

## Data Documentation Template

### Wildfire Mitigation FEMA Standard Analysis Methodology

This data documentation template is designed to assist Benefit-Cost (BC) analysts in recording the data and methodologies utilized in their Benefit-Cost Analysis (BCA). BC analysts should keep in mind that a well-documented BCA means that a knowledgeable BC analyst should be able to re-create the BCA from the supporting documentation provided (with a Mitigation application submitted for funding) without any additional explanation. BC analysts should provide an electronic or paper copy of the full BCA to compliment any template or summary submitted to FEMA for review. Check with your State Hazard Mitigation Officer or FEMA Regional office to find out if a completed Data Documentation Template (DDT) is required with your grant application.

Data Type	Value	Description	Documentation	Source
<b>Discount Rate</b>	<b>The OMB-mandated discount rate of 7% must be used for all BCAs.</b>	<ul style="list-style-type: none"><li>• The discount rate determines the time-value of money</li><li>• In a FEMA benefit-cost analysis, a discount rate is used to calculate a value today (the Net Present Value) of future benefits so that they can be compared to the costs of a mitigation project.</li></ul>	<ul style="list-style-type: none"><li>• Electronic or paper copy of the BCA.</li><li>• <b>The OMB-mandated discount rate of 7% must be used for all BCAs.</b></li></ul>	<ul style="list-style-type: none"><li>• <b>The OMB-mandated discount rate of 7% must be used for all BCAs.</b></li></ul>

<b>Data Type</b>	<b>Value</b>	<b>Description</b>	<b>Documentation</b>	<b>Source</b>
<b>Sample Area of Similar Fire Hazard</b>	Square miles	<ul style="list-style-type: none"> <li>Select an area of similar wildfire or wildland/urban interface fire fuel type and topography. (Sub-applicant enters data in square miles and module converts to acres).</li> </ul>	<ul style="list-style-type: none"> <li>At a minimum, reasoning for selecting the possible burn area must be mentioned in the narrative summary in the BCA module, along with a letter from a forester, local fire officer, or other credible source familiar with the area.</li> <li>Area selected can be depicted on a National Fire Hazard Map, an aerial photo.</li> </ul>	<ul style="list-style-type: none"> <li>National Fire Hazard Maps,</li> <li>U.S. Bureau of Forestry,</li> <li>Fire-safety engineers, foresters, certified wildland/urban interface fire officials.</li> <li>U.S.D.A. Forest Service</li> </ul>
<b>Total Acres Burned in Sample Area in Defined Time Period</b>	Acres	<ul style="list-style-type: none"> <li>Acres burned in the sample area selected above.</li> </ul>	<ul style="list-style-type: none"> <li>At a minimum, reasoning for selecting the possible burn area must be mentioned in the narrative summary in the BCA module, along with a letter from a forester, local fire officer, or other credible source familiar with the area.</li> <li>Area selected can be depicted on a National Fire Hazard Map, an aerial photo.</li> </ul>	<ul style="list-style-type: none"> <li>National Fire Hazard Maps,</li> <li>U.S. Bureau of Forestry,</li> <li>Fire-safety engineers, foresters, certified wildland/urban interface fire officials.</li> <li>U.S.D.A. Forest Service</li> </ul>
<b>Number of Years for the Acres Burned Data.</b>	Years	<ul style="list-style-type: none"> <li>The time period used for the sample burn area.</li> </ul>	<ul style="list-style-type: none"> <li>Narrative summary in the BCA module should include the reasoning used to determine the years entered for the burn data.</li> </ul>	<ul style="list-style-type: none"> <li>National Fire Hazard Maps,</li> <li>U.S. Bureau of Forestry,</li> <li>Fire-safety engineers, foresters, certified wildland/urban interface fire officials.</li> <li>U.S.D.A. Forest Service</li> </ul>

Data Type	Value	Description	Documentation	Source
<b>Fire Hazard Data (Burn Recurrence Interval)</b>	Years	<ul style="list-style-type: none"> <li>The estimated time period for the entire sample area considered to experience a fire in each acre.</li> </ul>	<ul style="list-style-type: none"> <li>If default values in FEMA software are used, then provide print out of software.</li> <li>If user-entered values are used provide full documentation of reasons for differences from FEMA default values.</li> </ul>	<ul style="list-style-type: none"> <li>BCA Wildfire calculation</li> <li>U.S.D.A. Forest Service</li> <li>Local, County, State, or Federal fire-fighting agency.</li> </ul>
<b>Building Value</b>	Total dollar value	<ul style="list-style-type: none"> <li>The cost for labor and materials to build a similar building in the same place.</li> <li>A key determinant of the amount of damage from future fires.</li> </ul>	<ul style="list-style-type: none"> <li>Narrative summary in the BCA module should include a justification for the building value entered into the module listing the credible source used to obtain the value.</li> </ul>	<ul style="list-style-type: none"> <li>Tax assessments, tax bills, local building inspector, contractor, builders or architect.</li> <li>Standard references such as: Marshall &amp; Swift Residential Cost Handbook, RS Means, Means Square Foot Cost Guide, or <a href="http://www.buildingcost.com">www.buildingcost.com</a>, referencing the types of buildings in the burn area under evaluation.</li> </ul>

