



# Federal Emergency Management Agency

Washington, D.C. 20472

**1. Date Signed:** August 13, 1998

**2. RR Policy Number:** 9526.1

**3. Subject:** Hazard Mitigation Funding Under Section 406 (Stafford Act)

**4. Purpose:** Provide guidance on the appropriate use of Section 406 hazard mitigation discretionary funding. This will ensure national consistency in the use of Section 406 mitigation funds; and promote measures that reduce future loss to life and property, protect the federal investment in public infrastructure, and, ultimately, help build disaster resistant communities.

**5. Scope and Audience:** This policy applies to all disasters declared after publication of this document. It is intended to guide all FEMA personnel responsible for the administration of the FEMA public assistance grant program.

**6. Background:**

a. The Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended, provides FEMA the authority to fund the restoration of eligible facilities which have sustained damage due to a Presidentially declared disaster. Within the enabling act, Section 406 also contains a provision for the consideration of funding additional measures, not required by applicable codes and standards (further described in 44 CFR 206.226) that will enhance a facility's ability to resist similar damage in future events.

In providing discretionary authority for the addition of hazard mitigation measures to permanent work restoration, Congress recognized that, during the repair of damaged components of facilities, there would be a unique opportunities to prevent recurrence of similar damage from future, similar disaster events. Such measures are in addition to any measures undertaken to comply with applicable codes and standards, although such compliance, itself, could be considered a form of mitigation.

b. Section 406 hazard mitigation funding and Section 404 hazard mitigation funding are distinct. Proposals for measures intended to benefit undamaged facilities, and measures not directly related to the damaged elements for which restoration work on a facility is performed are candidates for funding under Section 404. Section 406 funding is more appropriately viewed as stemming from, and related directly to, the repair work required as a result of the disaster. If a combination of Section 404 and Section 406 funding is intended, the Section 404 application should be submitted in a timely manner.

c. Section 406 hazard mitigation funding under the Stafford Act is a discretionary spending program. While the law provides that the President may authorize funds for eligible projects, it does not require funding. FEMA, Grantee and Subgrantee interests in disaster resistance must be balanced with the supplemental nature of disaster assistance and FEMA's obligation for the prudent stewardship of Federal disaster funds.

d. Only FEMA is authorized to interpret and implement the Stafford Act and regulations issued pursuant to the Stafford Act. Accordingly, only FEMA has the authority to determine which repairs (code/standard-mandated or otherwise) it will fund pursuant to the Stafford Act. The Stafford Act and applicable regulations cannot be read or interpreted as authorizing State or local building officials or agencies to determine the amount of Federal disaster assistance funds FEMA will contribute to a project.

## **7. Policy:**

a. Section 406 provides discretionary authority to fund mitigation measures in conjunction with the repair of damaged facilities. The mitigation measures must be related to eligible disaster-related damages and must directly reduce the potential of future, similar disaster damages to the eligible facility. These opportunities usually present themselves during the repair/replacement efforts.

b. While all parties must remain mindful of relative costs and benefits and prudent use of Federal disaster funds, a calculation of benefits and costs, using the FEMA approved computer model, no longer is necessary for justification of Section 406 funds.

c. Mitigation measures must be determined to be cost-effective. Any one of the following means may be used to determine cost-effectiveness:

1) Measures may amount to up to 15% of the total eligible cost of the eligible repair work on a particular project.

2) Certain mitigation measures (see Appendix A) will be determined to be cost-effective, as long as the mitigation measure does not exceed the eligible cost of the eligible repair work on the project.

3) For measures that exceed the above costs, the Grantee or Subgrantee must demonstrate through an acceptable benefit/cost analysis that the measure is cost-effective.

d. Proposed projects must be approved by FEMA prior to funding. They will be evaluated for cost effectiveness, technical feasibility, and compliance with statutory, regulatory and executive order requirements. In addition, the evaluation must ensure that the mitigation measures do not negatively impact a facility's operation or risk from another hazard.

e. Costs of meeting applicable codes/standards in accordance with 44 CFR 206.226 is distinct from mitigation funding.

f. There may be no duplication in funding between Sections 404 and 406. Therefore, the Grantee and Subgrantee must be able to identify specific hazard mitigation work that will be accomplished with funding through Section 406. Section 404 funding may not duplicate that work, although Section 404 may be additive and accomplished on Section 406 facilities. The appropriate split on a project between funds under Sections 404 and 406 is a FEMA decision.

g. Costs approved for project-specific mitigation measures under Section 406 of the Stafford Act may not be applied to improved projects which will involve the replacement of the disaster-damaged facility, whether on the same site or an alternate site. However, funds recommended for mitigation measures may be approved for an improved project which will include the work required to repair the disaster-damaged facility and restore its function, as well as improvements.

h. The cost caps (15% or 100%) for Section 406 hazard mitigation measures related to windows will be based on the total cost of damage to: 1) the damaged element, and 2) the affected building contents.

