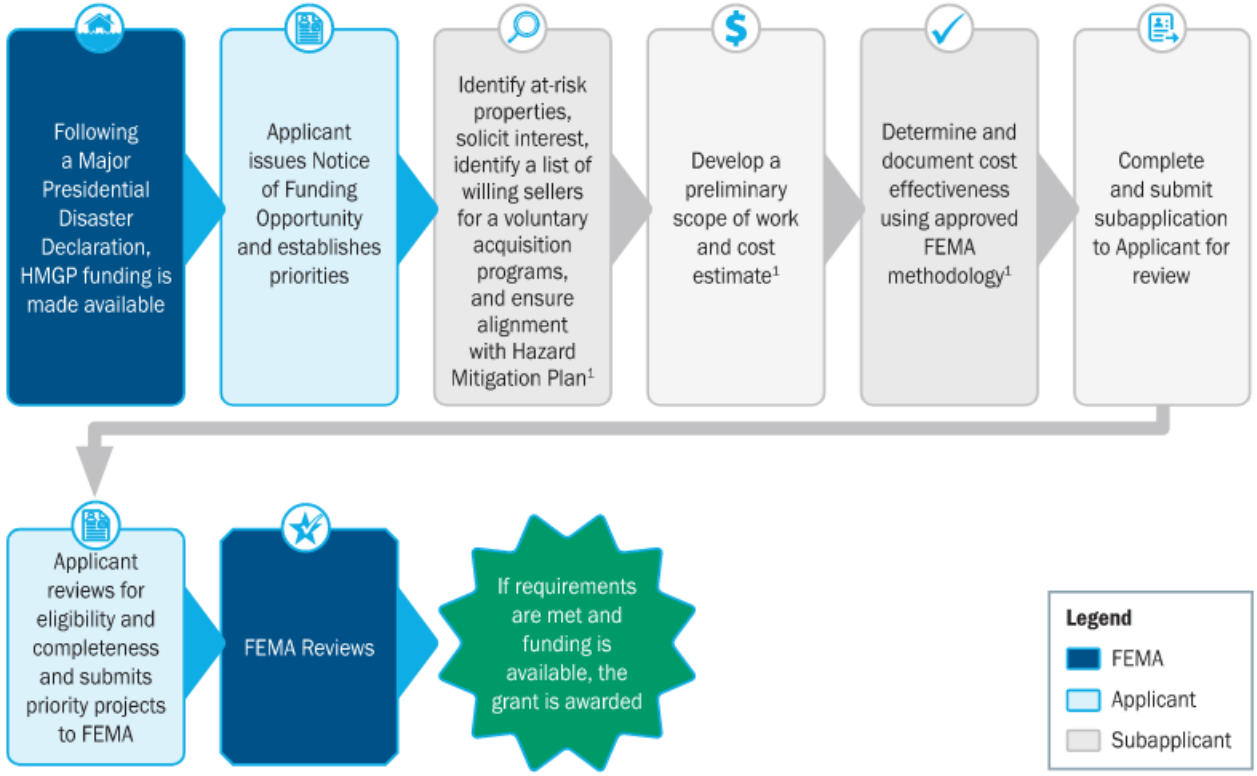
Purpose: Application templates have been developed to provide step-by-step instructions for specific project types. This application can be used for projects that involve the voluntary acquisition of an existing flood-prone structure and the conversion of the acquired land to open space following structure demolition. Acquisition projects are a long-term effort and require multiple steps. **Figure 1** shows the general process flow and decision points from Presidential Disaster Declarations to grant award.

Figure 1: Acquisition Project Process Overview



Notes:

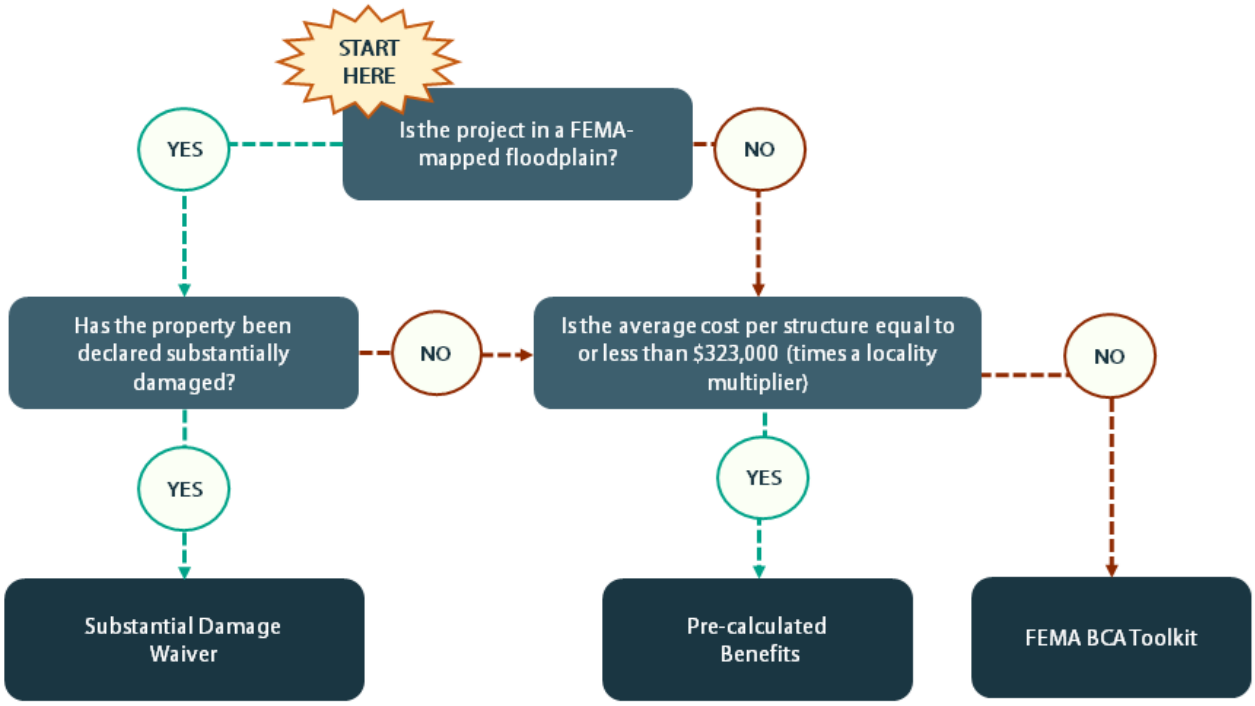
(1) These activities may also occur prior to the Disaster Declarations and/or the Notice of Funding Opportunity.

Prior to starting an application, it is recommended that you review the summary of data requirements (**Table 1**) needed to complete the application. Early submission of accurate and complete eligibility and pre-award information will facilitate FEMA's review process and the release of HMGP funds.

The methodology—used to evaluate cost-effectiveness—will affect data requirements for the application. Follow the flowchart in **Figure 2** for guidance on which cost-effectiveness methodology is recommended for the project. There are three methods to evaluate cost-effectiveness for an acquisition/demolition project:

- Substantial damage waiver
- Pre-calculated benefits
- Benefit-cost analysis (BCA) using the BCA Tool via: Modeled Damages or Historical or Professional Expected Damages

Figure 2: Benefit-Cost Analysis Decision Tree: Data you will need to provide for your application will vary depending on the cost-effectiveness methodology. This decision tree will assist in determining a recommended approach.



Key Resources:

Acquisition/Demolition Project Application and Instructions

This fillable application form is designed specifically for projects that involve the acquisition of a flood-prone structure and the conversion of the acquired land into open space through structure demolition. The accompanying instructions provide definitions, explanations, and clarification on the information requested in each section of the application. This step-by-step guidance references additional Job Aids and FEMA resources to help direct you to more detailed information, if needed.

Hazard Mitigation Technical Assistance Review | Job Aid Series, Acquisition Technical Review Supplement T1.1

This Job Aid describes the requirements for the technical review process for HMA-funded acquisition projects and provides a step-by-step approach to addressing each of the major components of an acquisition project application.

Hazard Mitigation Assistance EHP Review | Job Aid Series, Supplement No. E1.1: Acquisition and Demolition

This Job Aid provides detailed guidance regarding information that should be included for acquisition/demolition project applications, including recommended documentation and

supplemental information needed to help FEMA conduct an EHP review. This Job Aid categorizes the components considered within FEMA's EHP review process, describes the information needed under each component, identifies potential sources of documentation, and provides examples.

Table 1: Summary of Data Requirements

Location and Scope of Work Information	Required Eligibility Data[1]	Required Pre-Award Data[2]	Section and Number
Applicant/subapplicant contact information	✓		A
List of properties and locations	✓		Primary Properties Spreadsheet
Year built for each structure	✓		
Map showing project location with parcel boundaries of all properties being acquired	✓		K
Photograph that represents the appearance of each property site at the time of application	✓		B2
Tax card or tax assessor information for each structure	✓		B3
Project narrative describing the flood risk in the area	✓		B4
Detailed scope of work including details on site access, staging, and demolition activities (e.g., debris/ infrastructure/utility removal information, construction equipment, and ground disturbance)	✓		B5
Description and photos of adjacent structures		✓	B6
Identify post mitigation land uses	✓		B7
Description of alternatives (no action, alternative action, proposed project)	✓		C
Schedule (schedule must be for 3 years or less)	✓		E
Project cost estimate with line items and supporting documentation	✓		F
Cost-Effectiveness: *Information required depends upon the methodology used to show cost-effectiveness as determined in the flowchart* *Note: This includes common data requirements to show cost-effectiveness; some projects may require additional documentation of damages to demonstrate a benefit-cost ratio (BCR) over 1.0. The technical job aid provides step-by-step instructions and additional resources.*			
Substantial Damage Waiver			
Maps showing each structure's footprint within riverine SFHA on a preliminary or effective FIRM	✓		K
Documentation of substantial damage	✓		
Pre-calculated Benefits			
Maps showing each structure's footprint within or intersecting with the clearly delineated SFHA, using the FIRM or best available data OR clear demonstration that the Finished Floor Elevation (FFE) is less than the Base Flood Elevation (BFE)	✓		K
Average cost per structure is less than or equal to $323,000 (times a locality multiplier, if used)	✓		
Documentation of locality multipliers, if used.	If Applicable		

Location and Scope of Work Information	Required Eligibility Data[1]	Required Pre-Award Data[2]	Section and Number
FEMA BCA Toolkit: Modeled Damages			
Structure information: lowest floor elevation, building type, and building size	✓		K
Flood hazard data	✓		
Export of the BCA tool, PDF of the BCA Report, and supporting documentation	✓		
FEMA BCA Toolkit: Historical or Professional Expected Damages			
Documented Historical or Estimated Flood Damages	✓		K
Estimated recurrence intervals for one or more damage event, or at least 3 historical damage events from different years	✓		
Export of the BCA tool, PDF of the BCA Report, and supporting documentation	✓		
Additional EHP Documentation: Needs vary based on potential impacts considerations include:			
Description of public outreach that has occurred.		✓	D1
Description of any federal, state, or local agency coordination, and permitting		✓	D2
Description of any environmental and/or cultural studies that have been conducted in the area		✓	D3
Is the project in a known floodplain?	If yes, additional documentation and discussion of impacts and potential mitigation measures will be required		D4
Are there nearby surface waters or wetlands?			D5
Are their known hazardous or contaminated materials at the project site?			D6
Does the project involve the use of imported fill?			D7
Will the project remove vegetation?			D8
List any best management practices that will be used during construction	✓		D9
Other Required Documents			
Sample deed restriction language consistent with FEMA Model Deed Restriction	✓		H
Documentation of voluntary interest for each property owner	✓		
Citizenship Forms (Declaration & Release Form 90-69B)	If using Pre-Event Fair Market Value in the project cost		
Consultation Documentation for USACE and DOT	✓		
Fund commitment letters	✓		J
Applicable signed SF-424 forms and Assurances	✓		

Notes:

1- Eligibility: Items that must be included in the grant application to fully evaluate eligibility.

2- Pre-Award: Information that FEMA will need to review prior to award.

INSTRUCTIONS
HAZARD MITIGATION GRANT PROGRAM
ACQUISITION/DEMOLITION PROJECT

This document provides instructions on how to complete the application for an acquisition/demolition project under FEMA's Hazard Mitigation Grant Program (HMGP). This application can be used for projects that involve the voluntary acquisition of an existing flood-prone structure and the conversion of the acquired land to open space following structure demolition.

To add information into the form, double-click (gray) areas, or highlight the gray area and begin to type. Some form items have character limits to preserve the form and spacing—users should stay within the character limit when providing input. If additional space is needed, please attach a separate file and include the document name in the text box. Users can move from one gray form entry area to the next via the Tab button on their keyboard.

