

MEMA FY21 BRIC/FMA Program
FEMA Benefit Cost Analysis Workshop
 Reference Handout
 April 28, 2021

What is a Benefit Cost Analysis (BCA)?

- Demonstrates if project is cost-effective
 - *If an action's benefits are greater than its costs, then it is considered cost-effective.*
- Once benefits for a mitigation action are added up, that value is divided by the costs, which produces the Benefit-Cost Ratio (BCR).

$$\frac{\text{Benefits}}{\text{Costs}} = \text{BCR}$$

- *If the BCR is greater than or equal to 1.0, then the action is cost-effective*

What is a Benefit?	What is a Cost?
Avoided Physical Damages Avoided Loss of Function Costs Avoided Casualties Avoided Emergency Management Costs <i>Additional Benefits:</i> <ul style="list-style-type: none"> • <i>Environmental Benefits</i> • <i>Social Benefits</i> 	The price to develop and maintain the project: <ul style="list-style-type: none"> • Anticipated cash/in-kind federal match • Equipment • Labor • Materials • Subcontractors

Benefits = Damages (\$) Before Mitigation – Damages (\$) After Mitigation

What is a Damage?

- An application must contain actual or projected damage estimations and recurrences
- Damages explain the purpose and need for the project

How to Document Damage?

- Be holistic, think what did this cost the community? How can that cost be verified?
- Document all data, numbers, information, anything submitted in and with the BCA
- Organize like telling a story of the damage: what, where, why, how
- Pictures! Pictures of damage and/or event occurrence and severity



DOCUMENT ALL DATA,
 NUMBERS,
 INFORMATION,
 ANYTHING SUBMITTED
 IN AND WITH THE BCA



ORGANIZE LIKE TELLING
 A STORY OF THE
 DAMAGE: WHAT, WHERE,
 WHY, HOW



PICTURES! PICTURES OF
 DAMAGE AND/OR
 DAMAGE EVENT
 DOCUMENTS
 OCCURRENCE AND
 SEVERITY (IN SOME
 CASES)

Helpful Resources:

- [FEMA Benefit Cost Analysis Toolkit](#)
- [FEMA BCA Reference Guide](#)
- [FEMA Supplement to the Benefit-Cost Analysis Reference Guide](#)
- [BCA Software Training](#)
- [MEMA BCA Website](#)

Documentation Reference Resources:

- [FEMA mapping data](#)
 - [FEMA Map Service Center \(MSC\)](#)
 - [FEMA National Flood Hazard Layer \(NFHL\) Viewer](#)
 - [FEMA Map Information Exchange \(FMIX\)](#)
- State National Flood Insurance Program (NFIP) representatives: repetitive loss, documented damages
 - [NFIP Information and Resources](#)
- [U.S. Army Corps of Engineers \(USACE\) New England District](#)
 - [Weather and Hydrologic Data](#)
 - [Access to Water Resource Data \(Dams/Levees/Reservoirs\)](#)
- U.S. Geological Survey (USGS), National Water Service (NWS) and National Oceanic and Atmospheric Administration (NOAA) weather data
 - [USGS Water Data for Nation](#)
 - [USGS Current Water Data for Nation](#)
 - [Historical Observations](#)
 - [USGS StreamStats](#)
 - [National Weather Service/NOAA Weather & Hazard Data Viewer](#)
 - [National Weather Service/NOAA Snow/Ice Page](#)
 - [NWS Advanced Hydrologic Prediction Service](#)
 - [National Water Information System: Mapper](#)
 - [USGS Current Water Data for Massachusetts](#)
 - [USGS Surface-Water Data for Massachusetts](#)
- Insurance claims/records BureauNet/Simple and Quick Assessment (SQA) Net information:
 - [NFIP Reporting](#)
- Newspaper accounts citing credible sources
- Public agency data
- Copies of engineering/technical expert reports
- Letter from a local official with identified damage and damage assessment methodology
- Letter from providers confirming or identifying data gaps
- Damage repair records, or data from the State/local agency, local government