Data Type	Value	Description	Documentation	Source
<b>Contents Value</b>	Expressed as dollars	<ul style="list-style-type: none"> <li>• The cost to replace the contents of a building.</li> <li>• Contents damage includes items like furniture, office equipment, personal belongings, and non-permanent room dividers.</li> <li>• Contents do not include items that are permanent parts of the building such as electrical and plumbing systems.</li> <li>• FEMA standard value for residential buildings is 30% of the replacement value of the building or \$20,000, whichever is greater.</li> </ul>	<ul style="list-style-type: none"> <li>• If standard values in FEMA software are used then provide print out of software.</li> <li>• FEMA default value is 30% of building value for residential buildings.</li> <li>• If user-entered values are used provide full documentation of reasons for differences from FEMA standard values.</li> </ul>	<ul style="list-style-type: none"> <li>• No source required if a residential building and FEMA standard is used.</li> <li>• Otherwise, review insurance records, signed appraisals, purchase receipts, estimates based on current market prices for similar contents.</li> </ul>
<b>Infrastructure</b>	Total dollar value	<ul style="list-style-type: none"> <li>• Value of potential infrastructure damaged or destroyed by fire.</li> </ul>	<ul style="list-style-type: none"> <li>• Narrative summary in the BCA module should include the reasoning used to determine the amount of infrastructure at risk before mitigation.</li> <li>• May also attach a letter, e-mail, etc. from credible agency documenting this estimate</li> </ul>	<ul style="list-style-type: none"> <li>• Party responsible for maintenance or protection of the area, most likely a local, county, or state agency such as the highway department or the fire department.</li> </ul>

<b>Data Type</b>	<b>Value</b>	<b>Description</b>	<b>Documentation</b>	<b>Source</b>
<b>Timber Value</b>	Total dollar value	<ul style="list-style-type: none"> <li>Value of potential lumber destroyed by fire.</li> </ul>	<ul style="list-style-type: none"> <li>Narrative summary in the BCA module should include the reasoning used to determine the amount of timber at risk before mitigation.</li> <li>May also attach a letter, e-mail, etc. from credible agency documenting this estimate.</li> </ul>	<ul style="list-style-type: none"> <li>U.S.D.A. Forest Service or other qualified agency</li> <li>Forester, qualified timber company representative,</li> <li>Owner of the property (must be supported with signed estimate)</li> </ul>
<b>Fire Suppression Costs</b>	Total dollar value	<ul style="list-style-type: none"> <li>Estimated costs for responding to and fighting the fire.</li> </ul>	<ul style="list-style-type: none"> <li>Narrative summary in the BCA module include a justification of the fire suppression costs before mitigation.</li> <li>May also attach a letter, e-mail, etc. from credible agency documenting this estimate.</li> </ul>	<ul style="list-style-type: none"> <li>Local, County, State, or Federal fire-fighting agency that fights wildland fires.</li> <li>U.S.D.A. Forest Service</li> <li>Owner of the property (must be supported with signed estimate)</li> </ul>
<b>Other (costs)</b>	Total dollar value	<ul style="list-style-type: none"> <li>Other costs associated with fire related losses.</li> </ul>	<ul style="list-style-type: none"> <li>Narrative summary in the BCA module should include the reasoning used to determine any values entered in this cell.</li> <li>Requires detailed explanation of source used and method applied.</li> </ul>	<ul style="list-style-type: none"> <li>Developing values may involve working with the agency providing service or estimating the loss or the property owner(s).</li> </ul>

<b>Data Type</b>	<b>Value</b>	<b>Description</b>	<b>Documentation</b>	<b>Source</b>
<b>Number of Residents</b>	Number	<ul style="list-style-type: none"> <li>• Number of residents that would be impacted by a fire.</li> </ul>	<ul style="list-style-type: none"> <li>• Narrative summary in the BCA module should include source used and method applied to determine current population data for the community, county, or state.</li> </ul>	<ul style="list-style-type: none"> <li>• Community, county, or state population official.</li> <li>• Current census, atlas, or other reference guide with population information.</li> </ul>
<b>Annual Death Rate per 1,000,000</b>	Statistical value estimate	<ul style="list-style-type: none"> <li>• Estimated number of people killed by wildfires per year per 1,000,000 people.</li> </ul>	<ul style="list-style-type: none"> <li>• If default values in FEMA software are used then provide print out of software.</li> <li>• If user-entered values are used provide full documentation of reasons for differences from FEMA default values.</li> </ul>	<ul style="list-style-type: none"> <li>• FEMA “What is a Benefit?” guidance</li> </ul>
<b>Dollar Value of a Casualty</b>	<p>2006 Dollars (present year value per person)</p> <p>Casualty = \$3,141,633</p>	<ul style="list-style-type: none"> <li>• Estimated value of the loss of one person.</li> <li>• Use the Inflation Calculator found in the BCA Tools Folder to inflate the FEMA standard values from 2001 to present day value.</li> <li>• 2001 Casualty = \$2,710,000</li> </ul>	<ul style="list-style-type: none"> <li>• If standard values in FEMA software are used then provide print out of software.</li> <li>• Use the Inflation Calculator found in the BCA Tools Folder to inflate the FEMA standard values from 2001 to present day value.</li> </ul>	<ul style="list-style-type: none"> <li>• FEMA “What is a Benefit?” guidance, Section 2.3.</li> </ul>