Additional technical guidance is provided in the attached **Acquisition and Demolition Technical Review Job Aid Supplement No. T1.1 (Job Aid)** and the **Environmental and Historic Preservation Acquisition-Demolition: Information required for Environmental Review No. E1.1 (EHP Job Aid)**, which are referenced throughout these instructions.

A. Applicant/Subapplicant Information

1. **Applicant/Subapplicant Legal Name**: Enter your organization's legal name.
2. **Organizational Unit:** Enter the name of the department or agency within your organization that is pursuing the grant.
3. **Project Title**: Enter the name of the project title. The title should be short but descriptive (e.g., Everytown Residential Acquisition/Demolition Project).
4. **Applicant/Subapplicant Type**: Enter the type of applicant or subapplicant; refer to Hazard Mitigation Assistance (HMA) Guidance (Part III, Sections A and B) for information on *Eligible Applicants and Subapplicants*.
5. **Proposed Project Total Cost**: Enter the total cost of the project in the first field provided. In the fields beneath that, indicate the percentage and dollar amount of both the federal and local shares for the project.
6. **Certifications**: Read the statement provided and enter the requested information to certify the Applicant/Subapplicant reviewed and concurred with the HMGP program requirements.
7. **Mitigation Plan**: Mark the appropriate box—Yes or No. If Yes was marked, provide the specified information for the Local and State/Tribal Mitigation Plan. Refer to HMA Guidance (Part III, Section E.5) for information on hazard mitigation plan requirements.
8. **National Flood Insurance Program (NFIP):** Mark the appropriate box—Yes or No. HMGP mitigation project subapplications for projects sited within the Special Flood Hazard Area (SFHA) are eligible only if the jurisdiction in which the project is located is participating in the NFIP.

9. Enter the **Tax ID Number**, five-digit Federal Information Processing Standards (**FIPS**) code, six-digit **Community Identification Number**, and Data Universal Numbering System (**DUNS**) number for the Applicant/Subapplicant.
10. Enter the **U.S. Congressional District** for your jurisdiction, if applicable.
11. Enter the **State Legislative District** for your jurisdiction, if applicable.
12. **Primary Point of Contact**: Enter the contact information for the person coordinating the implementation of this grant throughout the application process.
13. **Alternate Point of Contact:** Enter the contact information for the alternate point of contact who can coordinate the implementation of this grant when the primary point of contact is not available.
14. **Authorized Applicant/Subapplicant Agent**: Enter the name and contact information for the authorized agent for your organization. The Authorized Applicant/Subapplicant Agent MUST be the chief executive officer, mayor, or person of comparable status who is authorized to sign contracts, authorize funding allocations or payments, etc.

B. Project Narrative and Scope of Work

Mitigation projects funded by HMA must be both technically feasible and effective at mitigating the risks of the hazard(s) for which the project was designed. Effective mitigation measures funded under HMA provide a long-term or permanent solution to a risk from a natural hazard.

1. Insert the name and Applicant/Subapplicant type for your organization and indicate the number of buildings to be acquired and demolished and any alternate properties, if applicable. Complete the Primary Properties and the Alternate Properties spreadsheets, if applicable.
2. Check the box to verify that a photograph of each property has been included. Photographs should represent the appearance of each property site at the time of application. Ensure that photographs are clearly labeled.
3. Check the box to verify that tax assessor information/tax card(s) have been provided for each structure. This information is used to verify information throughout the application.
4. Provide a detailed description of the project purpose and flood risk being mitigated. Describe past flooding events that have affected the proposed properties. Please include information on past damages and the federal disaster declaration number, if applicable. See **Step 1 of the Technical Job Aid.**
5. Provide a detailed scope of work. Clearly explain the proposed mitigation activity, identify the tasks required to complete the proposed activity, and define the tasks to be accomplished in clear, concise, and meaningful terms. **See Step 1 of the**

Technical Job Aid and Sections 1 and 2 of the EHP Job Aid for additional guidance. The scope of work should include the following:

a. Describe the demolition portion of the project; this includes the removal of structures, underground improvements, utilities, debris removal methods and disposal locations, and site grading.
b. Describe the existing condition of the ground surfaces that would be disturbed by all activities.
c. Describe how the project will be accessed, where staging areas would be located, and the vehicles and equipment that would be used.
d. Provide a geographic information system (GIS), Google Earth files (.kmz) ,or map or image that clearly shows the boundaries of the project area. Include all elements of the project, including ground disturbance areas, access, and equipment staging.

6. Describe adjacent structures and include photographs and the year that they were originally constructed. See Section 2B of the EHP Job Aid.
7. Indicate the post-mitigation use. Indicate what land uses the resulting properties will have. The land must be maintained in a way that is compatible with open space, recreational, or wetlands management practices and is consistent with conservation of natural floodplain functions. Refer to 44 Code of Federal Regulations Part 80 Subpart C and HMA Guidance Addendum, Sections A.2.2, A.6.1, and A.6.2 for allowable uses and open space restrictions.

C. Alternatives Considered

Mitigation project alternatives are required as part of application development. Indicate at least three alternative actions that were considered in the planning process:

1. No action alternative and its consequences
2. Alternative that was considered but not selected, and why
3. Additional alternative actions considered but not selected (not required)
4. The Proposed Action alternative is the project you are proposing in the application; explain why it is the most practical, effective, and environmentally sound alternative.

See Step 1 of the Technical Job Aid and Step 1 of the EHP Job Aid for additional guidance.

D. Environmental Planning and Historic Preservation Considerations

Projects potentially could impact nearby physical, cultural (historic and archaeological), biological, and social resources. Below are questions about potential impacts your project may have on these resources. Please note that not all of these may be applicable to your project. See the EHP Job Aid for more details.

1. Has the public been notified or provided input? If so, provide dates and method of outreach. If not, describe any planned public engagement activities for the project. (See Section 3A of EHP Job Aid.)

2. Describe any agency coordination and permits obtained from federal, state, or local agencies to implement the project. Include copies of any coordination materials, permit applications, or approvals. (See **Section 3B of EHP Job Aid**.)
3. Provide any studies that have been conducted for the project or for projects that were recently built nearby. Studies could include evaluations of cultural resources (e.g., historic, archaeological) or environmental resources (e.g., threatened and endangered species, wetlands, hydrology). (See **Section 3C of EHP Job Aid**.)
4. If the project is in a floodplain, describe the project activities that would occur or be located in the floodplain, if applicable. Show where project activities would overlap with floodplains on a map. (See **Section 3D of EHP Job Aid**.)
5. Describe any surface waters in or near the project area (e.g., ponds, lakes, rivers, streams, wetlands, other waterbodies). Describe any measures that would be used to avoid waterbodies or avoid impacting water (e.g., setbacks, silt fence). Show where project activities would overlap with wetlands or other waterbodies on a map. (See **Section 3E of EHP Job Aid**.)
6. Describe any known hazardous or contaminated materials at the project site including underground tanks. Describe how underground tanks (e.g., fuel, septic) would be removed or decommissioned in place. If the project requires the use of hazardous materials (including herbicides), describe their use and best management practices to minimize environmental exposure. (**See Section 3F of EHP Job Aid**.)
7. Would the project involve the use of imported fill? If yes, describe the type and source of the fill material. (See **Section 3G of EHP Job Aid**.)
8. If the project would remove vegetation for any reason, describe the type and amount or area of vegetation (e.g., two oak trees, one-quarter acre of turf grass). Describe how vegetation would be removed, if applicable (e.g., root ball removal, flush cut, dug up, chemical weed killer). If using herbicides, describe best management practices for their use. Estimate during which season(s) or months vegetation removal would occur. Would any special techniques be used to ensure survival of the plants/ seeds (e.g., mulch, irrigation, protective fencing)? (See **Section 3H of EHP Job Aid**.)
9. List any best management practices that would be used during project construction. (See **Section 3I of EHP Job Aid**.)

E. Estimated Work Schedule

Specify the duration of each process component required to complete the project. Although the components' occurrences are not necessarily sequential and activities may be carried out concurrently, the total project timeline cannot exceed the period of performance for HMGP, which is 36 months. If needed include a detailed schedule in the attached documentation. For additional guidance, see **Step 3 of the Technical Job Aid**. Common

milestones may include:

a. Signing Grant Agreement
b. Bidding and Procurement
c. Appraisals, Surveys, and Title Searches
d. Mitigation Offers, Closings and Deed Recordations
e. Asbestos Inspection and Abatement
f. Structure Demolitions within 90 days of closing
g. Site Stabilization - Grading, and Seeding
h. Closing Grant

F. Budget Estimating

1. **Costing Methodology**: Indicate which method(s) were used to determine the project costs. Choose whether the estimates were obtained from construction contractors and similar vendors, historical data from previous projects/activities (with an inflation factor, as needed), property appraiser, local property tax assessment data, online real estate websites, or other national cost estimating reference. If none of these were used, please choose "Other" and describe the methodology used to develop the cost estimate. For additional guidance, see **Step 4 of the Technical Job Aid**.

2. **Fair Market Value Determination**: Indicate which method will be used to determine the fair market value of each property. Include appropriate documentation within the application. For additional guidance, refer to HMA Guidance Addendum (Section A.6.9).

3. **Cost Estimate**: Enter the costs associated with all tasks/activities necessary to complete the project, as applicable. Ensure all tasks/activities match the information included in all other documentation provided with the application. All costs should be detailed and not contain any lump sums. The cost estimate should include a line item breakdown of costs consistent with all elements described in the Project Narrative and Scope of Work and Budget Estimating sections of this application. For additional guidance, see **Step 4 of the Technical Job Aid**. Common cost categories may include:
   a. Pre-Award Costs. These costs must have occurred after the declaration date of the relevant disaster.
   b. Fair Market Value of structures and land
   c. Appraisal costs to determine Fair Market Value
   d. Title Insurance
   e. Legal/Closing Costs
   f. Deed Recording Fees
   g. Uniform Relocation Assistance and Real Property Acquisition Act Relocation Assistance

h. Environmental Surveys and Other Costs Imposed by Regulatory Agencies
i. Asbestos & Other Hazards, Inspection & Removal
j. Structure Demolition and Associated Costs
k. Debris Removal
l. Clear Outbuildings, Slabs, Pads, and Driveways
m. Filling Basements and Pools
n. Well, Septic, and Underground Storage Tank Pumping and Capping
o. Grading and Seeding
p. Other. Use as needed and explain in budget narrative box below.

Refer to HMA Guidance Addendum, Section A, Table 1 for generally allowable costs for property acquisition and demolition.

4. **Budget Narrative**: Provide a budget narrative with explanations, justifications, and line item details of the project costs. If needed, indicate in box that the narrative is in an attachment to the application and provide with application submittal.

   The budget narrative should explain how costs were derived, including any details not in the line items. For additional guidance, see **Step 4 of the Technical Job Aid**.

G. Nonfederal Funding Share (25% of Total Project Costs)

List all sources and amounts used in the nonfederal share, including all in-kind services. In-kind services may not exceed the 25% nonfederal share. For each source, indicate the name of the source agency, describe the type of funding, and the amount. Attach letters of funding commitment for each source.

H. Additional Requirements

This section describes additional general requirements for Acquisition/Demolition Grants. Check each box to acknowledge the requirements. Insert the name of the jurisdiction or organization that will take ownership of the resulting property or properties in the box for Item 5.

I. Cost-Effectiveness

The Benefit-Cost Analysis (BCA) should be developed in accordance with **Step 8 of the Technical Job Aid**. The Technical Job Aid will provide additional guidance for the development the BCA and required supporting documentation required for the benefit-cost analysis.

1. **Cost-effectiveness Methodology:** Indicate which methodology was used to evaluate cost-effectiveness for the project. Select the appropriate BCA approach

for your project. If the Benefit-Cost Analysis Software was used, indicate the Benefit-Cost Ratio.

The BCA software can be found at https://www.fema.gov/benefit-cost-analysis, including explanations of how to use the tool. It is a best practice to provide a BCA narrative as supporting documentation. The BCA narrative should describe the methodology, assumptions, and justifications for all inputs to the subapplication documentation. All inputs for the BCA must be documented unless a FEMA standard or default value is used.

If pre-calculated benefits are used, the average cost of all structures in the project must meet the stated criterion in the FEMA memo entitled "Cost Effectiveness Determinations for Acquisitions and Elevations in Special Flood Hazard Areas Using Pre-calculated Benefits" .

If the project involves acquisition of structures that are declared substantially damaged (from any origin) and located in a riverine SFHA on a preliminary or effective flood insurance rate map (FIRM), the subapplicant may use the substantial damage waiver approach in lieu of providing a BCA or using pre-calculated benefits. For additional guidance, refer to the HMA Guidance (Part IV, Section I.1). Substantial Damage Waivers must be attached for reference.

J. Required Documentation Attached

Indicate all attachments to be included with this form. Please also indicate any additional documentation in the box below.

