



FEMA

**MEMORANDUM FOR:** Regional Administrators  
Regions I – X

**ATTENTION:** Regional Mitigation Division Directors  
Hazard Mitigation Assistance Branch Chiefs

**FROM:** Angela R. Gladwell  
Director, Hazard Mitigation Assistance Division  
Federal Insurance and Mitigation Administration

**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.<sup>1</sup>
- (2) A structure covered by a contract for flood insurance made available under the NFIP that meets both of the two following qualifiers:

---

<sup>1</sup> 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).

- a. Has incurred flood-related damage on two occasions, in which the cost of the repair, on average, equaled or exceeded 25 percent of the market value of the structure at the time of each such flood event; and
- b. At the time of the second incidence of flood-related damage, the contract for flood insurance contains increased cost of compliance coverage.<sup>2</sup>

In this memorandum, SRL 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. Received four or more separate claim payments of more than \$5,000 each (including building and contents payments); or
  - b. Received two or more separate claim payments (building payments only) where the total of the payments exceeds the current value of the property.<sup>3</sup>
- (2) A structure covered by a contract for flood insurance made available under the NFIP that has incurred flood related damage and meets one of the two following qualifiers:
  - a. Four or more separate claims payments (includes building and contents) have been made under flood insurance coverage with the amount of each such claim exceeding \$5,000, and with the cumulative amount of such claims payments exceeding \$20,000; or
  - b. At least two separate claims payments (includes only building) have been made under such coverage, with the cumulative amount of such claims exceeding the market value of the insured structure.<sup>4</sup>

Projects that are eligible for funding under the Federal Emergency Management Agency's (FEMA) Hazard Mitigation Assistance (HMA) programs must demonstrate cost-effectiveness.<sup>5</sup> FEMA has developed several methodologies that applicants and subapplicants may use to demonstrate cost-effectiveness.<sup>6</sup> 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.<sup>7</sup> Additionally, FEMA

---

<sup>2</sup> This definition is based on the definitions for RL used by the Flood Mitigation Assistance (FMA) program. *See* 42 U.S.C. § 4121(a)(7); and *see* 44 C.F.R. § 77.2(i).

<sup>3</sup> This definition is based on the definitions for SRL used by the NFIP program. *See* 42 U.S.C. § 4014(h); *see* FEMA, National Flood Insurance Program, *Flood Insurance Manual*, Appendix I, pg. 1, and Appendix L, pg. 8 (Apr. 2021); and *see* FEMA, National Flood Insurance Program, *Community Rating System Coordinator's Manual*, pg. 120-8 (2017).

<sup>4</sup> This definition is based on the definitions for SRL used by the FMA program. *See* 42 U.S.C. § 4104c(h)(3); and *see* 44 CFR § 77.2(j).

<sup>5</sup> For Building Resilient Infrastructure and Communities (BRIC), *see* Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act), as amended, 42 U.S.C. § 5133(b); for Hazard Mitigation Grant Program (HMGP) and HMGP Post Fire, *see* Stafford Act at 42 U.S.C. § 5170c and 44 C.F.R.) 206.434(c)(5); for Flood Mitigation Assistance, *see* National Flood Insurance Act of 1968 at 42 U.S.C. 4104c.

<sup>6</sup> In accordance with Office of Management and Budget (OMB) Circular A-94: Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs.

<sup>7</sup> 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

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. Pre-calculated benefits also reduce the time and resources needed to complete and review cost-effectiveness for projects and aims to increase the availability of mitigation opportunities to help communities increase resilience against future disasters.

In 2013, FEMA's HMA Division analyzed over 11,000 structures acquired or elevated and found that the average benefits for each project type were \$276,000 and \$175,000, respectively. FEMA determined that acquisitions and elevations in SFHAs for projects at or below those cost thresholds are cost-effective and established these values as pre-calculated benefits. In a September 2021 memorandum, entitled "Update to Cost-Effectiveness Determinations for Acquisitions and Elevations in Special Flood Hazard Areas Using Precalculated Benefits" FEMA adjusted those values for inflation to \$323,000 per structure for acquisitions and \$205,000 for elevations (and mitigation reconstruction). The memorandum also updated any values outlined in the 2015 Hazard Mitigation Assistance Guidance, Part IV, I.7. Precalculated Benefits for Acquisitions and Elevations in Special Flood Hazard Areas.

