Section 406 Hazard Mitigation

The Role of Mitigation in Public Assistance

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Section 406 Hazard Mitigation

Goal

To provide tools and knowledge to successfully identify 406 mitigation measures
## Section 406 Hazard Mitigation Objectives

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<tr>
<th>Define &amp; Identify the role of Hazard Mitigation in PA program &amp; development</th>
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<td>Section 406 Background, Policy, &amp; Purpose</td>
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<td>Why Mitigate?</td>
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<td>Assess eligibility of mitigation based on governing documents</td>
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<td>Determination of cost effectiveness</td>
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<td>Pre-Determined Measures</td>
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Section 406 Hazard Mitigation

Definition

Any sustained action taken to reduce or eliminate long-term risk to people & property from natural hazards & their effects; such action will enhance a facility’s ability to resist similar damage in future events.
Section 406 Hazard Mitigation

Stafford Act – Section 406

Authorizes the Public Assistance program (PA)

Allows for: Repair, Restoration, & Replacement of damaged facilities to pre-disaster conditions

406 measures are implemented through the PA program
Roadway Washouts

Oct 6, 2015, 4:19:27 PM
Grayson Co-SH 91
33.80680789, -96.56278216

Utilities

Mitigation
Damaged Elements

Bridges - Erosions & Structure damages

Jul 2, 2015, 9:19:41 AM
Hays County-Blanco River Brdg at Bogie Rd.
29.85708563, -97.89695316

Culvert Washouts

Jan 21, 2016, 11:35:43 AM
Kaufman Co-City Terrell-Convivnce Center Rd
32.75951939, -96.24726285

Structures

Storage tanks

Dec 30, 2015, 9:52:10 AM
Dallas Co-City Rowlett-Water Tower
32.90236638, -96.52515018

Texas Department of Public Safety
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Section 406 Hazard Mitigation

Governing Documents/Authority

Robert T. Stafford Act - Section 406

Title 44 CFR Section 206.226 RODF

PA Program and Policy Guide “Recovery Policy 9526.1”
Section 406 Hazard Mitigation

Background

Section 406 applies to eligible facilities that have sustained damage due to a presidentially declared disaster.

406 measures are in addition to any measures undertaken to comply with applicable Codes & Standards.

406 measures **MUST** be cost effective.
Section 406 Hazard Mitigation
Recovery Policy 9526.1

To provide discretionary authority to fund mitigation measures in conjunction with the repair of the disaster damaged facilities

- Measures Must be related to eligible disaster related damages; and
- Must directly reduce the potential of future/similar disaster damages to eligible facilities
Section 406 Hazard Mitigation
Recovery Policy 9526.1

Purpose

To promote measures that reduce future loss to life and property

To protect federal investment in public infrastructure

To help build disaster resistant communities
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Mitigate?

The Average Nationwide natural disasters cost over $50 Billion each year

Reduce excessive losses
- Breaking the disaster-rebuild-disaster cycle
- Strengthening existing infrastructure and facilities
- Addressing natural hazards
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Eligibility determination!

“Eligible” 406 Hazard Mitigation

• MUST directly reduce the potential of future / similar damages to eligible facility
• MUST be cost effective
• MUST be related to eligible disaster-related damages
• Improved projects are eligible – “IF” original facility and its function will be restored

“NOT Eligible” 406 Hazard Mitigation

• NOT cost effective
• Repair vs. Replacement - 44 CFR; Section 206.226 (f)
• Improved and/or Alternate projects
• NFIP requirements
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Policy Guide

Prior to funding, FEMA must approve HM Projects
- Cost effectiveness
- Technical Feasibility
- Compliance with statutory, regulatory, & Executive Order requirements

Scope of Work (SOW)
- If 406 funding is included in the SOW & Applicant wishes to restore facility WITHOUT 406, then a request to change the SOW must be submitted to FEMA prior to completion of project

404 and 406 Hazard Mitigation
- There may be NO duplication of funds between Sections 404 and 406 hazard mitigation

Texas Department of Public Safety
DIVISION OF EMERGENCY MANAGEMENT
## Section 406 Hazard Mitigation

<table>
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<tr>
<th>404 Mitigation</th>
<th>VS</th>
<th>406 Mitigation</th>
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<tr>
<td>• Separate program administered by the State</td>
<td></td>
<td>• Implemented through the PA Program</td>
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<td>• Eligible Statewide</td>
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<td>• Eligible to declared counties</td>
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<tr>
<td>• Applies to structural &amp; non-structural measures</td>
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<tr>
<td>- property acquisition</td>
<td></td>
<td>• Applies only to eligible damaged facilities</td>
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<tr>
<td>- Warning systems</td>
<td></td>
<td>• NO limits on funds – based on cost effectiveness</td>
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<tr>
<td>- drainage projects</td>
<td></td>
<td>• Can fund eligible facility projects that have</td>
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<tr>
<td>- Electric generators, etc.</td>
<td></td>
<td>sustained damage due to a declared disaster</td>
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<tr>
<td>• Program funding capped at 15% of total disaster funds</td>
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<tr>
<td>• Can fund projects not directly impacted by the disaster</td>
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Determination of Cost Effectiveness!

