

# Addendum to the Hazard Mitigation Assistance Unified Guidance

Hazard Mitigation Grant Program, Pre-Disaster Mitigation Program,  
and Flood Mitigation Assistance Program



**FEMA**

**Federal Emergency Management Agency**  
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# ADDENDUM: ADDITIONAL PROJECT GUIDANCE

## Introduction

This Addendum to the Hazard Mitigation Assistance (HMA) Unified Guidance provides information that is generally applicable to particular types of HMA projects but does not provide all of the information necessary to apply for funding for any type of project. In earlier editions of the HMA Unified Guidance, the information in this Addendum was in Part IX.

The information in this Addendum is organized as shown in [Table 1](#).

**Table 1: Organization of the HMA Unified Guidance Addendum**

| Addendum Part | Project Type                                                               |
|---------------|----------------------------------------------------------------------------|
| Part A        | Property acquisition and structure demolition or relocation for open space |
| Part B        | Wildfire mitigation                                                        |
| Part C        | Safe rooms                                                                 |
| Part D        | Reconstruction                                                             |
| Part E        | Structure elevation                                                        |

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## **A. Property Acquisition and Structure Demolition or Relocation for Open Space**

Part A of the Addendum supplements the information in Parts I through IX of the HMA Unified Guidance.

For property acquisition and structure demolition or relocation projects for the purpose of creating open space, Applicants and subapplicants must comply with 44 CFR Part 80, FEMA Property Acquisition and Relocation for Open Space, and this guidance. A project may not be framed in a manner that has the effect of circumventing these requirements.

### **A.1 Overview**

Generally, FEMA-funded property acquisition and structure demolition or relocation projects with the purpose of creating open space consist of the following: the community purchases a flood-prone structure from a willing seller and then demolishes or relocates it to a site outside the floodplain. The purchased property is deed restricted and maintained as open space in perpetuity to restore and/or conserve the natural floodplain functions. Although some communities elect to develop a site outside the floodplain and relocate structures to the new site, FEMA encourages communities to opt for the simpler acquisition and structure demolition because this type of project requires minimal environmental review, is considerably less expensive, and allows the homeowner to determine where to relocate.

Federal law requires properties acquired with FEMA funds in structure demolition or relocation projects to be maintained as open space in perpetuity and Grantees and subgrantees to be responsible for oversight in ensuring and enforcing proper land use and for coordinating with FEMA on any future land use or property disposition issues.

During the development of an acquisition project for open space, property owners are responsible for notifying the subapplicant of their interest in participating in the proposed project. They must provide all of the information requested by the subapplicant, and they must complete all of the actions that are required to complete the grant subapplication and to implement the property acquisition and structure demolition or relocation.

### **A.2 Eligible Activities**

For a property to be eligible for FEMA-funded acquisition, the subapplicant must acquire the [full] fee title of the property (except for any easements and encumbrances that FEMA determines are compatible with open space) from a willing, voluntary seller or must retain such interest. The subapplicant must commit not to use eminent domain if the property owner chooses not to participate and must verify that the property is not needed as a part of an intended or planned project. Once funds have been awarded, a property may not be subdivided before it is

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acquired except for portions outside the Special Flood Hazard Area (SFHA) or any risk zone identified by FEMA.

A property is eligible for acquisition if it:

- ◆ Will be acquired from a willing, voluntary seller;
- ◆ Contains a structure that may or may not have been damaged or destroyed as a result of a hazard event;
- ◆ Is undeveloped, at-risk land that is part of a project with an adjacent eligible property with one or more existing structure(s) and the total project remains cost-effective;
- ◆ Has incompatible easements or encumbrances that can all be extinguished;
- ◆ Is not contaminated with hazardous materials at the time of acquisition other than incidental demolition or household waste; and
- ◆ Is not part of an intended, planned, or designated project area for which the land is to be acquired by a certain date and/or where there is an intention to use the property for any public or private use that is inconsistent with the open space deed restrictions and FEMA acquisition requirements (e.g., roads, flood control levees).

Other eligibility requirements are as follows:

- ◆ An acquisition in a Coastal Barrier Resource System (CBRS) unit or Other Protected Area (OPA) is eligible under all HMA programs if the project is otherwise eligible under the requirements of 44 CFR and this guidance.
- ◆ Acquisitions are eligible only if they qualify for one of the exceptions in Section 6 of Coastal Barrier Resource Act (CBRA), 16 U.S.C. 3505. That is, acquisitions are eligible if they are consistent with the purposes of the CBRA and qualify as projects for the study, management, protection, and enhancement of fish and wildlife resources and habitats, as provided in 16 U.S.C. 3505(a)(6)(A) and 44 CFR Section 206.345. Acquisitions are subject to the regulatory restrictions of allowable uses under 44 CFR Section 80.19.
- ◆ Any structure that is relocated must be placed outside the SFHA and outside any regulatory erosion zone or other mapped hazard area, and the relocation must conform to any other applicable State or local land use regulations.

### **A.3 Open Space Restrictions**

To be eligible, a project must result in property acquisition and structure demolition or relocation, and the acquisition and demolition or relocation must meet all of the requirements of 44 CFR Part 80 and adhere to the following guidance on open space restrictions governing the use of grant funds and the use of acquired real property:



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- ◆ The subgrantee will dedicate and maintain the property in perpetuity for uses that are compatible with open space, recreational, or wetlands management practices and that are consistent with conservation of natural floodplain functions by recording deed restrictions consistent with the FEMA Model Deed Restriction (see [Addendum Part A.10](#)) for information on the FEMA Model Deed Restriction);
  - ◆ No new structures will be built on the property except:
    - Public buildings that are open on all sides and functionally related to a designated open space or recreational use;
    - Public restrooms;
    - Structures that are compatible with open space, recreational, or wetlands management use and applicable floodplain management policies and practices, and compatibility is confirmed in writing by the FEMA Regional Administrator before construction of the structures begins; or
    - Structures described in the three subbullets above that will be elevated or floodproofed to the base flood elevation (BFE) plus 1 foot of freeboard and that meet the applicable requirements of the National Flood Insurance Program (NFIP) floodplain management regulations at 44 CFR Section 60.3.
  - ◆ Allowable land uses for properties acquired for open space under the Pre-Disaster Mitigation (**PDM**) and Flood Mitigation Assistance (**FMA**) Programs in projects within CBRS units and OPAs are identified in [Addendum Part A.15](#). FEMA may prohibit additional post-acquisition uses that it determines, in consultation with the U.S. Fish and Wildlife Service (USFWS), are inconsistent with the purposes of the CBRA;
  - ◆ After settlement, no Federal disaster assistance for any purpose from any Federal source and no flood insurance payments may be made with respect to the property, and no person or entity shall seek such amounts;
  - ◆ The subgrantee must obtain the approval of the Grantee and the FEMA Regional Administrator before conveying ownership (fee title) of the property to another public agency or qualified conservation organization. Property transfer to private citizens and corporations will not be approved. The transferee must be another public entity or a qualified conservation organization. All development rights in the form of a conservation easement on the property must be conveyed to the conservation organization or retained by the subgrantee or other public entity; and
  - ◆ By accepting grant funds, the subgrantee accepts responsibility for monitoring and enforcing the deed restriction and/or easement language.

The open space restrictions described above and included in 44 CFR Section 80.19 apply to all FEMA-funded property acquisitions for the purpose of open space, regardless of when the

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application period opened, when the Presidential major disaster was declared, or when the property was acquired.

For managing open space after a property acquisition and structure demolition or relocation project, see [Addendum Part A.17](#). For the FEMA Model Deed Restriction and other Acquisition Project Resources, see [Addendum Part A.10](#).

## **A.4 Application Information**

Subapplicants are responsible for meeting the requirements and time frames in 44 CFR Section 80.13 and for providing the information that is necessary for the Applicant and FEMA to determine the eligibility of the project as described in the subapplication. The subapplication must contain property and project information, including the project description and environmental and historic preservation information.

FEMA may request additional information after the subapplication has been submitted to ensure that all necessary information is received. However, all information required by the regulations and this guidance must be received before a funding decision and award or final approval can be made.

### **A.4.1 Project Scope of Work**

For property acquisition projects, the project Scope of Work (SOW) in the subapplication must include the following:

- ◆ For all HMA programs, the project cost estimate must include the value of each property (pre-event or current, as appropriate) and documentation demonstrating how the market value was determined; and
- ◆ An appeal or reconsideration process for property owners who dispute the purchase offer property valuation.

### **A.4.2 Statement of Assurances**

Subapplications for assistance for property acquisition and structure demolition or relocation must include the FEMA Statement of Assurances. Subapplications without this formal assurance will not be considered for funding. The FEMA Statement of Assurances must be signed by the subapplicant's authorized agent. The Statement of Assurances must provide acknowledgement of, and agreement to, the requirements in the model Statement of Assurances available at <http://www.fema.gov/library/viewRecord.do?id=6365>.

Subapplications that do not include a signed FEMA Statement of Assurances are incomplete and will not be considered for funding.

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### **A.4.3 Deed Restriction Language**

The subapplication must include a sample of the deed restriction (not including property-specific details) that the subapplicant intends to record with each property deed. The sample must be consistent with the FEMA Model Deed Restriction, which is available on the FEMA Web site at <https://www.fema.gov/library/viewRecord.do?id=6327>.

If the subapplicant makes any changes to the language in the Model Deed Restriction, the subapplicant must seek approval from the FEMA Office of Chief Counsel, through the FEMA Regional Office, for the changes. Changes may be made to comply with local requirements, but changes to substantive, programmatic provisions will not be approved.

The subapplicant must follow the procedure described in the previous two paragraphs for acquisitions for open space in CBRS units and OPAs. The subapplication must include a sample of the deed restriction for review and approval by the FEMA Office of Chief Counsel, through the Regional Office, to ensure compliance with all deed restriction requirements specific to these areas.

### **A.4.4 Property Owner Documentation**

Documentation of the property owner's voluntary interest and certification that the property owner is a National of the United States or qualified alien must be submitted during the Application process. See [Addendum Part A.11.3](#) for definitions of a National of the United States and qualified alien.

#### **A.4.4.1 Voluntary Interest Documentation**

Participation in property acquisition and structure demolition or relocation projects by property owners is voluntary. Prospective participants must be informed in writing that participation in the program is voluntary and that the subapplicant will not use its eminent domain authority to acquire their property for the project purposes if negotiations fail and the property owner chooses not to participate.

Documentation of voluntary interest must be signed by each property owner and should be obtained as early in the project development as possible. The documentation must be submitted as specified in 44 CFR Section 80.13.

A Notice of Voluntary Interest can be documented using individually signed statements or a group sign-up sheet. Example Notices of Voluntary Interest are available at <https://www.fema.gov/library/viewRecord.do?id=3595> and <https://www.fema.gov/library/viewRecord.do?id=3596>

The documentation must include the name and signature of the interested property owners associated with each property and clear acknowledgement by every property owner of the following language:

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This project for open space acquisition is voluntary and neither the [Applicant] nor the [subapplicant] will use its eminent domain authority to acquire the property for open space purposes should negotiations fail and the property owner chooses not to participate.

During project implementation, the subgrantee must execute a more formal Statement of Voluntary Participation with the owner of each property identified in the subapplication SOW (see [Addendum Part A.10](#)).

#### **A.4.4.2 Certification of Owner Status for Pre-event Value**

Before the property owner can receive a pre-event value for the property, the subapplicant must provide certification obtained from the property owner that the property owner is a National of the United States or a qualified alien (see [Addendum Part A.11.3](#)). For property owners who are not Nationals of the United States or qualified aliens or who refuse to provide certification, the subgrantee will offer no more than the appraised current market value for their property.

#### **A.4.5 Consultation Regarding Other Ongoing Federal Activities**

Because properties acquired under HMA programs must be permanently converted to open space and will be unavailable for future development, subapplicants must coordinate with the appropriate Federal agency or agencies in accordance with 44 CFR Section 80.13 to ensure that other Federal actions are not anticipated that would affect the parcels under consideration for acquisition for open space.

If other Federal activities are planned in the proposed project area, the subapplicant will need to forego an open space acquisition project and pursue other mitigation project options. If the subapplicant decides to proceed with the acquisition project, the subapplicant must include documentation of its coordination under this section in the subapplication.

Consultation with the U.S. Army Corps of Engineers (USACE), Department of Transportation (DOT), and other Federal agencies is discussed below.

##### **A.4.5.1 U.S. Army Corps of Engineers**

The allowed uses of open space that has been created as a result of an acquisition project do not include flood levee systems, and subapplicants will be required to reject consideration of such use if they accept FEMA assistance to convert a property to permanent open space. The subapplicant must demonstrate in the subapplication that it has consulted with USACE regarding each subject property's potential use for the construction of a flood levee system (including berms, floodwalls, and dikes). FEMA will not award funds for any property without this documentation. This restriction does not generally apply to structures for ecosystem preservation, restoration, or enhancement.

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If the initial consultation with the subapplicant indicates that the local government wishes to consider a flood damage reduction levee in the area, the subapplicant or local government must undertake an expanded consultation with the Applicant, FEMA, and USACE. The consultation will involve the identification and full consideration of future potential land use conflicts to enable the local government to make an informed decision regarding how it should proceed. The local government may be able to pursue open space acquisition and flood damage reduction levee projects in the same community when there are no land use conflicts (i.e., the levee would not cross acquired land). If, however, the local government determines that a conflict exists and that it cannot be resolved and chooses to pursue the USACE flood damage reduction levee, the local government must notify FEMA, through the Applicant, that it will not submit a subapplication for FEMA mitigation grant funding for property acquisition and structure demolition or relocation.

If, after the consultation, the local government decides to pursue a FEMA-funded property acquisition and structure demolition or relocation project, the subapplication will include an assurance, resolution, or equivalent document adopted by the governing body of the local government that indicates the following:

- ◆ In consultation with USACE, the local government has identified and considered the future potential use of acquired land for the construction of flood damage reduction levees and has chosen to proceed with acquisition of permanent open space; and
- ◆ The local government understands that land acquired for open space purposes under the relevant mitigation grant program will be restricted in perpetuity to open space uses and will be unavailable for any use that is incompatible with the open space and floodplain purposes designated for the property, including the construction of flood damage reduction levees, paved roads, and other development.

#### **A.4.5.2 Department of Transportation**

The subapplicant must demonstrate in the subapplication that it has coordinated with the relevant State DOT to ensure that planning or future use documents do not contain any planned improvements or enhancements to Federal aid systems or other State transportation projects that would affect the proposed project area presently under consideration. The construction of such transportation improvements, enhancements, or projects on open space land is incompatible with open space uses and is therefore not allowed.

#### **A.4.5.3 Other Federal Agencies**

The Applicant and subapplicant must demonstrate in the Application and subapplication, respectively, that they have consulted with other Federal agencies, as appropriate, regarding other program requirements and/or activities and have identified the relationship between the requirements and activities to FEMA mitigation grant activities and funding. Other Federal agency requirements may apply to mitigation grant activities if other agency funds are used for

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activities related to the project in the community or for matching the mitigation grant funding, such as Community Development Block Grant (CDBG) funds.

Other Federal agency funds may be used to contribute to the non-Federal share of a FEMA-funded mitigation project if the requirements of both programs apply to the project. The Applicant is responsible for coordinating the programs that are available in the State. The coordination should include local program representatives and approaches and schedules. The objective should be to make the process as simple and consistent as possible for subapplicants and property owners.

#### **A.4.6 Consultation Regarding Properties in the CBRS or an OPA**

For any proposed action that involves the acquisition of a structure for open space purposes that is on or attached to a unit of the CBRS or an OPA, the FEMA Regional Administrator, as required by Section 6 of the CBRA, consults with the designated representative of the Department of the Interior (DOI) at the regional level before approving the action.

The request for consultation is in the form of a memorandum to the DOI representative that contains the following:

- ◆ Identification of the CBRS unit or the OPA;
- ◆ Description of the structure and the property to be acquired and demolished or relocated, including the identification of the structure as an exception under Section 6 of CBRA and full justification of its status as an exception;
- ◆ Amount of proposed Federal funding;
- ◆ Any additional required mitigation measures; and
- ◆ A determination of the action's consistency with the purposes of the CBRA, in accordance with 44 CFR Section 206.349.

Pursuant to FEMA's understanding with the DOI, the DOI representative provides technical information, an opinion as to whether the proposed action meets the criteria for a CBRA exception, and an opinion as to whether the action is consistent with the purposes of CBRA if consistency is required. DOI is expected to respond in a timely manner from the date of the FEMA request for consultation. If a written response is not received in a timely manner, the FEMA Regional Administrator will contact the DOI representative to determine whether the request for consultation was received.

When the opinion of the regional DOI representative is that the proposed action should not be taken and the issue cannot be resolved at the regional level, the FEMA Regional Administrator submits the issue to the Director, Office of Environmental Planning and Historic Preservation, Federal Insurance and Mitigation Administration for review. Consultation is accomplished at FEMA Headquarters with the DOI consultation officer and the Office of Environmental Planning

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and Historic Preservation, Federal Insurance and Mitigation Administration in coordination with the FEMA Office of Chief Counsel. The Director, Office of Environmental Planning and Historic Preservation, Federal Insurance and Mitigation Administration, then approves or does not approve the proposed action.

## **A.5 Allowable Property-related Costs**

Allowable costs are costs that are necessary and reasonable for the proper and efficient performance and administration of the Federal award. Allowable costs for property acquisition and structure demolition or relocation projects for open space depend on the scope of the project. Allowable costs are listed in [Table 2](#).

A shortfall is the difference between the amount the subgrantee pays an owner for a damaged residence and the cost of a comparable replacement home in a non-hazard-prone location if the cost of the replacement home is higher. Although rare, a shortfall is an allowable cost up to \$22,500 per property (the limit of the allowance may increase to \$31,000 per property on October 1, 2014). See [Addendum Part A.11.5](#).

## **A.6 Nonallowable Property-related Costs**

Property-related costs that are not allowable under HMA programs include, but are not limited to, the following:

- ◆ Compensation for land that is already held by an eligible entity even if the eligible entity is not the subapplicant for the project. However, compensation for development rights (e.g., obtaining an open space easement) may be an allowable cost (see [Table 2](#));
- ◆ Property acquisition and structural demolition projects where State and/or local laws or ordinances create a legal condition that requires structure demolition and/or prohibit future development of the property (e.g., a coastal setback requirement);
- ◆ Remediation, remediation plans, and environmental cleanup and certification of contaminated properties. However, permitted disposal of incidental demolition, household hazardous wastes, and fuel tanks that support a residential use only may be an allowable cost; and
- ◆ Aesthetic improvements and landscaping, new site property acquisition, and public infrastructure and utility development.

## **A.7 Relocation and Removal of Existing Buildings**

Existing buildings that are part of an open space acquisition and demolition or relocation project must be removed and disposed of in accordance with applicable laws within 90 days of closing and settlement of the property acquisition transaction. The Grantee and subgrantee are responsible for the removal and disposal.

**Table 2: Generally Allowable Costs for Property Acquisition and Structure Demolition or Relocation for Open Space**

| Both Structure Demolition and Relocation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Structure Demolition Only                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Structure Relocation Only                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
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| <ul style="list-style-type: none"> <li>• Removal of demolition debris and household hazardous wastes to an approved landfill (including debris from the demolition of houses, garages, driveways, sidewalks, and above-grade concrete slabs)</li> <li>• Abatement of asbestos and/or lead-based paint</li> <li>• Removal of septic tanks; if not removed, floors and walls must be cracked or crumbled so the tank will not hold water, and the tank must be filled with sand or other clean fill;</li> <li>• Permitted disposal of fuel tanks that support residential use only</li> <li>• Removal of all structure foundation and basement walls to at least 1 foot below the finish grade of the site</li> <li>• Filling of basements with compacted clean fill (basement floors must have a minimum 1-foot-diameter hole in the floor to allow for drainage)</li> <li>• Removal of only the trees, if any, that restrict the demolition work on any structure</li> <li>• Termination of all abandoned utilities at least 2 feet below the finish grade of the site</li> <li>• Capping of all wells and/or removal of associated components</li> <li>• Grading, leveling, and site stabilization of all demolition sites</li> </ul> | <ul style="list-style-type: none"> <li>• Market value of the real property (land and structures) either at the time of sale or immediately prior to the most recent disaster or flood event, subject to applicable adjustments, provided State/local laws do not prohibit future improvements and/or require structure demolition.</li> <li>• For land already owned by an eligible entity, compensation is for the structure and for development rights only, not for the land. This includes any entity eligible to apply for grant or subgrant funding under the relevant funding program, even if the entity is not the Applicant or subapplicant for the project.</li> <li>• Fees for necessary appraisals, title searches, title insurance, property inspections, and surveys.</li> <li>• Property tax liens or tax obligations can be extinguished with proceeds from property sale while performing the transfer of title.</li> <li>• Fees associated with the title transfer, contract review, and other costs associated with conducting the real estate settlement including recordation of the deed and deed restrictions.</li> <li>• Demolition, site restoration, and site stabilization of the acquired site.</li> </ul> | <ul style="list-style-type: none"> <li>• Market value of the real property (land only). For land already owned by an eligible entity, compensation is for the development rights. This includes any entity eligible to apply for grant or subgrant funding under the relevant funding program, even if the entity is not the Applicant or subapplicant for the project.</li> <li>• Fees for necessary appraisals, title searches, title insurance, property inspections, plan reviews, permit fees, and surveys</li> <li>• Property tax liens or tax obligations can be extinguished with proceeds from property sale while performing the transfer of title</li> <li>• Fees associated with the title transfer, contract review, and other costs associated with conducting the real estate settlement, including recordation of the deed and deed restrictions</li> <li>• Jacking and moving the structure to a different site</li> <li>• The reasonable cost of disassembling, moving, and reassembling any attached appurtenances such as porches, decks, skirting, and awnings</li> <li>• Necessary site preparations including foundation, water, sewer, and utility hookups</li> <li>• Site restoration and site stabilization of the acquired site</li> </ul> |



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Even if numerous properties are purchased on different dates, the Grantee and subgrantee are still responsible for structure disposal or removal within 90 days of settlement for each property. The FEMA Regional Administrator may grant an exception in accordance with 44 CFR Section 80.17(d) for multiple properties in a single project when the properties are individually identified and the need for an exception is justified, in accordance with the regulations.