- Site photos of each property.
- Tax card for each property
- Hazardous Materials Property Survey (include Individual Property Survey Form for each)
- Substantial Damage Documentation, as applicable
- Complete the attached Primary Properties and Alternate Properties spreadsheet(s).
- Voluntary Interest Forms: Interested homeowners will be required to sign Voluntary Interest Forms to ensure that they are made aware that participation is voluntary, and that neither FEMA, the state/tribe, nor the local jurisdiction will use eminent domain to acquire the properties. Signed Voluntary Interest Forms, or community meeting sign-in forms that include the information on voluntary participation and the signatures of interested homeowners, are included as documentation.
- Documentation of Fair Market Value. Indicate the applicable method for determination of the Fair Market Value.
- Pre-event, fair market value is offered to homeowners who are Nationals of the United States,

or qualified aliens. Under certain circumstances, Nationals and qualified aliens may be offered current fair market value. Homeowners who are not Nationals of the United States and are not qualified aliens will be offered current fair market value. The jurisdiction generally will not combine pre-event fair market value offers and current fair market value offers to homeowners within one project.

- Citizenship Forms, if using Pre-Event Fair Market Value (Declaration & Release Form 009-0-3)
- Property Site Maps: Provide map(s) showing the project location(s). If the project includes multiple structures, show the project boundaries. See **Step 5 of the Technical Job Aid**.
- FIRMette with property locations clearly marked. FIRMettes can be accessed in the FEMA Flood Map Service Center (https://msc.fema.gov/portal/home).
- Flood Hazard Data: Provide copies of data from applicable FEMA Flood Insurance Study, independent engineering study used to assess flood risk for the project, or historical flood event data.
- Consultation Documentation
- State Historic Preservation Officers (SHPO) Consultation, required if:
  a. Structure is 45 years or older at the time of FEMA review
  b. New ground is being disturbed
  c. Project is located in a Historic District
- Appropriate BCA documentation, including an export of the BCA tool and PDF of the BCA Report (if applicable) and all supporting documentation
- Funds commitment letter, which lists the sources and amounts used in the nonfederal share requirement, including all in-kind services. Fund commitment letters are also required from nonapplicant sources.
- Assurances (112-0-3C or 20-16c, and SF-LLL if applicable)
- Completed SF-424, signed by the authorized representative of the jurisdiction
- Completed SF-424d (Construction Programs) and SF-424c (Budget Information for Construction Programs)
- Supplemental payment
  - For the property owner to receive a supplemental payment, the recipient and subrecipient must demonstrate that the following circumstances exist:
    - Funds cannot be secured from other, more appropriate sources, such as housing agencies or voluntary groups
    - 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
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

- Detailed budget with additional budget narrative if box provided is not sufficient.
- Designated Authorized Agent documentation designating authority for the signatory to sign contracts, authorize funding allocations or payments, or apply for grant funding that is signed by the ruling body of the applicant
- FEMA Model Deed Restriction
- FEMA Statement of Assurances: Include a signed copy of the FEMA Statement of Assurances. Refer to HMA Guidance Addendum, Section A.6.3 for additional guidance.
- If there will be additional items not listed, please indicate those items in the comment box below this section.

ACQUISITION TECHNICAL REVIEW

PURPOSE: This supplement will cover requirements associated with the technical reviews for Hazard Mitigation Assistance (HMA)-funded acquisition projects. The Job Aid supplements (technical and Environmental and Historic Preservation [EHP]) augment the Acquisition and Relocation and Acquisition and Demolition job aids. This Technical Review Supplement provides additional information, examples, and potential sources of documentation for items listed in the job aids to help communities applying for HMA grants comply with application requirements.

All HMA applications must comply with the requirements outlined in the HMA Guidance. According to the guidance, in addition to a general programmatic review, an review, an EHP review and review and a technical review will be performed by the Federal Emergency Management Agency (FEMA) for each proposed project. The technical review will verify that a project demonstrates feasibility, effectiveness, and cost-effectiveness. This document is intended for technical reviews of applications only; for assistance completing EHP compliance reviews, see the EHP Supplement Job Aids.

Introduction

The following provides a review of the information that should be provided with the grant application, including recommended documentation, as well as a list of supplementary information to assist FEMA when conducting technical reviews of the project application. Technical resources are identified throughout this supplement to provide clarifying information on specific project application components. The final section provides a comprehensive list of resources identified throughout this supplement.

The project-specific guidance in this supplement does not provide all the information necessary to apply for funding through an HMA program and must be read in conjunction with all other relevant guidance documents.

Summary of Steps

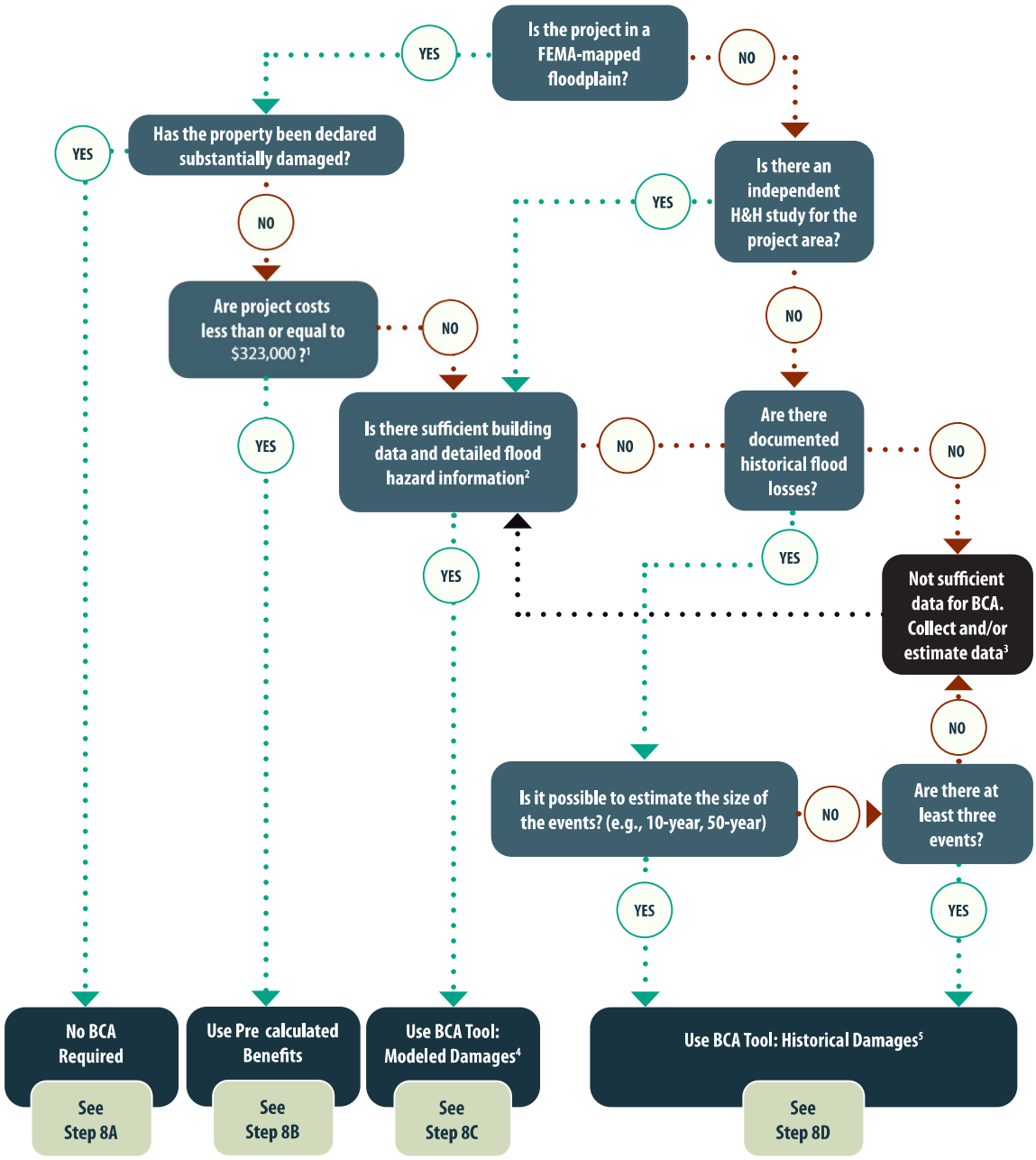
- ☐ **STEP 1:** Provide a Scope of Work (SOW)
- ☐ **STEP 2:** Provide Structure-Specific Details
- ☐ **STEP 3:** Provide a Project Schedule
- ☐ **STEP 4:** Provide a Project Cost Estimate
- ☐ **STEP 5:** Provide a Project Site Map
- ☐ **STEP 6:** Provide Property Location Information: Address and Latitude/Longitude
- ☐ **STEP 7:** Document the Flood Risk
- ☐ **STEP 8:** Cost-Effective Analysis
- ☐ **STEP 9:** Environmental and Historic Preservation Considerations

ADDITIONAL RESOURCES:

- ✓ **Hazard Mitigation Assistance Guidance**
- ✓ **Hazard Mitigation Assistance Guidance Addendum, Part A**
- ✓ **Benefit-Cost Analysis Reference Guide and Supplement to the Benefit-Cost Analysis Reference Guide**
- ✓ **HMA Application Development – Acquisition**
- ✓ **Sample Engineering Case Study for Acquisition**

A list of all resources referenced is provided on the last page of the supplement.

STEP 8: Cost-Effectiveness Analysis *(continued)*



NOTES

1. For projects that contain multiple structures, the average cost of all structures in the project must meet the stated criterion. Additionally, the specific geographic location of structures can greatly increase project costs, and the benefits identified may be adjusted using locality multipliers that are included in industry-accepted cost and pricing guides for construction. Refer to HMA Guidance Part IV, I.7.
2. Described in **Step 7** (Approach 1 or 2), must have information on 4 events. Building information must include LFE.
3. Review the BCA Reference Guide and Supplement prior to data collection to ensure that sufficient and relevant data for a BCA is collected for before mitigation and after mitigation conditions. Note that at least one known-frequency event, or three unknown-frequency events are required for historic flood losses. Once data is collected, return to process flow to determine the appropriate BCA approach.
4. For projects with multiple structures, consider using the Professional Expected Damages DFA.
5. Consider using Greatest Savings to the Fund (Refer to HMA Guidance Part IV, I.5).

Figure 5: Flowchart for Determining the Appropriate BCA Frequency and Damage Relationship

☐ Step 1: Provide a Scope of Work (SOW) *(continued)*

References: When preparing a SOW, refer to the following:

- For guidance, see HMA Guidance Part IV, Section H: Scoping Narrative: Scope of Work, Schedule, and Cost Estimate and Addendum to the HMA Guidance, Part A: Property Acquisition and Structure Demolition or Relocation for Open Space
- For an example narrative for an Acquisition Project, see the HMA Application Development - Mitigation Project Subapplication Scope of Work Examples and Sample Engineering Case Study for Acquisition.

Approach: The following items should be included in the SOW:

- Provide narrative of the flood risk being mitigated, including flood event history in the project area if available.
- Include mitigation project alternatives, which are required as part of application development. Document at least two alternatives that were considered as part of the planning or design phase. Clearly indicate which alternative is the preferred mitigation project and discuss why it is the most practical, effective, and environmentally sound alternative. One alternative is often considered the "no-action alternative" and reflects conditions expected to exist if a mitigation project is not completed. This is a key step to ensure an efficient EHP review process. For additional guidance, see the Acquisition and Demolition EHP Review – Supplement No. E1.1 and Acquisition and Relocation EHP Review – Supplement No. E1.2.
- Clearly explain the proposed mitigation activity, specifying the deliverables, identifying the tasks required to complete the proposed activity, and defining the tasks to be accomplished in clear, concise, and meaningful terms. All cost elements must match tasks and provide sufficient detail for FEMA to determine whether the application is eligible. The scoping narrative (including SOW) will become part of the conditions of the award.
- Describe the existing conditions of the structure(s) to be acquired. Specific details and documentation to support the narrative are described in **Step 2.**
- Describe demolition or relocation activities
  - Debris removal
  - Removal of underground improvements (e.g., septic tanks)
  - Removal of utilities
  - Site grading
  - Permitting
  - Future land use of the property being acquired. Provide a statement that the property will be deed-restricted as open space in perpetuity.
  - For relocation projects, this should include:
    - » A description of the relocation site.
    - » A thorough description of the relocation process, how it was selected, and why.
    - » Indication that utilities, infrastructure, and foundation at the relocation site will comply with any relevant codes and design standards.
    - » The proposed level of protection of the relocated structure (e.g., the house will be relocated outside of the 500-year floodplain).
    - » Description of how each structure will be physically relocated.
    - » Description and maps of what route will be used to move each structure to its new location and identification of any known infrastructure that will need to be moved during the relocation such as power lines and street signs.
    - » Information on who will bear responsibility for the relocation.
    - » If not all components of the building can be relocated, describe the final disposition of those building elements.

