### **Developing Mitigation Projects**



Molly J. O'Toole, P.E., D.WRE, CFM

# Mitigation

Hazard mitigation is defined as any sustained action taken to reduce or eliminate long-term risk to life and property from a hazard event."

# With Your Mitigation Plan...

- ✓ You know your hazards
- ✓ You've identified what mitigation you already do
- ✓ You've identified what mitigation you should do
- ✓ You have an action plan with mitigation actions and projects
- ✓ You've adopted the plan and it is being maintained

And now - mitigation projects...(optional)....

# FEMA Mitigation Grants

"\$3 of our [IEMA/FEMA] dollars to \$1 of your dollars"

**75% FEMA** 



25% state or local

### **Developing Mitigation Projects**

<u>Goal</u>: Show tools, resources and approaches for considering and developing mitigation projects.

#### What you need to know:

- Resources for Project Development
- Fundable Planning Activities and Projects
- Benefit-Cost Analysis
- Grant Applications (eGrants)
- Developing a Scope of Work

# **Grant Programs:**

- Pre-Disaster Mitigation (PDM)
- Hazard Mitigation Grant Program (HMGP)
- Flood Mitigation Assistance (FMA)
- Severe Repetitive Loss (SRL)



## Resources

"FY 2010 Hazard Mitigation Assistance"
 (HMA) Unified Guidance"

http://www.fema.gov/library/viewRecord.do?id=3649

### Hazard Mitigation Assistance Unified Guidance

Hazard Mitigation Grant Program, Pre-Disaster Mitigation Program, Flood Mitigation Assistance Program, Repetitive Flood Claims Program, Severe Repetitive Loss Program

June 1, 2009



Federal Emergency Management Agency Department of Homeland Security 500 C Street, S.W. Washington, DC 20472

### Resources

"FY 2010 Hazard Mitigation Assistance (HMA) Unified Guidance"

http://www.fema.gov/library/viewRecord.do?id=3649

- Benefit-Cost (BC) Toolkit Software and
- BCA Technical Assistance Helpline

http://www.bchelpline.com

**Developing Mitigation Projects** 













#### BCA HELPLINE

DOWNLOAD SOFTWARE

FAQ

**RESOURCE KIT** 

TRAINING

Need Resources? Find them in the: Resource Kit

Welcome to the BCA Tool Kit, Version 4.5, for the Hazard Mitigation Assistance program. We have recently updated the software to include:

- Targeted dynamic user guidance
- Modified economic values to reflect current information
- Updated resource documents
- Expanded BCA file import and export capabilities
- Enhanced ability to do earthquake mitigation projects for bridges and utilities
- Improved ability to use negative elevations in the flood module

Please note that subapplicants are required to use BCA software, Version 4.0 or higher, for the four non-disaster FY10 Hazard Mitigation Assistance Programs, and for HMGP applications for disaster declarations after June 1, 2009.

This enhanced tool kit confirms FEMA's continued commitment to offering hazard mitigation grant applicants and evaluators an innovative software package to demonstrate the cost effectiveness of proposed mitigation projects and to determine project eligibility for federal funding.

The FEMA BCA team will utilize this latest version of the software for all future BCA training sessions. This website has been updated to incorporate the latest information and resources with BCA. The BC Helpline has resources such as Methodology Reports, Data Documentation Templates (DDTs), BCA training schedule, and frequently asked questions (FAQs). I would like to bring your attention to four important items on the BC Helpline:

- FEMA BCA Software Version 4.5: www.bchelpline.com/regn.aspx
- Claceroom Training Materials

Below you will find documentation on setup, installation and usage of the BC Software.



BCA Software Installation and Trouble Shooting Guide

#### CURRENT BCA USERS

This Web site is for the new Benefit-Cost Analysis Tool development.

If you are looking for guidance and assistance on the current BCA software, please call (866) 222-3580 or e-mail bchelpline@dhs.gov.

## Resources

"FY 2010 Hazard Mitigation Assistance (HMA) Unified Guidance"

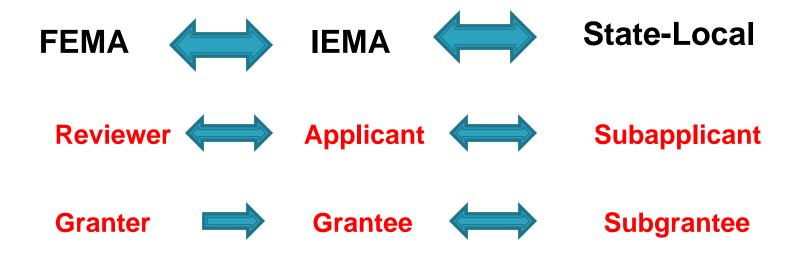
http://www.fema.gov/library/viewRecord.do?id=3649

- Benefit-Cost (BC) Toolkit Software and
- BCA Technical Assistance Helpline

http://www.bchelpline.com

▶ IEMA

## Who is Who?





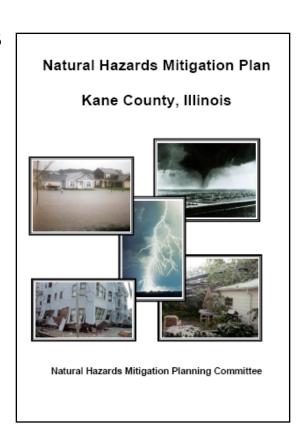
# Fundable or Eligible Activities:

# For Subapplicants.....

- Plans
- Projects

# Planning Grants

- Mitigation Plan Development
- Investigation of Mitigation Alternatives
- Repetitive Loss Area Investigation
- Critical Facility Evaluations



# Natural Hazard Mitigation

Flood

Earthquake

Severe Summer Storms

Severe Winter Storms

Tornado

Wind

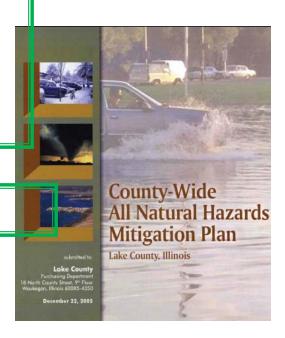
**Drought** 

Dam Failure

And so on....

# Eligible Projects

- Acquisition & Demolition
- Structural Elevation & Floodproofing
- Minor Localized Flood Reduction Projects
- Building Retrofitting
- Infrastructure Retrofit
- Mitigation Reconstruction
- Safe Room Construction
- Soil Stabilization
- Post Disaster Code Enforcement



# Grant Application Requirements

- Additional planning effort or mitigation project must be included in your mitigation plan\*
- Cost-Share
- Benefit-Cost Ratio 1.0 or Better
- Scope of Work

# Cost share

**75% FEMA** 



25% state or local

# Cost share

25% state or local

**75% FEMA** 

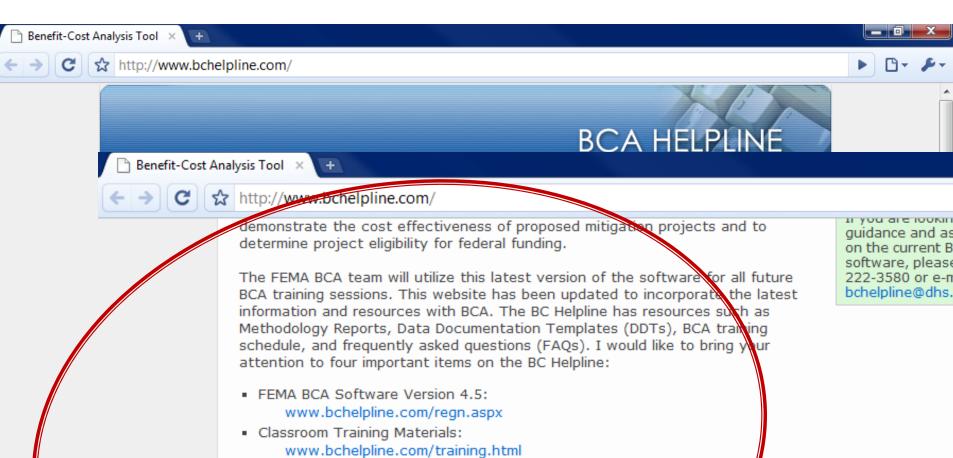


- Of 25% state/local share:
  - 12.5% in–kind services
  - 12.5% cash match
- State matching sources: IDNR and others

# Benefit-Cost Analysis (BCA)

- Benefit-Cost Ratio Must Be 1.0 or Greater
- Benefits = Damages Removed
- ALL Project Costs Must Be Included
- Latest FEMA Software
- www.bchelpline.com





BCA Reference Guide:

www.bchelpline.com/BCAToolkit/resources.html

Installation and Troubleshooting Guide:

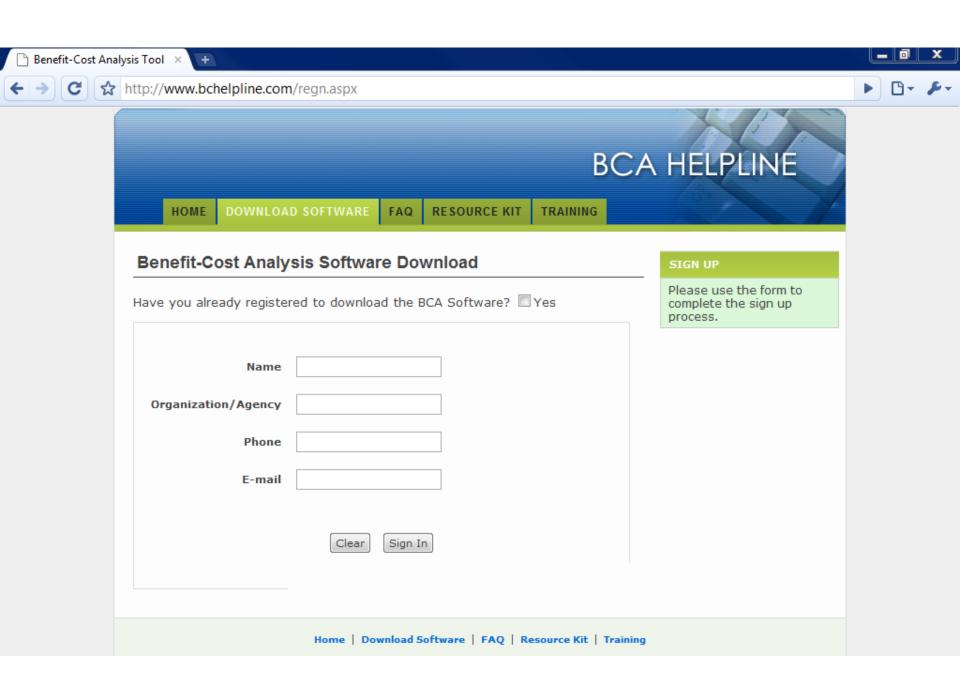
www.bchelpline.com/Documents/InstallGuide.pdf