All relocated structures in open space acquisition and relocation projects must be placed on a site outside an SFHA, outside any regulatory erosion zones at a distance at least 60 times the average annual erosion rate measured from an appropriate “erosion reference feature,” and outside any other identified hazard areas. The owner is responsible for ensuring that the building is brought into compliance with all applicable laws and regulations.

Existing buildings that are part of an open space acquisition and demolition project must be demolished (resulting in the permanent destruction of each structure) and disposed of in accordance with applicable laws.

After a disaster, the demolition and debris removal of acquired structures may be eligible for reimbursement under the FEMA Public Assistance Program if the structures represent a health and safety hazard as a result of the disaster. States/Grantees and subgrantees should coordinate with the appropriate FEMA Regional Office to determine whether these costs are eligible under the Public Assistance Program. If the costs of demolition do not qualify for Public Assistance Program funding, they are eligible project costs under the relevant mitigation grant program. If any parts of the structure are sold for salvage value, the total cost of the project will be reduced by the salvage value before cost shares are calculated.

## **A.8 Hazardous Materials**

In accordance with 44 CFR Section 80.11(e), properties that are contaminated with hazardous materials are not eligible for acquisition. The subgrantee must ensure that a property with past or present commercial or industrial use and any adjacent properties suspected of having hazardous materials at the site are not contaminated when the project Application is approved. If the subapplication is selected for further review by FEMA, the subgrantee must meet the requirements of EPA’s “all appropriate inquiries” rule, 40 CFR Part 312, including contracting with an appropriate qualified environmental professional for a Phase I Environmental Site Assessment Process, as defined by the rule. Any assessment must be in accordance with the procedures of ASTM International Standard E1527-05 or E2247-08. The costs for meeting these requirements are considered eligible project costs if such costs are included in the project budget.

In accordance with these criteria and 44 CFR Section 80.17(a), the subgrantee shall:

- ◆ Conduct interviews with past and present owners, operators, and occupants;
- ◆ Search for recorded environmental cleanup liens;

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- ◆ Review Federal, Tribal, State, and local government records; and
  - ◆ Conduct visual inspections of the facility and of adjoining properties.

The purpose of the environmental site assessment is to identify conditions that are indicative of releases and threatened releases of hazardous substances, pollutants, contaminants, petroleum and petroleum products, and controlled substances on, at, in, or to the subject property by gathering the following types of information about the subject property:

- ◆ Current and past property uses and occupancies;
- ◆ Current and past uses of hazardous substances;
- ◆ Waste management and disposal activities that could have caused releases or threatened releases of hazardous substances;
- ◆ Current and past corrective actions and response activities undertaken to address past and ongoing releases of hazardous substances;
- ◆ Engineering controls;
- ◆ Institutional controls; and
- ◆ Properties adjoining or near the subject property that have environmental circumstances that could have resulted in conditions indicative of releases or threatened releases of hazardous substances to the subject property.

The subgrantee must seek to gather all information that is publicly available, that is obtainable from its source within reasonable time and cost constraints, and that can practicably be reviewed.

If the Phase I “all appropriate inquiries” report identifies the presence of hazardous substances, pollutants, contaminants, petroleum and petroleum products, or controlled substances on, at, or in the subject property, the subgrantee shall require the owner to remove the materials or remediate the property in accordance with any applicable Federal, State, Tribal, or local requirements. The costs of a Phase II Environmental Site Assessment to evaluate suspected areas and to identify the nature and extent of contamination on, at, in, or to the property are not eligible mitigation grant project costs. Additionally, the cost of Phase III Environmental Site Assessment remediation plans, cleanup, and certification of the property are not eligible mitigation grant project costs.

A contaminated property must be “certified clean,” defined in 44 CFR Section 80.17(a) as a letter from the appropriate local, State, Indian Tribal, or Federal entity determining that no further remedial action is required to protect human health or the environment. A contaminated property must be certified clean before any interest in the property is purchased. The seller must also agree to indemnify the Grantee, FEMA, and the subgrantee for any liability arising from previous contamination of the property.

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## A.9 Clear Title

The subgrantee shall conduct a title search for each property it plans to acquire. The purpose of the title search is to ensure that the owner is the sole and actual titleholder to the property, to identify other persons with a property interest if the owner is not the sole and actual titleholder, and to ensure that the title is clear (i.e., there are no mortgages or liens outstanding upon sale of the property). In addition, there may not be easements or other encumbrances incompatible with open space to the property that would make the property either ineligible for acquisition or noncompliant with FEMA's open space land use restrictions (see [Addendum Part A.3](#)).

All known encumbrances that are incompatible with open space use must be revised or extinguished to ensure that the property use is consistent with the open space requirements in 44 CFR Part 80 and this guidance. Encumbrances include any encumbrance providing an interest in subsurface resource rights that may also involve an implicit right for surface access to the subsurface resource. The Applicant will obtain a title insurance policy reflecting that all incompatible easements or other encumbrances to the title have been extinguished to demonstrate clear fee title in conformance with 44 CFR Section 80.17(b).

If evidence obtained during the review indicates long-dormant subsurface rights (usually in excess of 50 years or beyond the reach of a standard title search) and the identity of the subsurface owner is unknown or otherwise not reasonably ascertainable, FEMA may approve the eligibility of the acquisition on a case-by-case basis. If a right to access a subsurface resource is discovered and asserted after the acquisition, the Grantee and subgrantee are required to take all appropriate action to enforce the open space restrictions required by 44 CFR Section 80.19.

Other title-related requirements are as follows:

- ◆ A title insurance policy demonstrating that clear title conveys must be obtained for each approved property that will be acquired;
- ◆ A physical site inspection for each property must be conducted to verify that there are no physical encumbrances to the property (a site survey may be necessary to clearly establish property boundaries);
- ◆ The property title must be transferred by a warranty deed in all jurisdictions that recognize warranty deeds;
- ◆ All incompatible easements or encumbrances must be extinguished;
- ◆ The subgrantee must take possession at settlement;
- ◆ The subgrantee must record the deed at the same time as and along with the programmatic deed restrictions;
- ◆ The deed transferring title to the property and the programmatic deed restrictions will be recorded according to State law and within 14 days after the settlement; and

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- ◆ All property transfers must be consistent with 44 CFR Part 80 and this guidance.

## **A.10 Statement of Voluntary Participation**

The Statement of Voluntary Participation formally documents the Notice of Voluntary Interest and information related to the purchase offer. The Statement of Voluntary Participation is available on the FEMA Web site at <https://www.fema.gov/library/viewRecord.do?id=3333>. The subgrantee must provide FEMA with a signed copy of the Statement of Voluntary Participation for each property post-award. For more information on voluntary interest documentation, see [Addendum Part A.4.4.1](#). For more information on the purchase offer, see [Addendum Part A.11](#).

Participation is not voluntary for tenants of properties to be acquired; for information about considerations for tenants, see [Addendum Part A.12](#).

## **A.11 Final Mitigation Offer**

The final Mitigation Offer to a property owner is based on the value assigned to a property (“purchase offer”) and applicable additions and deductions. Deductions to the purchase offer may include Duplication of Benefits (DOB) deductions, and additions may include any supplemental housing or insurance incentive payments. The subgrantee must ensure that all property owners are treated fairly and are offered an equitable package of benefits. The subgrantee (using a Statement of Voluntary Participation) shall inform each property owner in writing of the market value (pre-event or current) of the property and the method used to determine the final Mitigation Offer.

If several entities or programs are acquiring property in the same area, property owners may find it confusing if different offers are made to area owners at different times. To avoid any negotiation difficulties or confusion, the subgrantee should coordinate the release of property valuation information and purchase offers to property owners for the various programs. The subgrantee may wish to set a time limit with the property owner for the validity of a purchase offer. The subgrantee must provide an appeal or reconsideration process for property owners who dispute the amount of the purchase offer property valuation.

### **A.11.1 Purchase Offer: Value of the Property**

For each property identified for acquisition, the subgrantee shall establish and document a property value based on market value, which is defined as:

The amount in cash, or on terms reasonably equivalent to cash, for which in all probability the property would have sold on the effective date of the valuation, after a reasonable exposure time on the open competitive market, from a willing and reasonably knowledgeable seller to a willing and reasonably knowledgeable buyer, with neither acting under any compulsion to buy or sell, giving due

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consideration to all available economic uses of the property at the time of the valuation.

Current market value reflects the property value at the time of the final Mitigation Offer. Pre-event market value is defined as the market value of the property immediately before the relevant event affecting the property. For the Hazard Mitigation Grant Program (**HMGP**), the relevant event for assistance is the major disaster under which funds are available. For the **PDM** Program, pre-event market value is the value before the most recent major disaster; however, if the project is occurring separate from or more than 12 months after a disaster event, the current market value may be more appropriate. For the **FMA** Program, the pre-event market value is defined as the value of the property immediately before the most recent flood event resulting in an NFIP claim of at least \$5,000.

The relevant event may vary under the HMA programs, but the pre-event market value or current market value may be used at the Applicant's discretion for all HMA programs. The Grantee should coordinate with the subgrantee to determine whether the valuation should be based on the pre-event market value or current market value. The current market value may be the most efficient method if no damage has occurred to the property or if a reasonable amount of time has elapsed since the event.

The benefit of the pre-event market value is available only to owners who owned the property during the event and are Nationals of the United States or qualified aliens. If the current property owner purchased or took possession of the disaster-damaged property after the major relevant event or is not a National of the United States or qualified alien, the subgrantee may not offer the owner more than the current market value.

Typically, property acquisition and structure demolition or relocation projects require the valuation of the property (land and structures as a whole). When an eligible entity already owns the property and wants to deed-restrict it, valuation is for the structure and development rights instead of for the land. Relocation projects require the valuation of land only.

### **A.11.2 Valuation Methodology**

The following appraisal methodology must be used to determine property value:

- ◆ The appraisal must be conducted by an appraiser in accordance with the Uniform Standards of Professional Appraisal Practice;
- ◆ The appraiser must comply with relevant State laws and requirements and have the appropriate certification, qualifications, and competencies based on the type of property being appraised; and
- ◆ The subgrantee must coordinate with the Grantee to determine the assumptions that will be used in the appraisal (i.e., current or pre-event market value), and the assumptions must be applied consistently throughout the project area for all properties to be acquired.

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When determining the value for a large number of structures, the subgrantee may conduct appraisals to establish a statistical sampling of property values and develop an adjustment factor to apply to tax-assessed values so that they reasonably reflect each property's market value.

Potential deductions from and additions to the purchase offer must also be considered (see [Addendum Parts A.11.4](#) and [A.11.5](#), respectively).

### **A.11.3 Purchase Offer and Nationality**

A property owner who is not a National of the United States or a qualified alien is not eligible for a pre-event market value determination of property value. The property value must be based on the current market value.

“National of the United States” is defined in 8 U.S.C. 1101 as a citizen of the United States or a person who is not a citizen but who owes permanent allegiance to the United States. “Qualified alien” is defined in 8 U.S.C. 1641 as:

[A]n alien who, at the time the alien applies for, receives, or attempts to receive a Federal public benefit, is –

- (1) an alien who is lawfully admitted for permanent residence under the Immigration and Nationality Act [8 U.S.C. 1101 et seq.],
- (2) an alien who is granted asylum under section 208 of such Act [8 U.S.C. 1158],
- (3) a refugee who is admitted to the United States under section 207 of such Act [8 U.S.C. 1157],
- (4) an alien who is paroled into the United States under section 212(d)(5) of such Act [8 U.S.C. 1182 (d)(5)] for a period of at least 1 year,
- (5) an alien whose deportation is being withheld under section 243(h) of such Act [8 U.S.C. Part 1253] (as in effect immediately before the effective date of section 307 of division C of Public Law 104-208) or section 241(b)(3) of such Act [8 U.S.C. 1231(b)(3)] (as amended by section 305(a) of division C of Public Law 104-208),
- (6) an alien who is granted conditional entry pursuant to section 203(a)(7) of such Act [8 U.S.C. 1153 (a)(7)] as in effect prior to April 1, 1980; or
- (7) an alien who is a Cuban and/or Haitian entrant (as defined in section 501(e) of the Refugee Education Assistance Act of 1980).

Prior to the award or final approval, subgrantees will ask all property acquisition and structure demolition or relocation project participants (property owners) to certify that they are a National of the United States or a qualified alien. Subgrantees will offer participants who refuse to provide such certification, or who are not Nationals of the United States or qualified aliens, no more than the appraised current market value for their property. Participants who refuse to

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certify, or who are not Nationals of the United States or qualified aliens, may not receive supplemental housing payments.

Subgrantees may use FEMA Form 90-69B, Declaration and Release (available at <http://www.fema.gov/pdf/assistance/process/00903.pdf>), as certification of the nationality of participating property owners. At the time of certification, the subgrantee will ask the property owner to show a form of identification (any government-issued identification displaying the signer's name is sufficient). If the property owner has applied for FEMA disaster assistance, Form 90-69B will already be on file at FEMA, and the subgrantee will instead request verification from FEMA through the Grantee that a certification is on file.

#### **A.11.4 Deductions from the Purchase Offer**

The Grantee, subgrantee, and property owner must identify any potential DOB. FEMA deducts benefits from other sources from the purchase offer. Repair assistance that has been used for its intended purpose is generally not deducted if documentation of the use is provided. Examples of when DOB may occur in a property acquisition and structure demolition or relocation project are as follows:

- ◆ The subgrantee offers the full pre-event market value, but the property owner cannot provide documentation to demonstrate that assistance such as insurance, loans, repair grants, compensation in compliance with a court order, or other such assistance has been used for its intended purpose. This is because payment of the full pre-event market value compensates the owner for the loss of value that has occurred;
- ◆ The subgrantee offers the full pre-event market value, but legal claims are appropriate or legal obligations arise in connection to the property that may provide a benefit to the property owner. The parties involved in pending legal disputes must take reasonable steps to recover benefits available to them; and
- ◆ Relocated tenants receive relocation assistance and rental assistance but have received payments for the same purpose as part of the disaster assistance provided by any agency or payments from any other source. Any acquisition-related assistance provided to tenants must be reduced accordingly. However, tenant-related DOB deductions do not affect amounts available to the property owner.

For property valuations based on the pre-event market value, the following procedures can help prevent mitigation grant funds from duplicating benefits available from other sources:

- ◆ The subgrantee establishes the purchase offer property value as of a certain date;
- ◆ The subgrantee provides the Grantee with a list of property owners participating in the property acquisition and structure demolition or relocation project and a list of tenants who may be affected by the acquisition;

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- ◆ The Grantee and FEMA inform the subgrantee of the amount of repair or replacement assistance available to each property owner and rental or relocation assistance available to tenants. FEMA provides NFIP coverage information to the Grantee and subgrantee, including the amount paid on a claim and the amount of coverage available;
  - ◆ The subgrantee coordinates with property owners who must disclose all funding received for the same purpose, as described above, including repair or replacement assistance received, all insurance benefits available to them under an existing policy (whether or not they submitted a claim), and any potential recovery based on litigation or other legal obligations. The property owner must take reasonable steps to recover such amounts. The subgrantee must coordinate with tenants who must disclose any amounts received from rental or relocation assistance;
  - ◆ Property owners who have a Small Business Administration (SBA) loan are required to repay the loan or roll it over to a new property at closing; and
  - ◆ The subgrantee identifies any other potential sources of benefits to the subgrantee, property owner, or tenant.

The subgrantee shall reduce the purchase offer by the amount of any DOB. Deductions are not taken for any amounts the owner can verify with receipts that were expended on repairs or cleanup. Subgrantees may not credit property owners for their own labor hours for repair work.

For insurance payments made for which the purpose is unspecified, property owners may submit (1) an affidavit stating that the unspecified settlement will be used for personal property replacement or (2) documentation from the insurance company specifying the type of losses covered by the previously unspecified settlement. If the property owner submits an affidavit, upon receipt of the affidavit, the Grantee and subgrantee will treat the payment as a personal property settlement that is not subject to a DOB deduction.

#### **A.11.5 Additions to the Purchase Offer**

If the purchase offer for a property is less than the amount the property owner must pay to purchase a comparable replacement dwelling in a non-hazard-prone site in the same community, the Grantee and subgrantee may choose to make available to the property owner a supplemental payment of up to \$22,500 that would be applied to the difference (this supplemental payment may increase to \$31,000 on October 1, 2014). Subgrantees should consider the cost of relocating to a permanent residence that is of comparable value and that is functionally equivalent.

In order for the property owner to receive a supplemental payment, the Grantee and subgrantee must demonstrate that all of the following circumstances exist:

- ◆ Decent, safe, and sanitary housing of comparable size and capacity is not available in non-hazard-prone sites within the community at the anticipated acquisition price of the property being vacated;



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- ◆ The project would otherwise have a disproportionately high adverse effect on low-income or minority populations because project participants in these populations would not be able to secure comparable decent, safe, and sanitary housing; and
  - ◆ Funds cannot be secured from other more appropriate sources, such as housing agencies or voluntary groups.

For **HMGP**, the Grantee has the option of allowing subgrantees to provide a credit to property owners who have flood insurance. The subgrantee provides an incentive payment that is equal to up to 5 years of flood insurance premiums actually paid by the current property owner for an NFIP policy for structure coverage.

## **A.12 Tenants**

Although the property owner must voluntarily agree to participate in an open space project, participation is not voluntary for residential and business tenants and owners of mobile homes who rent homepads (homepad tenants) and who must relocate as a result of acquisition of their housing. Therefore, these tenants are entitled to assistance as required by the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (URA), as amended (42 U.S.C. 4601 et seq.). The implementing Federal regulations are in 49 CFR Part 24. Property owners participating in FEMA-funded property acquisition and structure demolition or relocation projects are not entitled to relocation benefits because the voluntary program meets URA exceptions.

URA regulations define “tenant” as a person who has the temporary use and occupancy of real property that is owned by another.

URA relocation benefits to displaced tenants include moving expenses, replacement housing rental payments, and relocation assistance advisory services. Displaced tenants include owners of manufactured homes who lease a pad site.

The amount of assistance the subgrantee must pay the tenant is provided in 49 CFR Part 24, Subpart E. An eligible displaced tenant is entitled to:

- ◆ Reasonable out-of-pocket (or fixed schedule) moving expenses; and
- ◆ Compensation for a reasonable increase in rent and utility costs incurred in connection with the relocation in certain circumstances.

Relocation assistance payments for tenants are intended to ensure that these individuals are able to relocate to decent, safe, and sanitary comparable replacement dwellings outside the floodplain or hazard area. If a tenant chooses to purchase a replacement dwelling, the tenant may apply the amount of rental assistance to which he or she would be entitled toward the down payment. Similarly, if a mobile home owner who rents a homepad chooses to purchase a replacement pad

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or lot, the mobile home owner may apply the amount of rental assistance to which he or she would be entitled toward the down payment.

An alien who is not lawfully present in the United States is not eligible to receive URA relocation benefits or relocation advisory services. FEMA may approve exceptions if unusual hardship to the alien's spouse, parent, or child, who *is* a U.S. citizen or an alien admitted for permanent residence, would otherwise result. Subgrantees will ask tenants who are potential recipients of URA assistance to certify that they are a U.S. citizen or are lawfully present in the United States. Subgrantees will not provide URA assistance to participants who refuse to certify or who are not a U.S. citizen or lawfully present.

Refer to 49 CFR Part 24 for instructions on implementing URA requirements. Subgrantees must coordinate closely with the Grantee and FEMA when implementing URA requirements. The State DOT is often a good resource in determining how to calculate the appropriate URA payment because the Federal Highway Administration (FHWA) oversees the applicability of the URA.

### **A.12.1 Rental Increase Payment**

A tenant displaced from a dwelling as a result of a federally funded property acquisition and structure demolition or relocation project is entitled to a rental increase payment if:

- ◆ The tenant rents or purchases and occupies a decent, safe, and sanitary replacement dwelling within 1 year after the date he or she moves out of the original dwelling; and
- ◆ The tenant occupied the displacement dwelling for the 90 days preceding the initiation of negotiations for acquisition of the property. The initiation of negotiations is defined as the first formal indication that the subgrantee wants to purchase a particular property. Any tenant who occupied the dwelling before a disaster event is usually eligible. The exception is if the project negotiations are unrelated to the disaster event or begin so long after the event that the event is no longer a relevant factor. If the dwelling is re-inhabited after the event, former tenants are generally not eligible. A signed lease is preferable for proving tenancy, but other documentation such as utility bills may be used to prove tenancy if a signed lease is not available because of the disaster event.

Compensation for a rent increase is 42 times the amount that is obtained by subtracting the “base monthly rent” for the displacement dwelling from the monthly rent and average monthly cost of utilities for a comparable replacement dwelling, or the decent, safe, and sanitary replacement dwelling now occupied by the displaced person.

The “base monthly rent” for the displacement dwelling is the lesser of the average monthly cost for utilities plus the rent at the displacement dwelling as determined by FEMA, or 30 percent of the tenant's average gross household income.

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Subgrantees may exceed the limits identified in the URA regulations in extraordinary circumstances if necessary to ensure that a displaced tenant will be able to obtain and retain a comparable unit that is decent, safe, and sanitary (as defined at 49 CFR Section 24.2(a)(8)) outside a high-hazard area. A rental assistance payment may, at the subgrantee's discretion, be disbursed in a lump sum or in installments. If any Housing and Urban Development (HUD) programs are providing partial funding for the project, the subgrantee should verify the program requirements to ensure proper coordination with mitigation grant program requirements.

The rental increase payment may not exceed a total of \$5,250.

