

FEMA Benefit Cost Analysis (BCA) Software Release Notes

Release 4.5.5

August 6, 2009

Post-4.5 releases

Release 4.5.5 corrects two problems: the system was not generating the report for a Hurricane Wind mitigation if no zip code was provided; and as a result of making the screens more keyboard-navigable in version 4.5.2, the system was changing user's radio button choices on some screens when the user returned to that screen (the modules affected were Flood, Hurricane Wind, and Tornado). There are no calculation changes in this version.

Release 4.5.2 provided improved keyboard navigation using the Tab and Enter keys and keyboard shortcuts, and it corrected a calculation error that occurred when zero percent damages were entered into the User Entered column on the Library Depth Damage Function tables in the Flood module.

Introduction

BCA 4.5 incorporates numerous changes to the prior release, version 4.1.3. The installation program has been modified to better accommodate installing and running the BCA software on Microsoft Vista © operating systems. Dynamic Help has been expanded and updated throughout the application. Numerous minor bugs have been fixed throughout the system. This document describes the significant changes, organized by feature or module. "You" refers to the user of the software.

New Feature: Backup/Restore

- Backs up the entire database on command
- Prompts you when you close the software if no backup has occurred in the past 2 weeks
- Allows you to restore from the backup database if there is a corruption issue or if you just want to delete all data entered since the backup was done
- Overwrites the current database with the selected backup version to be restored

Import/Export Feature

- Enhanced to handle large projects with many structures and attachments
- Backwards-compatible with BCA projects exported from version 4.1.3
- Incorporates text into the Import Wind/Seismic Data screen to help users locate the hazard data files for import

Notes:

- BCA version 4.5 can import and export large files; however, users should be aware of file size limitations when storing files on hard drives or computer networks as well as size limitations for electronic mail systems.
- Values that are automatically applied in the software (such as default and FEMA standard values) are intentionally not updated when a project is imported to a later version of the software. If you import a project from an earlier release (such as version 4.1.3) and you want the values to be updated, either change them manually or unselect and re-select the option that generated the values, such as Potable Water in Damage Frequency Assessment (DFA) or Primary Use of Building in Earthquake-Structural.

General Changes

- Reviewed numeric input fields and set to boundaries and characteristics defined by subject matter experts (SMEs)
- Set the benefit-cost ratio (BCR) in the upper right corner of the screen to recalculate automatically if you change data and click a Save button (except in Earthquake-Structural, which is a different software design)
- Fixed Project Report bugs; revisions to software are incorporated in reports as needed
- Fixed Status Report bugs to reflect the status more accurately
- Added the version number of the software at the top of the screen
- Data fields required to calculate the BCR have been designated with a “**”

Flood Module

- Modified questionnaire routing to incorporate additional structure elevation possibility for Coastal mitigations using Hydraulics and Hydrology or other non-Flood Information Study (FIS) study
- Moved questionnaire ahead of Cost Estimation Info screen so users redirected to DFA don't lose cost estimate data
- Modified flood elevation tables and damage calculations to allow negative elevations
- Modified calculations to handle an elevation difference of 2 feet or less between first floor elevation (FFE) and streambed elevation (SBE) or base flood elevation (BFE)
- Modified After-Mitigation damages calculations for elevation projects
- Corrected residential contents values for FEMA FIA depth damage functions (DDFs) for Coastal projects (many were incorrectly set as 100%)
- Added crawlspace contents values to contents damages (these were omitted in 4.1.3)
- Added dynamic help for displacement calculations, including a table with updated displacement costs
- Added dynamic help guidance for determining FFE locations
- Modified justification requirements (removed unnecessary ones and added

missing ones)

DFA Module

- Enhanced to allow the entry of damages based on engineering estimates (previously only historical damages could be used in DFA)—the new Expected Damages feature can be used to create earthquake mitigations for bridges and utilities
- Reworked many calculations in historical damages functionality
- Added, improved, and corrected validations
- Updated default values for potable water and Federal mileage rate

Hurricane Wind Module

- Corrected filtering of before-mitigation building characteristics to allow previously “impossible” combinations, and to allow “Unsure” where appropriate
- Corrected Code Plus values
- Added dynamic help for displacement calculations, including a table with updated displacement costs

Tornado Safe Room Module

- Changed wording of the safe room area fields to specify safe room dimensions only, not entire building
- Modified Occupancy table so every row is not required to total 100%

Earthquake Module

- Updated and corrected displacement costs

Frequently Asked Questions

The table below describes some behaviors of the BCA 4.5 software that may require additional explanation. This table includes the module, behavior and explanation in an effort to assist the user in successfully performing the desired function.

Module or Component	Behavior	Explanation
Earthquake – Structural	NSD Details and NSA Details buttons become unavailable after an analysis is run and “save and continue” is selected to obtain the BCR.)	To revise the NSD and NSA values to reflect non-structural mitigation after an initial analysis is run, follow these steps: 1) Go back to the Economic Values tab. 2) Reselect the same Building Use (for example, COM4) and reenter values if needed. 3) Click on the Vulnerability tab. 4) Click on NSD Details or “NSA Details” to enter appropriate values.
Earthquake – Structural	Save and Go Back does not save entries if I click it while in the Seismic	Click Save and Continue to save entries; then click Save and Go Back to back up.

Module or Component	Behavior	Explanation
	Data tabs.	
Reports	Sometimes displays “Report processing cancelled” while it is generating the report instead of “Report is being generated.”	Wait for a minute to see if the report is generating. If no report appears within 1-2 minutes, close the BCA Report window and click Print Report again.
IMPORT/EXPORT FROM 4.1.3:		
I/E: General	Default values are not updated automatically upon import.	Imported projects retain the values from the parent system by design, so history is not overwritten. To apply updated values to the project, change them manually or unselect and re-select the option that generated the values, such as Potable Water in DFA or Primary Use of Building in Earthquake-Structural.
I/E: Flood	Diagram 1 was selected as the FEMA Elevation Certificate in 4.1.3, but the field is blank after import to 4.5.	This is because Diagram 1 no longer exists—it was changed to 1A and 1B to reflect the current FEMA values. After importing the file, go to the elevation data screen and select the correct diagram from the list in the FEMA Elevation Certificate field.
I/E EQ-NS	If you import an EQ-NS mitigation for Elevators, it may not show a BCR.	Click through entire project to make sure it generates a BCR.