- 15%
- 100%
- FEMA’s Benefit Cost Analysis (BCA)
Section 406 Hazard Mitigation Cost Effectiveness!

15% Rule

406 measures may amount to or up to 15% of the total eligible cost of the eligible repair work on a particular project

Net Mitigation Costs \[ \leq 15\% \]

Cost of Damaged Element
Section 406 Hazard Mitigation

Cost Effectiveness!

100% Rule

Certain 406 measures are pre-determined by FEMA to be cost effective as long as the measure does not exceed 100% of the eligible cost of the eligible repair work on a particular project.

Net Mitigation Costs ≤ 100%

Cost of Damaged Element
### Section 406 Hazard Mitigation

#### Pre-Determined Measures

**Categories C, D, E, F, & G**

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<tr>
<th>Drainage Structures, roads, and bridges</th>
<th>Sanitary &amp; storm sewer systems</th>
</tr>
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<tbody>
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<td>Wastewater Treatment Plant</td>
<td>Water Treatment Plant</td>
</tr>
<tr>
<td>Portable Water</td>
<td>Electric Power Distribution</td>
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<tr>
<td>Above Ground Storage Tanks</td>
<td>Underground Pipelines</td>
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</tbody>
</table>
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Pre-Determined Measures - Buildings

- Doors and Windows
- Shutters
- Flexible Piping
- Replacement of Glass
- Roofs
- Anchoring
- Bracing
- Siding & Venting
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Pre-Determined Cost Effective Measures

- Do not exceed 100% of project cost
- Are appropriate to the disaster damage
- Will prevent future similar damage
- Are directly related to “ELIGIBLE” damages
- Do not increase Risks or cause Adverse Effects
- Are technically feasible for the hazard & location
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Cost Effectiveness!

406 mitigation measures that exceed 15% & 100%

State or Applicant MUST conduct a Benefit-Cost Analysis (BCA) to demonstrate that the measure(s) is cost effective

Benefits
Cost = BC Ratio
**Section 406 Hazard Mitigation**

**Examples of 406 measures**

<table>
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<tr>
<th>Drainage Structures &amp; culverts</th>
<th>When destroyed, replace with multiple structures or a large structure</th>
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<tbody>
<tr>
<td></td>
<td>Hydrology and Hydraulics (H&amp;H) study must be conducted</td>
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<td></td>
<td>Align culverts with stream flow to minimize erosions</td>
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</tbody>
</table>
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Examples of 406 measures

Washout Culverts: 2-36” & 1-30”
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Examples of 406 measures

Replaced by: 2-48” Culverts
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Examples of 406 measures

Washout Culverts: 2-30”

May 2015 Flood
Hill County – CR 2424
Section 406 Hazard Mitigation

Examples of 406 measures

REPLACED BY: BRIDGE
Section 406 Hazard Mitigation

Examples of 406 measures

Washout Culverts 4-48”
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Examples of 406 measures

Replacement!

- Bridge replacement exceeded 100%
- BCA: To demonstrate Bridge replacement is cost effective
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Examples of 406 measures

Hill County - CR 2316
Low Water-Xing

FEMA Pre-determined measures; or

Codes and Standards upgrade
Section 406 Hazard Mitigation Codes and Standards upgrade

- Are eligible only if the code or standard:
  - Applies to the type of restoration required
  - Is appropriate to the pre-disaster use of the facility
  - Is reasonable, in writing, formally adopted & implemented on or before the declaration date
  - Applies uniformly to all facilities of the type being repaired; and
  - Was enforced during the time that it was in effect
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Examples of 406 measures

Erosion Controls:
- Gabion/Rock Basket
- Headwalls & Wing walls
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Examples of 406 measures

Erosion Controls:
Rock/Concrete Riprap Channels

Bridges
Section 406 Hazard Mitigation

Examples of 406 measures

Erosion Controls:
Geotextile- Stability to Base

Sheet Piling
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Examples of 406 measures

Utility Mitigation:
Damaged Wood Cross-arm

Fiberglass Cross-arm:
6 times stronger, half the weight of wood, 60 yrs life expectancy, & resistant to critters
Questions?