### **A.12.2 Rental Assistance for Homepad Tenants**

Mobile home owners who lease a homepad and who must relocate to a new homepad as the result of acquisition of their pre-disaster homepad are also entitled to URA relocation benefits and replacement housing payments. Payments to mobile home owners may not duplicate insurance payments or payments made by other Federal, State, local, or voluntary agencies. Complex situations involving FEMA mobile homes that have been donated to a State or local government and then sold to the mobile home owner should be directed to the appropriate FEMA Regional Office for eligibility determination and calculation of benefits.

Displaced mobile home owners who rent their homepads are entitled to assistance as described below. However, only in rare cases may the combination of the two types of URA assistance exceed \$22,500 (the URA assistance may increase to \$31,000 on October 1, 2014).

The displaced mobile home owner and homepad renter is entitled to compensation for rental and utility increases resulting from renting a comparable homepad and moving expenses as described in [Addendum Part A.12](#). Compensation for homepad rent increase is 42 times the amount that is obtained by subtracting the "base monthly rent" for the displacement homepad from the monthly rent and the average monthly cost of utilities for a comparable replacement homepad. The rental increase payment may not exceed a total of \$5,250.

Displaced mobile homeowners are also entitled to one of the following:

- ◆ **Replacement Housing Assistance:** For URA purposes, the displaced mobile home owner is considered to be involuntarily displaced from his or her residence due to the homepad owner (landlord) selling the property. Therefore, if the mobile home is purchased, the displaced mobile home owner is also entitled to replacement housing assistance to compensate for his or her need to find replacement housing. Compensation for mobile home replacement is equivalent to the amount that is obtained by subtracting the value of the displacement mobile home from the cost of a new replacement mobile home.

There is no difference in property acquisition and structure demolition or relocation projects when the mobile homes are intact and are being relocated to new homepads.

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The replacement housing payment may not exceed a total of \$22,500 (may increase to \$31,000 on October 1, 2014). If the owner is also being compensated for a homepad rental increase, the combination of rental and relocation assistance may not exceed a total of \$22,500 (may increase to \$31,000 on October 1, 2014); or

- ◆ **Costs to Move a Manufactured Home:** If the owner of a manufactured home wishes to move the existing home to a new site rather than sell it, the moving costs are eligible. The reasonable cost of disassembling, moving, and reassembling any attached appurtenances such as porches, decks, skirting and awnings, anchoring the unit, and utility hook-up charges are included.

### **A.12.3 Tenant Businesses**

Tenant businesses that are involuntarily relocated as a result of a FEMA-funded property acquisition and structure demolition or relocation project are also entitled to URA benefits. Assistance provided to a tenant business cannot duplicate payments from insurance or any other source. Thus, SBA loans and other types of financial assistance received after the disaster must be subtracted from benefits received under the URA. The Grantee and subgrantee should seek assistance from the appropriate FEMA Regional Office in determining benefits for tenant businesses. The State DOT can be a good resource for determining benefits for tenants because the FHWA oversees the applicability of the URA.

## **A.13 Property Acquisition Closeout**

At completion of the Grant/subgrant activity, FEMA and the Grantee shall verify that all required subgrant activities have been accomplished in accordance with all programmatic guidance and proper grants management practices and 44 CFR Section 80.21, that all properties identified in the subapplication have been acquired, and that the Model Deed Restriction language was recorded with each corresponding deed.

The subgrantee shall provide to FEMA through the Grantee the following property information:

- ◆ A photograph of the property site after project implementation;
- ◆ A copy of the recorded deed and attached deed restrictions for each property;
- ◆ Latitude and longitude coordinates of the property;
- ◆ A signed Statement of Voluntary Participation from the owner of each property identified in the subgrant SOW (see [Addendum Part A.10](#)); and
- ◆ For each property identified in the FEMA Repetitive Loss database, a completed FEMA Form AW-501 documenting the completion of mitigation on the repetitive loss property. The form is available on the FEMA Web site at <https://www.fema.gov/national-flood-insurance-program-1/mitigated-properties-updates>.

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For more information about project closeout, see Part VII D of the HMA Unified Guidance.

## **A.14 Future Federal Benefits**

After settlement of the property acquisition transaction, no disaster assistance for any purpose from any Federal entity may be sought or provided with respect to the property, and FEMA will not distribute flood insurance benefits for that property for claims related to damage occurring after the date of settlement in accordance with the requirements in 44 CFR Part 80.

In addition, crops for which insurance is not available will not be eligible for any disaster assistance and are grown at the farmer's risk. Payment through the Non-Insured Crop Disaster Assistance Program (7 U.S.C. 7333) for damage to crops for which insurance is not available is considered "disaster assistance" and as such is not available to owners of open space-restricted land. However, benefits obtained through crop insurance programs offered under the Federal Crop Insurance Act, as amended (7 U.S.C. 1501 et seq.), are not considered "disaster assistance" and are available to owners of open space-restricted land.

## **A.15 Open Space Land Use Requirements**

Subgrantees must apply deed-restriction language to all acquired properties to ensure that the property is maintained in perpetuity as open space consistent with natural floodplain functions, as agreed to by accepting FEMA mitigation grant funding. Deed-restriction language is applied to acquired properties by recording the open space and deed restrictions. Modifications to the language in the FEMA Model Deed Restriction can be made only with prior approval from the FEMA Office of Chief Counsel through the appropriate FEMA Regional Office. The FEMA Model Deed Restriction is available on the FEMA Web site at <https://www.fema.gov/library/viewRecord.do?id=6327>.

Allowable land uses for open space generally include parks for outdoor recreational activities, wetlands management, nature reserves, cultivation, grazing, camping (except where adequate warning time is not available to allow for evacuation), unpaved surfaces, and other uses that FEMA determines are compatible with the grant and deed restrictions. See [Addendum Part A.15.1](#) and [A.15.2](#) for a more detailed list of allowed uses. FEMA makes a determination of the open space compatibility of access to a subsurface resource on a case-by-case basis.

Allowable land uses do not generally include walled buildings; flood control structures such as levees, dikes, or floodwalls; paved surfaces; bridges; cemeteries; actions that pose health, safety, or environmental risk in the floodplain; above- or below-ground pumping stations or storage tanks; placement of fill materials; or other uses that obstruct the natural and beneficial use of the floodplain. See below for additional details on land use. See [Addendum Part A.15.3](#) for a more detailed list of land uses that are not generally allowed.

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In rare circumstances when the administrator has determined that competing Federal interests are unavoidable and has analyzed floodplain impacts for compliance with 44 CFR Section 60.3 or higher standards, the Administrator may find that only USACE projects recognized by FEMA in 2000 and improvements to pre-existing Federal-aid transportation systems are allowable uses. A pre-existing Federal aid transportation system includes roads and bridges that are eligible for Federal aid under 23 U.S.C., including National Highway System component projects, Surface Transportation Program projects, and Highway Safety Improvement Program projects. These projects may be subject to additional environmental review.

Reuse of existing paved surfaces for recreational uses on the acquired property consistent with allowable uses is generally acceptable, but paved surfaces beyond those directly required for such uses should be removed. Communities shall use unpaved surfaces allowing for natural floodplain functions, where feasible, for allowable uses such as trails. Examples of unpaved surfaces are grass, hard-packed earth, and graded gravel.

Communities may creatively salvage pre-existing structures on the acquired property. In some cases, the complete demolition of a structure is not necessary, and it is possible to convert a closed-in structure with walls, such as a house, into an open picnic pavilion with a concrete slab floor and posts supporting the roof.

### **A.15.1 Allowable Uses of Open Space**

The list below is a guide to open space use that addresses typical situations, but the subgrantee and Grantee should review every situation for adherence to the relevant regulations, open space intent, and floodplain management principles. The local floodplain administrator should review all proposed uses of acquired floodplain land. The Grantee and subgrantee, in coordination with the appropriate FEMA Regional Office, shall determine whether a proposed use is allowable and consistent with the deed restrictions, grant agreement, this guidance, and floodplain management requirements.

The generally allowable land uses of acquired open space are:

- ◆ Vegetative site stabilization, natural dune restoration, agricultural cultivation, and grazing;
- ◆ Public picnic shelters, pavilions, and gazebos with associated foundations, provided the structures do not have walls;
- ◆ Public restrooms;
- ◆ Small-scale recreational courts, ball fields, golf courses, and bike and walking paths;
- ◆ Campgrounds if adequate warning will be provided to allow for evacuation;
- ◆ Installation of signs when designed not to trap debris;
- ◆ Unimproved, unpaved parking areas consistent with open space uses;

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- ◆ Unpaved access roads, driveways, and camping pads limited to those necessary to serve the acceptable uses on acquired property. Existing paved roads can be reused for these purposes;
  - ◆ Small boat ramps, docks, and piers to serve a public recreational use;
  - ◆ Drainage facilities intended to service onsite needs;
  - ◆ Construction activities, excavation, and other minor flood control structures necessary to create areas for water detention/retention including wetlands restoration or restoration of natural floodplain floodwater storage functions;
  - ◆ Sewer, water, and power to serve the allowable uses and sewer, water, and power line crossings where there is no floodwater obstruction created and there are no other readily available locations for these systems; and
  - ◆ Simple structures used exclusively for agricultural purposes in connection with the production, harvesting, storage, drying, or raising of certain agricultural commodities, including livestock, such as a pole-frame building (any such structure cannot be constructed so as to make it eligible for NFIP insurance), and steel grain bins and steel-frame corn cribs.

#### **A.15.2 Allowable Uses of Open Space in CBRS Units or OPAs**

Allowable land uses for acquired open space in CBRS units or OPAs are limited to the following:

- ◆ Vegetative site stabilization for the management, protection, and enhancement of fish, wildlife, plants, and their habitats;
- ◆ Bike and walking paths that are consistent with the conservation purposes of the acquisition;
- ◆ Installation of signs when designed not to trap debris;
- ◆ Unpaved access roads and driveways limited to those necessary to serve the conservation purposes of the acquisition. Existing paved roads can be reused for these purposes. All roads must be on natural grade;
- ◆ Small boat ramps, docks, and piers to serve a use that is related to the study, management, protection, and enhancement of fish, wildlife, plants, and their habitats; and
- ◆ Minor construction activities, excavation, and other flood control structures necessary for wetlands restoration or restoration of natural floodplain floodwater storage functions.

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### **A.15.3 Non-allowable Land Uses of Open Space**

The land uses of acquired open space that are not generally allowed are:

- ◆ Construction of flood damage reduction levees, dikes, berms, or floodwalls;
- ◆ Walled buildings or manufactured homes, except public restrooms. Reuse of pre-existing structures is not allowed unless all walls are removed;
- ◆ Fences and all other obstructions in the floodway. Fences outside the floodway must be designed to minimize trapping debris;
- ◆ Storage of inventory supporting a commercial operation or governmental facility, including wheeled vehicles or movable equipment;
- ◆ Cemeteries, landfills, storage of any hazardous or toxic materials, or other uses that are considered environmentally contaminating, dangerous, or a safety hazard;
- ◆ Pumping and switching stations;
- ◆ Above- or below-ground storage tanks;
- ◆ Paved roads, highways, bridges, and paved parking areas. Paved parking areas include asphalt, concrete, oil-treated soil, or other material that inhibits floodplain functions;
- ◆ Placement of fill except where necessary to avoid affecting onsite archeological resources; and
- ◆ Installation of septic systems or reuse of pre-existing septic systems except to service a permissible restroom.

### **A.15.4 Non-allowable Uses of Open Space in CBRS Units or OPAs**

For projects in CBRS Units or OPAs, the following land uses of acquired open space are generally not allowed:

- ◆ Any use FEMA determines is inconsistent with the allowable land uses identified above; and
- ◆ Any uses determined by the Grantee and/or FEMA as inconsistent with the regulations, this guidance, or deed restrictions.

Reuse of existing paved surfaces for recreational uses on the acquired property consistent with allowable uses is generally acceptable; however, paved surfaces beyond those directly required for such uses should be removed. Communities shall use unpaved surfaces allowing for natural floodplain functions, where feasible, for allowable uses such as trails. Examples of unpaved surfaces include grass, hard-packed earth, and graded gravel.

Communities may creatively salvage pre-existing structures on the acquired property. In some cases, the complete demolition of a structure may not be necessary; it may be possible to convert



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a closed-in structure with walls, such as a house, into an open picnic pavilion with a concrete slab floor and posts supporting the roof.

## **A.16 Subsequent Transfer of a Property Interest**

Post-grant award, the subgrantee may transfer a property interest only with the prior approval of the appropriate FEMA Regional Administrator and only to certain entities in accordance with 44 CFR Section 80.19(b) and this guidance.

After acquiring the property interest, the subgrantee, including successors in interest, may convey any interest in the property only if the appropriate FEMA Regional Administrator, through the Grantee, gives prior written approval of the transferee. The transferee must be another public entity or a qualified conservation organization. A qualified conservation organization is an organization whose purpose has been conservation for at least 2 years before the opening of the grant Application period that resulted in the transfer of the property interest to the subgrantee, pursuant to Section 170(h)(3) and (4) of the Internal Revenue Code of 1954, as amended, and the applicable implementing regulations. The transferee must document its status as a qualified conservation organization where applicable.

Any request to convey an interest in the property must include a signed statement that contains the following:

- ◆ The proposed transferee acknowledges and agrees to be bound by the terms of the original mitigation grant/subgrant conveyance according to 44 CFR Part 80 and this guidance;
- ◆ The statement references and incorporates the original deed restrictions providing notice of the conditions in this section; and
- ◆ The statement incorporates a provision for the property interest to revert to the subgrantee or Grantee in the event the transferee ceases to exist or loses its eligible status as defined under this section.

See 44 CFR Section 80.19 for more information.

The subgrantee may convey an easement or lease to a private individual or entity for purposes that are compatible with the uses described in 44 CFR Section 80.19 and this guidance with prior approval of the appropriate FEMA Regional Administrator and as long as the conveyance does not include authority to control and enforce the terms and conditions identified above. The FEMA Regional Administrator may choose to consult with the FEMA Office of Chief Counsel in reviewing documents proposed to convey an interest in the property. Any lease or easement must be for uses that are compatible with open space purposes and is clearly subject to the land use and other restrictions of the property by reference and/or incorporation of the recorded deed restriction language.

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## **A.17 Open Space Monitoring, Reporting, and Inspection**

The Grantee will work with subgrantees to ensure that the property is maintained in accordance with land use restrictions. The Grantee and subgrantees should jointly monitor and inspect acquired properties every 3 years to ensure that the inspected parcels continue to be used for allowable open space purposes.

Every 3 years, the subgrantee, the Grantee, and FEMA must coordinate to ensure that the subgrantee submits documentation to the appropriate FEMA Regional Administrator certifying that the subgrantee has inspected the subject property within the month preceding the report and that the property continues to be maintained consistent with the provisions of the grant/subgrant. If the property subsequently transfers to an allowable transferee, the subgrantee, the Grantee, and FEMA will coordinate with that entity to submit the information.

The Grantee, FEMA, and the subgrantee have the right to enter the parcel, with notice, in order to inspect the property to ensure compliance with land use restrictions. Subgrantees may identify the open space nature of the property on local tax maps to assist with monitoring.

### **A.17.1 Enforcement**

If the required monitoring (or other information) results in the determination that the subject property is not being maintained according to the terms of the grant, the subgrantee, Grantee, and FEMA are responsible for taking measures to bring the property back into compliance.

In the event a property is not maintained according to the identified terms, the Grantee shall notify the subgrantee (which includes successors in interest) that they have 60 days to correct the violation. If the subgrantee fails to demonstrate a good faith effort within the terms of the grant agreement within 60 days, the Grantee shall enforce the terms of the grant agreement by taking any measures it deems appropriate, including bringing an action of law or equity in a court of competent jurisdiction. If the Grantee fails to bring the property into compliance, FEMA may enforce the terms of the grant agreement by taking any measures it deems appropriate, including:

- ◆ Withholding FEMA mitigation awards or assistance from the Grantee, subgrantee, and current holder of the property interest (if different) pending corrective action;
- ◆ Requiring the transfer of title; and/or
- ◆ Bringing an action of law or equity in a court of competent jurisdiction against the Grantee, subgrantee, and/or their respective successors and assigns.

FEMA also reserves the right to transfer the property title and/or easement to a qualified third party for future maintenance. For additional information, see 44 CFR Section 80.19(e)(ii).

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## B. Wildfire Mitigation

Addendum Part B supplements the information in Parts I through VIII of the HMA Unified Guidance.

Addendum Part B is applicable to **HMGP** and the **PDM** Program and supersedes FEMA Mitigation Policy MRR-2-08-1, “*Wildfire Mitigation Policy for the Hazard Mitigation Grant Program (HMGP) and Pre-Disaster Mitigation (PDM) Program*” (September 8, 2008).

### B.1 Eligible Activities

**HMGP** and the **PDM** Program are available to mitigate the risk from wildfire to health and safety and of damage to clearly defined vulnerable buildings and structures by funding the following mitigation activities:

- ◆ Defensible space that involves the creation of perimeters around residential and non-residential buildings and structures through the removal or reduction of flammable vegetation;
- ◆ The application of non-combustible building envelope assemblies, the use of ignition-resistant materials, and the use of proper retrofit techniques in new and existing structures; and
- ◆ Vegetation management for hazardous fuels reduction, vegetation thinning, and reduction of flammable materials to protect life and property beyond defensible space perimeters but proximate to at-risk structures.

FEMA may fund above-code projects in communities with fire-related codes and may also fund activities that meet or exceed codes currently in effect for buildings and structures that were constructed or activities that were completed prior to the establishment of the local building codes.

As with any HMA-funded project, wildfire mitigation projects must be technically feasible, effective at reducing risk, and designed and implemented in conformance with all local, State and Federal requirements, which include local and State building codes and land use restrictions. FEMA urges the community or any entity implementing wildfire mitigation to use the materials and technologies that are in accordance with International Code Council (ICC), FEMA, U.S. Fire Administration (USFA), and the National Fire Protection Association (NFPA) Firewise recommendations, whenever applicable.

### B.2 Wildfire Mitigation Resources

The NFPA Firewise program provides resources for communities and property owners to use in the creation of defensible space and in making building modifications. The resources are

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available at [www.firewise.org](http://www.firewise.org) and [www.nfpa.org](http://www.nfpa.org). Additional resources for wildfire projects are as follows:

- ◆ *International Wildland-Urban Interface Code (ICC)*;
- ◆ *Standard for Reducing Structure Ignition Hazards from Wildland Fire (NFPA 1144)*;
- ◆ *Standard for Fire Protection Infrastructure for Land Development in Suburban and Rural Areas (NFPA 1141)*;
- ◆ *Standard for Fire-Retardant Treated Wood and Fire-Retardant Coatings for Building Materials (NFPA 703)*;
- ◆ *Code for Fire Protection of Historic Structures (NFPA 914)*;
- ◆ *Homebuilder's Guide to Construction in Wildfire Zones (FEMA P-737)*; and
- ◆ *Wildfire Hazard Mitigation Handbook for Public Facilities (FEMA P-754)*.

### **B.3 Application Information**

The following information must be included in a wildfire mitigation Application:

- ◆ A description of the wildfire mitigation activities and the method to accomplish the activities;
- ◆ Map(s) showing the project area (e.g., property address, polygon, quadrangle) and the relationship of the structures to the Wildland-Urban Interface or forested, range, or grassland area; and
- ◆ Property-level rating of wildfire risk for each home or community along with the scale used to measure the rating levels, if applicable.

### **B.4 Duplication of Programs**

The Applicant must ensure before submitting a grant Application that Duplication of Programs (DOP) between Federal agencies would not occur. FEMA will not provide assistance for activities for which it determines the primary or more specific authority lies with another Federal agency or program. The Application must include documentation that demonstrates that no DOP will occur, that other Federal programs have been investigated, and that the Applicant has coordinated with other appropriate Federal agencies.

For land that is adjacent to Federal lands, FEMA will coordinate with other Federal agencies to ensure that the proposed project does not fall within the scope of another Federal agency's grant authority and to ensure consistency with Federal policy and priorities.

Wildfire mitigation is addressed by the Federal government through a comprehensive legislative framework. FEMA recognizes that other Federal departments and agencies such as the U.S.

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Department of Agriculture, U.S. Forest Service (USFS), Natural Resources Conservation Service, USFWS, National Park Service, Bureau of Land Management (BLM), and the Bureau of Indian Affairs have primary wildland fire management responsibilities. These departments and agencies also have the primary responsibility for addressing ongoing forest management conditions, such as those caused by forest age, disease, and pest infestation spreading to and from the Federal lands onto adjacent non-Federal lands.

While these and other Federal agencies have the primary authority to protect the watersheds, forests, soils, and timber resources and address forest management conditions, they also have authority to address wildfire hazard reduction, including hazardous fuels reduction, with primary attention on areas that are on or near Federal lands. They may also assist State and local jurisdictions in efforts to protect the built environment in fire-prone areas of forests, ranges, and grasslands.

FEMA does not have authority to fund projects on Federal land owned by another Federal entity or projects with the purpose of addressing forest health conditions or ecological or agricultural issues related to land and forest management (e.g., insects, diseases, damage from extreme weather events affecting the forest-wide health, pest infestations). FEMA mitigation authority targets at-risk buildings and structures without regard to the benefits to Federal land and activities in areas outside the primary focus of other Federal agency wildfire risk reduction programs. FEMA hazard mitigation assistance for wildfires is focused on cost-effective, functional mitigation actions taken to reduce the risk to specific properties or buildings and structures from future wildfires. FEMA's goal of reducing the risk from wildfire hazards to human life and property, including loss of function to critical facilities, is intended to complement, and not duplicate, the programs of numerous other Federal agencies, such as the USFS or BLM, that fund wildfire risk reduction on non-Federal lands.

## **B.5 Eligible Wildfire Mitigation**

Eligible wildfire mitigation projects must clearly demonstrate mitigation of the risk from wildfire to residential and non-residential buildings and structures including public and commercial facilities. Projects must be located in a Wildland-Urban Interface, must be adjacent to or intermingled with the built environment, and must provide protection to life and the built environment from future wildfires.

