

PDM – Office Hours

June 2022



FEMA

An aerial photograph of a coastal town, likely in New England, featuring a harbor filled with numerous sailboats and yachts. The town is built on a hillside, with a prominent church steeple visible on the right. The entire image is overlaid with a semi-transparent blue filter. The text "BCA Efficiencies" is centered in the left half of the image.

BCA Efficiencies

Leverage Precalculated Benefits for Certain Project Types

- ❑ Acquisitions and elevations in the Special Flood Hazard Area
- ❑ Acquisition of RL / SRL structures
- ❑ Substantial Damage Waiver
- ❑ Residential hurricane wind retrofits
- ❑ Nonresidential hurricane wind retrofits
- ❑ Individual tornado safe rooms
- ❑ Post-wildfire mitigation
- ❑ Hospital generators

Refer to PCB memoranda at:
<https://www.fema.gov/grants/guidance-tools/benefit-cost-analysis>



Acquisition and Elevation Pre-calculated Benefits Update

- Acquisitions: \$323,000 per structure
 - Also applicable to RL/SRL structures outside the SFHA
- Elevations (and Mitigation Reconstruction): \$205,000 per structure
- All other existing requirements remain in place
- Location factors can be applied

U.S. Department of Homeland Security
Washington, DC 20472



MEMORANDUM FOR: Regional Administrators
Regions I – X

ATTENTION: Regional Mitigation Division Directors
Hazard Mitigation Assistance Branch Chiefs

FROM: Angela R. Gladwell ANGELA R. GLADWELL
Director, Hazard Mitigation Assistance Division
Federal Insurance and Mitigation Administration
Digitally signed by ANGELA R. GLADWELL
Date: 2022.02.15 13:37:17 -0500

DATE: February 15, 2022

SUBJECT: Benefit-Cost Analysis Efficiencies for Repetitive Loss and Severe Repetitive Loss Acquisition Projects Located Outside the Designated Special Flood Hazard Area

I. Background and Purpose of This Memorandum

This memorandum establishes the use of a pre-calculated benefit to demonstrate cost-effectiveness for Repetitive Loss (RL) and Severe Repetitive Loss (SRL) acquisition projects located outside the designated Special Flood Hazard Area (SFHA).

In this memorandum, RL refers to a structure or property meeting either (1) or (2) from the following definitions:

- (1) A structure that meets one of the two following qualifiers:
 - a. Two or more claims of more than \$1,000 paid by the National Flood Insurance Program (NFIP) within any rolling 10-year period, since 1978; or
 - b. Two or more claims (building payments only) that, on average, equal or exceed 25 percent of the market value of the property.¹
- (2) A structure covered by a contract for flood insurance made available under the NFIP that meets both of the two following qualifiers:

¹ This definition is based on the definitions for RL used by the NFIP program. See 44 C.F.R. § 209.2 and pt. 61, Appendices A(1)-A(3); see FEMA, National Flood Insurance Program, *Flood Insurance Manual*, Appendix A, pg. 11-12, and Appendix E, pg. 5 (Apr. 2021); and see FEMA, National Flood Insurance Program, *Community Rating System Coordinator's Manual*, pg. 120-7 (2017).



Generators Projects

- Streamlining process for hospitals with emergency departments
- **\$6.95 per hospital building gross square footage (BGSF) in urban areas and \$12.62 per BGSF in rural areas**
 - Use U.S. Census Bureau's TIGERweb to determine urban vs. rural
- BCA Tool Kit Enhancement
 - Standard recurrence intervals and outage durations

U.S. Department of Homeland Security
Washington, DC 20472



9/29/2021

INFORMATION

MEMORANDUM FOR: Regional Administrators
Regions I - X

ATTENTION: Regional Mitigation Division Directors
Hazard Mitigation Assistance Branch Chiefs

FROM: Kayed I. Lakhia, AIA, NCARB, LEED AP, CFM
Deputy Director, Hazard Mitigation Assistance/Mitigation
Directorate
Federal Insurance and Mitigation Administration LAKHIA
KAYED I

SUBJECT: **Pre-Calculated Benefits for Certain Hospital Generators to
Demonstrate Cost-Effectiveness**

I. Background and Purpose of this Memorandum

This memorandum establishes the use of a pre-calculated benefit to demonstrate cost-effectiveness for hospital generator projects.

