Appendix H:
Project Submittal Form and Priority Worksheet

1. **2017 Shelter Retrofit Proposal Submittal Form**
2. **2017 Project Priority Worksheet**

2017 SHELTER RETROFIT PROJECT SUBMITTAL FORM
EMPA Base Grant Task 8.A
Ref: Section 252.385(3), Florida Statutes

INSTRUCTIONS

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

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

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

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

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

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

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

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

5. Multiple projects can be submitted for each individual building (e.g., window shuttering, door 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.

2017 SHELTER RETROFIT PROJECT SUBMITTAL FORM

INSTRUCTIONS, Cont'd

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

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

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

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

8. These additional budget limitations apply to 2017 Shelter Retrofit Report projects:

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

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

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

County: _____

Latitude: _____ Longitude: _____

Facility Name:_____

Building Number or ID: _____

Address: _____

Current Ownership of Facility: (Public, Private) _____

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

If answer is No, why? _____

_____

HURRICANE EVACUATION SHELTER TYPE AND CAPACITY

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

☐ Yes ☐ No

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

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

☐ Yes ☐ No

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

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

☐ Yes ☐ No

Facility Name _____ Page 1 of _____

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

☐ Yes ☐ No

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

_____

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

_____

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

- ☐ Public Facility/Full Availability
- ☐ Public Facility/Limited Availability
- ☐ Private Facility/Full Availability
- ☐ Private Facility/Limited Availability

HURRICANE HAZARD INFORMATION (ARC 4496 Survey)

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

- ☐ FLDEM Least-Risk Decision Making (LRDM) report attached
- ☐ Other A/E survey report or LRDM attached
- ☐ No LRDM available, please complete **FACILITY DESCRIPTION** below

Facility Name _____ Page 2 of _____

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

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

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

FFE _____feet

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

☐ 1/A ☐ 2/B ☐ 3/C ☐ 4/D ☐ 5/E ☐ None

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

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

☐ 1/A ☐ 2/B ☐ 3/C ☐ 4/D ☐ 5/E ☐ None

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

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

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

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

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

_____

_____

Facility Name _____ Page 3 of _____

FACILITY DESCRIPTION, (cont'd):

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

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

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

☐ Yes ☐ No

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

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

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

☐ IBC or FBC, Edition _____ ☐ Other, _____

Edition, year _____

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

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

General Construction Classification, check only one response:

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

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

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

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

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

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

Facility Name _____ Page 4 of _____

FACILITY DESCRIPTION, (cont'd):

Exterior Wall Construction, check only one response as appropriate:

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

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

_____ %

Roof Construction, check only one response as appropriate:

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

Facility Name _____ Page 5 of _____

FACILITY DESCRIPTION, (cont'd):

What is the roof geometry type, check appropriate response:

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

☐ Other _____

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

Does the roof have a long span area (span of greater than 40 ft. between vertical supports)?

☐ Yes ☐ No

Are Roof Eaves/Overhangs (width greater than 2 ft.) present that connect directly to the roof structure?

☐ Yes ☐ No

Are appropriate loadpath connections present for the building's construction type?
(e.g., hurricane clips and straps for wood-frame construction)

☐ Yes ☐ No

If Parapet(s) are present and roof ponding is a hazard, are emergency overflow scuppers present?

☐ Yes ☐ No

Are there any tall structures/trees that are close enough and large enough, that if they fell over, they could strike the building with enough force to significantly breach the roof/walls?

☐ Yes ☐ No

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

_____

_____

_____

Facility Name _____ Page 6 of _____

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 Name _____ Page__7___of _____

FACILITY DESCRIPTION, (cont'd):

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

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

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

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

☐ Restaurant ☐ Cafeteria ☐ Other _____ ☐ None

Seating Capacity, if known? _____ persons

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

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

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

☐ Public Utility ☐ Onsite Well ☐ Other _____

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

☐ Public Utility ☐ Onsite Septic ☐ Other _____

Facility Name _____ Page 8 of _____

SHELTER RETROFIT/MITIGATION PROJECT PROPOSAL

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

_____

_____

_____

_____

_____

_____

_____

_____

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

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

If yes, is the project listed by specific building _____, or by campus only _____?

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

Facility Name _____ Page 9 of _____

Attachment A

2017 Shelter Retrofit Report
Preliminary Budget Worksheet

Project #1

Descriptive Title: _____

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

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

Project #2

Descriptive Title: _____

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

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

Facility Name _____ Page____of _____

Attachment A

2017 Shelter Retrofit Report
Preliminary Budget Worksheet

Project # _____

Descriptive Title: _____

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

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

Project # _____

Descriptive Title: _____

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

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

Facility Name _____ Page____of _____

2017 Shelter Retrofit List Report
Project Priority Worksheet

County: _____

Building Name/ID: _____

Address, City, Zip: _____

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

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

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

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

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

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

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

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

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

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

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

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

Destination county with 300+ dedicated multi-county SpNS spaces

(50) _____

Destination county with 50 – 299 dedicated multi-county SpNS spaces

(35) _____

Destination county with dedicated multi-county General Population-only and/or limited multi-county SpNS spaces (< 50 dedicated SpNS spaces)

(25) _____

Not a recognized multi-county shelter destination (0) _____

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

Yes (25) _____

No (0) _____

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

Yes (25) _____

No (0) _____

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

Public Facility/Full Availability (50) _____

Public Facility/Limited Availability (25) _____

Private Facility/Full Availability (15) _____

Private Facility/Limited Availability (0) _____

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

A. Surge Inundation/SLOSH Considerations

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

B. Rainfall Flooding/NFIP FIRM Review Considerations

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

C. High Winds/Type of Construction

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

D. Building's Structural Design, Wind Code Year

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

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

500 or greater additional spaces	(75)	_____
300 – 499 additional spaces	(50)	_____
150 – 299 additional spaces	(25)	_____
50 – 149 additional spaces	(10)	_____
1 – 49 additional spaces	(5)	_____
No increase in hurricane shelter capacity	(0)	_____

– For GP to SpNS equivalence, divide numerical capacity by three (3).

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

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

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

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

[4] – For GP to SpNS equivalence, increase numerical cost by multiplying by three (3).

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

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

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

Less than 12 months	(25)	_____
12 – 18 months	(15)	_____
19 – 24 months	(5)	_____

Greater than 24 months or Timeline