In 2021, FEMA analyzed over 180,000 National Flood Insurance Program (NFIP) claims from RL and SRL structures incurred between 2001–2021, including structures located outside the SFHA. This analysis found that the average benefits for acquisition of these structures is approximately \$323,000. Therefore, FEMA has determined that the acquisition of a structure designated as RL or SRL that is located outside the SFHA—with total project costs less than or equal to \$323,000—is also considered cost-effective. For projects that contain multiple structures, the average cost of all structures in the project must meet the stated criteria.

This memorandum expands the use of pre-calculated benefits to include acquisition projects of RL and SRL properties outside the SFHA with a project cost less than or equal to the existing calculated threshold of \$323,000. The memorandum also updates any values outlined in the 2015 Hazard Mitigation Assistance Guidance, Part IV, Section I.7, "Precalculated Benefits for Acquisitions and Elevations in Special Flood Hazard Areas", by adding precalculated benefits for RL and SRL properties outside the Special Flood Hazard Area. This new pre-calculated benefit advances FEMA's commitment to streamline the HMA programs by eliminating the need for complete benefit-cost analysis for acquisitions of RL and SRL structures located outside the SFHA. It also intends to reduce time and resources needed for data collection, analysis, and review, and allows communities to recover from disasters more quickly.

This memorandum does not supersede the September 29, 2021, "Update to 'Cost-Effectiveness Determinations for Acquisitions and Elevations in Special Flood Hazard Areas Using Pre-Calculated Benefits' Memorandum." The memorandum supplements the September 29, 2021

---

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>.

memorandum by extending the eligibility for use of the pre-calculated acquisition benefit value to RL and SRL structures outside the SFHA.

## **II. Scope and Applicability**

This memorandum is effective on February 15, 2022.

This methodology is available for all Hazard Mitigation Assistance (HMA) grant programs<sup>8</sup> and can be applied to new project subapplications as well as pending projects or project subapplications selected for further review. Additionally, pre-calculated benefits can be used to evaluate cost overruns for approved projects, if a new cost-effectiveness review is being performed.

Pre-calculated benefits cannot be used to establish cost estimates. Cost estimates must be based on industry standards, vendor estimates, or other acceptable sources. Only documented, eligible, and reasonable costs for completed work will be reimbursed.

All projects will be reviewed for cost-reasonableness and technical feasibility. Projects that do not represent a comprehensive solution or that include unreasonable costs will not be eligible for selection.

## **III. Pre-Calculated Benefits for Acquisition of RL or SRL Properties Within or Outside of the SFHA**

FEMA has determined that the acquisition of a structure designated as RL or SRL, regardless of location within or outside of the SFHA, with total project costs<sup>9</sup> less than or equal to \$323,000 is considered cost-effective.

To use this pre-calculated benefit to demonstrate cost-effectiveness, the structure(s) in the acquisition project must meet one of the definitions for RL or SRL provided in section I of this memorandum.

The specific geographic location of structures can increase acquisition costs. The benefit amounts identified above may be adjusted by using the most current location factors included in industry-accepted construction cost guides. If a multiplier is used, a copy of the source document must be included as part of the grant application.

For additional information on the HMA programs, visit <https://www.fema.gov/grants/mitigation>.

If you have any questions, please contact the BCA Helpline. The BCA Helpline contact information can be found on FEMA's BCA website on FEMA.gov, available at <https://www.fema.gov/grants/guidance-tools/benefit-cost-analysis>.

---

<sup>8</sup> HMA grant programs currently include the Hazard Mitigation Grant Program (HMGP), HMGP Post Fire, Flood Mitigation Assistance and Building Resilient Infrastructure and Communities.

<sup>9</sup> Total project costs include all applicable costs outlined in the 2015 Hazard Mitigation Assistance Guidance and its addendum, not just the construction costs or federal share.