RP9526.1

FEMA
RECOVERY POLICY

I. TITLE: Hazard Mitigation Funding Under Section 406 (Stafford Act)

II. DATE: MAR 3 0 2010

III. PURPOSE:

Provide guidance on the appropriate use of hazard mitigation discretionary funding available under Section 406 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act), 42 U.S.C. 5172. 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.

IV. SCOPE AND AUDIENCE:

This policy applies to all disasters declared after publication of this document. It is intended to guide all personnel responsible for the administration of the FEMA Public Assistance Grant Program.

V. AUTHORITY:

Section 406(e) **Repair, Restoration, and Replacement of Damaged Facilities** of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act), 42 U.S.C. 5172 and Title 44 Code of Federal Regulations (CFR) §206.226 **Restoration of damaged facilities**.

VI. BACKGROUND:

A. The Robert T. Stafford Disaster Relief and Emergency Assistance Act provides FEMA the authority to fund the restoration of eligible facilities that have sustained damage due to a presidentially declared disaster. Title 44 CFR §206.226 **Restoration of damaged facilities** contains a provision for the consideration of funding additional measures that will enhance a facility's ability to resist similar damage in future events.

1. 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 opportunity 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.

2. Section 406 hazard mitigation funding and Section 404 hazard mitigation funding are distinct. Section 406 is applied on the parts of the facility that were actually damaged by the disaster and the mitigation measure provides protection from subsequent events. The mitigation work must be cost effective and be reasonably performed as part of the work or measure which will reduce the potential for damage to a facility from a disaster event. Sometimes, a combination of Section 406 and 404 funding may be appropriate, where Section 406 hazard mitigation funding is used to provide protection to the parts of the facility that were damaged and Section 404 hazard mitigation funding is used to provide protection to the undamaged parts of the facility. In these instances, the application for Section 404 hazard mitigation funding must be submitted in a timely manner, consistent with State and local hazard mitigation plans, and approved by the State Hazard Mitigation Officer.

3. FEMA may provide discretionary hazard mitigation funding under Section 406 of the Stafford Act. FEMA, Grantee and subgrantee's 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.

4. 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 hazard mitigation measures it will fund. The Stafford Act and applicable regulations do not authorize State or local building officials or agencies to determine the amount of hazard mitigation funding FEMA will contribute to a project.

VII. POLICY:

A. Section 406 provides discretionary authority to fund mitigation measures in conjunction with the repair of the disaster-damaged facilities. These opportunities usually present themselves during the repair efforts. 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. Normally, this work is performed on the parts of the facility that were actually damaged by the disaster. In some instances, an eligible mitigation measure may not be an integral part of the damaged facility. FEMA will consider these exceptions on a case-by-case basis.

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

1. Mitigation 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) determined cost effective, as long as the mitigation measure does not exceed 100% of 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 methodology that the measure is cost effective. FEMA's Benefit Cost Analysis (BCA) software provides appropriate benefit/cost analysis methodologies. Public Assistance personnel can obtain the software from FEMA by downloading the software from http://www.bchelpline.com. If you need technical assistance with the FEMA BCA tools please contact the BCA helpline via e-mail (bchelpline@dhs.gov) or by calling 1-866-222-3580. The benefit/cost analysis will be based on a comparison of the total project cost to the total cost of the following projected benefits: 1) damage to the facility and its damaged contents, 2) emergency protective measures required as a result of that damage, 3) temporary facilities required due to the damage, 4) loss of function, 5) casualty (loss of life and injury), and 6) cost avoidance (damages avoided in the future due to mitigation measures).

C. If a facility has Section 406 hazard mitigation funding included in the approved scope of work (SOW) and the subgrantee wishes to restore the facility to its pre-disaster condition and function without the Section 406 hazard mitigation SOW, then the subgrantee must request a change of SOW prior to completion of the project. Section 406 hazard mitigation funds must be de-obligated when the subgrantee does not use the funds as approved in the SOW.

D. FEMA must approve proposed hazard mitigation projects prior to funding. FEMA will evaluate the proposed hazard mitigation projects for cost effectiveness, technical feasibility, and compliance with statutory, regulatory and executive order requirements. In addition, FEMA will ensure that the proposed hazard mitigation projects do not cause a negative impact to the facility's operation, surrounding areas, or susceptibility to damage from another hazard.