#### **8. Supersession:**

a. Paragraph 3.a) of October 14, 1994 Memorandum on "Benefit-cost Analysis in Support of Potential Hazard Mitigation Projects" directed to Regional Directors and Federal Coordinating Officers from Craig Wingo (RR) and Robert Shea (HM). The memorandum was published in Chapter 4511.600 of Public Assistance Policy and Guidance Compendium.

b. References to Section 406 funding of March 1995 Memorandum on "Benefit-cost Analyses in Support of Potential Hazard Mitigation Projects" directed to Regional Directors and Federal Coordinating Officers from Craig Wingo (RR) and Robert Shea (HM). The memorandum was published in Chapter 4511.600 of Public Assistance Policy and Guidance Compendium.

c. April 26, 1995 memorandum from Craig Wingo (RR) to William Tidball (FCO, DR-1008) on Section 406 Discretionary Hazard Mitigation Funding. Published in PA Compendium Chapter 4511.600

**9. Authorities and References:**

a. Section 406 (e) of the Robert T. Stafford Act, as amended:

"(1) General Rule. For purposes of this section, the cost of repairing, restoring, reconstructing, or replacing a public facility or private, nonprofit facility on the basis of the design of such facility as it existed immediately prior to the major disaster and in conformity with current applicable codes, specification, and standards (including floodplain management and hazard mitigation criteria required by the President or by the Coastal Barrier Resources Act (16 U.S.C. 3501 et seq.)) shall, at a minimum be treated as the net eligible cost of such repair, restoration, reconstruction, or replacement."

b. Reference: March 24, 1995 memorandum entitled "ENVIRONMENTAL POLICY MEMO #3 Policy for Projects Completed Without Environmental Review Required by the National Environmental Policy Act (NEPA).

**10. Originating Office: RR-IS**

**11. Review Date:** Two years after publication

**12. Signature:**



\_\_\_\_\_  
Lacy E. Suiter  
Executive Associate Director  
Response and Recovery Directorate

**13. Distribution:**

Regional Directors, Regional and Headquarters RR Division Directors

**SEE ATTACHED APPENDIX FOR POTENTIAL MEASURES THAT ARE PRE-DETERMINED TO BE COST EFFECTIVE**

## Appendix (4/29/98)

The following potential mitigation measures (reference: See Paragraph 7.c. of the policy) are determined to be cost-effective if they:

- do not exceed 100% of project cost,
- are appropriate to the disaster damage,
- will prevent future similar damage,
- are directly related to the eligible damaged elements,
- do not increase risks or cause adverse effects to the property or elsewhere,
- meet standards of good professional judgment, and
- otherwise meet requirements stipulated in the policy on *Hazard Mitigation Funding Under Section 406 (Stafford Act)*, RR Policy Number: 9526.1

This list will continue to be evaluated and will evolve over time as new information becomes available.

### 1. Infrastructure Systems:

#### A. Drainage/crossings and bridges

- 1) Drainage structures – When drainage structures are destroyed, replacing the structure with multiple structures or a larger structure. However, structures need to be considered with regard to a total drainage system and should not be replaced without a watershed hydrology study.
- 2) Low span bridges – Demolish/replace damaged low span bridges or other crossings that act to collect debris, increase flooding, and/or can be severely damaged.
- 3) Low-water crossings – Where traffic counts are low, replacing bridges with carefully placed low-water crossings.
- 4) Debris traps – Installing traps upstream of a culvert to prevent culverts from becoming clogged by vegetation.
- 5) Gabion baskets, riprap, sheetpiling, and geotextile fabric installation – Installation to control erosion.
- 6) Headwalls and wing walls – Installation to control erosion.
- 7) Restraining cables on bridges – Installation of cables to restrain a bridge from being washed off piers or abutments.

## **B. Sanitary and storm sewer systems**

- 1) Access covers – When feasible, access covers can be elevated to the hydraulic grade line. There are a number of devices that prevent infiltration into access holes.
  
- 2) Sewer lines –
  - a) Repair, lining or encasement of damaged sections to prevent infiltration or structural collapse.
  
