

Hazard Mitigation Cost Effectiveness Narrative: Demonstrating Cost- Effectiveness for Projects Less than \$1 Million

FEMA is providing greater access to its Hazard Mitigation Assistance (HMA) grant programs by addressing one of the challenges identified by our partners: the successful completion of a project Benefit-Cost Analysis (BCA).

Subapplicants may submit a cost-effectiveness narrative, rather than a BCA, for projects costing less than \$1 million. This Program Support Material provides instructions for how to complete a cost-effectiveness narrative needed for FEMA to validate the cost-effectiveness of the proposed project.

Overview

Applicants and subapplicants applying for the Building Resilient Infrastructure and Communities (BRIC) Program, Flood Mitigation Assistance (FMA) Program, including FMA Swift Current, Hazard Mitigation Grant Program (HMGP) and HMGP Post Fire must provide a BCA or other documentation that demonstrates cost-effectiveness.

FEMA will then verify the project's cost-effectiveness and estimate a Benefit-Cost Ratio (BCR) for the project during its review. Projects with a total cost¹ of less than \$1 million that qualify for BCA Assistance are not required to submit a cost-effectiveness narrative. In no case will FEMA award a hazard mitigation project that is not cost-effective.

A cost-effectiveness narrative is a written description, including both qualitative and quantitative data, of how a proposed mitigation project would benefit the community by protecting lives and the built environment. This Program

¹ The costs captured in the BCA must reflect the total project cost required to complete the mitigation activity, not just the federal share. Similarly, some subapplicants may not request HMA up to the available federal cost share. In these cases, the BCA must still use the sum of all required (not just requested) costs necessary to achieve the hazard mitigation purpose of the project.

Management costs, as defined in this guide, may be excluded from the project cost for the purpose of the BCA. Costs should be consistent with the project budget. Refer to The Hazard Mitigation Assistance Program and Policy Guide.

Support Material describes the elements of a cost-effectiveness narrative. Additional context and guidance for the concepts described in this Program Support Material can be found in the FEMA Hazard Mitigation Assistance Program and Policy Guide.

How to Complete a Cost-Effectiveness Narrative

In order to provide FEMA with enough data to verify the project's cost-effectiveness and estimate a Benefit-Cost Ratio, subapplicants should ensure they address the following questions in their narrative:

- How often does the hazard being mitigated occur?
 - For example: "Power outages occur at the Hazardtown fire station about once every 3-5 years."
- How many people benefit from the proposed mitigation project, and how was this number determined? (See Table 1 for more information on how to determine the project's benefitting population for purposes of the cost-effectiveness narrative.)
 - For example: "The proposed mitigation project, installing a generator at the Hazardtown fire station, benefits the fire station's service population of 700 residents."
- What structures, infrastructure, and/or building contents, if any, will be damaged if the project is not implemented?
 - For example: "If the proposed mitigation project is not implemented, Hazardtown Middle School will continue to experience flooding in the auditorium and classrooms on the north side of the building, damaging school equipment and resulting in costly mold remediation."
- What public services (including public safety, transportation, and utilities) and/or businesses, if any, would lose function during future hazard events if the project is not implemented?
 - For example: "If the culvert under Overflow Road at Muddy Creek is not upsized, Overflow Road will continue to flood during intense rainfall events and impede access to the Muddy Creek Shopping Center."
- Are there any additional benefits directly attributable to the proposed project that are not captured elsewhere in the cost-effectiveness narrative?
 - For example, would the project result in avoided injuries or deaths; reduced emergency management costs; reduced maintenance costs; protection of cultural, historical, or agricultural resources; reduced carbon emissions; or other economic benefits to the community?

BRIC, FMA, and FMA Swift Current Application/FEMA GO Instructions

- The cost-effectiveness narrative should be in Microsoft Word or Adobe PDF format and attached in the Cost-Effectiveness section of the FEMA GO subapplication.
- For the question "How was cost-effectiveness determined for this project?" the subapplicant should select "Other BCA methodology approved by FEMA in writing."
- For the total project benefits, enter a value equal to the project cost.

- For the question “Was sea level rise incorporated into the flood elevations in the BCA?” select “No.”
- For the question “Were environmental benefits added to the project benefits?” select “No.”
- For the question “Were social benefits added to the project benefits?” select “No.”

HMGP and HMGP Post Fire Application Instructions

- The cost-effectiveness narrative should be in Microsoft Word or Adobe PDF format and attached to the application. Supporting documentation and data should also be attached to the application for FEMA to estimate the BCR. If the applicant cannot provide documentation to support all of the information in the narrative, then FEMA reviewers may work with information provided to estimate the BCR.

Additional Information and Resources

For questions about developing a cost-effectiveness narrative, contact the BCA Helpline at bchelp@fema.dhs.gov or 855-540-6744 (toll free). For Building Resilient Infrastructure and Communities and Flood Mitigation Assistance questions, call the HMA Helpline at 866-222-3580.

Appendix A

Table 1: How to Determine Number of People Benefitting from Proposed Mitigation Project

Project Type ²	Examples of Benefitting Population
Property acquisition for open space	<ul style="list-style-type: none"> - Residential structures: Number of people living in home or building - Commercial, industrial, or recreational structures: Average daily number of workers and/or customers - Utilities: Number of customers served by the facility being mitigated - Critical facilities, including police stations, fire stations, hospitals, or other government facilities: Service population - Schools: Number of students - Roads and/or bridges: the average daily traffic (ADT) count of the portion being mitigated - Number of people living or working in the geographic area directly impacted by the proposed mitigation activity
Mitigation reconstruction	
Structure elevation	
Floodproofing	
Stabilization	
Flood risk reduction: localized flood risk reduction	
Flood risk reduction: non-localized flood risk reduction	
Wildfire mitigation	
Warning system	
Aquifer storage and recovery	
Retrofit: Structural retrofit	
Retrofit: Non-structural retrofit	
Retrofit: Seismic structural retrofit	
Retrofit: Seismic non-structural retrofit	
Retrofit: Wind retrofit	
Retrofit: Wildfire retrofit	
Retrofit: Snow retrofit	
Secondary power source: Generator	
Secondary power source: Solar photovoltaic system	
Secondary power source: Microgrid	
Secondary power source: Backup battery power system	
Tsunami vertical evacuation refuge	<ul style="list-style-type: none"> - Occupancy of vertical evacuation refuge or safe room
Safe room	
Other innovative solutions	<ul style="list-style-type: none"> - Number of people directly impacted by proposed mitigation activity

² For more information, see the Hazard Mitigation Assistance Program and Policy Guide.