Projects that are eligible for funding under FEMA's Hazard Mitigation Assistance (HMA) programs must demonstrate cost-effectiveness.¹ FEMA has developed several methodologies that applicants and subapplicants may use to demonstrate cost-effectiveness.² Generally, applicants and subapplicants demonstrate cost-effectiveness by conducting a benefit-cost analysis (BCA) that establishes that mitigation projects have a benefit-cost ratio (BCR) equal to or greater than 1.0.³ Additionally, FEMA provides several streamlined methodologies that applicants and subapplicants may use to demonstrate cost-effectiveness. One of these streamlined methodologies is pre-calculated benefits, in which FEMA calculates pre-determined cost-effectiveness values. Using these pre-calculated benefits eliminates the requirement for applicants to conduct a separate BCA for eligible projects.

¹ See, for example, for Building Resilient Infrastructure and Communities (BRIC), see Stafford Act Section 203(b); for Hazard Mitigation Grant Program (HMGP) and HMGP Post Fire, see Stafford Act Section 404 and 44 Code of Federal Regulation (CFR) 206.434(c)(5).
² In accordance with Office of Management and Budget (OMB) Circular A-94: Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs.
³ A benefit-cost analysis is a quantitative analysis used to assess the cost-effectiveness of a hazard mitigation measure by comparing the project's avoided future damages to the costs over the project lifetime. The result is a Benefit-Cost Ratio (BCR), which is the numerical expression of the cost-effectiveness of a project calculated as the net present value of total project benefits divided by the net present value of total project costs. A project is generally considered to be cost-effective when the BCR is 1.0 or greater, indicating the benefits of a prospective hazard mitigation project are sufficient to justify the costs. For more information on cost-effectiveness and the BCA Toolkit, see the FEMA BCA webpage at <https://www.fema.gov/grants/guidance-tools/benefit-cost-analysis>.





April 5, 2021

Updated Loss of Life Values

- DHS increased value of statistical life (VSL) to \$11.6 million
- See OMB Circular A-4 for discussion on VSLs

TO: COMPONENT CHIEF ECONOMISTS
DAVID L. HOUSER
David Houser
DHS Chief Regulatory Economist

FROM: DAVID L. HOUSER
CASS R. SUNSTEIN
Cass R. Sunstein
Senior Counselor to the Secretary and DHS Regulatory Policy Officer

SUBJECT: Best Practices for the Treatment of a Statistical Life in U.S. Department of Homeland Security Regulatory Analyses

This memorandum provides guidance to component Chief Economists on the use of estimates for the value of a statistical life (VSL) in Department of Homeland Security (DHS) regulatory analyses. On March 1, 2021, DHS issued interim guidance increasing the VSL from \$9.6 million (2015\$) to \$10.5 million (2020\$) using only an inflation adjustment. Since the issuance of the interim VSL of \$10.5 million, the Department of Transportation (DOT) has issued guidance supporting a VSL of \$11.6 million (2020\$) adjusting for both inflation and real income. DHS recommends adopting this updated DOT VSL of \$11.6 million for regulatory analyses with a base year of 2020.¹

As a reminder, Office of Management & Budget (OMB) Circular A-4 provides a useful background discussion on the practice of using VSLs.² When using VSLs in regulatory analyses, component regulatory economists may wish to include a brief discussion that explains that the “value of a statistical life” is not actually attempting to place a value on a human life, but is instead attempting to value the reduction of mortality risks in the context of low probability events. For example, a \$11.6 million VSL does not mean that a specific human life is worth \$11.6 million, but is instead meant to capture what people are willing to pay to reduce low-level mortality risks, or what people demand in order to face such risks (say, \$116 for a risk of 1 in 100,000). This approach to valuation of mortality risks is endorsed by OMB Circular A-4.

Component economists are also reminded that quantified benefits and costs, including those that come from a VSL, are not meant to be used as the sole basis that divides a “justified” regulation from an “unjustified” one. In some cases, for example, statutes require or forbid regulatory

¹ 2021 DOT Guidance: <https://www.transportation.gov/office-policy/transportation-policy/revised-departmental-guidance-on-valuation-of-a-statistical-life-in-economic-analysis>

² OMB Circular A-4, “Regulatory Analysis,” pages 29-31, September 17, 2003
<https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/circulars/A4/a-4.pdf>

CATEGORY	EARTHQUAKE	TORNADO	WILDFIRE	FIRE STATION & HOSPITAL
Self-treat/Minor	\$35,000	\$35,000	\$35,000	N/A
Treat & Release	N/A	\$290,000	N/A	N/A
Major	\$2,932,000	N/A	\$2,932,000	N/A
Hospitalized	N/A	\$3,728,000	N/A	N/A
Fatal (Value of Life)	\$11,600,000	\$11,600,000	\$11,600,000	\$11,600,000



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An aerial photograph of a coastal town, likely in New England, featuring a harbor filled with numerous sailboats and yachts. The town is built on a hillside, with a prominent church steeple visible on the right. The surrounding area is densely forested with green trees. The entire image is overlaid with a semi-transparent blue filter.