Please download and review the Installation and Troubleshooting Wide prior to installing the BCA Software Version 4.5.

If you have any questions about the new BCA software program, please contact the BC Helpline at bchelpline@dhs.gov or at 1-866-222-2580.

MA BCA Software Version 4.5: w.bchelpline.com/regn.aspx

Sining Materiales



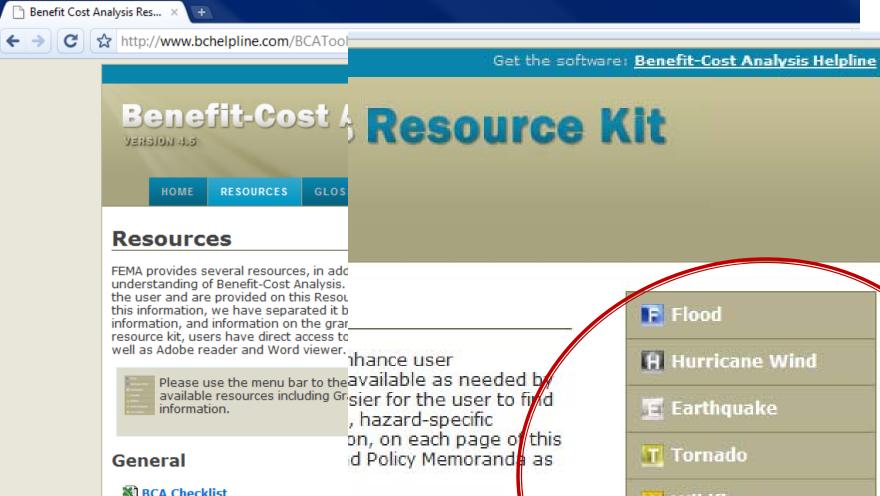


Welcome to the BCA Tool Kit, Version 4.5, for the Hazard Mitigation Assistance program. We have recently updated the software to include:

Targeted dynamic user guidance

#### RESOURCES

Below you will find



BCA Checklist

BCA Fact Sheet

BCA Reference Guide

📆 Hazard Mitigation Assistance Unit

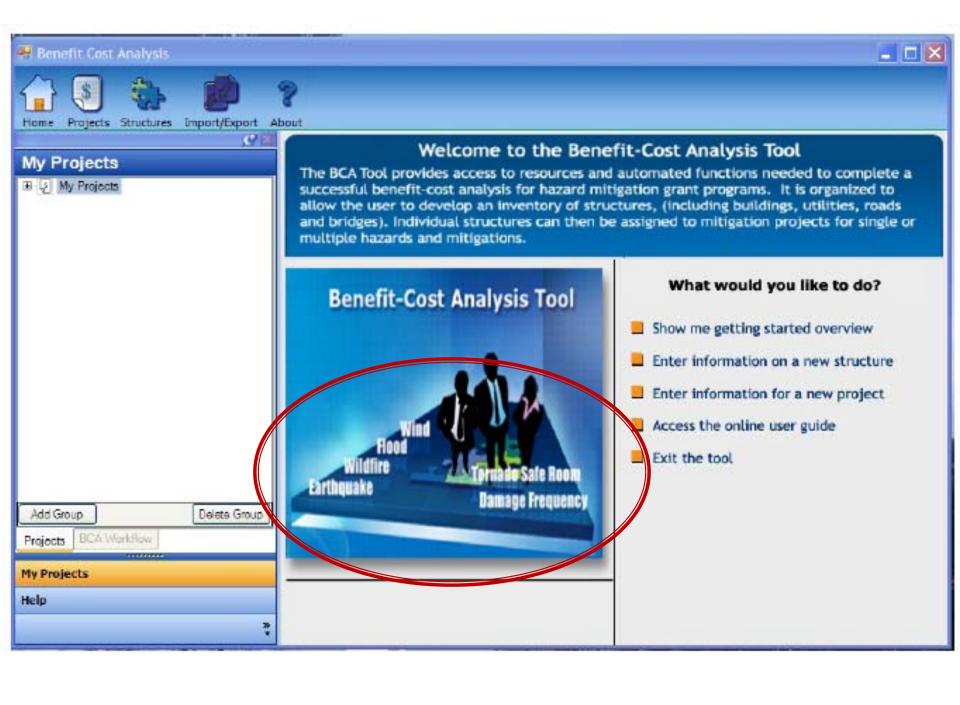
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Damage Frequency Assessment