For further information about programmatic requirements, see the HMA Guidance, Addendum Part A and 44 CFR Part 80.

☐ STEP 2: Provide Structure-Specific Details

Description: Provide detailed information about each structure included in the project.

Approach: Provide the following information about the structure; if there are multiple structures, this information must be provided and documented for each.

- Date structure was built
- Building type (e.g., single family residential, apartment, police station, hospital, mobile home)
- Structure information, including the square footage, number of stories, existence of attached garage, and description of outbuildings if present
- Describe the construction type (e.g., wood frame, masonry, concrete) and existing condition
- Describe the foundation (see **Figure 1**)

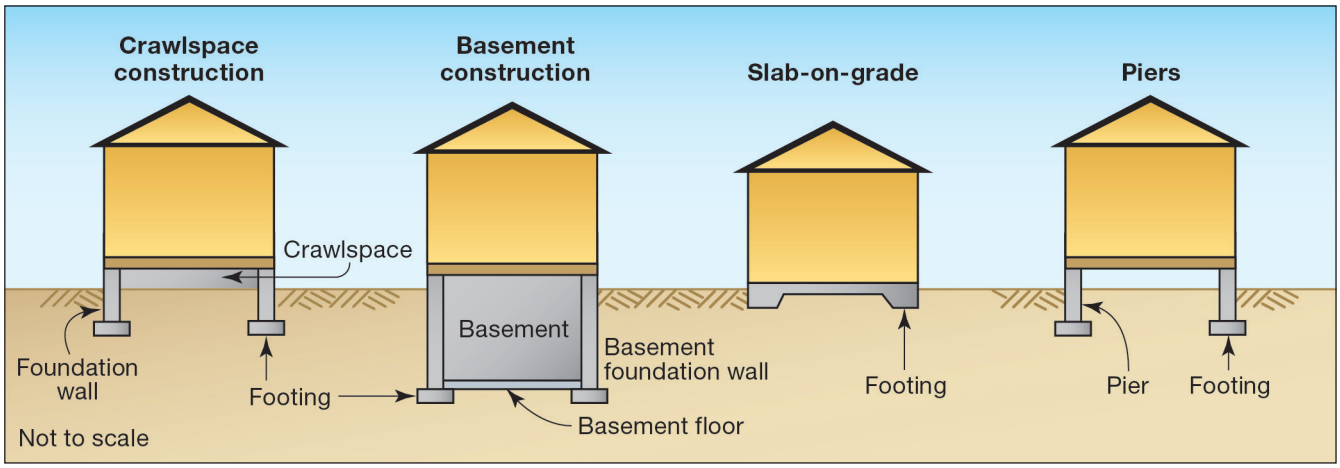


Figure 1: The four foundation types represented in this figure are crawlspace construction, basement construction, slab-on-grade, and piers.

Potential Sources: Structure information may be verified through city or county property records or from building permit information. This information can often be found from publicly available websites such as tax assessor website. Some cities and counties have parcel databases with this information. Alternatively, online mapping programs with measuring features and high-quality aerial photographs may be used to estimate the size of the building.

☐ STEP 2: Provide Structure-Specific Details *(continued)*

Example: One-story residential building, slab-on-grade, without a basement, no outbuildings, built in 1900; see **Figure 2:** Residential Property Record Card for documentation.

Floodville, NY: Residential Property Record Card

[Back to Search Results] [Start a New Search] [Help with Printing]

Search for Properties

Parcel ID | Name | Street Name | Reset

Parcel ID	Card	Map-Block-Lot	Location	Zoning	State Class	Acres
1234-5678	1		23 River St	LA307	101 - n/1	0.106

Owner Information
23 River St
Floodville, NY 12345

Property Picture
[No Picture Available]

Deed Information
Book/Page: 9953/16
Sale Date: 2009/09/01

Dwelling Information

Living Units:	1
Style:	Conventional
Story Heights:	1.5
Exterior Wall:	Alum/Vinyl
Attic Living:	None
Basement:	Part
Year Built:	1900
Ground Floor Area:	518
Unfinished BSMT Area:	0
FIN BMST Living:	n/a
Tot Living Area:	854
Rec Room:	0 x 0
Tot Rooms:	6
Bedrooms:	2
Full Baths:	1
Half Baths:	0
Mas Fire Place:	n/a
Frame Fire Place:	n/a
Heating Type:	Basic

Figure 2: An example of a Residential Property Record Card that can be used for documentation of the structure's details

☐ STEP 3: Provide a Project Schedule

Description: Include a detailed project schedule for all tasks identified in the project cost estimate and SOW. The schedule identifies major milestones, with start and end dates for each activity. Project schedules must show completion of all activities (including the construction period) within the period of performance (POP) allowed by the relevant HMA program. Sufficient detail must be provided so FEMA can determine whether the proposed activities can be accomplished within the POP.

References: HMA Guidance Part VI, Section D.4: Program Period of Performance and Part IV, Section H: Deliverables, Key Milestones and Schedule

Approach: Ensure that the information in the schedule supports the SOW and aligns with the project cost estimate.

☐ STEP 4: Provide a Project Cost Estimate

Description: Include a detailed line item cost estimate for all tasks identified in the project schedule and SOW. Allowable costs are costs that are necessary and reasonable for the proper and efficient performance and administration of the federal award. All costs included in the subapplication should be reviewed to verify they are necessary, reasonable, and allocable consistent with the provisions of 2 Code of Federal Regulations Part 200. Include sufficient detail so that FEMA can determine whether costs are reasonable based on proposed activities and level of effort. Costs incurred prior to award may be considered pre-award costs (and eligible for reimbursement) if they are incurred after the date of Presidential Major Disaster Declaration (Hazard Mitigation Grant Program) or after the release of the Notice of Funding Opportunity for Flood Mitigation Assistance.

References: For more detailed information on eligible and ineligible costs for acquisition projects, refer to the Addendum to the HMA Guidance Parts A.3.2 and A.3.3.

Approach: Ensure that the information in the cost estimate supports the SOW and aligns with the schedule.

Allowable costs are costs that are necessary and reasonable for the proper and efficient performance and administration of the federal award and may include but are not limited to:

- Property purchase costs (pre-event or current, as appropriate), including necessary fees
- Removal of demolition debris and household hazardous wastes, including disposal fees
- Abatement of asbestos and/or lead-based paints, including disposal fees
- Removal of all underground improvements (septic, foundation)
- Removal of utilities
- Site grading and leveling
- Structure relocation costs and fees

☐ STEP 5: Provide a Project Site Map

Description: Provide a map showing the project location. If the project includes multiple structures, show the project boundaries, including the staging area. **Figure 3** provides an example of a project site map.

Approach: Provide a map showing the project location, including structures, flooding source, map scale, and location information. For any maps provided, ensure that a scale bar is shown and the map is clearly labeled to identify the project boundaries.

Potential Sources: Official site survey, assessor maps, and topographic maps obtained from the project engineer or planner; maps created using a web-based service such as Google Maps. Flood maps can be downloaded at FEMA's Flood Map Service Center.

Reference: Supplement to the Benefit-Cost Analysis Reference Guide Section 5: Available Technology Aids

☐ STEP 5: Provide a Project Site Map *(continued)*

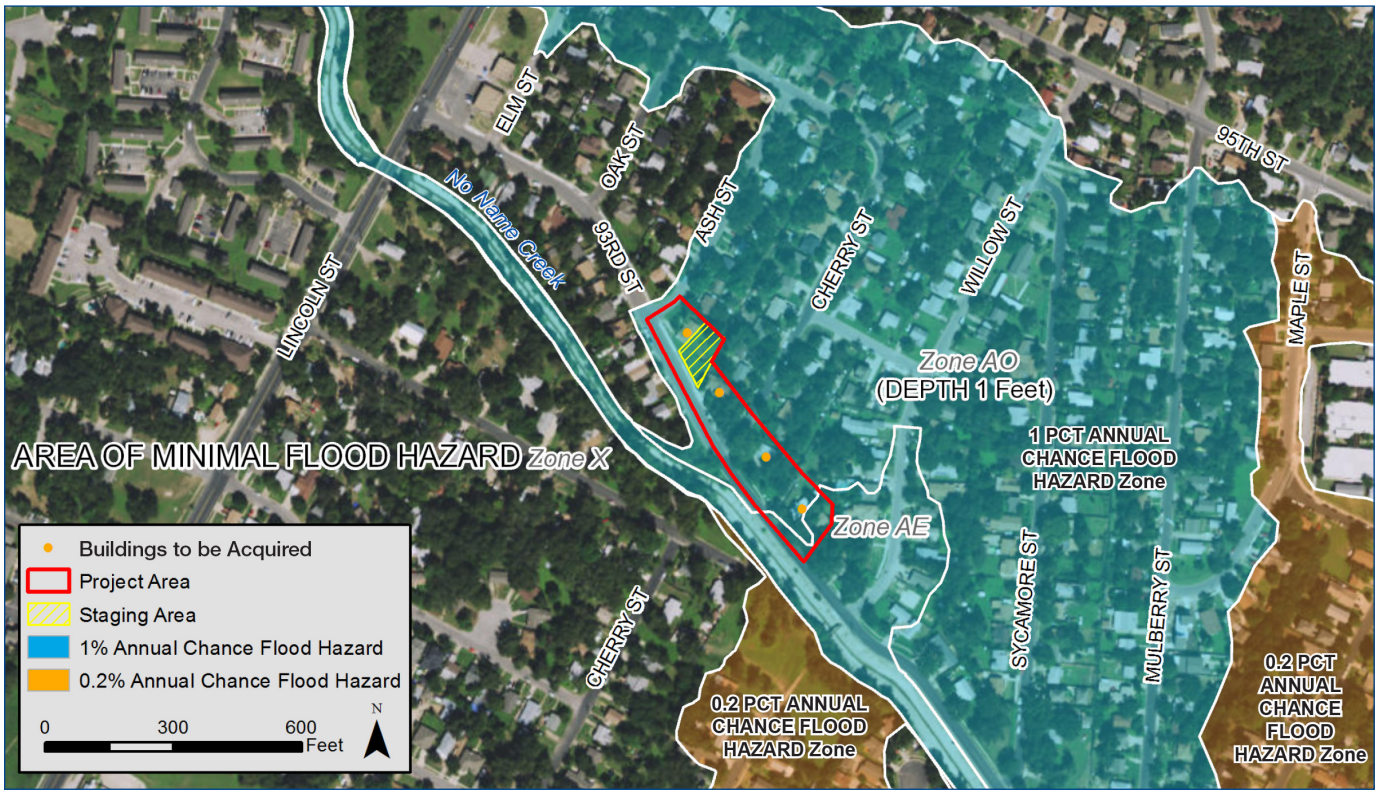


Figure 3: Example of a project site map. Map clearly shows the buildings to be acquired, the project area, the staging area, the flood zones and flood source, and the base flood elevation for the project site. The map includes a north arrow and a scale.

☐ STEP 6: Provide Property Location Information: Address and Latitude and Longitude

Description: Provide both the physical address and the latitude and longitude of each structure in the project application. For projects with multiple properties, tables containing all relevant information by property can be helpful.

PROPERTY ADDRESS

Approach: Provide property address(es) of each structure involved in the mitigation project. This includes street name and number; city, county, or parish; state; and zip code. A post office box number is not an acceptable address. If the address provided does not clearly match up with the structure(s) to be acquired, provide pictures or a site map with the structure(s) footprint(s) clearly identified.

Potential Sources: Property owner, local building inspector, tax assessor records, deed to the property, or engineering plans.

Example: 456 River Road NE, Martinsburg, Berkeley County, WV 25409

LATITUDE AND LONGITUDE

Approach: Provide the latitude and longitude of each structure involved in the mitigation project. The latitude and longitude should be taken at the center of the property. The latitude and longitude can be provided in either decimal degrees (e.g., 27.9807, -82.5340) or degrees, minutes, and seconds (27° 58’ 50.5” N, 82° 32’ 2.4” W).

If your global positioning system (GPS) or mapping application provides degrees, minutes, and seconds, you will need to convert this into decimal degrees to enter it into eGrants (Pre-Disaster Mitigation and Flood Mitigation Assistance applications only). Several free tools are available on the Internet for this conversion. Enter “coordinate converter” into a search engine to find one of these tools.

☐ STEP 6: Provide Property Location Information: Address and Latitude and Longitude *(continued)*

Potential Sources:

- GPS device
- Free online map tools or search engines (that generate latitude and longitude when an address is supplied)

Example: 27.9807, -82.5340 or 27° 58' 50.5" N, 82° 32' 2.4" W

☐ STEP 7: Document the Flood Risk

Description: There are two ways to demonstrate the risk of flooding to a hazard-prone structure: using engineering analysis to estimate the risk or using historical information to demonstrate the risk. In many flood-prone areas, FEMA has performed an engineering analysis of the risk that can be found in an FIS and accompanying FIRMs. In some areas, it may be possible that an engineering professional has performed an independent study of the flood risk and has prepared an engineering report documenting the results. If the area has not been studied in detail, flood risk can be demonstrated through documentation of a flood event history.