Benefit-Cost Analysis (in the BCA Tool Kit)

Benefit-Cost Analysis

- Pre-Calculated Benefits cannot be combined with benefits calculated in the BCA Toolkit
- Population served and benefitting versus the entire community
- All values and inputs must be justified with supporting documentation
 - Ex: Documentation of flood elevations, maps of structures for wildfire projects, etc.
 - Recommended: BCA narrative



General BCA Software Tips

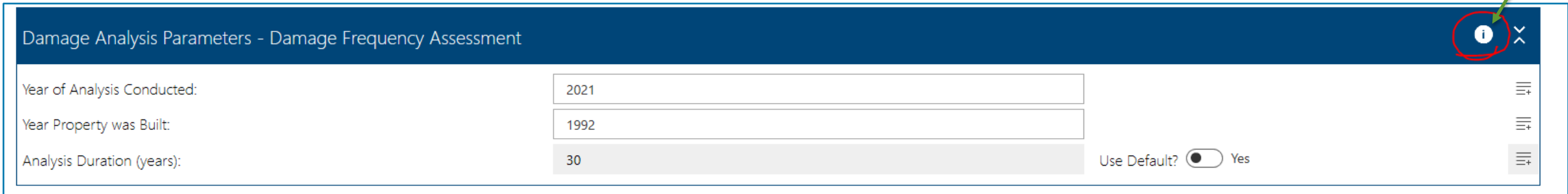
Damage Analysis Parameters - Damage Frequency Assessment

Year of Analysis Conducted: 2021

Year Property was Built: 1992

Analysis Duration (years): 30

Use Default? Yes



- Use the help content and comments sections of the Toolkit
- If errors occur, try using Excel Online
 - Contact the BCA Helpline if errors continue
- Export the file each time you save to ensure work is saved
- Provide detailed scope of work
- Attach Excel file and source data used to generate the BCA in the application

DAMAGE FREQUENCY ASSESSMENT MODULE OVERVIEW	×
DAMAGE ANALYSIS PARAMETERS – DAMAGE FREQUENCY ASSESSMENT	×
The primary function of this section is to determine the Analysis Duration. The Analysis Duration operates as the "window of time" through which the number and size of historical events is viewed by the Tool, which is important for calculating "before-mitigation" damages and losses and forecasting them ahead over the Project Useful Life.	
Year of Analysis Conducted	×
Year Property was Built	×
Analysis Duration	×
CRITICAL FACILITIES PROPERTIES	×
UTILITIES PROPERTIES	×
ROADS AND BRIDGES PROPERTIES	×



FEMA

An aerial photograph of a coastal town, likely in New England, featuring a harbor filled with numerous sailboats and yachts. The town is built on a hillside, with a mix of residential houses and larger commercial buildings. A prominent church with a tall steeple is visible on the right side. The surrounding area is densely forested with green trees. The entire image is overlaid with a semi-transparent blue filter.

Analysis Duration

Supplement to the Benefit-Cost Analysis Reference Guide (2.1.3.1)

Acceptable documentation for a change in local flow conditions to support the adjustment of the analysis duration includes:

- A current and old FIS showing the before and after changes in local flow conditions
- An H&H study that accounts for the change in local flow conditions
- A letter on community letterhead from an official knowledgeable about the changes in local flow conditions (e.g., city engineer, local floodplain manager);
- CLOMR or LOMR
- Aerial or other photography documenting the development

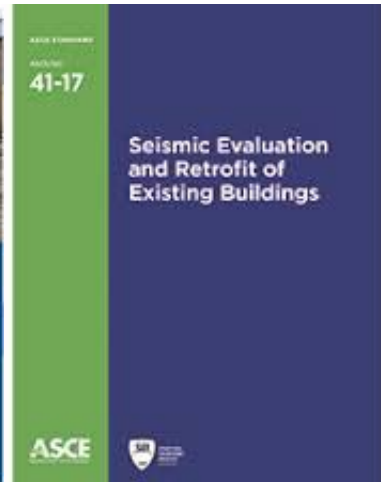
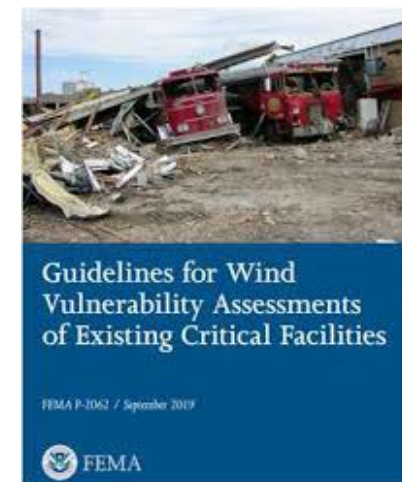