GP Grant Programs

Adobe Reader

BCA Chec



#### **BCA Information Checklist**

Below is the information needed to get started with a Benefit-Cost Analysis

Obtained	Information Type First Floor Elevation (FFE)	Potential Sources FEMA elevation certificate; a signed, sealed, and dated structure elevation survey; a building permit; or other documentation where the FFE is certified by a State-licensed professional surveyor or State-registered professional engineer.
	Building Replacement (BRV)	Tax records or tax card, property appraisal from a building inspector or local contractor, or documented data from a national cost-estimating guide.
	Building Area (square footage)	Tax records or tax card, property survey, real estate listing, building permit, property appraisal, or other square footage data provided by the local jurisdiction.
	Flood Hazard Data (Flood Elevation and Discharge Data)	Copies of the relevant pages from the FEMA Flood Insurance Study (FIS) or a Hydrology and Hydraulics (H&H) study for the flooding source, including the summary of discharges and flood profiles that reflect the flood data for the property locations.
	Building Contents Data	If the default is not used, a complete, itemized list of building contents with associated values, purchase receipts, appraisal of items, or copies of an itemized insurance policy that specifically cites the contents value.
	Displacement Costs	For displacement costs above the FEMA standard values of the displacement costs may include advertisements for rental properties in the community, advertisements for rental or storage spaces, contacts with rental agencies, or receipts from similar rentals.
	Flood Frequency Data	If FIS or H&H not available or using the Damage Frequency Approach (DFA), use historical records of flood frequencies for past storm events with the date of the flood event; recorded flood depth; damage amounts (in dollars); stream gage data; rain gage data; newspaper clippings; or detailed engineering calculations prepared by a State-certified hydrologist or State-registered professional engineer. This information is often required for grant applications.
	Before Mitigation Damages Data	If FIS or H&H not available or using the Damage Frequency Approach (DFA), use insurance claims data, receipts for repair or replacement due to previous flood damages, newspaper clippings, or detailed damage estimates based on documented flood levels or other community records. This information is often required for grant applications.

### Benefit-Cost Analysis - Essential Needs

Items	s Information Type	Molly's Recommendation
1	First Floor Elevation (FFE)	Field Survey
2	Building Replacement (BRV)	e.g., Marshall & Swift
3	Building Area (square footage)	Assessor or Homeowner
4	Flood Hazard Data (Flood Elevation and Discharge Data)	FIS and FIRM
5	After Mitigation Damages Data	Building Removed or New BFE
6	Project Cost	All Costs!

#### **BCA Information Checklist**

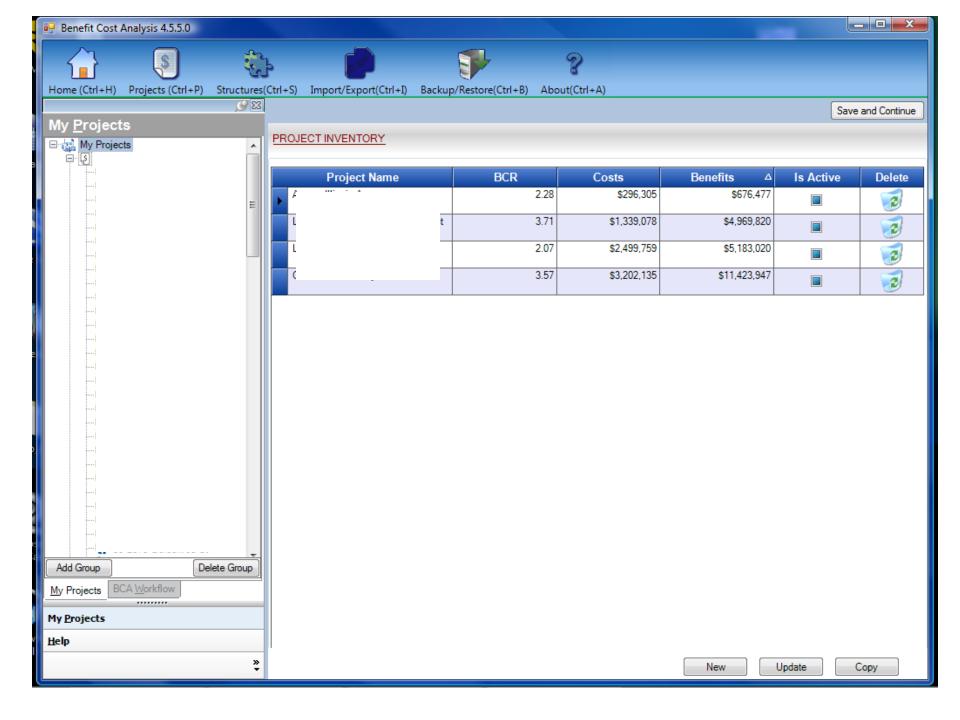
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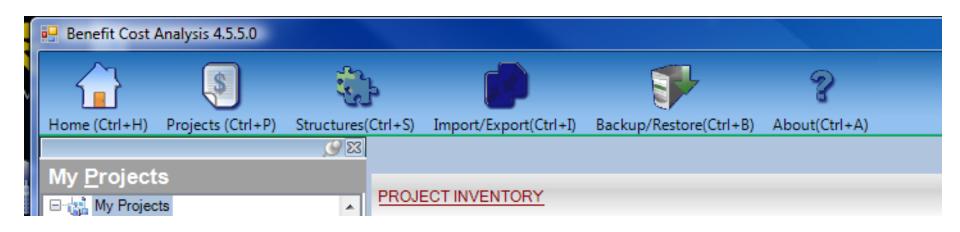
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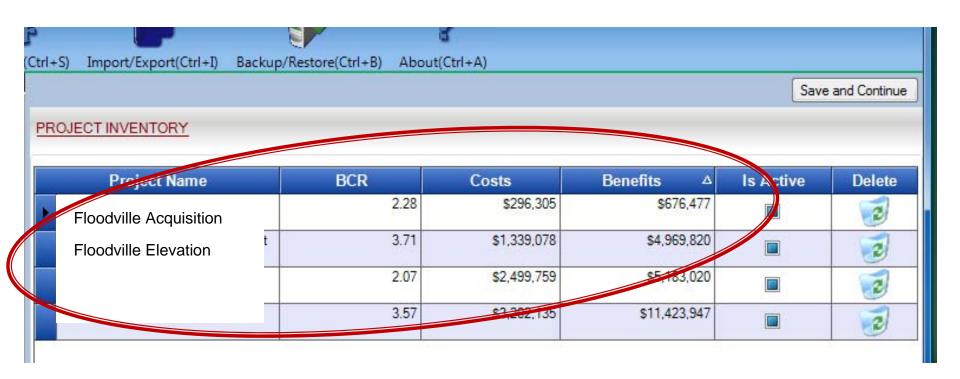
## To Get Started on the BCA