  - b) Relocating sections of damaged sewer lines to avoid damage from slip-out on roads or to avoid damage to lines crossing a stream or drainage area.
  
- 3) Pump stations –
  - a) Equipment or controls in a pump station that are subject to damage from the 100-year flood can be elevated. Pump station buildings can be dry floodproofed.
  
  - b) Installation of camlocks, transfer switches, and electrical panels to ease the hook-up of portable emergency generators.

## **C. Wastewater treatment plants**

- 1) Elevation of equipment and controls that can be elevated easily .
  
- 2) Dry or wet floodproofing of buildings.

## **D. Potable water**

- 1) Well systems –
  - a) Reduction of infiltration and subsequent contamination of the aquifer. Methods include casing the well or raising the elevation of the well head.
  
  - b) Elevation of controls, mechanical equipment, or electrical service associated with use of the well to protect them from flood damage.
  
- 2) Raw water intakes – Strengthening to prevent damage from erosion, scour and flood debris.

3) Water treatment plants –

- a) Elevation of equipment and controls that can be elevated easily.
- b) Dry floodproofing.

**E. Electric power distribution**

- 1) Pad-mounted transformers – elevating above the base flood elevation, or lowering them or burying them in non-flood, high-wind areas.
- 2) Using multiple poles to support transformers.
- 3) Burying lines.
- 4) Anchoring or otherwise protecting fuel tanks from movement in a disaster.
- 5) Replacing damaged poles with higher-class pole, or with a different material pole such as replacing wood poles with spun concrete.
- 6) Adding guy wire or other additional support to power lines.
- 7) Removing large diameter communication lines from power poles.
- 8) Providing looped distribution service or other redundancies in the electrical service to critical facilities.

**F. Above ground storage tanks – Strengthening or stiffening base connections.**

**G. Underground pipelines – Installation of shut-off valves (based on accepted practice) so that damaged sections of pipeline can be isolated.**

## **2. Buildings - General**

### **A. General effects of flood damage –**

1) **Buildings substantially damaged under NFIP regulations** – Repair, dry floodproofing, or elevation so they are protected to meet minimum NFIP regulations. If the building is replaced, rather than repaired, no Section 406 hazard mitigation funding is appropriate.

2) **Buildings not substantially damaged under NFIP regulations** – If technically feasible, dry floodproofing. Electrical panels, machinery rooms, emergency generators can be elevated above the BFE or dry floodproofed. If dry floodproofing is not feasible, these buildings should be wet floodproofed.

**B. Roofs** – Because the failure of a roof covering can lead to extensive damage to contents and operation, damaged roofing should never be replaced with the same material unless the cause of failure has been identified and corrected.

1) **Low slope roofs** – Replacement of the entire roof with a roof covering with a secondary membrane and a fully adhered roof covering that is not subject to progressive failure, such as a modified bitumen. Mechanically fastened insulation or membranes are not acceptable.

2) **Curbing and flashing** – Single membrane and built up roofs can be susceptible to progressive failure from flashing and curbing failure. These items should be inspected and repaired or replaced. National Roofing Contractors can provide technical advice.

3) **Ballasted roof systems** – Roof systems with gravel or other small ballast should be replaced with ballast of sufficient weight that it does not become airborne causing increased damages.

4) **Roof-mounted equipment** should be attached to a foundation that will resist expected wind forces.

5) **Hurricane clips** – Hurricane clips may be recommended for use in high-wind areas.

**C. Shutters** – In areas subject to hurricane winds, shutters are appropriate in the following areas:

1) All windows on critical facilities such as hospitals.

2) The lower floors of buildings with windows most likely to be struck by debris.

3) Windows of buildings with very high value contents that can be damaged by water (such as libraries and document centers).

4) Windows of buildings subject to debris from nearby ballasted roofs, metal buildings, manufactured homes or other structures likely to fail and result in debris.

**D. Anchoring** – Anchoring of mechanical and electrical equipment in critical facilities.

**E. Flexible piping** – Installation of flexible piping at pipe/conduit connections to equipment to accommodate expected movement in an earthquake.

**F. Bracing** –

a) Bracing of overhead pipes and electrical lines to meet seismic loads.

b) Bracing interior walls and partitions that could collapse, preventing safe exit from the building.

c) Bracing parapets, anchoring veneer or cladding, and bracing other non-structural elements that could collapse and cause injury or block safe exit of a building during an earthquake.

**G. Replacement of glass** – Replacement of glass (with break resistant material) in mullions to prevent breakage and fallout in the event of building movement.