Eligible wildfire mitigation activities include defensible space, structural protection through ignition-resistant construction, and hazardous fuels reduction, as described in the following subsections.

### **B.5.1 Defensible Space**

Creating defensible space involves creating a perimeter around a residential or non-residential building or structure by removing or reducing the volume of flammable vegetation including

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clearing tree branches vertically and horizontally. The volume of vegetation is minimized, flammable vegetation is replaced with less flammable species, and combustibles are cleared in accordance with all applicable codes and best practices. A description of the proposed defensible space activities must be provided for each property. FEMA recommends that ingress and egress to the building be maintained.

FEMA recognizes the importance of creating defensible space for residential and non-residential buildings and structures in accordance with local fire codes; standards and design criteria provided by ICC, FEMA, USFA, and NFPA; well-established and proven techniques; and Firewise practices.

The required radius of defensible space around a building is related to the degree of the hazard, and the radius that is needed for an effective defensible space may therefore vary from one jurisdiction or building to another. In addition, the topography, specifically slope steepness and direction, and the arrangement, amount, and flammability of the vegetation may require extending the perimeter. When the proposed perimeter extends beyond what is required, the effectiveness of the proposed defensible space must be demonstrated in the project Application.

Defensible space projects for residential structures, commercial buildings, public facilities, and infrastructure must be implemented in conformance with local code requirements for defensible space. FEMA recommends that projects use the design guidance in the *Homebuilder's Guide to Construction in Wildfire Zones* (FEMA P-737) or the *Wildfire Hazard Mitigation Handbook for Public Facilities* (FEMA P-754) if the latter presents a stricter standard.

## **B.5.2 Structural Protection through Ignition-Resistant Construction**

Structural protection through ignition-resistant construction involves the use of noncombustible materials, technologies, and assemblies on new and existing buildings and structures. FEMA will consider a subapplication for an ignition resistant-construction project only when:

- ◆ The property owner has previously created defensible space and agrees to maintain the defensible space in accordance with this guidance. The subapplicant must include documentation describing the defensible space for each property in the Application. FEMA will provide funding for ignition-resistant construction projects only after the subapplicant has demonstrated that the defensible space activity is complete and has provided documentation (e.g., photographs and description of the defensible space); or
- ◆ The subapplication includes both the defensible space and ignition-resistant construction projects as part of the same subapplication. The subapplicant must include a description of the defensible space for each property in the subapplication, and each property owner must agree to maintain the defensible space in accordance with this guidance.

Protection of homes, structures, and critical facilities through the use of ignition-resistant construction techniques or non-combustible building materials must be implemented in conformance with the local fire-related codes and standards. FEMA recommends that projects

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use FEMA P-737 or FEMA P-754 as appropriate. FEMA may fund above-code projects in communities if the project is cost-effective and in conformance with all applicable eligibility criteria. Eligible activities include:

- ◆ **Roof assemblies:** Installation of roof coverings; roof sheathing; roof flashing; roof skylights; roof, attic, and wall vents; and roof eaves and gutters that conform to any of the following ignition-resistant construction standards: (1) construction materials are fire-resistant in accordance with nationally recognized testing standards, (2) construction materials are noncombustible, and (3) construction materials constitute an assembly that has a minimum 1-hour -fire-resistant rating.
- ◆ **Wall components:** Installation of wall components such as the fascia, windows, window glazing, doors, window frames, and insulation that conform to any of the following ignition-resistant construction standards: (1) construction materials are fire-resistant in accordance with nationally recognized testing standards, (2) construction materials are noncombustible, and (3) construction materials constitute an assembly that has a minimum 1-hour-fire-resistant rating. Protection of fuel tanks (e.g., propane, gasoline).
- ◆ **External water hydration and thermal insulation systems:** Purchase and installation of external, structure-specific water hydration and thermal insulation systems (foam, fire-retardant, and water sprinkler systems) with a dedicated delivery system and dedicated self-contained foam or retardant in sufficient volume to protect the structure. For water sprinklers, a cistern is acceptable if a dry hydrant with a fire department connection or other water source (e.g., lake, river, swimming pool) is available. FEMA will consider the project when only assurance is provided in the operations and maintenance plan that a system (e.g., geographic information system) will be maintained to identify property addresses with wildfire sprinkler systems and will be made available to the appropriate fire department.

### **B.5.3 Hazardous Fuels Reduction**

Hazardous fuels reduction involves the removal or modification of vegetative fuels proximate to the at-risk buildings or structures that, if ignited, pose a significant threat to human life and property, especially critical facilities. Hazardous fuels reduction includes thinning vegetation, removing ladder fuels, reducing flammable vegetative materials, and replacing flammable vegetation with fire-resistant vegetation for the protection of life and property. Vegetation may include excess fuels or flammable vegetation.

Hazardous fuels reduction projects are implemented at the community level and extend beyond defensible space perimeters. However, FEMA will consider funding hazardous fuels reduction projects only if they are within 2 miles of homes and other structures that meet or exceed applicable fire-related codes and standards and if the risk reduction for the target community or buildings is demonstrated.

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Hazardous fuels reduction projects will be designed to moderate fire behavior and reduce the risk of damage to life and property in the target area for mitigation. The natural variation in vegetation, topography, and climate does not lend itself to a national design standard for hazardous fuels reduction activities. Hazardous fuels reduction projects will be designed and implemented in accordance with local and State codes and standards and best practices. The project design should include a consideration of the landscape and intended function of the project, and the location and orientation of the project site should be designed with consideration of the likely direction and severity of a wildfire.

Hazardous fuels reduction may be accomplished using community-owned, rental, or contract resources and equipment for mechanical treatments such as disking, mowing, and chopping. Chopping equipment may include chippers and saws. The equipment may not pose a risk of fire ignition (e.g., spark arrestor).

Eligible activities include community-level vegetation management, vegetation removal, vegetation clearing and/or thinning, slash removal, and vertical and horizontal clearance of tree branches to reduce the threat to human life and structures from future wildfires. Such activities must be no farther than 2 miles from structures and may include the following techniques:

- ◆ Chemical treatments, including herbicide applications with appropriate safeguards to ensure protection of human life, the environment, and watersheds;
- ◆ Grazing or biomass conversion;
- ◆ Mechanical treatments such as disking, mulching, grinding, mowing, chopping, and removal of such material; material left onsite must meet appropriate depth practices in accordance with applicable codes and best practices;
- ◆ Biomass removal including clearing straw, removing dead or dry vegetation, thinning, removal of brush and pine straw, or removing blown-down timber from wind throw, ice, or a combination; and
- ◆ Other industry-accepted techniques with FEMA's approval.

## **B.6 Ineligible Wildfire Mitigation**

The following project activities and their associated costs are not eligible for funding:

- ◆ Projects that do not protect homes, neighborhoods, structures, or infrastructure;
- ◆ Projects on federally owned land and land adjacent to Federal lands when the proposed project falls under the primary or specific authority of another Federal agency;
- ◆ Projects for hazardous fuels reduction in excess of 2 miles from structures;



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- ◆ Projects to address ecological or agricultural issues related to land and forest management (e.g., insects, diseases, infestations, damage from extreme weather events affecting the forest-wide health);
  - ◆ Irrigation of vegetation to avoid disease or drought-related infestation;
  - ◆ Projects to protect the environment or watersheds;
  - ◆ Projects for prescribed burning or clear-cutting activities;
  - ◆ Projects for maintenance activities, deferred or future, without an increase in the level of protection;
  - ◆ Projects for the purchase of fire-related equipment (e.g., vehicles, fire trucks) or communications equipment;
  - ◆ Projects for the creation and maintenance of fire breaks, access roads, and staging areas;
  - ◆ Purchase of equipment to accomplish eligible work (e.g., chainsaws, chippers);
  - ◆ Projects for vegetation irrigation systems installed on the ground and designed to moisten the surface;
  - ◆ Development or enhancement of fire-suppression capability through the purchase of equipment or resources (e.g., water supply or sources, dry hydrants, cisterns not related to water hydration systems, dip ponds); and
  - ◆ Activities intended solely to remedy a code violation without an increase in the level of protection.

Funding under these programs is not available for wildfire mitigation beyond the parameters described in this Guidance. FEMA will not consider funding for activities on Federal land. With regard to land adjacent to Federal lands, FEMA will ensure coordination with the Federal agency having jurisdiction to ensure that the proposed project does not fall within the scope of another Federal agency's grant authority and to ensure consistency with Federal policy and priorities.

## **B.7 Operations and Maintenance Plan**

The Application will include a statement acknowledging that a final operations and maintenance (O&M) plan must be submitted to FEMA before project closeout. The statement will include, but will not be limited to, the following information:

- ◆ Information demonstrating that the requested wildfire project will be maintained to achieve the proposed hazard mitigation;
- ◆ A description of the maintenance activities in the mitigation project (e.g., defensible space, hazardous fuels reduction, ignition-resistant construction);

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- ◆ The period of time the community is committing to maintain the area and/or project site, which must be consistent with the project useful life in the Benefit-Cost Analysis (BCA);
  - ◆ A discussion of the post-closeout activities that will be undertaken to maintain the area and/or project site for the duration of the project useful life; and
  - ◆ The schedule for implementation of the maintenance activities.

The final O&M plan must include all the above listed information at a minimum and must be submitted to FEMA for review before project closeout. The Grantee must affirm that the plan is consistent with this guidance, meets or exceeds local codes, and is in conformance with appropriate fire-related codes.

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## C. Hazard Mitigation Assistance for Safe Rooms

This section supplements the information provided in Parts I through IX of the HMA Unified Guidance. The project-specific guidance in this section does not provide all of the information necessary to apply for funding through an HMA program and must be read in conjunction with all other relevant sections of this guidance.

This section is applicable to **HMGP** and the **PDM** Program and supersedes the following:

- ◆ FEMA Mitigation Policy MRR-2-07-01, *Hazard Mitigation Assistance for Safe Rooms*;
- ◆ FEMA Interim Policy MRR-2-09-1, *Hazard Mitigation Assistance for Safe Rooms*; and
- ◆ FEMA Memorandum, *Waiver of Two Provisions of Mitigation Interim Policy MRR-2-09-1, Hazard Mitigation Assistance for Safe Rooms*.

### C.1 Overview

Safe room construction projects are designed to provide immediate life-safety protection for a limited at-risk population that cannot evacuate out of harm's way before an event. These mitigation activities are available for public and private structures for severe wind events including tornadoes and hurricanes. For the purposes of PDM Program and HMGP, "safe room" applies only to the following:

- ◆ Extreme wind (combined tornado and hurricane) residential and non-residential safe rooms;
- ◆ Extreme wind (combined tornado and hurricane) community safe rooms;
- ◆ Tornado community safe rooms; and
- ◆ Hurricane community safe rooms.

Safe room construction projects include retrofits of existing facilities and new safe room construction and apply to both single- and dual-use facilities.

This section provides information on HMA-funded safe room construction projects including eligible parameters, design standards, flood hazard siting limitations, protected populations, period of protection, eligible costs, O&M plans, cost-effectiveness, and compliance with environmental planning and historic preservation regulations.

When there is sufficient warning time in extreme wind events such as hurricanes, the general population can be expected to leave the area of anticipated immediate impact and seek shelter outside the at-risk area. However, people such as first responders and those who are physically unable to leave the area remain in harm's way. Therefore, for hurricane threats, FEMA considers funding only for extreme wind mitigation projects that are designed for populations that cannot remove themselves from harm's way during a land-falling hurricane.

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In extreme wind events such as tornadoes, there may be little or no warning to allow the general population to leave the area of immediate impact, and they must therefore seek immediate life-safety protection. Little or no warning limits the potential occupancy of tornado residential, non-residential, and community safe rooms to the people who are onsite or nearby.

PDM Program and HMGP funds may only be used for safe room projects designed to achieve “near-absolute protection” as described in the current editions of FEMA P-320, *Taking Shelter From the Storm: Building a Safe Room For Your Home or Small Business*, and FEMA P-361, *Design and Construction Guidance for Community Safe Rooms*. Any lower threshold of protection exposes safe room occupants to a greater degree of risk than is acceptable. In order to provide this acceptable level of hazard mitigation protection during extreme wind events, a structure has to meet design criteria intended for this specific purpose. Some of these projects also provide some ancillary level of structural and building envelope protection to reduce or eliminate damage to the structure and its contents and to ensure continuation of facility function.

PDM Program and HMGP funds are not available for general population shelters, including evacuation and recovery shelters. Safe rooms and general population shelters are different in two ways. First, shelters are generally not intended to withstand extreme wind events and are therefore not required to satisfy the higher design criteria of near-absolute protection consistent with hazard mitigation residential, non-residential, and community safe rooms as established in FEMA P-320 and P-361. Second, shelters are intended to provide longer term services and housing for people who have left the anticipated impact area of an extreme wind event or because their homes have been damaged or destroyed by extreme wind, wildfire, flooding, or other disaster event, but safe rooms are intended to provide protection for only approximately 2 hours in tornado events and 24 hours in hurricane events. These time periods also differentiate hazard mitigation event-only safe rooms from longer term evacuation and recovery shelters.

The planning and operation of PDM Program and HMGP safe rooms should not conflict with State and/or local evacuation plans. PDM Program and HMGP safe room projects should not be used as a substitute for, or as an option for individuals to ignore, local community and/or State evacuation plans or any other law or ordinance.

## **C.2 Eligibility Parameters**

FEMA will consider an extreme wind event mitigation activity consisting of the retrofit or construction of a residential, non-residential, or community safe room (single- or dual-use) to be an eligible project type for PDM Program and HMGP grant awards as follows:

- ◆ The safe room project provides immediate life-safety protection in the projected impact area of a hurricane and/or tornado;
- ◆ The safe room project is constructed with criteria recognized by FEMA to afford near-absolute protection and is verified by a licensed design professional. See [Addendum Part C.3.1](#);

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- ◆ The safe room project is not located in certain high-hazard areas where flood waters have the potential to endanger occupants of the safe room. See [Addendum Part C.3.2](#);
  - ◆ The safe room is designed and sized only to the extent necessary for the limited population that must remain in the impact strike area during an extreme wind event. The safe room is also designed only to the extent necessary for the limited time period that a hurricane and/or tornado event is occurring. Therefore, safe rooms must be sized according to the defined population that will use the facility during a storm event, and the design is to accommodate this population for a limited period. See [Addendum Part C.3.3](#);
  - ◆ Allowable safe room project costs are directly related to and necessary for the hazard mitigation purpose of providing immediate life-safety protection by means of the structure and the building envelope for the limited population required to remain in the impact area during an extreme wind event. See [Addendum Part C.3.4](#);
  - ◆ Community safe room projects have or will develop an operations and maintenance (O&M) plan. At a minimum, the process to include O&M plans includes the following:
    - Descriptive statement of the O&M plan at the time of the Application along with a Statement of Assurances that the O&M plan will be developed during project implementation; and
    - Final O&M Plan prior to project closeout.
- See [Addendum Part C.3.5](#);
- ◆ The safe room project demonstrates cost-effectiveness. See [Addendum Part C.3.6](#);
  - ◆ The safe room project complies with all relevant environmental planning and historic preservation regulations. See [Addendum Part C.3.8](#); and
  - ◆ The safe room project adheres to other program conditions as described in this guidance. See [Addendum Part C.3.9](#).

## **C.3 Implementation Guidance**

The implementation guidance in this section is intended to ensure that Applicants and subapplicants pursuing PDM Program or HMGP grant funds for safe room projects adequately understand and address all of the requirements that are unique to this type of mitigation.

### **C.3.1 Recognized Design Standards**

To qualify for PDM Program or HMGP funding, a safe room must provide near-absolute protection, and it does so when it complies with FEMA-recognized design and construction criteria, codes, or standards. A safe room that is designed to lower design criteria provides a lower level of protection, resulting in a greater degree of risk than is acceptable to FEMA, and is

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therefore not eligible for PDM Program or HMGP funding. FEMA recognizes acceptable life-safety protection for safe room occupants if the project Application documentation shows that the safe room project meets or exceeds the criteria set forth in the publications or standards listed below:

- ◆ FEMA P-320, *Taking Shelter From the Storm: Building a Safe Room For Your Home or Small Business*; or
- ◆ FEMA P-361, *Design and Construction Guidance for Community Safe Rooms*.

In addition, ICC 500, *Standard for the Design and Construction of Storm Shelters*, a consensus standard from ICC is acceptable for use in designing PDM and HMGP safe rooms only when incorporating the recommendations in FEMA P-320 and P-361. FEMA has identified design criteria in FEMA P-320 and P-361 to be more conservative than the criteria in ICC 500 because of emergency management and near-absolute protection considerations.

### **C.3.2 Flood Hazard Siting Limitations**

To be considered for funding, PDM and HMGP safe room projects must include maps or other documentation that identify the project location relative to the floodplain. FEMA does not support the placement of safe rooms where floodwaters have the potential to endanger occupants. FEMA P-320 and P-361 include flood hazard siting limitations.

To be eligible for PDM and HMGP funding, FEMA will only consider community safe rooms that are located outside the following high-hazard areas:

- ◆ Coastal High Hazard Area (Zone VE) or other areas known to be subject to high-velocity wave action; or
- ◆ Coastal A Zone as described in ASCE 24-05, *Flood Resistant Design and Construction*, or the zone identified as Limit of Moderate Wave Action (LiMWA) on Flood Insurance Rate Maps (FIRMs); or
- ◆ Floodways.

FEMA will only consider residential safe rooms that are located outside the high-hazard areas listed above and that are also outside areas subject to coastal storm surge inundation associated with a Category 5 hurricane (where applicable, these areas should be mapped areas studied by the USACE, National Oceanic and Atmospheric Administration, or other qualified sources).

FEMA P-320 and P-361 provide additional flood hazard design criteria that should be adhered to when designing and constructing safe rooms.

### **C.3.3 Protected Populations**

FEMA will only consider PDM Program and HMGP Applications for safe room projects that identify the safe room population that must remain behind or will not have time to leave and

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must face an imminent threat of a tornado or hurricane or both. The Applicant will identify and quantify this population so the size of the safe room can be verified during the grant application review process. This is demonstrated by risk assessment information such as information that is developed as part of a mitigation plan or evacuation plan.

As discussed earlier, Applicants and subapplicants should be mindful that PDM Program and HMGP funds are not available for general population shelters, including evacuation and recovery shelters. The emergency management measures necessary to afford protection to thousands of occupants of large, public venues such as stadiums or amphitheaters are beyond the scope of PDM Program and HMGP community safe rooms, and shelters are therefore not eligible for PDM Program or HMGP funding. It is essential for Applicants and subapplicants to identify the hazard mitigation population to be protected; otherwise, the application review may be delayed or the application may be rejected.

This implementation guidance provides details to help Applicants and subapplicants identify, quantify, and document eligible at-risk populations needing hazard mitigation life-safety protection during extreme wind events. [Addendum Parts C.3.3.2](#) and [C.3.3.3](#) address hurricane and tornado hazards, respectively, and how at-risk populations are affected by them. This section further describes categories of populations that are at risk from tornadoes, hurricanes, or both.

The Applicant will demonstrate consideration at a minimum of the following components in determining the eligible safe room population:

- ◆ Population to be protected within the area at risk of impact by tornado and/or hurricane hazards;
- ◆ Warning capabilities, logistics, and operation components that support basic safe room functions;
- ◆ Travel times for the population to be protected to reach the safe room so that people are not exposed to additional risk when moving to the protected area;
- ◆ Hazard mitigation time of protection: approximately 2 hours for tornado and 24 hours for hurricane; and
- ◆ Relationship of the population to be protected by the safe room to State or local emergency evacuation requirements.

Community safe rooms are intended for a limited at-risk population, but the criteria for tornadoes and hurricanes differ in certain applications. When the at-risk population for tornadoes and hurricanes is identified, the respective mitigation activities should be considered separately and then combined (if both exist). Characteristics such as the size of the targeted area, the warning time before the impact, and the duration of the storm affect the population requiring protection differently; therefore, the at-risk population must be determined for each type of event.

The following sections identify issues to consider when applying for funding for a hurricane, tornado, or combined hazard community safe room. Applicants and subapplicants should select the most appropriate population for their safe room project:

- ◆ [Addendum Part C.3.3.2](#), Population at risk from hurricanes
- ◆ [Addendum Part C.3.3.3](#), Population at risk from tornadoes
- ◆ [Addendum Part C.3.3.4](#), Population at risk from both hurricane and tornadoes

The steps to identify the populations at risk for these hazard categories are described in these sections.

### C.3.3.1 Safe Room Sizing Criteria

The identified at-risk population directly affects the proposed safe room design size and is verified during the grant review process. PDM and HMGP funding is not provided for safe rooms that are larger than the size that is required to accommodate the identified at-risk population. PDM and HMGP safe room project Applications are subject to usable floor area per occupant space requirements and size limitations identified in the design criteria noted in [Addendum Part C.3.1. Table 3](#) identifies the minimum required usable floor area per safe room occupant consistent with FEMA-recognized design criteria.