E. The cost of meeting applicable codes/standards in accordance with 44 CFR §206.226(d) **Restoration of damaged facilities,** *Standards* and minimum National Flood Insurance Program requirements are regulatory requirements that are distinct from hazard mitigation. Funding for these costs is considered separately.

F. When the cost of proposed replacement material for a damaged component is more than the original material, the proposed material must be shown to be cost effective.

G. There may be no duplication in hazard mitigation 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. Sections 404 and 406 funding cannot be used to meet the non-federal cost share of the other grant.

H. Funds recommended for mitigation measures may be approved for an improved project if the original facility and its function will be restored and the mitigation work is still needed, is technically feasible, and will be performed as part of the overall project. Facilities eligible for replacement under 44 CFR 206.226(f) **Restoration of damaged facilities.** *Repair vs. replacement* are not eligible for mitigation measures.

1. If mitigation measures are approved for the repair of a disaster-damaged facility and the subgrantee requests an improved project which will instead involve the replacement of the facility, on the same site or an alternate site, the cost of the mitigation measures is not eligible.

2. The cost of mitigation measures approved under Section 406 for the repair of a facility may not be applied towards an Alternate Project.

VIII. RESPONSIBLE OFFICE: Recovery Directorate (Public Assistance Division).

IX. SUPERSESSION: This policy supersedes DAP9526.1, *Hazard Mitigation Funding Under Section 406 (Stafford Act)*, dated July 30, 2007, and all previous guidance on this subject.

X. REVIEW DATE: This policy does not automatically expire, but will be reviewed 3 years from the date of publication.

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Appendix A

POTENTIAL MITIGATION MEASURES THAT ARE PRE-DETERMINED TO BE COST EFFECTIVE

The following potential mitigation measures (reference: paragraph VII.B.2) 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,
- are technically feasible for the hazard and location, and
- otherwise meet requirements stipulated in this policy, including environmental, historic, and mitigation planning considerations.

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

A. Drainage/crossings and bridges

1. Drainage structures - When drainage structures are destroyed, replacing the structure with multiple structures or a larger structure. Sizing of replacement culverts can be made using in-place state/local drainage criteria (nomographs). However, structures need to be considered with regard to a total drainage system and should not be upgraded without a watershed hydrology study with an emphasis on downstream effects and NFIP regulations.

2. Culverts – Where the alignment of culverts is inconsistent with streams flowing through them (because it has been blown-out), realign or relocate the culverts to improve hydraulics and minimize erosion. However, realignment of structures must be considered in regard to a total drainage system and shall not be replaced without a hydrology study with an emphasis on downstream erosion effects.

3. Headwalls and wing walls - Installation to control erosion.

4. Low-water crossings – When bridges are destroyed and where traffic counts are low, replacing bridges with carefully placed low-water crossings.

5. Gabion baskets, riprap, sheet-piling, and geotextile fabric installation - Installation to control erosion.

6. Roadways – Where roadways shoulders are damaged by overflow from adjacent water courses, stabilize shoulders and embankments with geotextile fabric.

7. Restraining cables on bridges - Installation of cables to restrain a bridge from being knocked off piers or abutments during floods or earthquakes. Also, where bridges have been damaged or destroyed when girders, beams and decking system are displaced by storm surges or earthquakes, install girder and deck uplift tie-downs to prevent their displacement from the substructure.

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 – Repair, lining or encasement of damaged sections to prevent infiltration or structural collapse.

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 flood-proofed.

b. Installation of camlocks, transfer switches, and electrical panels to facilitate the connection of portable emergency generators.

c. Pump stations – If pumps and their attached motors are damaged by storm water inundation, replace them with submersible or inline pumps as appropriate.

d. Pump stations – If pump station equipment is damaged as a result of inundation resulting from power failure, install switches, circuit isolation and/quick connect capability to facilitate rapid connection of backup power.

C. Wastewater treatment plants

1. Elevation of equipment and controls that can be elevated easily.

2. Dry or wet flood-proofing 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 - Buttressing 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 flood-proofing.