References: FEMA's How to Find Your FIRM and Make a FIRMette and FEMA's Flood Map Service Center.

Approach: The following steps should be taken to document flood risk:

1) If an FIS and FIRM are available for the project area, provide a copy of the map, with the project location and impacted structure(s) footprint(s) outlined on the map and a copy of the associated information in the FIS. Ensure that the flood zone in which the structure is located is clear. Note whether the structure is in the SFHA (the 100-year floodplain) and if located in a regulatory floodway.

> Note that if an FIS and FIRM exist for the project area, this documentation should be provided whether or not an independent flood analysis or historical flood information was used to assess the project.

2) If an independent engineering study exists and is being used to assess the flood risk for the project, provide a copy of the professionally certified report. The report should include hydrologic and hydraulic (H&H) calculations used to determine flood elevations for four events with varying flood recurrence intervals such as the 10-year, 50-year, 100-year, or other interval. If these calculations were completed using modeling software, the engineering report should document all model inputs and outputs. Inundation maps are also recommended to support the analysis and document which structures are at risk.
3) If detailed flood analysis is not available, provide a list of historical flood events along with the following information:
   - Specific date of each flood event.
   - Measured or estimated high water marks from the event in the vicinity of the project area if available.
   - Size of the event (flood recurrence interval such as the 10-year, 50-year, or other) if known. See Supplement to the Benefit-Cost Analysis Reference Guide.
   - A list of physical damages to the structures included in the project application and the associated repair costs. Actual insurance claims may be available through the homeowner or BureauNet if the properties are flood repair insured. See Supplement to the Benefit-Cost Analysis Reference Guide.
   - Number of volunteer hours spent at the project site to assist in repair/recovery activities such as damaged material removal if any.
4) If acquisition is intended to mitigate a landslide or erosion risk, document the expected time to failure using engineering analysis or measured erosion rates.

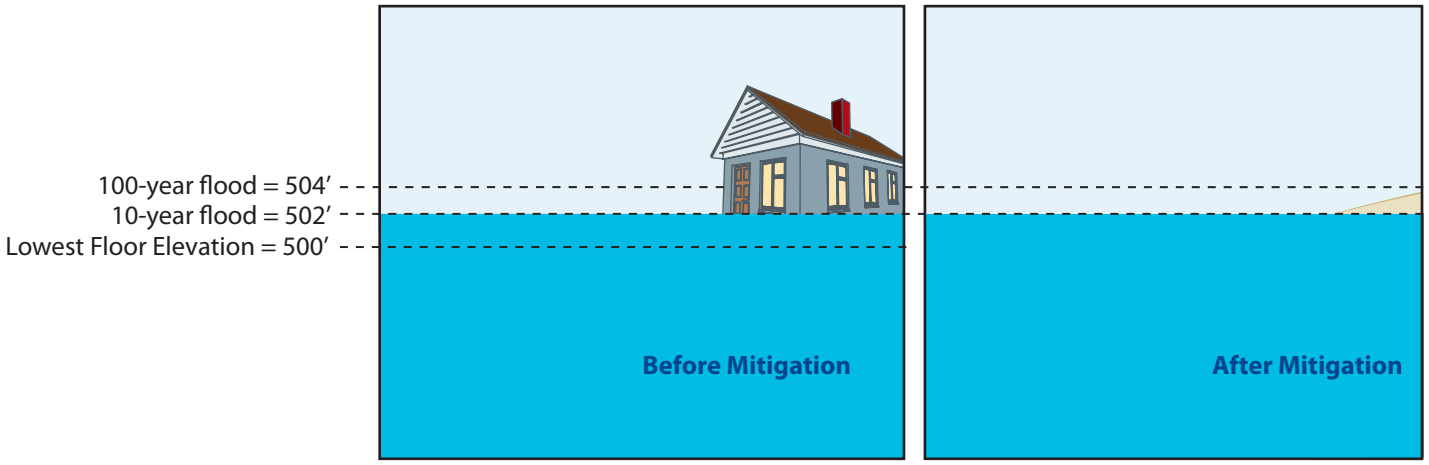
☐ STEP 8: Cost-Effectiveness Analysis

Description: Cost-effectiveness of an acquisition project must be demonstrated in order to obtain FEMA funding. FEMA has provided an approach to demonstrating cost-effectiveness based on pre-calculated benefits which requires minimal documentation, if certain requirements are met (see **Step 8B**). If it is not possible to meet those requirements, a benefit-cost analysis (BCA) is required to assess the cost-effectiveness of the project.

This section provides guidance on the following:

- **Step 8A:** Substantial Damage Waiver
- ***Step 8B:** Pre-calculated Benefits for Acquisition Projects in the SFHA
- ***Step 8C:** BCA Tool – Modeled Damages
- ***Step 8D:** BCA Tool – Historical or Professional Expected Damages
- ***Step 8E:** Additional Benefits for a BCA

A BCA is a quantitative procedure that assesses the cost-effectiveness of a hazard mitigation measure over the useful life of the project by comparing the potential avoided damages (benefits) associated with the mitigation measure to the cost of the project in current dollars. **Figure 4** helps illustrate this concept.



Recurrence Interval	Expected Damages *Before* Mitigation	Expected Damages *After* Mitigation	Damages Avoided (Benefits)
10-year flood	$1,981	$ 0	$1,981
100-year flood	$17,121	$0	$17,121

Figure 4: Before Mitigation, the structure's lowest floor elevation is at 500 feet. At this location, the 10-year flood event is estimated to be 502 feet, causing an estimated $1,981 in damages to the structure, and the 100-yr flood event is estimated to be 504 feet, causing an estimated $17,121 damages to the structure. After Mitigation, when the structure has been acquired and either demolished or relocated, there is no longer risk to the structure at this location. Therefore, the expected damages After Mitigation are $0 for both flood events and the Damages Avoided (the benefits of the mitigation project) are equal to the estimated damages from Before Mitigation.

☐ STEP 8: Cost-Effectiveness Analysis *(continued)*

FEMA will only consider applications that use a FEMA-approved methodology to demonstrate cost-effectiveness. FEMA provides a BCA tool that allows applicants to calculate a project benefit-cost ratio (BCR). The BCR is a calculation of the project benefits divided by the project costs. Projects for which benefits exceed costs (a BCR of 1.0 or greater) are generally considered cost-effective. Benefits may include avoided damage, loss of function, and displacement. In the case of acquisition projects, benefits include:

All BCA inputs must be justified and documented. When appropriate FEMA standard values are used, it should be clearly stated.

- Avoided physical damage to the building and contents
- Avoided displacement costs – the costs required to move to and reside in a temporary location while repairs are performed on the building
- Avoided mental stress and lost productivity (for residential properties)
- Avoided loss of net revenue (for commercial properties)
- Avoided loss of public services (for public properties)
- Avoided volunteer labor time that typically supports cleanup and repair work
- Environmental benefits value of improved ecosystem services through the creation of open space

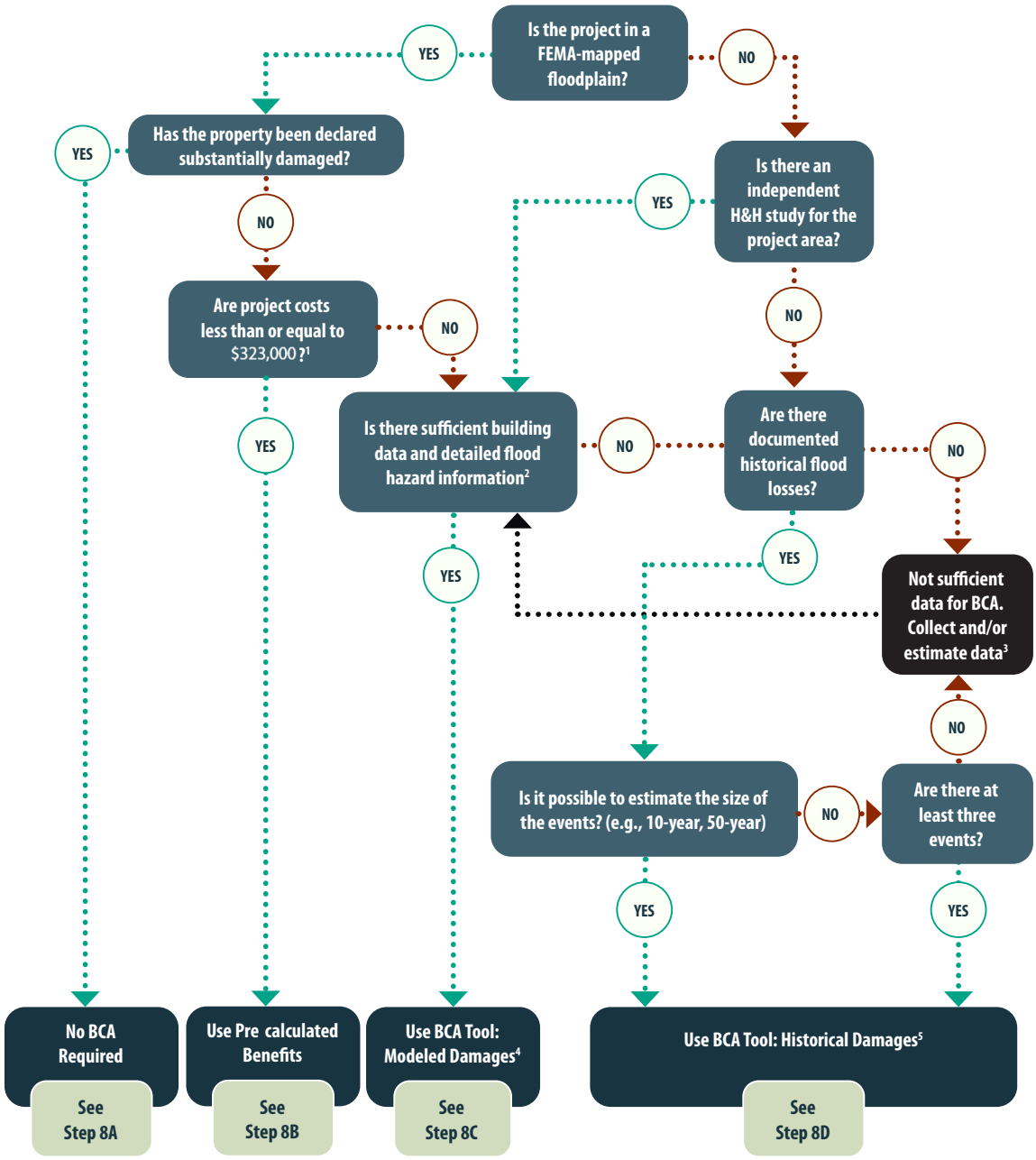
There are a number of benefits that could be counted for a project, and any or all of the benefits can be included in a BCA when analyzing cost-effectiveness. The approaches outlined in **Step 8C** and **8D** of this supplement are focused primarily on avoided physical damage (building and contents). It is recommended that the applicant start a BCA using these types of benefits as they are typically the largest benefits for acquisition projects. If the BCR does not exceed 1.0 or is only slightly over 1.0 after following **Steps 8C** or **8D,** move to **Step 8E** and find additional methods of calculating potential benefits for the project.

This supplement only provides a recommended approach to documenting cost-effectiveness. For detailed guidance on using the FEMA BCA Tool, refer to FEMA BCA Reference Guide and FEMA Supplement to the BCA Reference Guide. For additional questions, contact the ***BC Helpline at bchelpline@dhs.gov or at 1-855-540-6744***.

Approach: There are a number of methods to evaluate cost-effectiveness. The method used will depend on the data collected in the previous steps of this supplement. Use the flow chart provided in **Figure 5** to analyze the data available for the project site and determine the recommended approach.

The FEMA BCA Tool includes embedded Help Content. Click on the information button within the tool to access the Help Content.

STEP 8: Cost-Effectiveness Analysis *(continued)*



NOTES

1. For projects that contain multiple structures, the average cost of all structures in the project must meet the stated criterion. Additionally, the specific geographic location of structures can greatly increase project costs, and the benefits identified may be adjusted using locality multipliers that are included in industry-accepted cost and pricing guides for construction. Refer to HMA Guidance Part IV, I.7.
2. Described in **Step 7** (Approach 1 or 2), must have information on 4 events. Building information must include LFE.
3. Review the BCA Reference Guide and Supplement prior to data collection to ensure that sufficient and relevant data for a BCA is collected for before mitigation and after mitigation conditions. Note that at least one known-frequency event, or three unknown-frequency events are required for historic flood losses. Once data is collected, return to process flow to determine the appropriate BCA approach.
4. For projects with multiple structures, consider using the Professional Expected Damages DFA.
5. Consider using Greatest Savings to the Fund (Refer to HMA Guidance Part IV, I.5).