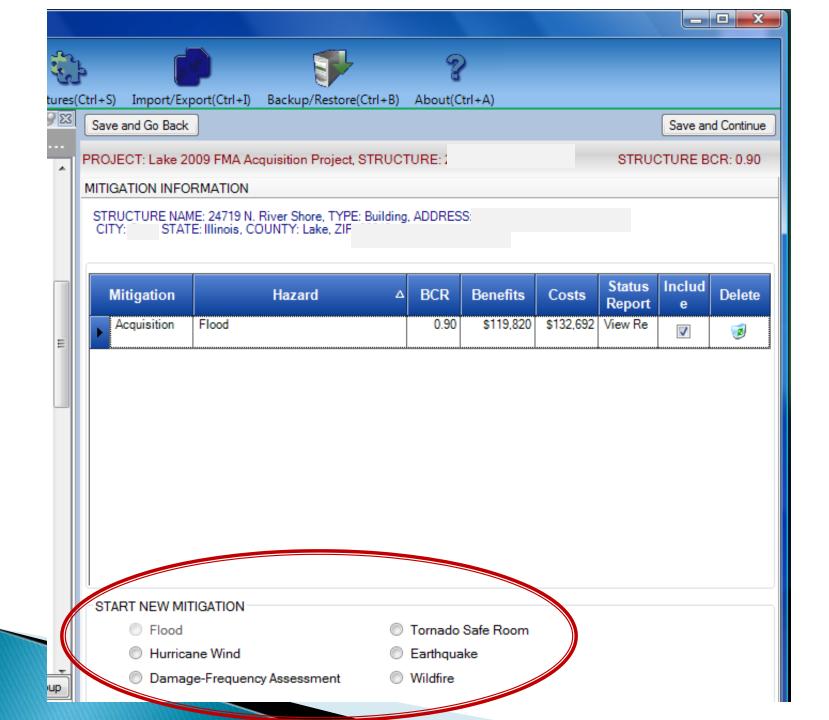
- Build a spreadsheet
- Test properties on the Benefit-Cost Analysis Tool