**Table 3: HMA-Funded Safe Room Minimum Usable Floor Area per Safe Room Occupant**

| Type of Safe Room                                | Occupant           | Minimum Usable Floor Area per Occupant |
|--------------------------------------------------|--------------------|----------------------------------------|
| Tornado residential one- and two-family dwelling | Standing or seated | 3 s.f.                                 |
| Tornado non-residential safe room                | Standing or seated | 5 s.f.                                 |
| Tornado community safe room                      | Standing or seated | 5 s.f.                                 |
|                                                  | Wheelchair bound   | 10 s.f.                                |
|                                                  | Bedridden          | 30 s.f.                                |
| Hurricane community safe room                    | Standing or seated | 20 s.f.                                |
|                                                  | Wheelchair bound   | 20 s.f.                                |
|                                                  | Bedridden          | 40 s.f.                                |

s.f. = square feet

For example, a community may decide to build a dual-use facility that includes a tornado safe room function in a community center. The new facility may include an assembly or multi-purpose room that has 1,185 square feet. In order to use the space as a community tornado safe room, the gross square footage must be reduced to account for egress circulation, partitions,



interior columns, furnishings, finishes, equipment, and other features. The calculation may be exact or estimated using 85, 65, or 50 percent of the gross square footage. These percentages are identified as acceptable in FEMA P-361 and ICC 500. The net usable floor area is what is available to accommodate a limited number of safe room occupants. In this example, using 85 percent of the gross square footage as usable square footage, the 1,185 square feet is reduced to 1,007 usable square feet:

$$1,185 (0.85) = 1,007 \text{ square feet}$$

Per FEMA P-361 design criteria, a minimum of 5 square feet per safe room occupant must be provided in a tornado community safe room (see [Table 3](#)). In this example safe room, designers must also account for wheelchair-bound or bedridden occupants. A community safe room should be sized to accommodate a minimum of one wheelchair space (at 10 square feet) for every 200 occupants. Therefore, the 1,007-square-foot usable floor area would provide enough space for the protection of 200 occupants (see [Table 4](#)) and would be eligible for HMGP and PDM funding. It would not be reasonable for an application in this example to include a request for usable square footage of 2,000 square feet because that amount of space has not been demonstrated as being necessary for an identified at-risk population of 200 occupants.

**Table 4: Community Safe Room Size**

| Occupants                  | Required Square Feet per Person | Total Square Footage |
|----------------------------|---------------------------------|----------------------|
| 199 occupants              | 5 s.f.                          | 995 s.f.             |
| 1 occupant in a wheelchair | 10 s.f.                         | 10 s.f.              |
| Total 200 occupants        | —                               | 1,005 s.f.           |

s.f. = square feet

Applicants and subapplicants should refer to FEMA P-361 for further guidance on sizing criteria.

### C.3.3.2 Population at Risk from Hurricanes

This section provides information to help Applicants and subapplicants identify and define the population at risk from hurricanes and identify who may require a safe room facility.

#### Information Sources

Determining the hurricane safe room population depends on the assumptions used in the evacuation or emergency response plans and policies being administered by local, State, and Federal (if applicable) emergency management organizations. Therefore, Applicants and subapplicants are encouraged to coordinate with the relevant agency in the jurisdiction that developed the plans. In addition, local or Indian Tribal mitigation plans are required to include a risk assessment that defines the hazard characteristics within an area and a vulnerability assessment. Evacuation plans are likely to be more specific in terms of population, but the risk

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assessment in a community's existing mitigation plan may also be a source for this information. Documentation to support the determination of the at-risk population may be directly related to the planning tools mentioned above and should be included in the application.

### **Hurricane Population Categories**

Generally, two broad categories of potential hurricane safe room occupants may be identified as part of the limited at-risk population in need of life-safety protection: (1) first responders and (2) critical and essential services personnel and facility occupants. Common to both categories is the condition that the safe room population comprise individuals who must stay in the area that may be affected by the extreme wind hazard.

The at-risk population should be accommodated within the safe room for a minimum of 24 hours (the FEMA P-361 minimum design occupancy time for hurricane safe rooms). Applicants and subapplicants are encouraged to use verifiable information, such as emergency evacuation plans and local emergency management plans (or other applicable sources) to identify potential safe room occupants from the categories listed below.

#### *Category 1: First Responders*

The civilian personnel of emergency response services, also known as first responders, may be required to remain in harm's way. First responders include, but are not limited to, fire and police department personnel, rescue squads, emergency operations center (EOC) personnel, emergency medical and ambulance service providers, search and rescue teams, and similar personnel who a local community may depend upon for a successful response to an extreme wind event.

#### *Category 2: Critical and Essential Services Personnel and Facility Occupants*

In many cases, other critical services personnel may be required to remain in harm's way to facilitate the continued operation of certain critical facilities, including long-term care and custodial care facilities, water supply and wastewater facilities, power supply and distribution plants, fuel and other hazardous material storage facilities, communications and data centers, and others that a local community may depend on for a successful response to an extreme wind event. This category may also include occupants of these facilities such as patients in hospitals, residents of long-term care facilities, and prison/jail inmates.

#### *Documentation*

Applicants and subapplicants must provide documentation to support the identified at-risk population for the safe room and must also submit adequate documentation in support of their risk assessment to allow grant program reviewers to determine whether the proposed safe room size is appropriate for the identified at-risk population. The documentation should be sufficiently detailed to be verified during the grant review process. Applicant and subapplicant coordination

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with the local, State, or Federal (if applicable) agency responsible for developing emergency evacuation plans is critical.

Each grant program identifies documentation requirements, but in general, documents that can be used to quantify the at-risk population such as evacuation plans, emergency response plans, and meeting notes are acceptable. For example, the population categories listed above may be part of the affected population identified in an emergency evacuation plan.

In all cases, it should be emphasized that planning and operation of PDM and HMGP safe rooms, including the identification of the population to be protected, should not conflict with State and/or local evacuation plans. PDM and HMGP safe room activities should not be used as a substitute for, or as an option for individuals to ignore, local community and/or State evacuation plans or any other law or ordinance.

#### *Travel Considerations*

The issues to consider in estimating travel time to the safe room facility include local emergency management and law enforcement requirements, mandatory evacuations, evacuation times from at-risk areas, and any other plans that affect the movement of at-risk populations. Further guidance is provided in FEMA P-361.

#### *Basic Warning Capabilities*

In addition to design and construction criteria, an adequate warning system must be in place to notify prospective community safe room occupants when they should evacuate to the safe room facility. Occupants of homes (residences) with a residential safe room are assumed to use that room and require no evacuation and only a minimal travel time. Applicants and subapplicants for community safe room projects must demonstrate that the at-risk population can be properly notified to allow sufficient travel time to the community safe room.

#### *Period of Protection*

As identified in FEMA P-361, the hazard mitigation time of protection for safe rooms is a minimum of 24 hours for hurricane events.

### **C.3.3.3 Population at Risk from Tornadoes**

This section provides information to help identify and define the population at risk from tornadoes.

Populations at risk from tornadoes are generally limited to the family or group of families who live in the dwelling or dwellings served by the safe room, workers who have access to a safe room at their place of business, and individuals who have access to an onsite community safe room. In addition, due to the short period between tornado identification and impact, these at-risk populations must be close to the safe room in order benefit from it.

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Tornado safe room populations are determined based on limited warning times (minutes, not days) and the maximum reasonable travel time for potential safe room occupants to reach the safety of the facility. At-risk populations that cannot reach the safe room within a reasonable time are not considered as potential occupants of the safe room.

Tornadoes strike without timely warning, often depriving the at-risk population sufficient time to seek safety. Only about 20 minutes (or less) of warning time may be provided before a tornado strikes. For a limited or no-warning storm event, at-risk individuals have various degrees of vulnerability.

The following two aspects of vulnerability should be considered when identifying and quantifying the population at risk from a tornado:

- ◆ The physical characteristics of the built environment (buildings or other structures) in which the population resides. Because buildings differ in their susceptibility to damage from a tornado, building occupants are exposed to varying risks of injury or death. Individuals living in non-engineered housing, older housing, and manufactured housing are more susceptible to catastrophic damage from a tornado; hence, they are extremely vulnerable; and
- ◆ The ability of the population to mobilize to the safe room during a tornado, irrespective of where they are located. While a 20-minute warning may be sufficient time for an able-bodied adult to find adequate shelter, this is not the case for the very young, the elderly, the sick or frail, and those with impaired mobility. These groups require the greatest level of assistance, time to mobilize, and attention during an emergency.

## **Documentation**

Applicants and subapplicants must provide documentation to support the identified at-risk population for the safe room and must also submit adequate documentation in support of their risk assessment to allow grant program reviewers to determine whether the proposed safe room size is appropriate for the at-risk population identified. The documentation should be sufficiently detailed to be verified during the grant review process. Applicant and subapplicant coordination with the local, State, or Federal (if applicable) agency responsible for developing emergency action plans is critical.

Each grant program identifies documentation requirements, but in general, emergency response plans, area maps, building construction drawings, and meeting notes that can be used to quantify the at-risk population are acceptable. In addition, local or Indian Tribal mitigation plans are required to describe the vulnerability of the community and structures and in particular the vulnerability of special high-risk populations and may therefore also be a source for this information. It is essential that Applicants and subapplicants provide this information; otherwise, the application review may be delayed or the application may be rejected.

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## **Travel Time Considerations**

The two vulnerability aspects listed above will facilitate identifying and targeting high concentrations of at-risk populations. The most effective tornado safe rooms minimize occupant travel time. Consequently, onsite community safe rooms, built either as integral parts of a building or as separate structures, offer the greatest level of protection to occupants. Community safe rooms in hospitals, schools, long-term care centers, and other facilities that house highly vulnerable populations are the most successful in minimizing the risks. These safe rooms may be designed to serve the community at large in addition to onsite residents. In such cases, the population of the safe room is limited by the proximity of potential occupants to the safe room, which is defined by the maximum allowed travel time and/or the maximum distance to the safe room.

The distance from the safe room for the at-risk population is based on a maximum walking travel time of 5 minutes or a maximum driving travel distance of approximately 0.5 mile. When considering a single- or dual-use community safe room, the 5-minute walk time or the equivalent 0.5-mile driving distance must be calculated by the actual travel route or pathway that a pedestrian or a driver will be required to follow. The pathway should not be restricted, bottlenecked, or obstructed by barriers such as multi-lane highways, railroad tracks, bridges, or similar facilities or by topographic features. Traffic congestion (including parking constraints) during the movement of the potential at-risk population to the safe room once a storm watch/warning notification is issued should be considered when defining the at-risk population for the community safe room. In either case, whether walking or driving, prospective safe room occupants must be able to safely reach the facility within 5 minutes of receiving a tornado warning or notice to seek shelter.

## **Basic Warning Capabilities and Logistics**

Both residential and community safe rooms are built and operated for the purpose of saving lives during extreme wind storms. In addition to design and construction criteria, an adequate warning system should be in place to notify the safe room occupants when they should evacuate to the safe room facility. This is especially critical for tornadoes, for which the warning time is very short. The safe room facility must open its doors to admit occupants and provide them with the services they need in a timely manner. Further guidance is provided in FEMA P-361, Chapter 9.

## **Period of Protection**

As identified in FEMA P-361, the hazard mitigation time of protection for safe rooms is a minimum of 2 hours for tornado events.

### **C.3.3.4 Population at Risk from Both Hurricanes and Tornadoes**

Many areas in the United States are subject to both hurricane and tornado hazards. When a safe room to protect from both hazards is being considered, the at-risk population must be determined

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independently for each hazard. When designing a combined safe room for tornado and hurricane hazards, the most restrictive design criteria for these hazards, provided in FEMA P-361, must be used. There is not necessarily one set of complete criteria for combined hazards. For that reason, design engineers should pay close attention to the criteria in FEMA P-361 when designing a combined safe room for both tornado and hurricane hazards.

### C.3.4 Eligible Costs

Allowable costs for PDM and HMGP safe room projects are costs for project components (e.g., design, construction, project administration) that are related directly to and necessary for the hazard mitigation purpose of providing immediate life-safety protection by means of the structure and the building envelope to the limited population that must remain in the impact area during an extreme wind event. Allowable costs for safe rooms apply to retrofits of existing facilities, new construction, and single or dual-use facilities.

Under the current Safe Room Policy, for each structure type, eligible project costs are limited to:

- ◆ **Protection by design components**, including and limited to the safe room portion of the envelope (walls, ceilings, doors, windows, as specified in FEMA P-320 and P-361).
- ◆ **Ancillary “best practice” components** recommended by FEMA P-320 and P-361, including standby (backup) power, communications, and emergency electrical lighting limited to the safe room portion of the building.
- ◆ **Design and construction components** for safe room portion only, including engineering fees and excavation.
- ◆ **Required features for function** necessary for safe room function and habitation, including ventilation, permanent electrical lighting, steps for ingress/egress, and toilets and hand washing facilities.

General eligible cost categories are listed below. A more detailed list of eligible safe room cost categories is provided in [Table 5](#). FEMA will only consider as eligible costs those that are consistent with FEMA-approved performance criteria (FEMA P-320 and P-361), which generally include:

- ◆ Design activities;
- ◆ Site preparation and building foundation materials and construction;
- ◆ Structural systems capable of resisting the design wind loads (including roof decking and roof support structures);
- ◆ Protective envelope components such as:
  - Walls, ceiling/roof systems and doors; and
  - Other retrofit hardening activities that meet FEMA-approved performance criteria

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- ◆ Functional components such as:
    - Permanent electrical lighting, heating, ventilation, air conditioning, toilets, and hand-washing facilities consistent with FEMA-approved performance criteria; and
    - Signage, emergency communications equipment, and backup power generation for the safe area.
  - ◆ O&M plan development.
    - In the case of retrofits, pre-existing conditions of code noncompliance that local or State officials are obligated to remedy are not eligible for hazard mitigation funding consideration. However, eligible costs may include code-required, mitigation-related and above-code components, as long as all components contribute to the near-absolute protection criteria set forth in FEMA P-320 and P-361.

[Table 6](#) presents examples of five safe room projects and their eligible costs.

### **C.3.5 Ineligible Costs**

Costs associated with providing facilities for any function that is not essential for life-safety protection of occupants are not eligible. If a safe room facility can fulfill its basic function of life-safety protection for occupants during a storm without a building feature or component that provides conveniences or additional comfort, costs associated with that feature or component are not eligible. Examples are flooring, seating, and food preparation facilities. This is a significant issue in dual-use community safe rooms, which are designed to provide other functions.

Ineligible costs generally include but are not limited to:

- ◆ Project components not directly related to the hazard mitigation purpose as described in this guidance, such as general evacuation studies or plans;
- ◆ Project components not consistent with FEMA-approved performance criteria (FEMA P-320 and P-361) such as:
  - Inadequate designs;
  - Inadequate structural systems; and
  - Inadequate protective envelope.
- ◆ The cost of any functionality or outfitting not directly required to meet FEMA-approved performance criteria such as auditorium seating, sports equipment, furniture, interior or exterior decorative elements and fixtures, and floor treatments.
- ◆ Operation and maintenance of safe rooms.

A more detailed list of ineligible safe room cost categories is provided in [Table 5](#).

**Table 5: Eligible and Ineligible Components of Residential and Community Safe Rooms**

| Building Systems and Components                                                                                                                                                                    | Design Criteria                                                                                                                                                                  | Residential Safe Room: 1- and 2-Family Dwellings | Non-residential Safe Room Tornado Dual-Use | Non-residential Safe Room Tornado Single-Use | Non-residential Safe Room Hurricane Dual-Use | Non-residential Safe Room Hurricane Single-Use |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|--------------------------------------------|----------------------------------------------|----------------------------------------------|------------------------------------------------|
| <b>Systems and Components Defining the Safe Room Space</b>                                                                                                                                         |                                                                                                                                                                                  |                                                  |                                            |                                              |                                              |                                                |
| Foundations, structural systems, walls, and ceilings/roofs (new construction and retrofit) that directly support or protect the building cladding, providing near-absolute, life-safety protection | FEMA P-320 and P-361                                                                                                                                                             | Eligible                                         | Eligible                                   | Eligible                                     | Eligible                                     | Eligible                                       |
| Doors and windows                                                                                                                                                                                  | FEMA P-320 and P-361                                                                                                                                                             | Eligible                                         | Eligible                                   | Eligible                                     | Eligible                                     | Eligible                                       |
| Protection of exterior above-ground generators and/or electrical, ventilation, or communication equipment                                                                                          | FEMA P-320 and P-361                                                                                                                                                             | Eligible                                         | Eligible                                   | Eligible                                     | Eligible                                     | Eligible                                       |
| <b>Common “Best Practice” Components (Recommended by FEMA)</b>                                                                                                                                     |                                                                                                                                                                                  |                                                  |                                            |                                              |                                              |                                                |
| Signage                                                                                                                                                                                            | FEMA P-320 and P-361                                                                                                                                                             | Eligible                                         | Eligible                                   | Eligible                                     | Eligible                                     | Eligible                                       |
| Communications <sup>(1)</sup>                                                                                                                                                                      | Required by FEMA P-361 (Chapters 8 and 9 for emergency communications to and from the safe room)                                                                                 | Eligible                                         | Eligible                                   | Eligible                                     | Eligible                                     | Eligible                                       |
| Local Area Network drops and wiring <sup>(1)</sup>                                                                                                                                                 | Not a design requirement of FEMA P-320 or P-361                                                                                                                                  | Ineligible                                       | Ineligible                                 | Ineligible                                   | Ineligible                                   | Ineligible                                     |
| <b>Components Where Function Meets FEMA Protection Criteria</b>                                                                                                                                    |                                                                                                                                                                                  |                                                  |                                            |                                              |                                              |                                                |
| Alternate source of power (e.g., generator, battery)                                                                                                                                               | As specified in FEMA P-320 or P-361. Capacity should be limited to the load required for life-safety protection: a minimum of 2 hours for tornadoes and 24 hours for hurricanes. | Eligible                                         | Eligible                                   | Eligible                                     | Eligible                                     | Eligible                                       |



| Building Systems and Components                                   | Design Criteria                                                                                                                                                     | Residential Safe Room: 1- and 2-Family Dwellings | Non-residential Safe Room Tornado Dual-Use | Non-residential Safe Room Tornado Single-Use | Non-residential Safe Room Hurricane Dual-Use | Non-residential Safe Room Hurricane Single-Use |
|-------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|--------------------------------------------|----------------------------------------------|----------------------------------------------|------------------------------------------------|
| Equipment and supplies (e.g., fire extinguishers, first aid kits) | As specified in FEMA P-320 or P-361. Compliant with minimum local building code provisions when used as a safe room or A-3 occupancy. <sup>(3)</sup>                | Ineligible                                       | Eligible                                   | Eligible                                     | Eligible                                     | Eligible                                       |
| Fire-suppression sprinkler systems                                | As specified in FEMA P-320 or P-361. Compliant with minimum local building code provisions when used as a safe room or A-3 occupancy. <sup>(3)</sup>                | Ineligible                                       | Eligible                                   | Eligible                                     | Eligible                                     | Eligible                                       |
| Heating, ventilation, air conditioning                            | As specified in FEMA P-320 or P-361 and MRR-2-09-1. Compliant with minimum local building code provisions when used as a safe room or A-3 occupancy. <sup>(3)</sup> | Ineligible                                       | Eligible                                   | Eligible                                     | Eligible                                     | Eligible                                       |
| Permanent electrical lighting                                     | As specified in FEMA P-320 or P-361. Compliant with minimum local building code provisions when used as a safe room or A-3 occupancy. <sup>(3)</sup>                | Eligible                                         | Eligible                                   | Eligible                                     | Eligible                                     | Eligible                                       |
| Emergency electrical lighting                                     | As specified in FEMA P-320 or P-361. Compliant with minimum local building code provisions when used as a safe room or A-3 occupancy. <sup>(3)</sup>                | Eligible                                         | Eligible                                   | Eligible                                     | Eligible                                     | Eligible                                       |
| Permanent electrical outlets                                      | As specified in FEMA P-320 or P-361. Compliant with minimum local building code provisions when used as a safe room or A-3 occupancy. <sup>(3)</sup>                | Ineligible                                       | Ineligible                                 | Ineligible                                   | Ineligible                                   | Ineligible                                     |
| Emergency electrical outlets                                      | As specified in FEMA P-320 or P-361. Compliant with minimum local building code provisions when used as a safe room or A-3 occupancy. <sup>(3)</sup>                | Eligible                                         | Eligible                                   | Eligible                                     | Eligible                                     | Eligible                                       |

| Building Systems and Components                                                                                                        | Design Criteria                                                                                                                                      | Residential Safe Room: 1- and 2-Family Dwellings | Non-residential Safe Room Tornado Dual-Use | Non-residential Safe Room Tornado Single-Use | Non-residential Safe Room Hurricane Dual-Use | Non-residential Safe Room Hurricane Single-Use |
|----------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|--------------------------------------------|----------------------------------------------|----------------------------------------------|------------------------------------------------|
| Upgrade of an electrical or ventilation system for the protected portions of the structure (required for safe room installation)       | As specified in FEMA P-320 or P-361 Compliant with minimum local building code provisions when used as a safe room or A-3 occupancy. <sup>(3)</sup>  | Eligible                                         | Eligible                                   | Eligible                                     | Eligible                                     | Eligible                                       |
| Upgrade of an electrical or ventilation system for the unprotected portions of the structure (not required for safe room installation) | As specified in FEMA P-320 or P-361. Compliant with minimum local building code provisions when used as a safe room or A-3 occupancy. <sup>(3)</sup> | Ineligible                                       | Ineligible                                 | Ineligible                                   | Ineligible                                   | Ineligible                                     |
| Steps/stairs, elevators/lifts for safe room ingress-egress                                                                             | As specified in FEMA P-320 or P-361. Compliant with minimum local building code provisions when used as a safe room or A-3 occupancy. <sup>(3)</sup> | Eligible                                         | Eligible                                   | Eligible                                     | Eligible                                     | Eligible                                       |
| Americans with Disabilities Act of 1990 (ADA) (42 U.S.C. 12101 et seq.) entrances for ingress/egress                                   | As specified in FEMA P-320 or P-361. Compliant with minimum local building code provisions when used as a safe room or A-3 occupancy. <sup>(3)</sup> | Eligible                                         | Eligible                                   | Eligible                                     | Eligible                                     | Eligible                                       |
| Toilets and hand-washing facilities in the safe room                                                                                   | As specified in FEMA P-361 and in compliance with minimum local building code provisions.                                                            | Ineligible                                       | Eligible                                   | Eligible                                     | Eligible                                     | Eligible                                       |
| Compliance with FEMA Safe Room Policy, FEMA P-320, and FEMA P-361 for Design Flood Criteria and Floodplain Management                  | As specified in P-320 or P-361, where compliant with minimum local building code provisions, and in accordance with MRR-2-09-1.                      | Eligible                                         | Eligible                                   | Eligible                                     | Eligible                                     | Eligible                                       |
| <b>Design and Construction Components</b>                                                                                              |                                                                                                                                                      |                                                  |                                            |                                              |                                              |                                                |
| Planning/engineering/architecture/design fees                                                                                          | Only planning/design costs required for the safe room, utility protection, and travel/time accessibility. Must comply with unit cost allowances.     | Eligible                                         | Eligible                                   | Eligible                                     | Eligible                                     | Eligible                                       |