E. Electric power distribution

1. Pad-mounted transformers - elevating above the base flood elevation.

2. Using multiple poles to support transformers.

3. Anchoring or otherwise protecting fuel tanks from movement in a disaster.

4. Replacing damaged poles with higher-rated poles, of the same or different material such as replacing wood poles with precast concrete or steel.

5. Adding guy wire or additional support to power lines.

6. Removing large diameter lines from poles.

7. Providing looped distribution service or other redundancies in the electrical service to critical facilities.

F. Above ground storage tanks

1. Strengthening or stiffening base connections.

2. Installation of self-initiating disconnects and shut-off values between tanks and distribution lines to minimize damage and leaks.

G. Underground pipelines - Installation of shut-off valves so that damaged sections of pipeline can be isolated.

Buildings – General:

A. General effects of flood damage –

1. Buildings substantially damaged under NFIP regulations - Repair, dry flood-proofing, or elevation so they are protected to meet minimum NFIP regulations. If the building is replaced, rather than repaired, minimum NFIP requirements are generally in place as codes and standards in participating communities and are applicable in both repair and replacement situations. Section 406 mitigation should be considered in those cases where the standards either fall short or provide no protection against other hazards.

2. Buildings not substantially damaged under NFIP regulations - If technically feasible, dry flood-proofing. Electrical panels, machinery rooms, emergency generators can be elevated above the BFE or dry flood-proofed. If dry flood-proofing is not feasible, these buildings should be wet flood-proofed.

B. Roofs - Because the failure of a roof covering can lead to extensive damage to contents and operation, damaged roofing should be evaluated to determine cause of failure.

1. Low slope roofs - Replacement of the entire roof with a roof covering with a secondary membrane and a fully adhered roof covering, such as modified bitumen. Mechanically fastened insulation or membranes are not acceptable.

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

3. Hurricane clips - Hurricane clips for use in high-wind areas.

4. Roofs – When roof damages are due to wind pressure beneath soffits and overhangs, strengthen the soffit and overhang material and means of attachment to prevent wind pressure adversely affecting the roofing system.

5. Roofs – When there is roof system damage or water intrusion due to damage to roof opening such as hatches and skylights strengthen the openings or the windows to avoid future damage.

6. Roofs – For gable roofs damaged by wind, replace the gable end-framing with hipped roof framing to reduce wind forces (lower edge pressure; reduced projected wind area) and strengthen the roof framing.

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

1. All damaged windows on critical facilities such as hospitals.

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

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

4. Damaged 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** –

1. Anchoring of mechanical and electrical equipment in critical facilities.

2. For small ancillary buildings that have sustained damage and/or have caused damage to other facilities, anchor the buildings to foundations to prevent toppling or becoming missile hazards.

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

F. Bracing –

1. Bracing of large diameter pipes and electrical lines to meet seismic loads.

2. Bracing non-structural interior walls and partitions.

3. 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 impact-resistant material.

H. General Buildings –

1. Buildings – Where spread footings have been undercut by scour, underpin footings.

2. Siding – if siding has been damage by wind, replace with a stronger siding with stronger attachments to the wall sheathing and structure.

3. Venting – Where there has been water damage caused by water intrusion through venting systems, replace the vents with rain and water resistant vents.

I. Doors and Windows –

1. Where damage has resulted from wind and water intrusion around weather stripping on doors and/or windows, upgrade the weather stripping to prevent water infiltration.

2. Where damage has been caused by wind-induced failure of doors, replace the doors with stronger units. This applies to the door frame, door, hinges and lock hardware. Both entry and garage doors should be considered.

J. **Miscellaneous Structures –**

1. Marine Piers – If marine pier ramps that attach to decking have been damaged by storm-surge uplift and buoyancy, install open decking or floating decking with uplift-resistant tie-downs and fasteners.

2. Signage – If sign panels and their supports have failed, replace with a stronger type of system of supports and panels. Consider using multiple support posts and stronger panels and fasteners.

3. Gutters and Downspouts – If damaged by either wind and/or water, upgrade the gutter and downspout system to direct water away from the structure to prevent interior or basement water damage.

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