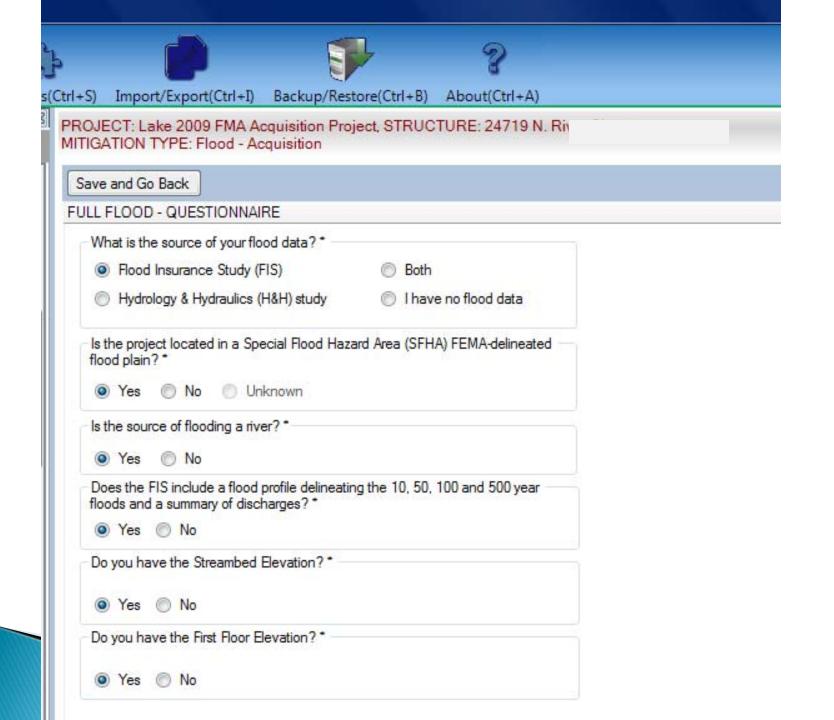
Property	Structure								100-year			
Address	Lot Number	Туре	Year of Trailer	Age (years)	Condition (Good, Average, Fair, Poor)	M&S Depreciatio n (%)	Length	Width	Sq. Feet	Ground (LAG)	First Floor Elevation	BFE 100- year
			Page 1		Pg. 1		Page 2	Page 2		Survey	Survey	Above
955 East State Street	Α	Trailer	1965	44	Good	58	48	20	960.0	829.5	832	836.5
955 East State Street	В	Trailer	1970	39	Good	58	60	14	840.0	829.5	832.4	836.5
955 East State Street	D	Trailer	1993	16	Good	29	70	14	980.0	829.9	833.5	836.5
955 East State Street	E	Trailer	1984	25	Good	45	66	14	924.0	829.8	833.8	836.5
955 East State Street	F	Trailer	1990	19	Good	35	70	14	980.0	830	833.3	836.5
955 East State Street	G	Trailer	1968	41	Fair	61	56	12	672.0	829.6	833	836.5
955 East State Street	Н	Trailer	1967	42	Fair	61	60	12	720.0	829.5	833.2	836.5
955 East State Street	I	Trailer	1966	43	Fair	61	60	12	720.0	829.4	833	836.5
955 East State Street	J	Trailer	1988	21	Average	45	66	14	924.0	829.9	832.8	836.5
955 East State Street	K	Trailer	1980	29	Average	58	50	10	500.0	829.8	832.9	836.5
955 East State Street	М	Trailer	1992	17	Average	40	68	14	952.0	829.8	832.7	836.5
955 East State Street	N	Trailer	1991	18	Average	40	70	14	980.0	829.6	833.2	836.5

