




May 27, 2005

FEMA

MEMORANDUM FOR: FEMA Regional Directors
Regions I – X

ATTENTION: Mitigation Division Directors
Administration and Resource Planning Division Directors
Response and Recovery Division Directors
Regions I – X

FROM: 
David I. Maurstad
Acting Director
Mitigation Division
Emergency Preparedness & Response Directorate

SUBJECT: Guidance for the Updated Alternative Determination of Cost-Effectiveness for Eligible Insured Repetitive Loss Properties

This memorandum provides guidance regarding how to use the updated alternate cost-effectiveness methodology and property list provided with this memorandum. The alternate methodology applies to the following FEMA Mitigation Grant Programs: the Hazard Mitigation Grant Program, Flood Mitigation Assistance Program, Pre-Disaster Mitigation Program and supplemental Mitigation Grants. Projects submitted for consideration under any of these programs must adhere to all requirements set forth in the various governing statutes and program regulations. Applicants requesting mitigation funds may use this alternative cost-effectiveness methodology and supporting data for any project meeting the guidelines described herein from the date of the initial July 2003 memorandum through December 31, 2006, or until this eligible NFIP repetitive loss properties list is superseded by another updated data set.

Eligible Repetitive Loss Properties

FEMA has updated the select list of repetitive flood loss properties exhibiting a level of risk that may be cost-effective to mitigate. These are properties that have either experienced four or more insured flood losses, or have the highest severity of flooding (i.e., cumulative losses paid exceeds the property value), with some properties satisfying both criteria. There are approximately 10,000 such properties, which represent about one quarter of one percent of all NFIP policies. These properties have expected average annual losses of about \$80 million, which account for about 10% of expected total NFIP annual losses.

We have once again limited the properties for which we have provided “potential future damages avoided” data to currently insured single family and 2-4 family residences for which we have acceptable property valuation data. An electronic list of eligible NFIP repetitive loss structures for each State in your region is provided as an attachment to this memorandum. To aid with location of these structures, we have also included the Repetitive Loss or Property Locator Number. This should prove helpful for those communities that have previously worked with

these Repetitive Loss lists. Please keep in mind that the data in this list is protected by the Privacy Act and may be provided to States and communities for approved routine uses only.

Eligible Project Types

This memorandum applies only to the required determination of cost-effectiveness relevant to projects submitted for funding in which eligible NFIP repetitive loss properties are included. This alternative methodology may only be applied to projects meeting the following criteria:

- Projects that address at least one or more eligible NFIP repetitive loss properties, which includes any of the properties on the electronic list provided with this memorandum;
- Projects that are designed to accomplish property acquisition/demolition, structure relocation or structure elevation; and
- For structural elevation projects, each structure must provide a minimum 1-foot of freeboard above the base flood elevation (BFE). Freeboard means a factor of safety, expressed in feet, above a specified flood level. Freeboard tends to compensate for factors that could contribute to flood heights greater than the height calculated for a selected flood frequency, such as wave action, bridge openings and the hydrological effect of urbanization of the watershed. More stringent State or local requirements must be met where applicable.

Projects not meeting the above criteria must undergo a standard FEMA BCA. Furthermore, for elevation projects, applicants are required to verify elevation data during project closeout by providing a signed FEMA Elevation Certificate (FEMA Form 18-31) based on finished construction from a registered professional engineer, registered land surveyor or, in the case of unnumbered A Zones or AO Zones, a Certified Floodplain Manager (CFM) or local floodplain administrator authorized to provide elevation information. The certification must stipulate that both the structure and all associated utilities are elevated to a minimum of 1-foot above the BFE or depth specified in AO Zones, based on an accurate floodplain survey.

Potential Future Damages Avoided

For each of the eligible NFIP repetitive loss structures, two “potential future damages avoided” values have been calculated, one based on a project useful life of 30 years for use with elevation projects and one based on a project useful life of 100 years for use with acquisition and relocation projects. For mitigation projects that completely eliminate or significantly reduce future losses, this value is comparable to the net present value of benefits used in the current FEMA BCA software modules. Instructions on how to use this estimate of “potential future damages avoided,” are provided in this guidance; however, the following caveats need to be made concerning this data:

- The “potential future damages avoided” value is based on insurance data and, therefore, may not accurately reflect the maximum potential future damages avoided for all properties;
- Property addresses on the list are the best available from existing NFIP records. The applicant or Regional Staff should contact Errol Garren (202 646-3678) for assistance in locating these properties or in updating any property addresses; and
- We estimate that up to 5% of these properties will not be 1-4 family residences or will have multiple structures at the property location. FEMA Regional Mitigation staff, applicants and sub-applicants should work with FEMA Headquarters Risk Reduction Branch and/or the

Benefit-Cost Helpline staff to determine the appropriate use of the “potential future damages avoided” value in determining cost effectiveness for projects addressing these properties.