| Building Systems and Components                                                                                                                                                                                                          | Design Criteria                                                                                                                                                                                                                           | Residential Safe Room: 1- and 2-Family Dwellings | Non-residential Safe Room Tornado Dual-Use | Non-residential Safe Room Tornado Single-Use | Non-residential Safe Room Hurricane Dual-Use | Non-residential Safe Room Hurricane Single-Use |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|--------------------------------------------|----------------------------------------------|----------------------------------------------|------------------------------------------------|
| Engineering peer review of safe room design criteria (limited to systems and components providing life-safety protection). This cost may be included in the design cost/engineering fee but may also be singled out as a line-item cost. | Only additional engineering review of plans/design required for the safe room, utility protection, and occupant protection. Must comply with unit cost allowances for design fees.                                                        | Eligible                                         | Eligible                                   | Eligible                                     | Eligible                                     | Eligible                                       |
| Excavation                                                                                                                                                                                                                               | As required for excavating the required foundation for the safe room such as interior foundation (e.g., interior column footing), exterior foundation, underground placement of safe room, and underground placement of electrical lines. | Eligible                                         | Eligible                                   | Eligible                                     | Eligible                                     | Eligible                                       |
| Below-ground electrical lines for safe rooms in another structure                                                                                                                                                                        | Compliant with minimum local building code.                                                                                                                                                                                               | Ineligible                                       | Ineligible                                 | Ineligible                                   | Ineligible                                   | Ineligible                                     |
| Below-ground electrical lines from the structure to exterior of the safe room                                                                                                                                                            | Compliant with minimum local building code.                                                                                                                                                                                               | Eligible                                         | Eligible                                   | Eligible                                     | Eligible                                     | Eligible                                       |
| Moisture protection                                                                                                                                                                                                                      | As specified in FEMA P-320 or P-361. Compliant with minimum local building code provisions when used as a safe room or A-3 occupancy. <sup>(3)</sup>                                                                                      | Eligible                                         | Eligible                                   | Eligible                                     | Eligible                                     | Eligible                                       |
| Surveys, tests, soil borings, and so on for protected portion                                                                                                                                                                            | As specified in FEMA P-320 or P-361. Compliant with minimum local building code provisions when used as a safe room or A-3 occupancy. <sup>(3)</sup>                                                                                      | Ineligible                                       | Eligible                                   | Eligible                                     | Eligible                                     | Eligible                                       |
| Site preparation and finish work (e.g., excavation, grading, site stabilization)                                                                                                                                                         | Compliant with minimum local building code or ordinance.                                                                                                                                                                                  | Ineligible                                       | Eligible                                   | Eligible                                     | Eligible                                     | Eligible                                       |

| Building Systems and Components                                                                                  | Design Criteria                                                                                                                                                                    | Residential Safe Room: 1- and 2-Family Dwellings | Non-residential Safe Room Tornado Dual-Use | Non-residential Safe Room Tornado Single-Use | Non-residential Safe Room Hurricane Dual-Use | Non-residential Safe Room Hurricane Single-Use |
|------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|--------------------------------------------|----------------------------------------------|----------------------------------------------|------------------------------------------------|
| Inspections                                                                                                      | As specified in FEMA P-320 or P-361. Compliant with minimum local building code.                                                                                                   | Eligible                                         | Eligible                                   | Eligible                                     | Eligible                                     | Eligible                                       |
| <b>Generally Ineligible Components (Non-Essential to Protection)</b>                                             |                                                                                                                                                                                    |                                                  |                                            |                                              |                                              |                                                |
| Safe room maintenance                                                                                            | Per HMA Unified Guidance, FEMA is not responsible for project maintenance.                                                                                                         | Ineligible                                       | Ineligible                                 | Ineligible                                   | Ineligible                                   | Ineligible                                     |
| Restroom fixtures that are not the minimum code required for toilet and hand-washing facilities in the safe room | Not a design requirement of FEMA P-320 or P-361.                                                                                                                                   | Ineligible                                       | Ineligible                                 | Ineligible                                   | Ineligible                                   | Ineligible                                     |
| Paint on walls and ceilings for the safe room                                                                    | Not a design requirement of FEMA P-320 or P-361.                                                                                                                                   | Ineligible                                       | Ineligible                                 | Ineligible                                   | Ineligible                                   | Ineligible                                     |
| Floor coverings – Subfloors as appropriate and adequate for use in a safe room                                   | Not a design requirement of FEMA P-320 or P-361.                                                                                                                                   | Ineligible                                       | Ineligible                                 | Ineligible                                   | Ineligible                                   | Ineligible                                     |
| Floor covering for the unprotected portion of the project                                                        | Not a design requirement of FEMA P-320 or P-361.                                                                                                                                   | Ineligible                                       | Ineligible                                 | Ineligible                                   | Ineligible                                   | Ineligible                                     |
| Finishes that enhance basic wall/ceiling paint or floor covering                                                 | Not a design requirement of FEMA P-320 or P-361.                                                                                                                                   | Ineligible                                       | Ineligible                                 | Ineligible                                   | Ineligible                                   | Ineligible                                     |
| Removal of structures from developed land                                                                        | Not a design requirement of FEMA P-320 or P-361.                                                                                                                                   | Ineligible                                       | Ineligible                                 | Ineligible                                   | Ineligible                                   | Ineligible                                     |
| Kitchen cabinets, countertops, and kitchen equipment                                                             | See “Storage areas for food, water, and equipment” below.                                                                                                                          | Ineligible                                       | Ineligible                                 | Ineligible                                   | Ineligible                                   | Ineligible                                     |
| Storage areas for food, water, and equipment                                                                     | FEMA P-361 includes the recommendation for food and water storage within the safe room. FEMA P-361 also identifies safe room equipment that should be stored within the safe room. | Ineligible                                       | Eligible                                   | Eligible                                     | Eligible                                     | Eligible                                       |

| Building Systems and Components                                                                                   | Design Criteria                                                                                                                                                                                                                                                        | Residential Safe Room: 1- and 2-Family Dwellings | Non-residential Safe Room Tornado Dual-Use                | Non-residential Safe Room Tornado Single-Use              | Non-residential Safe Room Hurricane Dual-Use              | Non-residential Safe Room Hurricane Single-Use            |
|-------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|-----------------------------------------------------------|-----------------------------------------------------------|-----------------------------------------------------------|-----------------------------------------------------------|
| Security cameras and EOC-type equipment                                                                           | Not a design requirement of FEMA P-320 or P-361.                                                                                                                                                                                                                       | Ineligible                                       | Ineligible                                                | Ineligible                                                | Ineligible                                                | Ineligible                                                |
| Purchase of land                                                                                                  | Although not a design requirement of FEMA P-320 or P-361, costs associated with the acquisition of land are eligible for single- and dual-use community safe rooms.                                                                                                    | Ineligible                                       | Eligible                                                  | Eligible                                                  | Eligible                                                  | Eligible                                                  |
| Landscaping                                                                                                       | Not a design requirement of FEMA P-320 or P-361.                                                                                                                                                                                                                       | Ineligible                                       | Ineligible                                                | Ineligible                                                | Ineligible                                                | Ineligible                                                |
| Parking, and all non-building elements that support getting occupants from the parking area to the safe room area | Not a design requirement of FEMA P-320 or P-361. These costs include, but are not limited to, parking areas/surfaces, weather protection structures, walkways, stairs and railings, and signage otherwise not needed for pedestrian access unless required by the ADA. | Ineligible                                       | Ineligible except for access necessary for ADA compliance | Ineligible except for access necessary for ADA compliance | Ineligible except for access necessary for ADA compliance | Ineligible except for access necessary for ADA compliance |

- (1) Community-wide, mass notification systems are not eligible costs for safe room projects. Only warning systems necessary to notify prospective safe room occupants along with communications equipment directly supporting the safe room function are eligible costs.
- (2) Safe rooms must comply with minimum square footage requirement presented in FEMA P-361 when applying for Federal funding. However, when additional space per occupant is provided, this typically reduces the BCR for the safe room project. Currently, no exceptions or provisions allow for the additional benefit to be credited due to the use of facility (e.g., an EOC, a hospital, a special needs shelter). FEMA P-361 square footage criteria are net square footages (usable) for the safe room (protected) area.
- (3) When a safe room is a single-use space or any other space that has not otherwise been classified for use or occupancy, the occupancy should be defined as A-3 as defined in Section 303 of the 2006 (or most current edition) of the International Building Code. This occupancy designation will provide the criteria needed for defining other non-safe room design parameters from the building code for the safe room space, including, but not limited to, lighting, toilet and hand washing fixtures, ventilation, etc.

**Table 6: Example Eligible Costs by Safe Room Type**

| Type of Safe Room                             |                                                                                                                                              | Eligible Project Costs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Ineligible Project Costs                                                                                                                                                                                                                                                                                                     |
|-----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Residential Safe Room</b>                  | Tornado or hurricane safe room, new construction or retrofit, interior or exterior<br>Example: Interior basement safe room, new construction | <ul style="list-style-type: none"> <li>Protective safe room envelope (walls, ceiling, and door)</li> <li>Required FEMA P-320 or FEMA P-361 best-practice components</li> <li>Design and construction costs for safe room portion only</li> <li>Required safe room components, such as permanent electrical lighting and ventilation, as specified in FEMA P-320</li> </ul>                                                                                                                              | —                                                                                                                                                                                                                                                                                                                            |
| <b>Community Safe Room – Retrofit</b>         | Single-use tornado or hurricane safe room                                                                                                    | <ul style="list-style-type: none"> <li>Components or hardening activities that meet FEMA P-361 wind mitigation criteria</li> <li>Required FEMA P-361 best-practice components including signage, communications, and standby (backup) power sources</li> <li>Construction and design fees</li> <li>Required components, such as electrical lighting, ventilation, (may only be necessary for hurricane safe rooms), toilets and hand-washing facilities as specified in FEMA P-361</li> </ul>           | Non-mitigation performing components not identified in FEMA P-361                                                                                                                                                                                                                                                            |
|                                               | Dual-use tornado or hurricane safe room                                                                                                      | <ul style="list-style-type: none"> <li>Costs eligible for FEMA cost share (<i>limited to designated mitigation-performing areas of the structure</i>) include costs to harden walls, floors, ceilings/roofs, windows in safe area only</li> <li>Standby (backup) power sources for safe room area only</li> <li>Any local <i>code-required</i> items, including toilet and hand-washing facilities, electrical lighting, and ventilation limited to the safe room area</li> </ul>                       | Non-mitigation-performing components not identified in FEMA P-361, including items relating to non-shelter use, such as auditorium seating, sports equipment and fixtures, floor treatments, and bathroom fixtures (other than code-required toilets and hand washing fixtures specified by the FEMA safe room publications) |
| <b>Community Safe Room – New Construction</b> | Single-use tornado or hurricane safe room                                                                                                    | <ul style="list-style-type: none"> <li>Walls, floors, ceilings/roofs, doors, and windows included in the safe room</li> <li>Required FEMA P-361 best-practice components including signage, communications, standby (backup) power sources, and construction and design fees</li> <li>Local <i>code-required</i> items, including toilet and hand-washing facilities, electrical lighting, ventilation, ADA entrances (ADA entrances are federally mandated but also required by local code)</li> </ul> | Non-mitigation performing components not identified in FEMA P-361                                                                                                                                                                                                                                                            |

| Type of Safe Room                                     |                                         | Eligible Project Costs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Ineligible Project Costs                                                                                                                                                                                            |
|-------------------------------------------------------|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Community Safe Room – New Construction (cont.)</b> | Dual-use tornado or hurricane safe room | <p>Costs eligible for FEMA cost share (<i>limited to the safe room area of the structure</i>) include:</p> <ul style="list-style-type: none"> <li>• Walls, floors, ceilings/roofs, doors, and windows included in the safe room portion of the facility</li> <li>• Required FEMA P-361 best-practice components including signage, communications, and standby (backup) power sources</li> <li>• Construction and design fees</li> <li>• Local <i>code-required</i> items, including toilet and hand-washing facilities, electrical lighting, and ventilation</li> </ul> | Non-mitigation-performing components not identified in FEMA P-361, including items relating to non-shelter use, such as auditorium seating, sports equipment and fixtures, floor treatments, and bathroom fixtures. |

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### **C.3.5.1 Program Funding Limits**

Potential Applicants and subapplicants should understand that HMGP or PDM grant funding for safe room projects is subject to all program-specific rules and regulations including any pre-determined limitations on the Federal share of project costs. Detailed information on funding program limits is provided in Part V, E of the HMA Unified Guidance. Potential Applicants and subapplicants should also consult the appropriate State Hazard Mitigation Officer for details on funding limitations.

### **C.3.5.2 Cost Estimates**

Applications for safe room projects must include detailed, line-item costs in the project cost estimates. Well-documented project cost estimates contain quantities, unit costs, and a source for each unit cost. In contrast, lump-sum cost estimates do not provide quantities and unit costs required to evaluate the accuracy of the project cost estimate. Lump-sum cost estimates are not acceptable.

Under HMGP and PDM, project cost estimates include unit costs related to the proposed square footage of the protected area or areas of the safe room (see [Addendum Part C.3.3.1](#) for safe room sizing criteria). Unit costs may also be related to the protected population (occupants) of the safe room.

### **C.3.6 Operations and Maintenance Plans for Community Safe Rooms**

To be considered for funding, PDM and HMGP community safe room project Applications will include a written statement with their project Application acknowledging that the requested community safe room will be operated and maintained in a manner that will achieve the proposed hazard mitigation. FEMA will only consider Operations and Maintenance (O&M) plans that are consistent with criteria available in FEMA P-361, *Design and Construction Guidance for Community Safe Rooms*. O&M plans are not required for residential safe rooms.

Community safe rooms are built and operated to provide immediate life-safety protection during extreme wind hazards. To achieve this purpose, community safe rooms must be built to the design criteria specified in [Addendum Part C.3.1](#), and they must admit occupants and provide them with the services they need in a timely manner. Subapplicants must provide an operations and maintenance (O&M) Statement of Assurances for the safe room project application acknowledging that the requested community safe rooms will be operated and maintained in a manner that will achieve the proposed hazard mitigation.

Prior to closeout, the Grantee and FEMA will review the subapplicant's final signed O&M Plan for consistency with FEMA P-361 criteria. FEMA will only consider O&M Plans that are consistent with criteria in FEMA P-361.



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The steps in meeting the O&M Plan requirements are as follows:

- Step 1. The subapplicant develops a description of the O&M Plan that includes an assurance that the O&M Plan will be developed during project implementation and includes the description in the Application (see [Addendum Part C.3.6.1](#))
- Step 2. The subapplicant develops the O&M Plan (see [Addendum Part C.3.6.2](#))
- Step 3. The Grantee and FEMA review the Final O&M Plan, which is due before project closeout (see [Addendum Part C.3.6.3](#))

### **C.3.6.1 Descriptive Statement of an O&M Plan**

A statement acknowledging the requirement for an O&M plan for the community safe room should be included in the grant application. The statement should include:

- ◆ A description of the maintenance procedures;
- ◆ A brief statement about the operation of the safe room when it is in use;
- ◆ Basic information about how the safe room will be used, including how use is initiated, the warning system, and basic procedures for opening the doors to the public;
- ◆ Key components of the safe room maintenance procedures;
- ◆ The office that will be responsible for the O&M of the safe room; and
- ◆ Assurance that the O&M Plan will be developed and completed before project closeout.

### **C.3.6.2 Development of an O&M Plan**

The development of an O&M Plan should be coordinated with the appropriate entities using and operating the community safe room and should be signed by the appropriate officials in these organizations.

The O&M Plan may be based on preliminary engineering drawings and should include at a minimum the operations and maintenance components listed below. FEMA P-361, Chapter 9 and Appendices C and D, provide additional information on O&M components.

#### **Operations Components**

The operations components of an O&M Plan should include the following at a minimum:

- ◆ Community organization(s) responsible for operating and maintaining the community safe room, such as the local emergency management office and contact information for the relevant office(s);

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- ◆ Command and management roles and responsibilities for key individuals, such as the safe room manager and site coordinator, and their essential duties and/or the agency responsible for fulfilling these roles;
  - ◆ Major tasks that the safe room management team will perform during a tornado/hurricane watch issued by the National Weather Service;
  - ◆ Major tasks that the safe room management team will perform during a tornado/hurricane warning issued by the National Weather Service; and
  - ◆ General operation tasks in the community safe room from the time the emergency is announced to the time occupants may safely leave.

### **Maintenance Components**

The maintenance components of an O&M Plan should include assurance from the organization responsible for operating and maintaining the community safe room of the following during the useful life of the community safe room:

- ◆ Non-mitigation uses will not prohibit the use of the community safe room to perform its hazard mitigation purpose of life-safety protection to ensure that the approved safe room occupancy will be available at all times;
- ◆ Regular maintenance will be scheduled and performed by a designated party during the useful life of the community safe room;
- ◆ Basic exterior and interior signage will be posted as necessary and appropriate for adequate safe room operations;
- ◆ A redundant power source, such as batteries or generators, will be available to provide standby (emergency) power for lighting and ventilation for the community safe room in the event of primary power failure, as required; and
- ◆ The community safe room inventory will include essential equipment and supplies such as communications equipment, emergency equipment, first-aid supplies, water, and sanitary supplies.

### **C.3.6.3 Development of a Final O&M Plan**

The development of a Final O&M Plan should be coordinated with the appropriate entities that are using and operating the community safe room and should be signed by appropriate officials in these organizations.

A Final O&M Plan is required before project closeout. The Final O&M Plan must include:

- ◆ The operations and maintenance components listed in [Addendum Part C.3.6.2](#);
- ◆ The signature of the subgrantee for the approved application; and

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- ◆ The signature of authorized officials from the community organization(s) responsible for operating and maintaining the community safe room, if different from the subgrantee.

### **Grantee Review of Final O&M Plan**

The Safe Room Policy requires that the Grantee affirm that the Final O&M Plan is consistent with FEMA P-361 criteria by:

- ◆ Reviewing the Final O&M Plan to ensure it addresses the O&M components and has the required signatures listed above;
- ◆ Coordinating with the subgrantee to address any missing components; and
- ◆ Transmitting the Final O&M Plan to FEMA with a written statement affirming that it is consistent with FEMA P-361 criteria.

### **FEMA Review of Final O&M Plan**

The Grantee is informed in writing once FEMA has determined that the Final O&M Plan is consistent with FEMA P-361 criteria. FEMA's comments on the Final O&M Plan must be addressed before FEMA makes a final determination of consistency. Grantees not completing a Final O&M Plan at closeout will be subject to recoupment of grant funds as determined by FEMA.

### **C.3.7 Cost-Effectiveness of Safe Rooms**

PDM Program and HMGP safe room project applications requesting funding must demonstrate project cost-effectiveness through an acceptable BCA. This section discusses the total project costs required to demonstrate compliance with cost-effectiveness requirements. The total project cost for BCA purposes is the sum of all eligible costs necessary to achieve life-safety protection. Applicants and subapplicants should refer to [Addendum Part C.3.4](#) to identify the full range of components that make up these necessary costs. As identified in [Addendum Part C.3.4](#), eligible project costs generally include:

- ◆ Design activities;
- ◆ Site preparation and building foundation materials and construction;
- ◆ Structural systems capable of resisting the design wind loads (including roof decking and roof support structures);
- ◆ Protective envelope components such as:
  - Walls, ceiling/roof systems, and doors; and
  - Other retrofit hardening activities that meet FEMA-approved performance criteria;

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- ◆ Functional components such as:
    - Permanent electrical lighting, heating, ventilation, air conditioning, and toilets and hand-washing facilities consistent with FEMA-approved performance criteria;
    - Fire suppression sprinkler systems;
    - Signage, emergency communications equipment, and backup power generation for the safe area; and
  - ◆ O&M plan development.
  - ◆ Costs associated with the acquisition of land

In some cases, the total project cost of a safe room for a large community may exceed HMGP or PDM Program funding limits. In these cases, the actual total project cost must be used in the BCA. The grant program funding limit (which would be less than the actual project cost) may not be used as the total project cost entered into the BCA.

Similarly, some Applications may not request PDM or HMGP funds up to the available Federal cost share. In these cases, the application must still use the sum of all required (not just requested) costs necessary to achieve the hazard mitigation purpose of immediate life-safety protection.

### **C.3.8 Environmental Planning and Historic Preservation Compliance**

Safe room project designs must take into consideration potential impacts on a wide variety of environmental and historical resources, such as wetlands, floodplains, historic structures, and archaeological sites.

To assist with the Environmental Planning and Historic Preservation (EHP) review, FEMA has prepared a Programmatic Environmental Assessment (PEA) to help project application developers and reviewers evaluate the potential impacts to the human environment resulting from the construction of residential and non-residential (individual) safe rooms and community safe rooms that are proposed for HMGP or PDM funding. The PEA provides the public and decision-makers with helpful information necessary to understand and evaluate the potential environmental consequences of these hazard mitigation actions and helps streamline the National Environmental Policy Act (NEPA) review process.