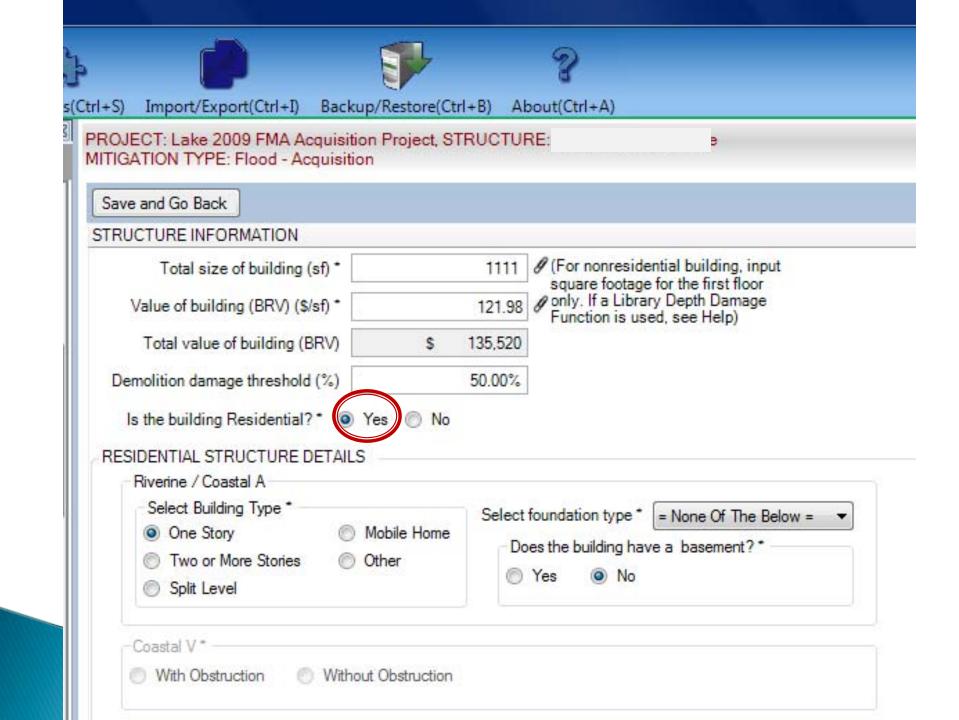


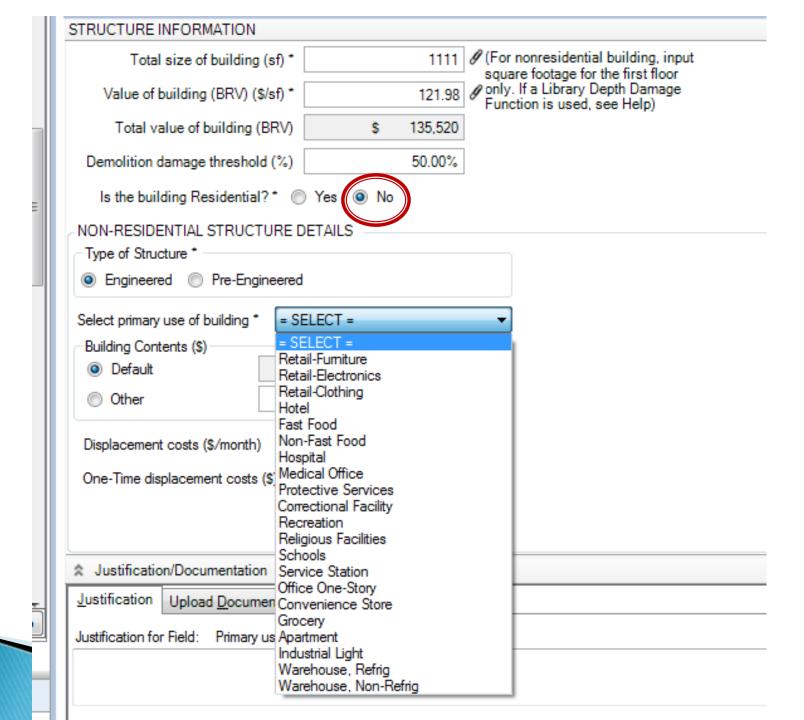










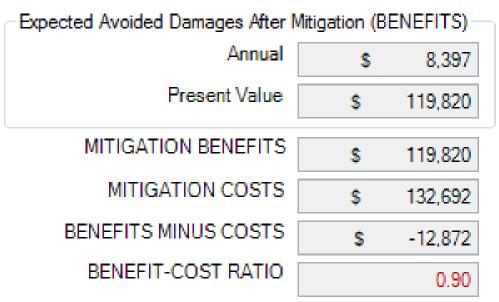


#### Save and Go Back

#### SUMMARY OF BENEFITS

Expected Annual Damages Before Mitigation —						
Annual	\$		8,397			
Present Value		S	119,820			

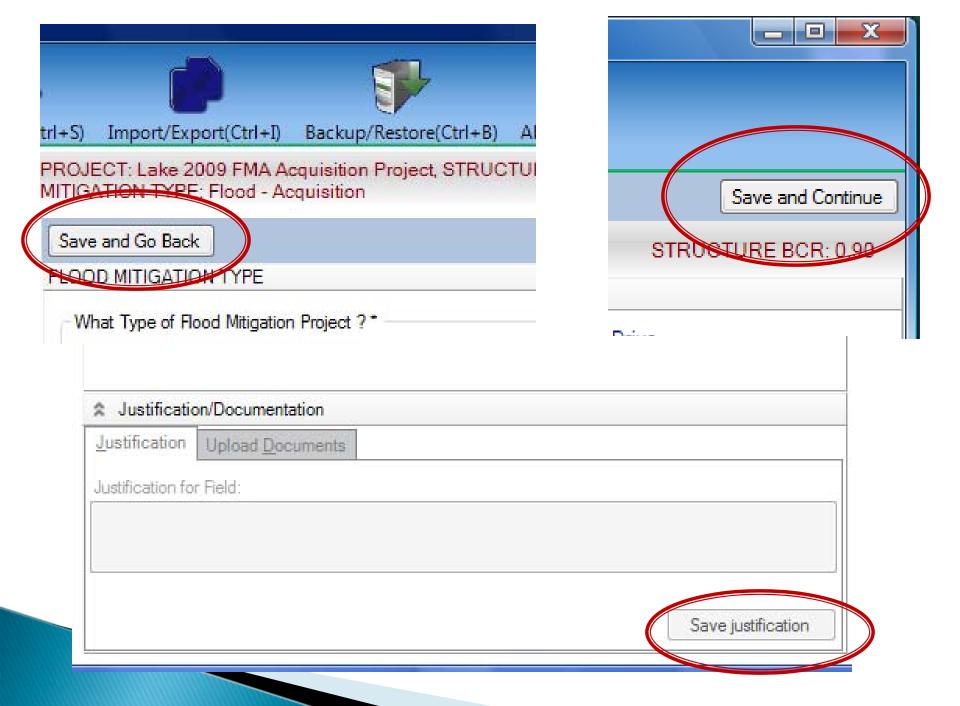
Expected Annual Damages After Mitigation				
Annual	\$	0		
Present Value	S	0		



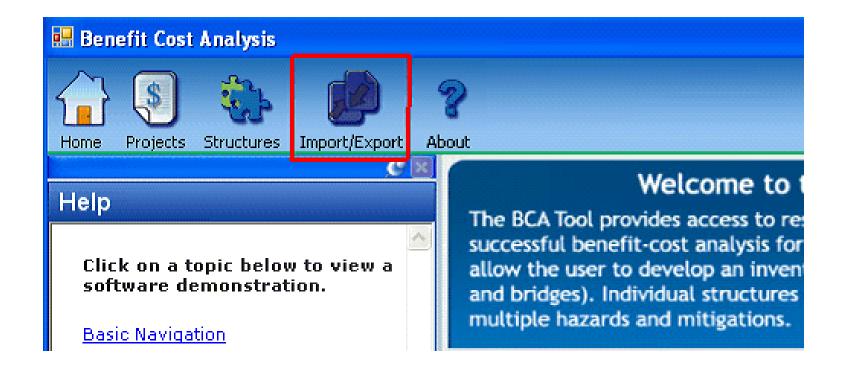
## Project BCA vs. Sturcture BCA

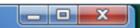
- Total Benefits verses Total Costs
- 0.90 + 1.2 = 1.05
- Low BCs
- Very High BCs