Figure 5: Flowchart for Determining the Appropriate BCA Frequency and Damage Relationship

☐ STEP 8A: Substantial Damage Waiver

Description: In accordance with HMA Guidance Part IV, Section I.1, the acquisition of structures that have been declared Substantially Damaged and located in a riverine SFHA on a preliminary or effective FIRM is considered cost-effective. If the Substantial Damage Waiver is used, the project application should include a certification that the structures meet these conditions.

If cost-effectiveness is met through Substantial Damage Waiver, no further cost-effectiveness analysis is required.

Approach: Provide NFIP substantial damage determination letters for each structure.

☐ STEP 8B: Pre-calculated Benefits for Acquisition Projects in the SFHA

Description: For acquisition projects located in the SFHA, HMA Guidance Part IV, Section I.7 describes the pre-calculated benefits that may be used to demonstrate cost-effectiveness for acquisition projects, including the specific documentation required.

If the acquisition of a structure located in the 100-year floodplain has a total project cost equal or less than $323,000, then the project is cost-effective. For projects that contain multiple structures, the average cost of all structures in the project must meet the stated criterion. Additionally, the specific geographic location of structures can greatly increase acquisition costs, and the pre-calculated benefit of $323,000 may be adjusted using locality multipliers that are included in industry-accepted cost and pricing guides for construction.

If cost-effectiveness is met through pre-calculated benefits, no further cost-effectiveness analysis is required.

Approach: Ensure that documentation requested under **Steps 1** through **7** of this supplement is provided. A BCA is not required. Ensure that the flood maps provided clearly identify the structures as located in the SFHA.

☐ STEP 8C: BCA Tool – Modeled Damages

Description: The BCA Tool can utilize Modeled Damages to analyze proposed mitigation projects by comparing estimated flood elevations for various flood events to the structure's LFE. The BCA tool then uses the depth of each scenario flood event above (or below in some instances) the structure's LFE and establishes depth-damage curves to estimate damages to the building based on a percentage of the Building Replacement Value (BRV). Additionally, it uses the same depth-damage curves to estimate damage to building contents, displacement from the building, and loss of use of the building. Using Modeled Damages is recommended for BCAs when users have detailed flood hazard information (using **Step 7** methods 1 or 2) and structural data (using **Step 2**).

References: FEMA's Benefit-Cost Analysis Reference Guide, Supplement to the Benefit-Cost Analysis Reference Guide, and FEMA BCA Tool (including Help Content within the tool).

Approach: The following describes the essential flood hazard and structural data required to estimate avoided physical damages using Modeled Damages in the BCA Tool. If **Steps 1** through **7** of this supplement were followed and all data gathered, there should be minimal data collection needed to complete the BCA:

1) Structural information
   - Building information (**Step 2**)
   - Lowest Floor Elevation
2) Project useful life: The project useful life for acquisition projects is 100 years.
3) Building Replacement Value (BRV)
4) Annual maintenance cost associated with maintaining the effectiveness of the acquisition
5) Flood Hazard Information – **Step 7 (1 or 2)**

☐ STEP 8C: BCA Tool – Modeled Damages *(continued)*

Coastal Projects	Riverine Projects
Ground surface elevation	Stream bed elevation
BFE or 100-year elevation with wave action	Flood elevations for the 10-, 50-, 100-, and 500-year recurrence intervals (alternative recurrence intervals are acceptable when using an H&H studies)
Stillwater elevation (for the 10-, 50-, 100-, 500-year recurrence intervals). Alternative RIs are acceptable when using a non FEMA H&H study	Flood discharge rates for the 10-, 50-, 100-, and 500-year recurrence intervals (riverine flood hazard analysis only, alternative recurrence intervals are acceptable when using an H&H study)

Table 1: Flood hazard information for coastal and riverine project types

Although the information listed above is required to calculate avoided building damages, the Modeled Damages approach will use FEMA standard values to automatically calculate avoided loss to contents and avoided displacement costs (the costs required to move and stay in a temporary location while repairs are performed on the structure). If additional benefits are to be calculated, go to **Step 8E.**

☐ STEP 8D: BCA Tool – Damage Frequency Assessment (DFA)

Description: The BCA Tool Damage Frequency Assessment (DFA) calculates project benefits and costs for proposed mitigation projects for any hazard. The DFA compares user-entered damages/losses and the frequency that they occur in the pre-project scenario versus the post-project scenario to calculate benefits based on avoided losses. The DFA module is recommended for BCAs when using historic flood information (**Step 7,** method 3) or for projects with multiple structures using Professional Expected Damages (**Step 7,** method 2).

References: FEMA's Benefit-Cost Analysis Reference Guide, Supplement to the Benefit-Cost Analysis Reference Guide, and FEMA BCA Tool (including Help Content within the tool).

Approach: The DFA calculates project benefits for proposed hazard mitigation projects based on either documented historic damages or professional expected damages from at least one known-frequency event. If recurrence intervals are not known and there are historical damage data from at least three events, the DFA can estimate a recurrence interval. Otherwise, additional data collection or analysis will be needed. The calculation compares pre- and post-project conditions:

- **Before-mitigation:** Based on existing conditions at the site. To demonstrate the current risk, actual historical damages or professionally expected damages for certain severity events (e.g., the 10-year flood, the 50-year flood) can be entered in the DFA to perform a BCA.
- **After-mitigation:** The same scenario flood events should result in reduced damages due to the mitigation project. The post-project damages should be estimated based on the level of protection provided by the project. For acquisition/demolition projects, post-project damages are $0. These projects are the only mitigation projects that do not have any residual risk.

For an acquisition project, the DFA is most typically utilized when there is no detailed H&H analysis for the project area and the risk to the project site is demonstrated through past flood damages to the structure. Information regarding each of the scenario events was described in **Step 7** of this supplement. For each damage event, the corresponding recurrence interval information is needed. If recurrence intervals are not available, the BCA Tool will calculate a recurrence interval when historical damage data from at least three events are provided.

☐ STEP 8D: BCA Tool – Damage Frequency Assessment (DFA) *(continued)*

Potential Sources:

- Insurance claims, receipts from repair of flood damages, FEMA Public Assistance Worksheets, Bureau Net data, documentation of loss of service from a utility provider or Public Works department.
- Property owner affidavit, estimated from damage functions

Example: The attached insurance claim information shows $12,000 in damages to flooring and air conditioning on June 10, 1998 from riverine flooding. The recurrence interval was estimated from gage information to be a 10-year event.

FEMA also allows for the use of the Greatest Savings to the Fund (GSTF) data and methodology to demonstrate cost-effectiveness. The GSTF calculation measures the expected savings of a mitigation project over the project useful life. Using past NFIP claims, the total expected future insurance claims can be projected. GSTF is calculated by subtracting total expected future insurance premiums from expected future claim payments.

☐ STEP 8E: Additional Benefits for a BCA

Description: There are a number of benefits that could be counted for a project. Any or all of the benefits can be used to demonstrate that a project is cost-effective, or, in other words, has a BCR greater than 1.0. Once the initial BCA information is collected and a preliminary analysis is performed, additional benefits may be analyzed if needed.

Approach:

Answer the following questions:

1) Is the building residential? If yes, how many residents reside in the each building? If not readily available, use averages from Census data related to the municipality or county.
2) Does the building include any rental property for which the owner receives rental income?
3) Is there a business run out of the building or home?
4) Are there any non-critical governmental services provided from the building such as a permit office or library?
5) Are there any critical services provided from the building such as police, fire, or medical services?
6) Does the project eliminate or reduce the need for volunteer labor?
7) What is the total project area/parcel size being acquired? What is the land use after the project is complete?

☐ STEP 9: Environmental and Historic Preservation Considerations

Environmental and historical preservation compliance will need to be considered as part of the application process. Please refer to Acquisition and Demolition EHP Review – Supplement No. E1.1 and Acquisition and Relocation EHP Review – Supplement No. E1.2.

Resources

Below is a list of resources identified throughout this supplement. Not all of these resources are necessary for every acquisition project but are provided to ease in identification of source material.

PROGRAM AUTHORITIES

- The National Flood Insurance Act of 1968, As Amended, 42 U.S.C. 4001 et seq.
- The Robert T. Stafford Disaster Relief and Emergency Assistance Act, As Amended, 42 U.S.C. 4001 et seq.
- 44 Code of Federal Regulations
- 2 Code of Federal Regulations Part 200

PROGRAM GUIDANCE

- FEMA Hazard Mitigation Assistance Guidance and Addendum to the Hazard Mitigation Assistance Guidance
- Benefit-Cost Analysis Reference Guide
- Supplement to the Benefit-Cost Analysis Reference Guide

ADDITIONAL TOOLS AND RESOURCES

- FEMA's How to Find Your FIRM and Make a FIRMette
- FEMA's Map Service Center
- Benefit-Cost Analysis (BCA) Tool
- Cost Estimating Principles for Hazard Mitigation Assistance Applications
- FEMA's National Flood Hazard Layer
- HMA Application Development Scope of Work Examples
- HMA Application Development Engineering Case Studies
- Acquisition and Demolition EHP Review – Supplement No. E1.1 and Acquisition and Relocation EHP Review – Supplement No. E1.2
- FEMA Hazard Mitigation Assistance Job Aids

October 2020 | Supplement No. E1.1

Acquisition-Demolition:
INFORMATION REQUIRED FOR ENVIRONMENTAL REVIEW

PURPOSE

The purpose of this Job Aid is to help communities applying for Hazard Mitigation Assistance (HMA) grants for acquisition and demolition mitigation projects understand and provide the documentation needed for the Federal Emergency Management Agency (FEMA) to carry out an **Environmental Planning and Historic Preservation (EHP)** review of a project. It is required by law that all projects funded with HMA grants comply with EHP laws, regulations, and Executive Orders (EO). During the EHP review process, FEMA evaluates the potential impacts of the project on the human and natural environment. FEMA begins the EHP review process when the project application is submitted. It is your responsibility as the subapplicant to provide documentation that accurately describes the project, its purpose and location, existing environmental conditions in the project area, potential project impacts, best management practices (BMPs), different alternatives considered for the project, and mitigation strategies to address environmental impacts of the project. FEMA will assess the potential impacts of the project. The applicant must wait to start work on the project until the EHP review has been completed by FEMA.

FEMA will also conduct a technical review to verify your project's technical feasibility and cost-effectiveness. Refer to the Technical Review Job Aids.

1 Table of Contents

2 What is the EHP review?

During the EHP review, FEMA assesses the potential impacts of your project on nearby physical, cultural (historic and archaeological), biological, and social resources. The National Environmental Policy Act (NEPA) requires FEMA and other federal agencies to assess the environmental impacts of proposed federal actions prior to making decisions. FEMA must also ensure your project is compliant with various federal laws and presidential EOs such as the Clean Water Act (CWA), the Endangered Species Act, the National Historic Preservation Act, EO 11988 on floodplains, and EO 11990 on wetlands. The EHP review may include consultation with other federal and state agencies, which may add time to the review process.

Projects with less potential for impacts may be covered by a Categorical Exclusion (CATEX) under NEPA. Complex projects may need more extensive review through the preparation of an Environmental Assessment (EA) or an Environmental Impact Statement (EIS). For your project, FEMA will prepare or provide support for the NEPA-required documentation, and you can help by providing the information discussed in this Job Aid.

FEMA has predetermined that projects complying with certain criteria do not have significant environmental impacts and may be covered by a CATEX for NEPA compliance. Some acquisition and demolition projects will meet the criteria for CATEX N3 *Federal Assistance for Property Acquisition and Demolition,* which covers actions involving the acquisition of properties and the associated demolition and removal when the acquisition is from a willing seller. The assistance is solely for the purposes of financial compensation for the acquisition, and the land must be deed restricted to open space, recreational, wildlife habitat, or wetland uses in perpetuity. This CATEX does not cover federal assistance for acquisition for the purpose of construction or redevelopment.

3 What Information is Required for the EHP Review of Acquisition and Demolition Projects?

This section outlines information that should be included in your application so that FEMA can review your project for EHP compliance. FEMA HMA program staff will conduct a review to make sure the project complies with HMA program eligibility. For each item, there is an explanation as to why it is needed, where you can find this information, and an example of how the information should be provided to FEMA. Each piece of information requested is needed to develop a comprehensive project description to be included with your application.

1 SCOPE OF WORK

1A: What are you proposing to do?

☐ Describe the acquisition and structure demolition project's scope of work. Acquisition and demolition activities may include:

- Debris removal
- Removal of underground improvements (e.g., septic tanks)
- Removal of utilities
- Site grading
- Permitting

☐ FEMA grant conditions require acquired land to become open space in perpetuity. Describe how the land would be rehabilitated to an open and natural state.