Technical Feasibility

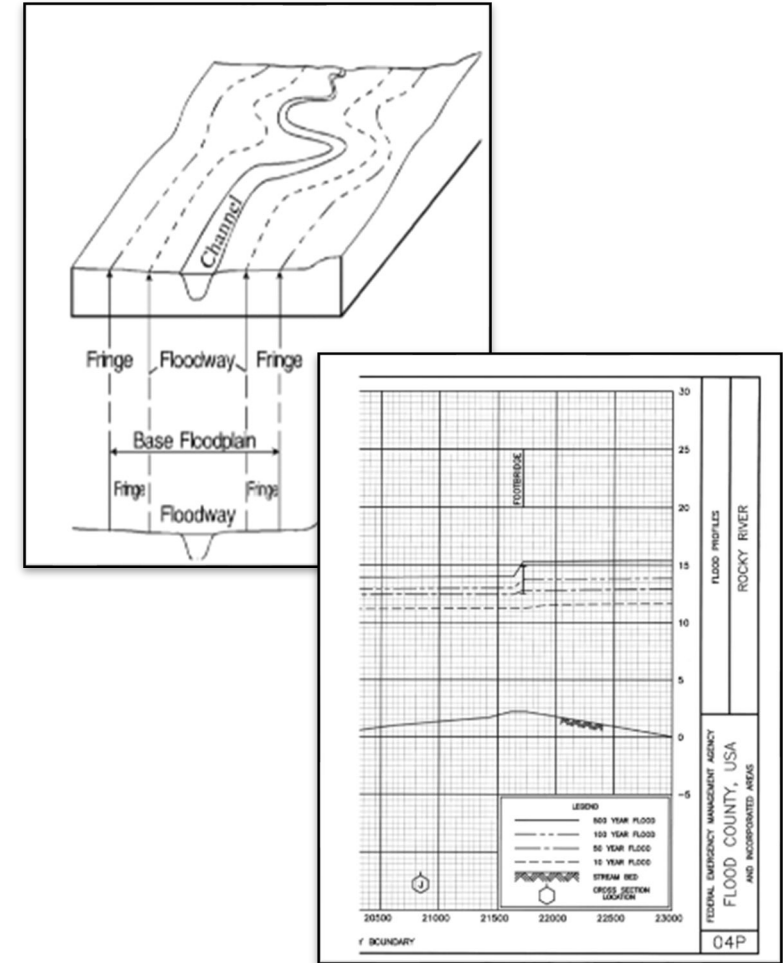
Technical Feasibility

- The feasibility of a project is demonstrated through conformance with accepted engineering practices, established codes, standards, modeling techniques, or best practices
 - Minimum requirement: conform with the latest published editions (either of the two most recently published editions) of relevant consensus-based codes, specifications, and standards that incorporate the latest hazard-resistant designs
- Consideration of technical feasibility and effectiveness during the project scoping process facilitates project development
 - Vulnerability Assessment (Building Evaluation, H&H Study, etc.)
- Clearly establish the desired level of protection/risk reduction and ensure the application is consistent throughout



Flood Risk Reduction Projects – Data Needs

- Pre- and post-project flood data
 - FEMA FIS / engineering study
- Support Recurrence Intervals
 - Unknown frequency tool or documented events
- Lowest floor for structures / elevation of infrastructure
 - Can be estimated
- Define the level of protection (include after mitigation damages)
 - Physical damages / Loss of function



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Resources

- HMA Guidance and Addendum:
 - <https://www.fema.gov/grants/mitigation/hazard-mitigation-assistance-guidance>

- FEMA HMA Website
 - [Hazard Mitigation Assistance Grants | FEMA.gov](#)

- FEMA HMA Job Aids:
 - <https://www.fema.gov/grants/mitigation/job-aids>

- FEMA BCA Website:
 - <https://www.fema.gov/grants/guidance-tools/benefit-cost-analysis>

- BCA Reference Guide:
 - https://www.fema.gov/sites/default/files/2020-04/fema_bca_reference_guide.pdf

- Supplement to the BCA Reference Guide:
 - https://www.fema.gov/sites/default/files/2020-08/fema_bca_guide-supplement.pdf

- FEMA's BCA Helpline:
 - Email: bchelpline@fema.dhs.gov
 - Phone: 1-855-540-6744



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Thank you.

BCA Questions

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Program Questions

Reach out to your Regional POC



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