Property		Structure									100-year	
Address	Lot Number	Туре	Year of Trailer	Age (years)	Condition (Good, Average, Fair, Poor)	M&S Depreciatio n (%)	Length	Width	Sq. Feet	Ground (LAG)	First Floor Elevation	BFE 100- year
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955 East State Street	N	Trailer	1991	18	Average	40	70	14	980.0	829.6	833.2	836.5



# Benefit-Cost Analysis Tool











(Ctrl+S) Import/Export(Ctrl+I) Backup/Restore(Ctrl+B) About(Ctrl+A)

Save and Continue

#### PROJECT INVENTORY

Project Name	BCR	Costs	Benefits △	Is Active	Delete
<b>&gt;</b>	2.28	\$296,305	\$676,477		3
t l	3.71	\$1,339,078	\$4,969,820		3
	2.07	\$2,499,759	\$5,183,020		3
	3.57	\$3,202,135	\$11,423,947		3

# **Grant Application**

- 1. Call IEMA
- 2. Request a Login to eGrants
- 3. Print Blank Application
- 4. Write a Scope of Work
- 5. Complete the BCA (with justifications)
- 6. Complete the eGrant Application & attachments
- 7. Submit to IEMA "Stockpile"

#### **OUR MISSION**

To reduce loss of life and property and protect our nation's critical infrastructure from all types of hazards through a comprehensive, risk-based, emergency management program of mitigation, preparedness, response and recovery

	* d	lenotes requir	red field	
	* User ID	:		
	* Password	:		
	Log	jin	Reset	
1 1 3	Session expire	es in thirty minute	es for this applicatio	n
	Session expire	es in thirty minute	es for this application	n
	Session expire	es in thirty minute	es for this application	n
	Session expire			

### View Subgrant Application Sections

Apprication Title: Kane County, Illinois, Repetitive Loss Mitigation Project

Subgrant Applicant: Kane County Environmental Management

FEMA Application Number: PDMC-PJ-05-IL-2007-002

Match Sources

State Application Number: IL-2007-004

Application Year: 2007 Grant Type: Project Application

Address: 719 Batavia Avenue Building A, Geneva, IL 60134 000

To view an application section, click on the appropriate View link below. To print one or more sections, select the checkbox and then click on the Print Lation. When you are finished, click the Close Window button below.

View

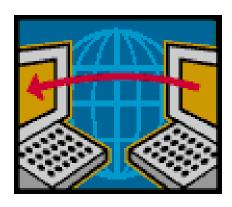
#### Print Action Application Secur Select View Applicant Information View Contact Information Community Information View Mitigation Plan Information View Mitigation Activity Information View Hazard Information View Scope of Work View **Properties Pecision Making Process** View Cost Esumate

## Benefits of eGrants

- Online tool allows ongoing for updates
- Paperless
- Project team can access application
- Maneuverable

## But...

- Many attachments
- Takes time



#### View Subgrant Application Sections

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Subgrant Applicant: Kane County Environmental Management FEMA Application Number: PDMC-PJ-05-IL-2007-002

State Application Number: IL-2007-004

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Print	t ]			
	Select	Application Section		Action
	Γ	Applicant Information	View	
		Contact Information	View	
	Г	Community Information	View	
	Г	Mitigation Plan Information	View	
<b>\</b>	_	Mitigation Activity Information	View	
	Г	Hazard Information	View	
	<u> </u>	Scope of Work	View	
	_	Properties	View	
	Г	Secision Making Process	View	
	Г	Cost Estimate	View	
	-	Match Sources	View	

# Scope of Work - Outline

- Overview
- 2. Community Profile
- 3. Hazard Description
- 4. Problem Assessment
- 5. Need for Mitigation
- 6. Mitigation Goals
- Mitigation Alternatives
- Recommended Mitigation Approach
- 9 Benefit-Cost Analysis
- 10. Project Funding
- 11. Project Schedule
- 12. Project Implementation

# Scope of Work

It Provides an Overview



- Cut & Paste Paragraphs to eGrants
- eGrant Attachment
- Share with Your Local Officials
- Use to Solicit Matching Funds

## **Developing Mitigation Projects**

- Fundable Activities
- Assessing Projects
- Benefit-Cost Analysis
- eGrants
- Scope of Work





- ✓ Why Pursue a Mitigation Grant What's the Benefit to the Community
- ✓ How to Pursue a Mitigation Grant
- ✓ Important Considerations Things to Watch Out For

# In the Mitigation Plan We've Said....



"...if we have the resources."





Molly O'Toole 630-889-9774 molly@mollyotoole.com