<b>Data Type</b>	<b>Value</b>	<b>Description</b>	<b>Documentation</b>	<b>Source</b>
<b>Dollar Value for Minor/Major Injuries</b>	<p>2006 Dollars (present year value per person)</p> <p>Major injury = \$18,085</p> <p>Minor injury = \$1,808</p>	<ul style="list-style-type: none"> <li>• Average of the estimated values for the treatment of major and minor injuries per person.</li> <li>• Use the Inflation Calculator found in the BCA Tools Folder to inflate the FEMA standard values from 2001 to present day value.</li> <li>• 2001 Major injury = \$15,600</li> <li>• 2001 Minor injury = \$1,560</li> </ul>	<ul style="list-style-type: none"> <li>• If standard values in FEMA software are used then provide print out of software.</li> <li>• Use the Inflation Calculator found in the BCA Tools Folder to inflate the FEMA standard values from 2001 to present day value.</li> </ul>	<ul style="list-style-type: none"> <li>• FEMA “What is a Benefit?” guidance, Section 2.3.</li> </ul>
<b>Percent Reduction in Damages, Losses, and Casualties</b>	Percentage	<ul style="list-style-type: none"> <li>• Amount of damage avoided by implementing the proposed mitigation action.</li> <li>• One of the key determinants in this type of analysis.</li> </ul>	<ul style="list-style-type: none"> <li>• Narrative summary in the BCA module should include the reasoning used to determine the amount of damage avoided by proposed mitigation action.</li> <li>• May also attach a letter, e-mail, etc. from credible agency documenting this estimate.</li> </ul>	<ul style="list-style-type: none"> <li>• Local, County, State, or Federal fire-fighting agency that fights wildland fires.</li> <li>• U.S.D.A. Forest Service</li> <li>• Owner of the property (must be supported with signed estimate)</li> </ul>
<b>Mitigation Project Useful Lifetime</b>	Years	<ul style="list-style-type: none"> <li>• Estimated amount of time that mitigation action will be effective (includes any maintenance activities that will be done to prolong effectiveness).</li> </ul>	<ul style="list-style-type: none"> <li>• Narrative summary in the BCA module should include a justification of the value entered for the useful lifetime of the proposed mitigation action.</li> <li>• May also attach a letter, e-mail, etc. from credible agency documenting this estimate.</li> </ul>	<ul style="list-style-type: none"> <li>• Local, County, State, or Federal fire-fighting agency that fights wildland fires.</li> <li>• U.S.D.A. Forest Service</li> <li>• Local, County, State, or Federal official specializing in vegetation removal and regrowth rates</li> </ul>

Data Type	Value	Description	Documentation	Source
<b>Mitigation Project Cost (includes data inputs for net mitigation project cost and additional annual maintenance cost (\$/yr) for a project)</b>	Total dollar value	<ul style="list-style-type: none"> <li>Estimated total cost of the proposed mitigation action and any maintenance activities that will be done to prolong effectiveness.</li> </ul>	<ul style="list-style-type: none"> <li>Narrative summary in the BCA module should state that this value comes from a potential or submitted project application.</li> <li>Sub-applicant should provide a detailed cost breakdown, rather than a lump sum value, from an engineering cost estimate.</li> <li>Must document source and reasoning in estimate of maintenance activity cost.</li> <li>Should support the value submitted with the project application.</li> </ul>	<ul style="list-style-type: none"> <li>For maintenance values, see Local, County, State, or Federal official specializing in vegetation removal</li> </ul>



## **FEMA BCA Checklist**

### **Appendix II FEMA BCA Checklist**

*Last Updated June 28, 2006*

**For the entire BCA Checklist, refer to the BCA\_Checklist.doc located on the BCA Mitigation Toolkit (BCA Mitigation Toolkit\4 – BCA TOOLS\CHECKLIST AND DATA DOCUMENTATION TEMPLATES).**

#### **2.2 BCA Damage Data**

- 2.2.1 The data should be well documented for each event that resulted in damage. The data should also be consistent with the type of mitigation project proposed (e.g., flood damage data should be provided in support of a proposed flood mitigation project). If damage was recorded for multiple events, the estimated frequency and the associated damage **MUST** be documented and provided for each event to support the damage analyses in the BCA.
- 2.2.2 Data used in place of FEMA standard or default values in the BCA modules **MUST** be documented. The documentation should include justification of why it is more appropriate than the FEMA values. Even minor changes in data will be considered incorrect if it is not fully documented or lacks justification for its use.
- 2.2.3 When using the Wildfire module, the “burn data” (sample area size, acres burned, type of fuel, burn recurrence interval, timber value, fire suppression costs, mitigation project life) **MUST** be provided, documented, and obtained from a credible source.