### **C.3.9 Summary of Grant Application Requirements for Safe Rooms**

To be eligible for FEMA grant funding, safe room Applications and subapplications must include:

- ◆ Documentation that demonstrates compliance with relevant HMGP and PDM program guidance requirements;

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- ◆ Documentation that demonstrates compliance with local planning, zoning, building, and other applicable codes;
  - ◆ Identification of the at-risk population as follows:
    - Documentation on the composition, size, and rationale for including each group designated as an at-risk population;
    - For tornado residential and community safe rooms, documentation that demonstrates how the designated population would reach the safe room within the prescribed time limit after notification; and
    - For hurricane safe rooms, documentation that demonstrates that each group comprising the at-risk population belongs to one of the categories specified in this guidance.
  - ◆ Travel limitations:
    - For tornado community safe rooms, travel limits are 5 minutes for the occupants who will be walking or the maximum distance of 0.5 mile from the safe room for those driving. This means that the population relied upon as the potential occupants of the safe room must reside or work in buildings that are no more than 0.5 mile away from the safe room; and
    - For hurricane safe rooms, travel times are not limited;
  - ◆ A cost-effectiveness analysis using approved FEMA methodology;
  - ◆ Description of the approach the subapplicant will use in preparing the O&M plan; and
  - ◆ Closeout requirements:
    - Final signed O&M Plan;
    - Photos of the project site before and after construction;
    - Latitude/longitude at the project site; and
    - Vicinity map and map of the SFHA if applicable.

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## D. Mitigation Reconstruction Projects

This section supplements the information in Parts I through IX of the HMA Unified Guidance. For mitigation reconstruction resources, see Part X C.11.

### D.1 Additional Project Eligibility Requirements

Mitigation reconstruction projects result in the construction of code-compliant and hazard-resistant structures on elevated foundation systems. Mitigation reconstruction projects are not allowed in the regulatory floodway or coastal high hazard area (Zone V). Mitigation reconstruction projects must be designed using the best available data, including Advisory Base Flood Elevations (ABFEs), if available.

Mitigation reconstruction projects cannot be combined with other activity types in the same project subapplication to ensure that the subapplication scope, schedule, and budget adhere to programmatic requirements. Subapplicants must indicate in the mitigation activity section of the subapplication why they have chosen mitigation reconstruction instead of the other available activity types.

### D.2 Eligible Mitigation Reconstruction Costs

Mitigation reconstruction activities may involve the demolition of an existing structure followed by onsite replacement of a hazard-resistant (e.g., flood, wind, fire) and code-compliant structure.

All reasonable and necessary costs, including anticipated project costs, direct costs associated with project scoping, costs for reviewing design professional changes, and costs for the pre-construction and construction activities listed [Table 7](#) are eligible project costs. All costs shall be based on the construction of fundamental, code-compliant structures as related to the codes and standards included or referred to in this guidance. Eligible activities must adhere to all Federal, State, and local requirements. A detailed project cost estimate shall be prepared by, or under the supervision of, the design professional responsible for project design. Details pertaining to the project cost estimate, such as submittal format, cost ranges, preparation requirements, and source documentation, are included in Part V H.3.

Eligible costs are limited to \$150,000 Federal share per property. Some eligible activities such as administrative allowances and permitting fees need not be included in the \$150,000 maximum Federal share.

The activities that are eligible as part of a grant award in mitigation reconstruction are divided into consultation and project scoping, pre-construction activities, and construction activities. The activities in each category that are eligible to the extent reasonable and necessary to perform the project purpose are identified in [Table 7](#).

**Table 7: Eligible Mitigation Reconstruction Activities**

| Activity                                                                                                            | Subject to Federal Share Funding Limit of \$150,000? |
|---------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|
| <b>1. Project Scoping</b>                                                                                           |                                                      |
| Property verification (e.g., size of pre-existing structure)                                                        | No                                                   |
| Preliminary elevation determination                                                                                 | No                                                   |
| Environmental Site Assessment Phase 1                                                                               | No                                                   |
| Engineering Feasibility Study (e.g., can an existing structure be elevated? is mitigation reconstruction feasible?) | No                                                   |
| Benefit-Cost Analysis                                                                                               | No                                                   |
| Title search (e.g., ownership verification)                                                                         | No                                                   |
| <b>2. Pre-Construction Activities</b>                                                                               |                                                      |
| Site survey (i.e., boundaries, elevation)                                                                           | No                                                   |
| Testing of soils / geotechnical, testing for asbestos and lead-based paint                                          | No                                                   |
| Archeological Assessment Phase 1                                                                                    | No                                                   |
| Local, State, and Federal Permitting (e.g., environmental, historic preservation)                                   | No                                                   |
| Architectural / engineering design / plans / specifications                                                         | No                                                   |
| Plan review                                                                                                         | No                                                   |
| <b>3. Construction Activities</b>                                                                                   |                                                      |
| Permitted disposal of routine asbestos, lead-based paint, and household hazardous wastes incidental to demolition   | No                                                   |
| EHP mitigation                                                                                                      | No                                                   |
| Demolition / removal                                                                                                | Yes                                                  |
| Erosion control / grading / drainage                                                                                | Yes                                                  |
| Utility connections                                                                                                 | Yes                                                  |
| Landscaping for site stabilization (e.g., seeding)                                                                  | Yes                                                  |
| Walkways and driveways                                                                                              | Yes                                                  |
| Elevated foundation construction                                                                                    | Yes                                                  |
| Inspection of foundation system                                                                                     | No                                                   |
| Structural shell                                                                                                    |                                                      |
| Framing                                                                                                             | Yes                                                  |
| Exterior doors                                                                                                      | Yes                                                  |
| Windows (includes protection)                                                                                       | Yes                                                  |
| Access / egress                                                                                                     | Yes                                                  |
| Exterior cladding                                                                                                   | Yes                                                  |
| Roofing                                                                                                             | Yes                                                  |

| Activity                                                                         | Subject to Federal Share Funding Limit of \$150,000? |
|----------------------------------------------------------------------------------|------------------------------------------------------|
| Interior partitioning                                                            |                                                      |
| Drywall                                                                          | Yes                                                  |
| Trim                                                                             | Yes                                                  |
| Painting                                                                         | Yes                                                  |
| Interior doors                                                                   | Yes                                                  |
| Insulation                                                                       | Yes                                                  |
| Utility equipment                                                                |                                                      |
| Heating, ventilation, and air conditioning (HVAC)                                | Yes                                                  |
| Water / wastewater plumbing                                                      | Yes                                                  |
| Electrical panel and wiring                                                      | Yes                                                  |
| Hot water heater                                                                 | Yes                                                  |
| Fixtures                                                                         |                                                      |
| Sinks / toilets / showers                                                        | Yes                                                  |
| Lighting                                                                         | Yes                                                  |
| Cabinets and countertops                                                         | Yes                                                  |
| Flooring                                                                         | Yes                                                  |
| Building inspections                                                             | No                                                   |
| Certificate of Occupancy                                                         | No                                                   |
| Final elevation certificate                                                      | No                                                   |
| Owner displacement costs                                                         | No                                                   |
| Tenant displacement costs                                                        | No                                                   |
| Prepare and record flood insurance requirement (after construction is finalized) | No                                                   |

### D.2.1 Eligible Demolition/ Removal Activities

Mitigation reconstruction projects include either total or partial demolition of the site. All demolition debris shall be removed and taken to an approved landfill. The following must be considered during demolition:

- ◆ Asbestos and lead-based paint must be abated;
- ◆ Existing associated structures, garages, and above-grade concrete slabs must be removed;
- ◆ Abandoned septic tanks, if not removed, must be emptied and the floors and walls must be cracked or crumbled to prevent the tank from holding water and the tank must be filled with sand or other clean fill;



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- ◆ All foundation and basement walls not included in the mitigation reconstruction project footprint shall be removed to at least 1 foot below the finish grade of the site or as necessary to construct the new foundations;
  - ◆ All basements not included in the mitigation reconstruction project footprint shall be filled with compacted clean fill. Prior to filling, basement floors should be provided with a minimum 1-foot diameter hole in the floor to allow for drainage;
  - ◆ Only trees that restrict the mitigation reconstruction work on any structure may be removed;
  - ◆ Any abandoned utilities shall be terminated at least 2 feet below the finish grade of the site;
  - ◆ Any abandoned wells shall be capped and associated components may be removed; and
  - ◆ All disturbed areas must be graded and leveled. The top 12 inches of soil should be capable of supporting vegetation in areas not included in the reconstructed footprint.

### **D.2.2 Ineligible Mitigation Reconstruction Costs**

Some mitigation reconstruction activities and their associated costs are not eligible. Ineligible costs include, but are not limited to, the following:

- ◆ Landscaping for ornamentation (e.g., trees, shrubs);
- ◆ Decks and garages not included as part of the foundation system;
- ◆ All construction activities not specifically noted in this guidance and not specifically approved by FEMA in advance; and
- ◆ Site remediation of hazardous materials.

### **D.3 Feasibility and Effectiveness Requirement**

The height to which a foundation can be constructed is a key factor in determining feasibility. Assistance in evaluating flood mitigation techniques can be found in FEMA 551, *Selecting Appropriate Mitigation Measures for Floodprone Structures* (2007). All proposed mitigation measures in FEMA 551 must be consistent with other HMA program criteria such as eligible activities.

FEMA has developed guidance for the design of appropriate foundations based on the requirements of the International Codes and other applicable coastal construction standards. This guidance is included in FEMA 550, *Recommended Residential Construction for Coastal Areas: Building on Strong and Safe Foundations* (2009), which also includes sample foundation design calculations and drawings and detailed descriptions of the considerations for determining the feasibility of constructing to the required height. Although FEMA 550 was developed in

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response to reconstruction needs after Hurricane Katrina, the design solutions can be used in both coastal and non-coastal flood zones. FEMA 550 recommends that users choose the appropriate foundation by following the Foundation Selection Decision Tree and that the sample designs be used for a maximum height of 8 feet for a closed foundation and up to 15 feet for an open foundation. A design professional should be consulted to determine feasibility for residential structures with required foundation heights that are greater.

## **D.4 Mitigation Reconstruction Project Scoping**

The Statement of Work (SOW) for mitigation reconstruction projects is expected to include the following six general construction-related activities. The activities are discussed below.

- ◆ Pre-construction;
- ◆ Site preparation;
- ◆ Foundation construction;
- ◆ Structural shell construction;
- ◆ Interior finishes; and
- ◆ Construction completion.

In developing the mitigation reconstruction SOW, the subapplicant should consider:

- ◆ Health issues involved with working with asbestos, mold, and lead-based paint;
- ◆ Whether the structure can be safely elevated with a low likelihood of collapse or disintegration of the structure during the process and the need for a registered engineer or architect to ensure that structure elevation is possible; and
- ◆ The square footage of a resulting structure shall be no more than 10 percent greater than that of the original structure. Breezeways, decks, garages, and other appurtenances are not considered part of the original square footage unless they were situated on the original foundation system. Original square footage must be documented in the subapplication through copies of tax records or other verifiable means.

In order to facilitate project development and to ensure that all potential costs have been estimated, a conceptual design of proposed activities must be prepared during subapplication development. Although the construction of each structure will be designed by a licensed professional as part of the implementation of the project, basic design parameters for each structure must be established during project scoping. Some of the design parameters that must be established during project scoping include foundation type, required foundation height, flood hazard conditions, appropriate wind design, project cost, and site conditions. To aid potential subapplicants through the project scoping process, FEMA has developed detailed information regarding project cost estimates (see Part V H.3.1).

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#### D.4.1 Design Parameters

The primary design parameters that must be considered during project scoping include:

- ◆ **Foundation Type:** A key consideration for scoping mitigation reconstruction projects is the type of foundation that is required. The type of foundation for a specific mitigation reconstruction project is based on the location of the property within a defined flood zone (based on the BFE or ABFE) and the required height of the proposed structure above adjacent grade. During project scoping, the applicable flood zone or flood hazard area for each structure must be identified in addition to the associated foundation design requirements. This will help subapplicants determine the appropriate foundation type. The type of foundation that is selected affects the type and cost of construction and must be identified prior to subapplication submittal. Assistance in evaluating flood mitigation techniques can be found in FEMA 551. Detailed guidance on foundation designs and design parameters can be found in FEMA 550;
- ◆ **Foundation Height:** The required height to which a foundation must be constructed is a key factor in determining feasibility and cost. Assistance in evaluating flood mitigation techniques can be found in FEMA 551. FEMA has developed guidance for the design of appropriate foundations based on the requirements of the International Codes and other applicable coastal construction standards. This guidance is included in FEMA 550, which also includes sample foundation design calculations and drawings. In this document, FEMA has recommended sample designs and associated height limitations for various foundation types. For residential structures with required foundation heights greater than these limits, a design professional should be consulted to determine feasibility;
- ◆ **Wind Design Considerations:** All mitigation reconstruction activities must be completed in accordance with the 2006 International Codes or latest edition, which include the appropriate wind design as dictated by the required wind design speed for the project location. An additional consideration is the requirement for the installation of shutters or other protective measures in windborne debris regions, which are defined by areas with a design wind speed of 120 miles per hour or greater. During project scoping, projects located in these areas should be identified, and the associated cost of shutters or protective measures must be included in project costs;
- ◆ **Seismic Considerations:** All mitigation reconstruction activities must be completed in accordance with the 2006 International Codes or latest edition, which include the appropriate seismic design as dictated by the required seismic design for the project location. During project scoping, projects located within these areas should be identified and the associated cost of seismic design measures or protection must be included in project costs; and
- ◆ **Project Cost:** The requirements and preferences for mitigation reconstruction developed through the parameters described above will significantly affect the cost of proposed

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activities. Proposed costs must be developed for consideration of mitigation options and completion of the BCA. Detailed guidance on costing procedures is available from the appropriate FEMA Regional Office. In addition to these specific parameters, other considerations may need to be addressed during project scoping, such as:

- Zoning requirements and other local ordinances;
- Soil conditions;
- Site access requirements; and
- EHP considerations.

During project scoping, consideration should be given to all parameters that have the potential to significantly affect project implementation, including work schedule, project cost, and project effectiveness. Additional resources for mitigation reconstruction design parameters can be found in Part X C.11.

#### **D.4.2 Codes and Standards**

Mitigation reconstruction projects shall be designed and constructed to the minimum standard as established by the requirements of the 2006 International Codes or latest edition. Structures, including all parts and appurtenances, shall be designed and constructed to safely support all loads, including dead loads, live loads, roof loads, floor loads, wind loads, flood loads, snow loads, seismic loads, and combinations of loads expected to be imposed on the structure as defined in the code and related documents referenced in the codes. The construction of structures shall result in a system that provides a complete load path capable of transferring all loads from the point of origin through load-resisting elements to the soils supporting the foundations.

One- and two-family dwellings shall be designed and constructed, as a minimum, to meet the requirements of the 2006 *International Residential Code for One- and Two-Family Dwellings* published by ICC, and ASCE/SEI 24-05 or latest edition. FEMA encourages communities to use the newly issued 2009 or 2012 International Codes with referenced standards. The standards include Appendix G, Flood Resistant Construction, for all occupancies including residential, commercial, and other occupancies. The 2006 International Codes shall be the minimum applicable requirement until and unless a subsequent edition of that code is adopted by the governing jurisdiction.

Multi-family dwellings shall be designed and constructed, at a minimum, to meet the requirements of the International Building Code (IBC) published by the International Code Council. The 2006 IBC shall be the minimum applicable requirement until and unless a subsequent edition of that code is adopted by the governing jurisdiction. For purposes of this program, the absence of an adopted building code in a participating jurisdiction or a jurisdiction's use of a building code that does not meet the requirements of the International

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Codes shall not relieve the subapplicant from meeting the minimum design and construction requirements.

Installation of manufactured homes must follow regulations and guidance provided by HUD and the State Administering Agency. In addition, for installations in the SFHA, the flood provisions in NFPA 225, *Model Manufactured Home Installation Standard* (2009 Edition), shall be the minimum requirement. This document details the standards for preparation of sites and foundations on which manufactured homes are installed and the procedures for onsite installation of homes.

FEMA also provides additional guidance including recommended prescriptive pre-engineered foundation design in FEMA P-85, *Protecting Manufactured Homes from Floods and Other Hazards* (2009). FEMA P-85 has been updated to reflect the requirements of the most current codes and standards and to provide a best practices approach in reducing damage from natural hazards.

Project construction documents, including design drawings and specifications, shall be signed and sealed by a design professional licensed in the State in which the project is to be constructed and certified for compliance with the codes, standards, and minimum construction requirements specified in this guidance. Construction documents must be produced prior to the start of construction but are not required for submittal as part of an application. The construction documents shall include a statement that the design meets or exceeds the applicable 2006 International Code or more recent editions. Construction documents based on standard details developed by a manufacturer or material supplier, including framing members, framing connections and roofing, and siding or appurtenance fasteners shall be signed and sealed by a design professional licensed in the State in which the project is constructed.

#### **D.4.3 Pre-construction**

Pre-construction activities for each structure include project design, analysis, and permitting required to meet the requirements for funding.

Project design will be performed by, or under the direct supervision of, a design professional (i.e., a registered architect or engineer licensed in the State of the project). The design includes all calculations, analysis, and research necessary to determine the forces expected to act on the project structure. The design must account for all attachments and appurtenances. The selected structural framing members must be sufficient to provide a load path for all load-bearing members so as to transfer design loads to the foundations. The design must also account for the connections required to transfer loads from one member to another in accordance with the design concept.

Assistance in evaluating flood mitigation techniques can be found in FEMA 551. Design and construction techniques for building foundations can be found in FEMA 550, which describes in detail the considerations for determining the feasibility of constructing to the required height.

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Although FEMA 550 was developed in response to the reconstruction needs after Hurricane Katrina, the design solutions provided can be used in both coastal and non-coastal flood zones.

The design process also includes any testing required to establish site-specific design parameters, such as soil borings conducted as part of a geotechnical exploration, to determine foundation requirements.

Prior to construction, each subapplicant must obtain all applicable permits and pay all required permitting fees. Applicable permits are expected to include, but not be limited to, the following:

- ◆ Zoning or land use approvals;
- ◆ Environmental permits or required certifications;
- ◆ Historic preservation approvals; and
- ◆ Building permits.

#### **D.4.4 Site Preparation**

Site preparation activities include demolition of existing structures, removal and disposal of project debris, site environmental restoration, utility relocation, and site grading required as part of the project. The subgrantee shall conduct ASTM International's E2247-08 Phase I Environmental Site Assessment in accordance with the EPA's "all appropriate inquiries" rule (40 CFR Part 312). A clean-site certification from the appropriate Federal or State agency is required for properties that were subject to remedial, removal, response, or corrective actions for hazardous materials. Environmental site remediation costs are not eligible.

#### **D.4.5 Foundation Construction**

Foundation construction activities include installation, monitoring, and testing (if required) of foundations supporting the structure. Assistance in evaluating flood mitigation techniques can be found in FEMA 551. Design and construction techniques for building foundations can be found in FEMA 550. FEMA 550 describes in detail the considerations for determining the feasibility of constructing to the required height. Although FEMA 550 was developed in response to the reconstruction needs after Hurricane Katrina, the design solutions provided can be used in both coastal and non-coastal flood zones.

Installation of an open foundation system shall be monitored to ensure that foundation elements are installed to the depth, and achieve the load capacity, specified in the construction documents. Foundation construction monitoring can be conducted by a building official or his/her designee, the licensed design professional responsible for the project design, or an independent agency.

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#### **D.4.6 Structural Shell Construction**

Structural shell construction activities include all framing, load-carrying elements, attachments, and building envelope components above the foundation. Because rough-in installation of electrical, communications, plumbing, and mechanical systems may require drilling through or making notches in load-carrying elements, such rough-in work is also part of the structural shell construction activities. Structural shell construction activities must include an inspection of the completed shell prior to interior work covering the framing.

A critical element of structural shell construction is an engineering inspection conducted after framing, service rough-in, and building envelope construction are completed, but before the installation of interior walls or coverings. The engineering inspection shall verify that the size, location, and materials used in the construction are in conformance with the construction drawings and the applicable International Code.

The results of an engineering inspection by, or under the direct supervision of, the responsible design professional or an independent agency shall be presented in a written report signed and sealed by the licensed design professional in charge of the monitoring. The engineering inspections must be conducted by a building official or his/her designee. The licensed design professional responsible for the project design may inspect the structure for quality control reasons.

#### **D.4.7 Interior Finishes**

Interior finish activities include installation of interior walls, flooring, wiring/lighting fixtures, insulation, plumbing and mechanical fixtures, kitchen/bath counters, cabinets, sinks, toilets, tub/shower, and HVAC. Inspections of these interior finishes shall be conducted in accordance with the requirements of the applicable International Code Council building code.

#### **D.4.8 Construction Completion**

Construction completion activities consist of conducting final inspections, preparing a final elevation certificate (including digital photographs), issuing a Certificate of Occupancy for the structure, and assembling the documentation necessary to verify the project's conformance with program requirements.

### **D.5 Cost Estimate**

Each project requires a project cost estimate as part of the technical and cost-effectiveness evaluation process. The project cost estimate shall include all reasonably anticipated project costs, including direct costs associated with project scoping and construction and closeout activities. The project cost estimate should also be based on standard-grade construction.

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Eligible costs are limited to \$150,000 Federal share per property. Some eligible activities, such as administrative allowances and permitting fees, need not be included in the \$150,000 maximum Federal share.

Federal share funding will be estimated and obligated on a per-square-foot basis; reimbursement will be in a manner consistent with standard Grantee procedures. Based on the foundation type and required elevation height, a square-foot cost for each potential combination of structure characteristics will be developed. All structures of the same type within a subapplication will have costs allocated at the same square-foot rate. Subapplicants will identify the type and number of structures of each possible combination to be included in the proposed project.

For cost-estimating purposes, the breakdown of structure types is based on the following structure and foundation characteristics:

- ◆ Structure type
  - One-story
  - Two-story
- ◆ Structure area
  - 800 to 3,200 square feet (one-story)
  - 1,200 to 3,600 square feet (two-story)
- ◆ Foundation type
  - Open foundation
  - Closed foundation
- ◆ Foundation height
  - 0 to 5 feet
  - 5 to 10 feet
  - 10 to 15 feet
  - Over 15 feet

To facilitate the application development process, FEMA will provide square-foot cost estimates for combinations of the above structure characteristics with respect to the appropriate geographic region of the Grantee. The square-foot costs will be developed with the understanding that the costs of eligible construction activities can vary based on the quality and type of construction materials and finishing work. Mitigation reconstruction costs will be based on materials, service equipment, and standard-grade construction practices, with basic exterior ornamentation and interior refinements consistent with an average quality of construction as defined in a commercially available cost guide. Any costs incurred above and beyond the square-foot costs as allocated by FEMA will not be the responsibility of FEMA and will not be included in the



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determination of the Federal share or non-Federal cost share. Only actual costs incurred for eligible activities will be reimbursed by the Grantee.