- ☐ If the project would disturb the ground for any reason (e.g., foundation excavation, utility line removal, clearing a staging area), describe the activities (both temporary and permanent) that would require ground disturbance and show the locations on a map or plan view; include the length, width, and depth of the ground disturbance.
- ☐ Describe the existing condition of the ground surface (e.g., pavement, landscape shrubs and trees, previously undisturbed soils with vegetation) that would be disturbed.

Why It's Needed: Acquisition and demolition projects are intended reduce flood risks to people and structures by acquiring property inside floodplains, demolish those structures, and restore the acquired property to open space. A complete project description is essential for FEMA to understand how the project may impact human, environmental, and cultural resources. The methods used to remove structures and buildings may temporarily increase erosion and sedimentation, impact species, or affect human communities. Ground disturbance could affect archaeological resources, soils, or utilities. FEMA will use this information to evaluate impacts and it may affect the complexity of the EHP review.

Potential Sources: Project architects, engineers, design plans or drawings, and contractors.

EXAMPLE:

The project proposes the removal of five residential buildings within the VE flood zone of the Sandy Beach neighborhood. All five buildings are elevated on mason piers anchored 2 feet below the surface. Each structure would be removed using a backhoe that would first remove the elevated building and then remove the piers and anchoring. The backhoe would dig up to six inches below the pier anchoring to completely remove the elevation system. The housing debris would be removed by a licensed hauler and would be taken to the local transfer station at 459 Main St. Once demolition is complete, imported fill would be used to refill holes and then the area would be replanted using native beach grasses.

1B: How would the project area be accessed and where would the staging areas be located?

- ☐ Describe how the project area would be accessed. Show the boundaries of the access routes or points on a map or plan view of the project area and describe the surface type (e.g., asphalt, dirt, gravel).
- ☐ If any new access routes would need to be created for the work to be completed, show where the routes would be located on a map or plan view of the project area.
- ☐ Describe where materials and equipment would be stored and staged during construction. Show the boundaries of the staging areas on a map or plan view of the project area, and describe the surface type (e.g., asphalt, dirt, gravel).
- ☐ If the creation of new access routes or staging areas would require ground disturbance or vegetation removal, describe the extent of the ground disturbance (see Item 1A) and vegetation removal (see Item 3H).
- ☐ Describe the vehicles and equipment that would be used to implement the project.
- ☐ Describe any local restrictions on equipment use (e.g., seasonal or daily restrictions, work hours, local noise ordinances).

Why It's Needed: Demolition of structures may require a new access point to the property or leveling a staging area for construction. FEMA will evaluate the potential for impacts from activities that disturb the ground or remove vegetation.

Why It's Needed: (cont.) Some types of equipment may have impacts related to erosion, noise, air pollution, or accidental releases of fuel and lubricants. Vehicle and equipment use may cause ground disturbance that could impact archaeological resources.

Potential Sources: Project planners, construction contractors, and engineers.

EXAMPLE:

The mechanized equipment used for the demolition would consist of a 1.5 cubic meter backhoe and a hauler truck. The equipment would be staged on the adjacent Marsh Road and the existing driveway to the building. The equipment would require a 15-foot zone around the entire building to properly demolish it.

1C: What are alternatives to the project?

- ☐ Describe what would happen if the project is not implemented.
- ☐ If any other alternatives were developed, describe how they would have achieved the same goal and explain why those options were dismissed. If the public (including groups and agencies) provided input on the alternative(s), include the feedback you received.

Why It's Needed: FEMA may need to compare the impacts of the project with the impacts of alternatives (including any alternatives that were dismissed).

Potential Sources: Project planners, public outreach meetings, board meeting notes, and preliminary designs.

EXAMPLE:

The City developed two alternatives to reduce flood loss to the beach community. The first alternative proposed to elevate buildings 2 feet above the Base Flood Elevation (BFE). The second alternative proposed to relocate the buildings inland to empty lots in the Rosy Gardens development. The elevation alternative was dismissed because the buildings would have to be elevated 15 feet to reach 2 feet above the BFE and coastal regulations prohibit structures of that height in the area. Relocation of the buildings was dismissed because a majority of the building owners would not agree to this alternative. The No Action alternative was also dismissed because the buildings would continue to be at risk for repetitive flood loss.

1D: What is the project schedule?

- ☐ Provide a schedule that includes construction, operation, and maintenance activities, including the months or seasons when work would occur.

Why It's Needed: FEMA will use information on the timing and duration of different activities to evaluate the significance of impacts on people and the environment.

Potential Sources: Project engineer

EXAMPLE:

Implementation of the project is expected to take a total of 6 weeks. Demolition and removal of the building is expected to take 2 weeks and restoration of naturalized area where the building was located would take an additional 4 weeks. The work is expected to take place during the months of February and March.

2 PROJECT AREA AND STRUCTURE INFORMATION

2A: Where is the structure(s) and/or infrastructure located?

- ☐ Provide the geographic coordinates (latitude/longitude) and the physical site address of the project area(s).
- ☐ Provide a geographic information system (GIS), computer-aided design (CAD), Google Earth files (.kmz), or map or image that clearly show the boundaries of the project area. If your project has a complex boundary, a GIS or kmz file is preferred. The information provided should show the boundaries of all temporary and permanent project activities including staging areas, access routes, any vegetation removal, and the affected structure(s).
- ☐ Provide an estimate of the area of ground disturbance in acres or square feet.
- ☐ Provide a few representative photographs of the surrounding area to the north, south, east, and west of the project area.

Why It's Needed: FEMA needs the project location to evaluate existing conditions in the project area and potential project impacts.

Potential Sources: Municipal GIS or CAD data or Google Earth files developed for the project design; local building inspectors; tax assessor records; property deeds; engineering plans. The geographic coordinates of your project area can be obtained using software such as GIS or Google Earth, websites such Google Maps, Bing Maps or latlong.net, smartphone mapping apps, or with a Global Positioning System device.

EXAMPLE:

The project area encompasses three properties located on the seaward side of Dune Road. The physical addresses and geographic coordinates (latitude, longitude) of the property are:

- *2 Dune Rd, Ocean City, MD (38.5455, -73.0560)*
- *4 Dune Rd Ocean City, MD (38.5453, -73.0559)*
- *8 Dune Rd Ocean City, MD (38.5451, -73.0559)*

The map and GIS shapefile included with the application show the project area boundary, access routes, equipment staging locations, and the structures footprints.

2B: Describe the structures in the project area.

- ☐ Provide a description of the type, number, size, and dimensions of structure(s) that would be demolished, including photographs of all sides and the year they were originally constructed.
- ☐ Describe adjacent structures, including photographs and the year that they were originally constructed.
- ☐ Describe the type of foundation for the structure(s) and how it will be removed.
- ☐ Describe any prior improvements or additions that have been made to the structure(s) to be demolished (e.g. new windows, change in roofing material from original construction), changes to the original location (i.e., relocation) of the structure, or other changes to the original structure design.
- ☐ If the structure(s) is designated as historic or is in a designated historic district, provide information on the known historic property/district, as applicable.

Why It's Needed:

FEMA will use the date of construction to screen whether the structures to be removed might be historic and to help determine the effect the project may have on historic properties. Structures that are 45 years or older at the time of application may be eligible for listing in the National Register of Historic Places. Older structures may require additional EHP review. Photographs of the structures may allow FEMA to make a determination without needing to visit the site. Actions that change the character or setting of structures and buildings may also change the cultural value of a building. This could have a negative impact on structures, buildings, sites, objects, or historic districts that may be eligible for listing or be listed in the National Register of Historic Places.

Potential Sources:

Tax assessor data (provide the URL for the tax assessor if possible), GIS-based tax assessor database.

EXAMPLE:

The project area includes one residential home (see attached map). The home is a two-story building built in 1927 with a basement and is 35 feet by 25 feet. The building is in a neighborhood of newer buildings. The dates of adjacent buildings range from 1988 to 2018, see attached tax records for each property adjacent to the property proposed for acquisition.

Photo of the South and East Side of Building

Photo of North and West Side of Building

3 POTENTIAL IMPACTS ON PEOPLE, THE ENVIRONMENT, AND CULTURAL RESOURCES

3A: Has the public been notified or provided input?

- ☐ Explain any controversy that exists or could exist related to the project.
- ☐ Describe any existing or planned public engagement activities for the project.

Why It's Needed: If there is or could be controversy around a project, FEMA may need to use a higher level of NEPA documentation. Public input can help identify potential impacts on environmental and cultural resources or low-income and minority communities. You may also be involved in the publication of public notices, in accordance with FEMA procedures.

Potential Sources: Notices in the local newspapers, public outreach meetings, website postings, and project planners.

EXAMPLE:

A public meeting that addressed the acquisition of properties was held at the Osprey Community Center for all eligible residents. The meeting was held May 24 and offered residents a chance to ask questions and complete applications. Once the grant is approved, a follow up meeting is planned to present the final list of properties that would be acquired and provide details on the proposed park that would be constructed where the demolished structures were located. There was no controversy because only willing sellers are participating.

3B: Did you coordinate with or consult regulatory agencies?

- ☐ Describe any agency coordination and permits you obtained from federal, state, or local agencies to implement the project. Provide copies of any coordination materials, permit applications, or approvals.

Why It's Needed: If you have already coordinated with an agency, then FEMA may be able to avoid duplication of effort. FEMA also may coordinate with state or federal agencies that have issued permits and approvals to confirm findings, identify best management practices (BMPs), or determine mitigation measures for project impacts. Many agencies, including U.S. Army Corps of Engineers, offer a pre-application process where you can learn more about the permits and conditions that may be required for your project.

Potential Sources: Project planners.

EXAMPLE:

In December, the Town of Atlantis consulted with the State Coastal Agency on the proposed acquisition and demolition project and subsequent dune installation pursuant to the state's Coastal Management Program. The Coastal Agency determined the that project was consistent with the state's coastal zone policies, see attached consultation.

3C: Were environmental or cultural studies conducted?

- ☐ If any environmental or cultural studies were completed either for the project or for other projects in the same area by local, state, or federal entities, please provide copies. Studies could include evaluations of cultural resources (e.g., historic, archaeological) or environmental resources (e.g., threatened and endangered species, wetlands, hydrology).

Why It's Needed: FEMA may use the findings during the EHP review to avoid duplicating efforts.

Potential Sources: Project contractor or engineer, EHP studies required by state law or local ordinances, and environmental studies completed within or near the project area.

EXAMPLE:

For a prior project along the Dunes Boulevard corridor that passes through the project area, the County Department of Transportation conducted a biological survey for the threatened Red knot (Calidris canutus rufa) and an archaeological survey. The reports from those studies are attached. These prior studies overlap with the current project area and cover about half of the project area.

3D: Would your project encroach on floodplains?

☐ Describe the project activities in the floodplain, if applicable, as well as use and occupancy of the facility.

Why It's Needed: FEMA needs to understand whether your proposed project will physically impact a floodplain or whether the project could be impacted by flooding during and after construction pursuant to EO 11988 – Floodplain Management. If the project has the potential to impact floodplains, you may be involved in the publication of public notices required by FEMA procedures.

Potential Sources: Local floodplain agency/administrator, history of flooding/flood claims, FEMA Flood Map Service Center.

EXAMPLE:

Based on a review of FIRM Map #06087C0357F effective 9/27/2017, the entire project area is within the VE flood zone. In the long-term, the demolition of the structures, creation of a dune complex, and the planting of native coastal grasses would restore the natural functions and values of the floodplain.

3E: Are there surface waters or wetlands in the project area?

☐ Describe any surface waters in or near the project area (e.g., ponds, lakes, rivers, streams, wetlands, other waterbodies).

☐ Describe any measures that would be used to avoid waterbodies or avoid impacting water (e.g., setbacks, silt fence).

☐ Provide any permits or applications that were developed related to project impacts on surface waters.

Why It's Needed: FEMA needs to evaluate existing conditions and potential project impacts on water resources regulated by the CWA, the Coastal Zone Management Act, and EO 11990 – Protection of Wetlands. If the project has the potential to impact wetlands, you may be involved in the publication of public notices required by FEMA procedures. Temporary construction measures, such as silt fencing, and their manner of placement, may cause ground disturbance and could affect archaeological resources or waters of the U.S.

Potential Sources: CWA permits and approvals, wetland delineations of the site, and National Wetlands Inventory Wetlands (NWI) Mapper.

EXAMPLE:

There are a series of known saltwater marshes between the project properties. The marsh areas are far enough away from the structures that the City will be able to avoid them during demolition. The restoration work to create dunes and replant with native dune grasses would also avoid these marshes because the work would be focused on restoring the previously disturbed areas around and under the demolished structures.

3F: Would your project have an impact on hazardous or contaminated materials?

- ☐ Describe any known hazardous or contaminated materials that may be present in the project area or that are needed to implement the project.
- ☐ If your project would use any hazardous materials, describe the BMPs that would be used to minimize exposure of people and the environment to those materials and how the materials would be discarded.

