



Hurricane Safe Room Worksheet

For preliminary Benefit Cost Analysis conducted by the State Mitigation Technical Team

Applies for the following mitigation activities: **NEW HURRICANE SAFE ROOM AND RETROFIT OF EXISTING STRUCTURE**. For assistance, contact the State of Florida Mitigation Technical Unit.

IMPORTANT: This worksheet is required as part of your application. The State of Florida Mitigation Technical Unit will conduct a Benefit Cost Analysis (BCA) for your project and the following information is needed to evaluate cost effectiveness. Once a preliminary BCA is completed, the reviewer will contact you with results and/or to collect support documentation.

NOTE: A complete worksheet will expedite the Technical Review.

Requirements

To complete a successful project application, a minimum amount of technical information is required for review. Data collected in this worksheet will provide reviewers with preliminary information necessary to evaluate project eligibility, feasibility, and cost effectiveness. Carefully review and confirm that you are aware of the following information.

Standalone safe room projects: The safe room should be designed and constructed to provide protection against the wind speed requirements for safe room construction in the project area. The safe room construction shall be designed to provide “near-absolute protection” based on the criteria contained in the standards of the Department of Homeland Security, Federal Emergency Management Agency guidance manual FEMA P-361 Design and Construction for Community Safe Room which refers to applicable ICC 500 and ASCE 7 standards. Construction documents for community safe rooms designed for more than 50 occupants, as well as for safe rooms in an elementary school, secondary school, day care facility with an occupant load greater than 16, or any Risk Category IV building, are required to undergo peer review. Only eligible expenditures that are directly related to and necessary for the hazard mitigation purpose of providing immediate life-safety protection shall be reimbursed. Eligible and ineligible costs are outlined in the latest edition of the HMA Guidance. Activities shall be completed in strict compliance with Federal, State, and Local applicable Rules and Regulations.

Internal safe room projects: The internal safe room or area should be designed and constructed to be structurally independent of the host building, providing protection against the wind speed requirements for safe room construction in the project area, the same as a stand-alone safe room. The design of the safe room should assume the failure of the host building. The internal safe room construction shall be designed to provide “near-absolute protection” based on the criteria contained in the standards of the Department of Homeland Security, Federal Emergency Management Agency guidance manual FEMA P-361 Design and Construction for Community Safe Room which refers to applicable ICC 500 and ASCE 7 standards. Construction documents for community safe rooms designed for more than 50 occupants, as well as for safe rooms in an elementary school, secondary school, daycare facility with an occupant load greater than 16, or any Risk Category IV building, are required to undergo peer review. Only eligible expenditures that are directly related to and necessary for the hazard mitigation purpose of providing immediate life-safety protection shall be reimbursed. Eligible and ineligible costs are outlined in the latest edition of the HMA Guidance. Activities shall be completed in strict compliance with Federal, State, and Local applicable Rules and Regulations.

I confirm that I have reviewed the requirements listed above (signature):

For additional information and resources, please refer to [FEMA Technical Review Job Aid](#) for Safe Room projects.



MITIGATION

Hurricane Safe Room Worksheet

Section I – Project General Information

<i>Project Name:</i>	<i>Worksheet completed by:</i>
	<i>Name:</i>
	<i>Title:</i>
<i>Sub-Applicant:</i>	<i>Phone:</i>
	<i>Email:</i>

Section II – Project Cost Information

<i>Mitigation Project Cost:</i>	<i>Annual Maintenance Cost:</i>
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Section III – Project Specific Information

<i>Safe room location (address):</i>	
<i>Are you proposing a stand-alone or an internal safe room?</i> <input type="checkbox"/> Stand-alone <input type="checkbox"/> Internal Safe Room	<i>What is the wind speed the safe room will be designed to withstand?</i> <input type="checkbox"/> 130 MPH <input type="checkbox"/> 160 MPH <input type="checkbox"/> 200MPH <input type="checkbox"/> 250 MPH
<i>Is the safe room going to be constructed at the designated location or is the safe room prefabricated? Select one:</i> <input type="checkbox"/> Constructed at a location <input type="checkbox"/> Prefabricated	<i>Provide the number of occupants expected to use the safe room and describe how the number of potential occupants was derived:</i>
<i>Are you proposing to retrofit an existing structure?</i> <input type="checkbox"/> Yes <input type="checkbox"/> No	

Indicate the predominant structure type(s) that people will leave to go to the safe room. Select up to two (2) types and enter the percent of total occupancy coming from each structure type (total must equal 100%):

Structure Type (select up to two)	Percentage of Occupancy (%)

Section IV – Additional Mitigation Action

<i>Are you proposing to install a generator to support all critical functions of the safe room?</i> <input type="checkbox"/> No (<i>Explain why in section V below</i>) <input type="checkbox"/> Yes (<i>Complete Generator Worksheet</i>)



Section V – Additional Information

Please use this page to expand on the information provided above or to include any additional information relevant to the proposed mitigation project.