Subapplicants may contact their Applicant to obtain the FEMA-provided square-foot cost estimates and may use these values without submitting additional documentation. However, an Applicant may provide a specific cost estimate for each combination of structure characteristics on a square-foot basis. FEMA will review cost estimates submitted to ensure they are reasonable and valid for the type of construction and the geographic area. Cost information will be maintained and updated by FEMA to keep the reference cost range information as current as possible. Additional dollars-per-square-foot information provided by subapplicants may be used by FEMA to manage the changing dynamic of construction cost variances.

For Applicants not using the square-foot costs provided by FEMA, documentation of the source of all cost estimates must be provided. Costs must be provided in dollars-per-square-foot format. The costs shall be based on the construction of fundamental, code-compliant structures with essential appurtenances as described. This will allow a comparative review of projects of varying types within a Region and will ensure that reasonable construction costs have been submitted.

## **D.6 Plan Review and Inspections**

Construction drawings and specifications shall be reviewed by the local jurisdiction prior to the start of construction. As defined by Section 103 of the IBC, the required review of the construction drawings and specifications shall be conducted by the local jurisdiction's building official. If the local jurisdiction has not established a building department, the reviews must be conducted by an independent design professional retained by the jurisdiction to conduct such reviews. The reviewing design professional shall be licensed in the State. Payment of the reviewing design professional is an allowable cost. Construction inspections must be conducted to verify that the project was constructed in full accordance with the approved design and the applicable International Codes. Construction inspections shall be conducted by the office of the building official or under the direct supervision of a design professional licensed in the State where the project is located, as applicable.

## **D.7 Builder Certification**

At a minimum, all work must be performed by contractors licensed or registered in the State where they are working and who maintain appropriate insurance coverage. In addition, contractors must adhere to more stringent local requirements, where applicable.

## **D.8 Certificate of Occupancy**

Projects funded under this program shall not be occupied, or the occupancy category changed, without prior issuance of a Certificate of Occupancy by the governing local jurisdiction. In

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jurisdictions that have adopted the International Codes, the Certificate of Occupancy shall be issued only after the building official inspects the structure and finds no violations of the provisions of applicable codes or other laws enforced by the building department, as well as the provisions and requirements of this guidance.

In the absence of an adopted building code in a participating jurisdiction, or the absence of a designated building official, the required inspections shall be conducted by, or under the direct supervision of, a design professional licensed in the State where the project is located. In communities that have not adopted the International Codes, the State Building Commission shall determine the education, training, and experience requirements for inspectors responsible for conducting inspections.

Inspections required prior to the issuance of a Certificate of Occupancy include, but are not limited to, the following:

- ◆ **Demolition Inspection:** Inspections shall be made after all utility connections have been disconnected and secured in such manner that no unsafe or unsanitary conditions exist on the site during or after demolition operations;
- ◆ **Foundation Inspection:** Inspections shall be made during foundation construction to verify that the foundations have been installed to the depth and capacity specified in the construction documents;
- ◆ **Floodplain Inspection:** Inspections shall be made for properties located in the SFHA, upon placement of the lowest floor, and prior to subsequent vertical construction. Documentation of the elevation of the lowest floor shall be provided by a land surveyor, engineer, or architect authorized by law to certify elevation information in the State where the project is located. Handheld Global Positioning System-derived ground elevations are not acceptable to meet this requirement. In addition, setbacks and distances from water courses, the regulatory floodway, Zone V, and the mapped limit of the 1.5-foot breaking wave zone should be checked prior to construction;
- ◆ **Framing Inspection:** Inspections shall be made after the roof is in place, including all framing and bracing, and after the plumbing, mechanical, and electrical rough-ins are complete. The framing inspections shall be made to verify that framing members are of the type, size, and grade indicated on the construction documents and the connections and fasteners have been installed in accordance with the applicable codes and construction documents;
- ◆ **Sheathing Inspection:** Inspections shall be conducted after all roof and wall sheathing and fasteners are complete and, at a minimum, shall include inspection of the roof sheathing, wall sheathing, sheathing fasteners, and roof/wall dry-in; and

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- ◆ **Final Inspection:** A final inspection should be completed to document compliance with all requirements of the International Codes, local floodplain ordinances, and any other State or local regulations.

A comprehensive list of all required inspections, permits, and certifications is included in the International Codes. Additional information on flood-related inspections can be found in the ICC's *Reducing Flood Losses through the International Codes*. A sample inspection checklist is available at <http://www.fema.gov/library/viewRecord.do?id=2094>.

## **D.9 Mitigation Reconstruction Closeout**

In addition to the typical HMA closeout processes, closeout of mitigation reconstruction projects generally includes the following:

- ◆ A Certificate of Occupancy and Final Elevation Certificate for each structure in the project to certify that the structure is code-compliant. A copy of a recorded deed for each property, including mitigation reconstruction project deed requirements, shall also be submitted to the Grantee;
- ◆ A certification from a building official or licensed design professional verifying that the structure was designed and constructed to the minimum standard of the 2006 International Codes must be provided. These documents must be submitted before closeout can be completed. If a subgrantee fails to provide these documents, FEMA has the authority to recoup grant funds provided for the project;
- ◆ Verification that final square footage is within 10 percent of original structure square footage at the time of closeout;
- ◆ Verification of insurance for each structure; and
- ◆ Update of the property site information in the eGrants and National Emergency Management Information System (NEMIS) database for each structure.

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## E. Structure Elevation

This section supplements the information provided in Parts I through IX of the HMA Unified Guidance. See Part X C.12 for resources on structure elevation resources.

Structure elevation activities generally involve physically raising an existing structure to an elevation at the base flood elevation (BFE) or higher if required by FEMA or local ordinance. Structure elevation may be achieved through a variety of methods, including elevating on continuous foundation walls; elevating on open foundations, such as piles, piers, posts, or columns; and elevating on fill. Foundations must be designed to properly address all loads and be appropriately connected to the floor structure above, and utilities must also be properly elevated. Buildings proposed for elevation must be structurally sound and capable of being elevated safely.

### E.1 Eligible Design Standards

At a minimum, FEMA requires Applicants and subapplicants to design all structure elevation projects in accordance with the NFIP standards in 44 CFR Part 60. For additional information about the NFIP and structure elevation projects, see Part X C.1.

FEMA encourages Applicants and subapplicants to design all structure elevation projects in accordance with ASCE/SEI 24-05.

Buildings proposed for structure elevation must be structurally sound and capable of being elevated safely. In addition, important design considerations for structure elevations consistent with 44 CFR Part 60 are as follows:

- ◆ The lowest floor of the structure must be elevated to the BFE or to the elevation specified in the local ordinance if higher. Upon completion of the elevation work, an Elevation Certificate (FEMA Form 81-31) verifying “as built” elevations will be completed to ensure that the structure complies with the local floodplain ordinance and NFIP floodplain management and HMA grant requirements.
- ◆ Elevation projects must be designed and adequately anchored to prevent flotation, collapse, and lateral movement of the structure due to hydrodynamic and hydrostatic loads, including the effects of buoyancy. It is recommended that an engineer certify that the design elevation will withstand the depth and velocity of 100-year flood events (hydrostatic and hydrodynamic loads), any potential increase in wind load, or any other relevant load factors.
- ◆ For elevation projects in Zone V with open foundations (piles, piers, posts, or columns), the space below the lowest floor must be free of obstructions or constructed with non-supporting breakaway walls, open wood lattice-work, or screening intended to collapse under wind and water loads without causing collapse, displacement, or other structural damage to the elevated portion of the building or supporting foundation system.

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Guidance on free-of-obstruction and breakaway wall requirements is available in FEMA Technical Bulletin-5, *Free-of-Obstruction Requirements* (2008), and FEMA TB-9, *Design and Construction Guidance for Breakaway Walls Below Elevated Coastal Buildings* (2008).

- ◆ For elevation projects on continuous foundation walls with fully enclosed areas below the lowest floor, the area must be used solely for parking of vehicles, building access, or storage as identified in 44 CFR Section 60.3(c)(5).
- ◆ Elevation projects on continuous foundation walls must be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs to meet these criteria must be certified by a registered Professional Engineer or meet or exceed the criteria in 44 CFR Section 60.3(c)(5). Guidance on meeting this requirement can be found in FEMA TB-1, *Openings in Foundation Walls and Walls of Enclosures* (2008).

## E.2 Elevation Methods

Standard structure elevation methods are identified in FEMA P-312, *Homeowner's Guide to Retrofitting – Second Edition* (2009), and FEMA 347, *Above the Flood: Elevating Your Flood Prone House* (2000). In addition, FEMA has developed guidance for the design of appropriate foundations based on the requirements of the International Codes and other applicable standards. This guidance is provided in FEMA 550, *Recommended Residential Construction for Coastal Areas: Building on Strong and Safe Foundations* (2009), and is available for use with HMA structure elevation projects. Furthermore, FEMA encourages Applicants and subapplicants to design all structure elevation projects in accordance with ASCE/SEI 24-05.

Available elevation methods, which are thoroughly described in FEMA P-312, Chapter 5, and FEMA 347 include:

- ◆ Elevating the existing structure onto piles, posts, or piers;
- ◆ Filling in the basement and replacing it with an elevated floor; and
- ◆ Elevating by vertically extending the foundation walls of the home.

Activities that result in the construction of new living space at or above the BFE are considered only when they are consistent with mitigation reconstruction requirements described in [Addendum Part D](#). Activities include structure elevations that abandon a lower enclosed area and add a second story above the BFE to an existing structure.

The method that is selected for elevating a house depends on factors such as:

- ◆ Foundation type;
- ◆ Condition of the house;

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- ◆ Applicable State and local building codes;
  - ◆ Soil type and bearing capacity;
  - ◆ Weight of the house and lateral forces on the house from water and other natural hazards such as winds and earthquakes;
  - ◆ Height of proposed elevation above the grade level; and
  - ◆ Number of additions to the original structure.

The most common foundation types are:

- ◆ Crawl space on foundation walls;
- ◆ Slab-on-grade;
- ◆ Open type foundation:
  - Piles; and
  - Posts or piers.

Additional details to consider when constructing an elevation project can be found in the following publications:

- ◆ FEMA P-55, *Coastal Construction Manual*, Fourth Edition (2011);
- ◆ FEMA P-259, *Engineering Principles and Practices of Retrofitting Floodprone Structures* (2012);
- ◆ FEMA P-499, *Home Builders Guide to Coastal Construction Technical Fact Sheet Series*; (2010) and
  - ◆ ASCE/SEI 24-05, *Flood Resistant Design and Construction* (2005).

This list is not a comprehensive list of publications on retrofitting and elevations. More documents are available at <http://www.fema.gov/building-science-publications>.

## **E.3 Eligible Structure Elevation Costs**

### **E.3.1 Eligible Costs**

Allowable costs are costs that are necessary and reasonable for the proper and efficient performance and administration of the Federal award. In addition to the costs identified in Part V H.3, Cost Estimate, the following costs associated with structure elevation projects are generally allowable:

- ◆ Engineering services for design, structural feasibility analysis, and cost estimate preparation;

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- ◆ Surveying, soil sampling, completion of elevation certificate, title search, deed recordation fees, legal and/or permitting fees, project administration, and construction management;
  - ◆ Disconnection of all utilities;
  - ◆ Building of a foundation so that the lowest floor is at the BFE or higher if required by local ordinance or FEMA;
  - ◆ Physical elevation of the structure and subsequent lowering and attachment of the structure onto a new foundation;
  - ◆ Construction of a floor system that meets minimum building code requirements when the existing floor system cannot be elevated or is not appropriate for the new foundation;
  - ◆ Reconnecting utilities and extending lines and pipes as necessary and elevating all utilities and service equipment;
  - ◆ Debris disposal and erosion control;
  - ◆ Costs for repair of lawns, landscaping, sidewalks, and driveways if damaged by elevation activities;
  - ◆ Construction of a utility room above the BFE only if there is no existing space within the house for this purpose or there is no alternative cost-effective way to elevate the utilities;
  - ◆ Elevation of existing decks, porches, or stairs;
  - ◆ Construction of new stairs, landings, and railings to access the elevated living space per minimum code or local ordinance;
  - ◆ Construction of ADA-compliant access facilities when an owner or a member of the owner's family has a permanent physical handicap and a physician's written certification. Only one ADA-compliant access is allowable for funding unless specified otherwise in applicable State or local codes (for more information on ADA, see <http://www.ada.gov/>). If ramps are not technically feasible, a mechanical chair lift may be installed;
  - ◆ Documented reasonable living expenses (except food and personal transportation) that are incurred while the owner is displaced by the elevation construction;
  - ◆ Abatement of asbestos and lead-based paint; and
  - ◆ Filling basements with compacted clean fill.

### **E.3.2 Ineligible Costs**

Certain structure elevation activities and their associated costs are not eligible. In addition to the ineligible costs listed in [Addendum Part D.2.2](#), ineligible costs for structure elevation include, but are not limited to, the following:

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- ◆ Elevating structures that were not in compliance with current NFIP standards at the time of construction;
  - ◆ Costs related to building additions or auxiliary structures;
  - ◆ Construction of new decks or porches;
  - ◆ Any improvements for purely aesthetic reasons unless required by the EHP compliance review;
  - ◆ Costs to replace or repair utility service components, which are undersized, inadequately designed, or unsafe unless required by code (except utility rooms noted as eligible costs);
  - ◆ Exterior finish on the exposed foundation of the elevated building, unless required by EHP compliance review and or local code; and
  - ◆ Additional landscaping for ornamentation beyond what existed on the site prior to construction of the project (e.g., trees, shrubs).

#### **E.4 Additional Application Requirements**

In addition to the items identified in Part V H.1, Scope of Work, the following data are required for each structure:

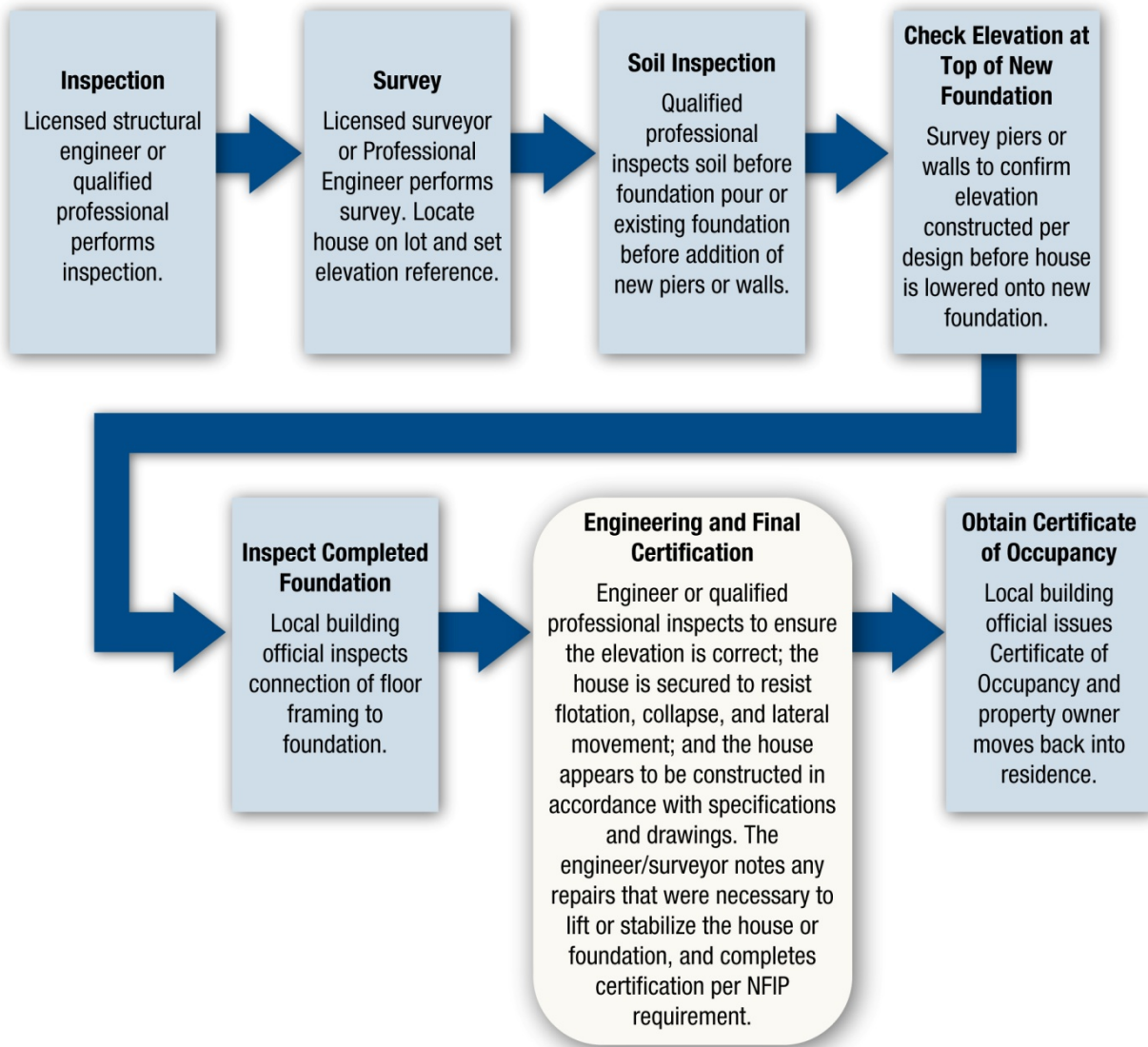
- ◆ Physical address and property owner's name;
- ◆ Estimated cost to elevate each structure;
- ◆ Name and location of flooding source (i.e., creek, river, watershed, or location of stormwater ponding) and location on the applicable FIRM;
- ◆ The proposed elevation of the lowest floor for each structure to be mitigated, the BFE, and the current elevation of the lowest finished floor;
- ◆ Type of existing foundation (slab-on-grade, crawl space, basement, or open foundation) and the proposed elevation method and standard to be used; and
- ◆ A statement that the project will be designed in compliance with NFIP standards in 44 CFR Part 60.

#### **E.5 Survey and Inspection Considerations**

Surveying and inspections are encouraged throughout the construction process. Certifications of the surveys ensure that the work has been performed in compliance with the structure-specific plans and specifications, applicable codes and standards, and minimum NFIP requirements. [Figure 1](#) identifies important inspection and survey considerations.



**Figure 1: Inspection and Survey Considerations**



## E.6 Closeout

In addition to the typical HMA closeout processes, closeout of structure elevation projects generally includes:

- ◆ Update of the property site information in the respective HMA system (i.e., eGrants or NEMIS) database for each structure;
- ◆ A Certificate of Occupancy for each structure in the project to certify that the structure is code-compliant;

- 
- ◆ A Final Elevation Certificate (FEMA Form 81-31) for each structure to ensure the structure has been elevated to the proper elevation;
  - ◆ A copy of the recorded deed amendment for each property as required by Part IV D.7.1 of the HMA Unified Guidance;
  - ◆ Certification by an engineer, floodplain manager, or senior local official that the completed structure elevation is in compliance with local ordinances and NFIP regulations, including all applicable NFIP Technical Bulletins;
  - ◆ A front, rear, and side photograph of the final elevated structure; and
  - ◆ Verification of flood insurance for each structure.

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## Acronyms and Abbreviations

|       |                                                  |
|-------|--------------------------------------------------|
| ABFE  | Advisory Base Flood Elevations                   |
| ADA   | Americans with Disabilities Act                  |
| BCA   | Benefit-Cost Analysis                            |
| BFE   | base flood elevation                             |
| BLM   | Bureau of Land Management                        |
| CFR   | Code of Federal Regulations                      |
| CBRA  | Coastal Barrier Resource Act                     |
| CBRS  | Coastal Barrier Resource System                  |
| CDBG  | Community Development Block Grant                |
| DOB   | Duplication of Benefits                          |
| DOI   | Department of the Interior                       |
| DOP   | Duplication of Programs                          |
| DOT   | Department of Transportation                     |
| EHP   | Environmental Planning and Historic Preservation |
| EOC   | emergency operations center                      |
| FEMA  | Federal Emergency Management Agency              |
| FHWA  | Federal Highway Administration                   |
| FIRM  | Flood Insurance Rate Map                         |
| FMA   | Flood Mitigation Assistance                      |
| HMA   | Hazard Mitigation Assistance                     |
| HMGP  | Hazard Mitigation Grant Program                  |
| HUD   | Housing and Urban Development                    |
| HVAC  | heating, ventilation, and air conditioning       |
| IBC   | International Building Code                      |
| ICC   | International Code Council                       |
| NEMIS | National Emergency Management Information System |
| NEPA  | National Environmental Policy Act                |
| NFIP  | National Flood Insurance Program                 |
| NFPA  | National Fire Protection Association             |
| O&M   | operations and maintenance                       |
| OPA   | Other Protected Area                             |

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|        |                                                                                  |
|--------|----------------------------------------------------------------------------------|
| PDM    | Pre-Disaster Mitigation                                                          |
| PEA    | Programmatic Environmental Assessment                                            |
| SBA    | Small Business Administration                                                    |
| s.f.   | square feet                                                                      |
| SFHA   | Special Flood Hazard Area                                                        |
| SOW    | Scope of Work                                                                    |
| URA    | Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 |
| U.S.C. | United States Code                                                               |
| USACE  | U.S. Army Corps of Engineers                                                     |
| USFA   | U.S. Fire Administration                                                         |
| USFS   | U.S. Forest Service                                                              |
| USFWS  | U.S. Fish and Wildlife Service                                                   |