Why It's Needed: The presence, management, use, or generation of hazardous materials can impact the natural and human environment. FEMA needs to evaluate potential project impacts from (or use of) hazardous and contaminated materials regulated by federal and state law including the Comprehensive Environmental Response, Compensation, and Liability Act and the Resource Conservation and Recovery Act. Any site that has or has had recorded hazardous waste issues will require a Clean Site Certification prior to grant approval.

Potential Sources: Environmental site assessments, site visits, state environmental agency/databases, and EPA Envirofacts.

EXAMPLE:

Owing to their age, the buildings to be demolished may contain asbestos; a licensed abatement specialist would inspect each structure prior to demolition. If asbestos is found, it would be abated and hauled off-site by licensed professionals. All underground storage tanks will be decommissioned according to state regulations and any contaminated soils from leaking tanks will be excavated and removed. Any waste materials produced would be hauled to the municipal landfill. There are no other known hazardous wastes on site.

3G: Would your project use imported fill?

- ☐ If your project involves the use of fill, describe the type and source of the fill material.

Why It's Needed: FEMA needs to confirm that the fill used is free from contaminants and is in compliance with federal and state hazardous and contaminated materials laws. FEMA also needs to evaluate the source of fill for potential effects to historic properties. If a borrow site is being used, it's also important to ensure that the area is not archaeologically sensitive.

Potential Sources: Project planner or engineer, and similar completed projects.

EXAMPLE:

Once demolition is complete, imported fill would be used to create a natural dune to protect the remaining properties inland. The sand fill will likely come from offshore dredging activities. We are currently coordinating with U.S. Army Corps of Engineers (USACE) for material, see attached correspondence.

3H: Is vegetation removal required?

- ☐ If the project would remove vegetation for any reason, describe the type and amount or area of vegetation (e.g., two oak trees, one-quarter acre of turf grass).
- ☐ Describe how vegetation would be removed, if applicable (e.g., root ball removal, flush cut, dug up, chemical weed killer).
- ☐ Provide photographs of the vegetation to be removed in the project area.
- ☐ Would you restore vegetation after the project is complete or does the project include planting or seeding of vegetation? If so, describe where and how it will be planted (e.g., by hand, with machinery, broadcast seeding) and the types (e.g., grasses, trees, shrubs) and species of vegetation that would be planted.
- ☐ Would any special techniques be used to ensure survival of the plants/seeds (e.g., mulch, irrigation, protective fencing)?

Why It's Needed: Vegetation removal could cause the loss of habitat for wildlife species including endangered or threatened species. Root ball removal could also impact archaeological resources that may be present within the root system. FEMA will evaluate the impact vegetation removal has on environmental and cultural resources.

Potential Sources: Project planner or engineer, landscape architects, and similar completed projects.

EXAMPLE:

The only vegetation that would be removed is landscape shrubs and bushes around the residential structures, totaling approximately 0.3 acres. Plants would be removed using handheld tools and the vegetation would be hauled off to the nearest transfer station by the county. Once the building is removed, the area would be planted with native grasses.

3I: What Best Management Practices (BMPs) would the project use?

- ☐ List all BMPs to be implemented, as part of the project, to reduce potential impacts.

Why It's Needed: Most projects require BMPs to limit noise, dust, and erosion while the project is being implemented. FEMA needs to document BMPs that will be used to ensure the project's environmental impacts will be avoided and minimized, where possible, in compliance with federal and state environmental laws.

Potential Sources: Project engineers; BMP guidance provided by federal, state, or local environmental agencies; and BMPs specified in permit approvals issued by federal, state, or local agencies.

EXAMPLE:

The city would implement the following BMPs during project implementation:

Air Quality: The selected contractor would keep vehicle and mechanical equipment running times to a minimum and all engines would be properly maintained.

Water Quality: A silt fence would be installed prior to demolition to minimize the impact of soil erosion while the project is being implemented. All equipment would be kept at least 100 feet from the stream banks.

Coastal Zone: All construction equipment would stay within the property boundary and work would remain 3 feet inland from the dune system beyond the project property at all times.

EXAMPLE (cont.):

Hazardous Materials: Equipment and vehicles would be inspected daily for fuel and fluid leaks. Any spills or leaks would promptly be contained and cleaned up and the equipment would be repaired. A spill prevention plan would be developed for hazardous materials to be used during project implementation. Storage and handling of hazardous and toxic materials would occur at least 150 feet away from streams and waterbodies.

Noise: No project activities would occur between the hours of 10:00 p.m. to 7:00 a.m., in compliance with the town's noise ordinance.

4 What Happens Next?

The EHP review process occurs throughout the life cycle of the HMA project and has three specific steps where different aspects of the review process occur. The three steps are detailed below.

- ☐ Pre-Award: This is the information and documentation-gathering stage of the EHP grant review process. Following the directions provided in this Job Aid will help you create a comprehensive application which includes all foreseeable required information needed for the EHP review. Providing this information as quickly and as accurately as possible will help expedite the next steps and reduce the need for FEMA to request additional information. The need for additional information may significantly impact the length of time for the EHP review up to 60 days, if not more, for every request for information sent.
- ☐ Formal EHP Review: Once the required information and documentation is gathered, FEMA will review the project to ensure it is compliant with all EHP-related laws, EOs, and regulations. The level of EHP review necessary for a particular project will depend on the type of project, its complexity, and the potential impacts it may have on the human and natural environment. Less complex projects with no potential impacts may undergo a short EHP review, while more complex projects with several potential impacts may take longer to review and may require consultation with other federal/state agencies, and/or the creation of an EA or EIS. At the end of this process, a Record of Environmental Consideration (REC) will be completed, itemizing the project conditions that will be included with your award packet. These conditions could include measures such as reaching out to other federal agencies for potential permits, ensuring proper documentation is followed during waste disposal, and stopping work if a sensitive historic resource is discovered. You will want to carefully review all the conditions in your award packet during project implementation to remain compliant with the grant.
- ☐ Closeout: Once the project is complete, the applicant (State/Tribe) will request project closeout from FEMA. FEMA will begin closing out the project, and during this time, will follow up on all the conditions stipulated in the REC. If any condition required you to document activities or outcomes, FEMA will request that documentation during closeout. If FEMA discovers that any of the conditions were not met, the project could be found noncompliant and FEMA may seek to recover the grant money.

If deviations from the proposed scope of work result in design changes, the need for additional ground disturbance, additional removal of vegetation, or result in any other unanticipated changes to the physical environment, you must contact FEMA, and a re-evaluation under NEPA and other applicable environmental laws would be conducted.

5 Scope of Work Checklist

Below is a summary checklist of all the questions from the previous three sections. Use this checklist to help you as you complete your information packet.

1 SCOPE OF WORK

- ☐ Describe the acquisition and structure demolition project's scope of work. Acquisition and demolitions activities may include debris removal, removal of underground improvements (e.g., septic tanks), removal of utilities, site grading, or permitting.
- ☐ FEMA grant conditions require acquired land to become open space in perpetuity. Describe how the land would be rehabilitated to an open and natural state.
- ☐ If the project would disturb the ground for any reason (e.g., foundation excavation, utility line removal, clearing a staging area), describe the activities (both temporary and permanent) that would require ground disturbance and show locations on a map or plan view; include the length, width, and depth of the ground disturbance.
- ☐ Describe the existing condition of the ground surface (e.g., pavement, landscape shrubs and trees, previously undisturbed soils with vegetation) that would be disturbed.
- ☐ Describe how the project area would be accessed. Show the boundaries of the access routes or points on a map or plan view of the project area and describe the surface type (e.g., asphalt, dirt, gravel).
- ☐ If any new access routes would need to be created for the work to be completed, show where the routes would be located on a map or plan view of the project area.
- ☐ Describe where materials and equipment would be stored and staged during construction. Show the boundaries of the staging areas on a map or plan view of the project area, and describe the surface type (e.g., asphalt, dirt, gravel).
- ☐ If the creation of new access routes or staging areas would require ground disturbance or vegetation removal, describe the extent of the ground disturbance and vegetation removal.
- ☐ Describe the vehicles and equipment that would be used to implement the project.
- ☐ Describe any local restrictions on equipment use (e.g., seasonal or daily restrictions, work hours, local noise ordinances).
- ☐ Describe what would happen if the project is not implemented.
- ☐ If any other alternatives were developed, describe how they would have achieved the same goal and explain why those options were dismissed. If the public (including groups and agencies) provided input on the alternative(s), include the feedback you received.
- ☐ Provide a schedule that includes construction, operation, and maintenance activities, including the months or seasons when work would occur.

2 PROJECT AREA AND STRUCTURE INFORMATION

- ☐ Provide the geographic coordinates (latitude/longitude) and the physical site address of the project area(s).

2 PROJECT AREA AND STRUCTURE INFORMATION (cont.)

- ☐ Provide a geographic information system (GIS), computer-aided design (CAD), Google Earth files (.kmz), or map or image that clearly show the boundaries of the project area. If your project has a complex boundary, a GIS or kmz file is preferred. The information provided should show the boundaries of all temporary and permanent project activities, including staging areas, access routes, any vegetation removal, and the affected structure(s).
- ☐ Provide an estimate of the area of ground disturbance in acres or square feet.
- ☐ Provide a few representative photographs of the surrounding area to the north, south, east, and west of the project area.
- ☐ Provide engineering drawings, if available.
- ☐ Provide a description of the type, number, size, and dimensions of structure(s) to be demolished, including photographs of all sides and the year they were originally constructed.
- ☐ Describe any adjacent structures, including photographs and the year that they were originally constructed.
- ☐ Describe the type of foundation of each structure and how it will be removed.
- ☐ Describe any prior improvements or additions that have been made to the structure(s) to be demolished (e e.g., new windows, change in roofing material from original construction), changes to the original location (i.e., relocation) of the structure, or other changes to the original structure design.
- ☐ If the structure(s) is designated as historic or is in a designated historic district, provide information on the known historic property/district, as applicable.

3 POTENTIAL IMPACTS ON PEOPLE, THE ENVIRONMENT, AND CULTURAL RESOURCES

- ☐ Explain any controversy that exists or could exist related to the project.
- ☐ Describe any existing or planned public engagement activities for the project.
- ☐ Describe any agency coordination and permits you obtained from federal, state or local agencies to implement the project. Provide copies of any coordination materials, permit applications, or approvals.
- ☐ If any environmental or cultural studies were completed either for the project or for other projects in the same area by local, state, or federal entities, please provide copies. Studies could include evaluations of cultural resources (e.g., historic, archaeological) or environmental resources (e.g., threatened and endangered species, wetlands, hydrology)..
- ☐ Describe the project activities in the floodplain, if applicable, as well as use and occupancy of the facility.
- ☐ Describe any surface waters in or near the project area (e.g., ponds, lakes, rivers, streams, wetlands, other waterbodies).
- ☐ Describe any measures that would be used to avoid waterbodies or avoid impacting water (e.g., setbacks, silt fence).
- ☐ Provide any permits or applications that were developed related to project impacts on surface waters.
- ☐ Describe any known hazardous or contaminated materials that may be present in the project area or that are needed to implement the project.

3 POTENTIAL IMPACTS ON PEOPLE, THE ENVIRONMENT, AND CULTURAL RESOURCES (cont.)

- ☐ If your project would use any hazardous materials, describe the best management practices (BMPs) that would be used to minimize exposure of people and the environment to those materials and how they would be discarded.
- ☐ If your project involves the use of fill, describe the type and source of the fill material.
- ☐ If the project would remove vegetation for any reason, describe the type and amount or area of vegetation (e.g., two oak trees, one-quarter acre of turf grass).
- ☐ Describe how vegetation would be removed, if applicable (e.g., root ball removal, flush cut, dug up, chemical weed killer).
- ☐ Provide photographs of the vegetation to be removed in the project area.
- ☐ Would you restore vegetation after the project is complete or does the project include planting or seeding of vegetation? If so, describe where and how it will be planted (e.g., by hand, with machinery, broadcast seeding) and the types (e.g., grasses, trees, shrubs) and species of vegetation that would be planted.
- ☐ Would any special techniques be used to ensure survival of the plants/seeds (e.g., mulch, irrigation, protective fencing)?
- ☐ List all BMPs to be implemented, as part of the project, to reduce potential impacts.

ADDITIONAL RESOURCES:

- Supplemental Job Aid No. T1.2 – Acquisition and Demolition Technical Review
- FEMA's Office of Environmental and Historic Preservation – Home page of FEMA's EHP office
- HMA EHP At-a-Glance Guide – Provides a general overview of EHP review considerations
- FEMA Directive 108-1 – Legal document that directs how FEMA EHP reviews projects
- DHS Instruction Manual 023-01-001-01, Rev 01 – Appendix A lists CATEXs