
<td>2. County Shelter Deficit</td>
<td>(50)</td>
<td></td>
</tr>
<tr>
<td>3. Flood &amp; Bldg Construction Considerations</td>
<td>(75)</td>
<td></td>
</tr>
<tr>
<td>4. Proposal Will Improve Structural Integrity</td>
<td>(25)</td>
<td></td>
</tr>
<tr>
<td>5. Proposal Will Correct Identified Deficiencies</td>
<td>(25)</td>
<td></td>
</tr>
<tr>
<td>6. Numerical Increase in Shelter Capacity</td>
<td>(75)</td>
<td></td>
</tr>
<tr>
<td>7. Building Ownership and Availability</td>
<td>(50)</td>
<td></td>
</tr>
<tr>
<td>8. Bldg Envelope/Shutters Only Projects</td>
<td>(50)</td>
<td></td>
</tr>
<tr>
<td>9. Cost-Effectiveness Considerations</td>
<td>(50)</td>
<td></td>
</tr>
<tr>
<td>10. Proposal Demonstrates Impact Upon Shelter Deficit</td>
<td>(75)</td>
<td></td>
</tr>
<tr>
<td>11. Project Specified in Local Mitigation Strategy</td>
<td>(50)</td>
<td></td>
</tr>
<tr>
<td>12. Project Design and/or Construction Timeline/Duration?</td>
<td>(25)</td>
<td></td>
</tr>
<tr>
<td>13. Is the Building a Designated Special Needs Risk Shelter?</td>
<td>(25)</td>
<td></td>
</tr>
</tbody>
</table>

TOTAL POINTS (650) _______

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

   Regional shelter deficit 100,000 spaces or greater (75) _______

   Regional shelter deficit 50,000 to 99,999 spaces (50) _______

   Regional shelter deficit 10,000 to 49,999 spaces (25) _______

   Regional shelter deficit 1 to 9,999 spaces (10) _______

   No regional shelter space deficit (0) _______

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

   County shelter deficit 25,000 spaces or greater (50) _______

   County shelter deficit 15,000 to 24,999 spaces (25) _______

   County shelter deficit 5,000 to 14,999 spaces (15) _______

   County shelter deficit 1 to 4,999 spaces (10) _______

   No county shelter space deficit (0) _______

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

   A. SLOSH Zone Considerations

   Outside Cat 5 storm surge zone (25) _______

   Inside Cat 4/5 storm surge zone, floor above Cat 5 max inundation elevation (15) _______

   Inside Cat 3 storm surge zone, floor above Cat 5 max inundation elevation (5) _______

   Inside Cat 3 storm surge zone, floor below Cat 5 max inundation elevation (0) _______
B. **NFIP Flood Considerations**

FIRM Zones C, D or unshaded-X  (15) _________

FIRM Zone B or shaded-X  (10) _________

FIRM Zone A or AH (See Note 1)  (0) _________

C. **Building Construction**

Heavy Construction  (25) _________

Moderate Hurricane Resistance  (15) _________

Some Hurricane Resistance  (5) _________

Light Construction/Info not available  (0) _________

D. **Other Considerations** (Building Certification, etc.)

_____________________________________________  (10) _________

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

   YES  (25) _________

   NO  (0) _________

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

   YES  (25) _________

   NO  (0) _________
6. Numerical increase in shelter capacity due to this retrofit project (Maximum 75 Points):
   - 500 or greater additional spaces (75) ___________
   - 300-499 additional spaces (50) ___________
   - 150-299 additional spaces (25) ___________
   - 1-149 additional spaces (15) ___________
   - No increase in shelter capacity (0) ___________

7. Building ownership and availability for use as a public shelter (Maximum 50 Points):
   - Public Facility/Full Availability (50) __________
   - Private Facility/Full Availability (25) __________
   - Public Facility/Limited Availability (15) __________
   - Private Facility/Limited Availability (0) __________

8. Fenestration protection-ONLY Project(s) (Generators/electrical work not considered) (Maximum 50 Points):
   - Fenestration protection Only (windows, doors, etc.) required (50) ________
   - Fenestration protection and engineer certifications only required (25) ________
   - More structural work than fenestrations & engineer certificates (0) ________

9. Cost-effectiveness of project(s) (Maximum 50 Points):
   - $99 or less per total shelter spaces (50) __________
   - $100 to $174 per total shelter spaces (25) __________
   - $175 to $349 per total shelter spaces (15) __________
   - $350 to $499 per total shelter spaces (5) __________
   - In excess of $500 per total shelter spaces (0) __________
10. Project proposal has been demonstrated to have a significant impact upon the local, regional and statewide shelter deficit situation: (Maximum 75 Points)

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

<table>
<thead>
<tr>
<th>Reference in LMS</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific Building(s) referenced in LMS</td>
<td>(50)</td>
</tr>
<tr>
<td>Specific Campus/Complex Only referenced in LMS</td>
<td>(25)</td>
</tr>
<tr>
<td>No Specific references to project(s) in LMS</td>
<td>(0)</td>
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</table>

12. Project Design and/or Construction Timeline/Duration?

<table>
<thead>
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<th>Duration</th>
<th>Points</th>
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<tr>
<td>Less than 12 months</td>
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<tr>
<td>12 – 18 months</td>
<td>(15)</td>
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<td>19 – 24 months</td>
<td>(5)</td>
</tr>
<tr>
<td>Greater than 24 months</td>
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13. Is Building a Designated Special Needs Hurricane Evacuation Shelter?

<table>
<thead>
<tr>
<th>Answer</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>(25)</td>
</tr>
<tr>
<td>No</td>
<td>(0)</td>
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</table>