HURRICANE SAFE ROOM WORKSHEET INSTRUCTIONS

Refer to the instructions below to complete the Safe Room Worksheet using the best available data.

Section I – Project General Information

Project Name: Enter the name of the project title. The title should be short but descriptive (e.g., City of Orlando, Emergency Response Center, Hurricane Safe Room).

Sub-Applicant: Enter your organization's legal name.

Worksheet completed by: Enter name, title, phone number, and email of the person completing this Worksheet. This person must have the knowledge and/or the resources to accurately answer all questions and provide supporting documentation, as needed. Information may come from multiple creditable sources.

Section II – Project Cost Information

Mitigation Project Cost: Enter the total cost of the project. A lump sum on this worksheet is acceptable for preliminary BCA, but a detailed breakdown attached to your application is required.

Annual Maintenance Cost: Relates to the amount of money you expect to spend every year maintaining the project, to ensure functionality at the time of a high wind event.

Section III – Project Specific Information

Project Location: Provide a full description of the specific geographical location of the project.

Are you proposing a stand-alone or an internal safe room? Select one option:

- **Stand-alone:** A separate building (i.e., not within or attached to any other building) that is designed and constructed or retrofitted to withstand extreme winds and the impact of windborne debris during hurricanes.
- **Internal Safe Room:** A specially designed and constructed room or area within or attached to a larger building. An internal safe room should be designed and constructed or retrofitted to be structurally independent from the larger building and provide the same wind and windborne debris protection as a standalone safe room.

Is the safe room going to be constructed at the designated location or is the safe room prefabricated? Select one option:

- **Constructed at a location:** The proposed hurricane safe room will be constructed at the project site. A signed and sealed letter from a professional engineer, certifying that the structure will be designed and constructed in

accordance with the most current edition of FEMA P-361 (for non-prescriptive designs) or FEMA P-320 (for prescriptive designs), is recommended.

- **Prefabricated:** For prefabricated safe rooms, a National Storm Shelter Association (NSSA) certification is recommended. The certification provided by the NSSA must state that the safe room design meets or exceeds the FEMA program requirements. For prefabricated safe rooms that are non-NSSA certified, a signed and sealed letter from a professional engineer, certifying that the prefabricated structure will be designed and constructed in accordance with the most current edition of FEMA P-361 is recommended.

What is the wind speed the safe room will be designed to withstand? Enter the wind speed that the safe room will be designed to withstand. Safe room design wind speed must be consistent with the wind speed zone of the location, which can be found in FEMA P-361 for community safe rooms.

Provide the number of occupants expected to use the safe room and describe how the number of potential occupants was derived: Enter the number of people who will be expected to use the safe room. FEMA policy assumes that for the hurricane hazard, the general population has been evacuated and only critical staff (e.g., selected first responders) and vulnerable populations that cannot be evacuated will occupy the safe room. Users should be aware of several FEMA policy requirements that are not included in the BCA calculations, but their consideration could impact the occupancy and project cost variables: Gross Area of the safe room: The gross area of the safe room is the total area from wall to wall for the portion of the building used as a safe room. For a stand-alone safe room, the gross area is the entire area of the building. For an internal safe room, the gross area should be based on the area of the building where structural elements are proposed to be upgraded to FEMA 361 guidelines. Per P-361, a hurricane-safe room must be designed to accommodate a minimum of 20 ft² per person or 40 ft² for each occupant in a medical bed.

Predominant Structure Type(s): From the dropdown menu, select the predominant structure type(s) that people will leave to go to the safe room. Select up to two (2) types and enter the percent of total occupancy coming from each structure type (total must equal 100%). The predominant structure type represents the location (before-mitigation) of the safe room occupants during a hurricane and should be selected based on the type(s) of structure the occupants will evacuate from in the response area. Different structure types that the occupants will evacuate from have different "building performance" against the wind hazard.



MITIGATION

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Section IV – Additional Mitigation Action

Are you proposing to install a generator to support all critical functions of the safe room? Select yes or no. If no, provide a brief explanation. If yes, please complete generator worksheet.