Alternate Cost-Effectiveness Methodology

OMB Circular A-94, Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs, describes the economic principles and methods by which most Federal programs, including FEMA’s mitigation programs, must analyze and verify the cost effectiveness of projects they fund. OMB requires that both costs and benefits be computed on a net present value basis, and that applicants use a discount rate of 7% for determining BCA on all FEMA mitigation projects.

FEMA introduced this alternate cost-effectiveness methodology in July 2003. It allows for a simplified, alternate, FEMA-approved methodology to conduct the Benefit-Cost Analysis (BCA) for certain repetitively flooded properties currently insured under the National Flood Insurance Program (NFIP). Based on the use of the methodology to date, I have determined that the alternate cost-effectiveness methodology has supported the mitigation of these NFIP-insured structures by providing a framework that allowed States, Tribal governments and local community applicants to use NFIP-provided data to determine either all or part of the “benefits” portion of the BCA to demonstrate cost-effectiveness of proposed mitigation projects.

The alternate methodology adheres to the requirements set forth by OMB, and in no way waives the requirement of determining cost-effectiveness for eligible NFIP repetitive loss properties. Rather, it provides an alternate method for demonstrating cost-effectiveness for projects that meet the criteria and assumptions stated in this memorandum. The following sections provide an alternative framework through which States, Tribal governments and local community applicants can determine whether a proposed project meets the cost-effectiveness criteria for mitigation grants when the project includes eligible NFIP repetitive loss properties.

FEMA-funded mitigation projects may not cost more than the anticipated value of the reduction in both direct damages and subsequent negative impacts to the area if future disasters were to occur. Traditionally, this demonstration of cost effectiveness is done via a BCA, resulting in a benefit-cost ratio (BCR) of at least 1.0. When using only the potential future damages avoided values as project benefits, applicants must use the following formula to determine a project’s BCR:

$$\text{Potential Future Damages Avoided} / \text{Total Project Cost} = \text{Benefit-Cost Ratio}$$

For example, to determine a benefit-cost ratio for a sample property with potential future damages avoided equaling \$152,652 and a total project cost of \$85,254; you would use the following formula:

$$\$152,652 / \$85,254 = 1.791$$

Maximizing Benefits

FEMA encourages all applicants to demonstrate the maximum benefits for all mitigation projects. Keep in mind that using the “potential future damages avoided” value for eligible NFIP repetitive loss properties will not account for all possible avoided damages, such as uninsured

losses. In such cases, applicants can either forego this alternate methodology and perform a traditional BCA for these properties, or maximize the benefits by adding the net present value of benefits from these additional considerations to the “potential future damages avoided” value. However, the additional benefits must not duplicate the avoided insured structural and content damages, including any insurance deductibles, which are represented by the “potential future damages avoided” value. The resulting total value of the benefits calculated should be divided by the total project cost to determine a BCR for the project.

Combining Eligible NFIP Repetitive Loss Properties And Other Properties

In some situations applicants may propose projects that include structures on FEMA’s eligible NFIP repetitive loss list, other NFIP repetitive loss properties not on FEMA’s eligible list and other flood prone structures as well. For projects that consider a mix of eligible repetitive loss properties, non-eligible repetitive loss properties and other flood prone properties, the applicant may compile the benefits by adding the total value of the benefits calculated including “potential future damages avoided” for all eligible NFIP repetitive loss properties to the total net present value of benefits derived from the FEMA BCA software for eligible repetitive loss, non-eligible repetitive loss and/or flood prone properties included in the project. The resulting value will be divided by the total cost of the project to determine a composite BCR for the project.

Considerations When Using The Alternate Methodology

Not all repetitive flood loss properties on the list will be cost-effective using this alternative methodology. While not required, FEMA encourages applicants to focus on mitigating the repetitive loss structures that are cost-effective. FEMA encourages all applicants to demonstrate the maximum benefits for all mitigation projects.

If you have questions or need additional information regarding this alternative methodology, please have your staff contact one of the following individuals on my staff:

Insurance Data

Tom Hayes, Chief Actuary, (202) 646-3419

NFIP Repetitive Loss List

Errol Garren, Program Specialist, (202) 646-3678

Cynthia Pollnow, Program Specialist, (202) 646-4636

Benefit-Cost Analysis

Matt Smith, Mitigation Program Specialist, (202) 646-3748

Attachment