“Serving Our Commonwealth”

Making the Most of Disasters - 406 Hazard Mitigation

KAMM 2015
Deja Vu All Over Again

How To:

• Quit repairing the same sites
• Stop assisting the same families
• Break the cycle of disaster - rebuild - disaster - rebuild - rebuild
Kentucky - Are we not living right?

Disaster History:

• Since 2008 - 16 Presidential Declarations
• For the first time - ever - Kentucky has received declarations for snow assistance
• In 2015 there have been 4 declarations - February, March, April, and July
Are we making hay once the sun shines?

What are the opportunities for mitigation when a declaration is made?

• Damages to roads, bridges, buildings, equipment, utilities: $174,007,054

• ANY damaged eligible element should be considered for mitigation measures
Types of FEMA Hazard Mitigation Funding

1. 404 Mitigation
Funding is awarded through the FEMA Hazard Mitigation Grant program for a variety of projects, which are not required to be declaration-specific measures

Available Funding:
Total value of a disaster declaration X 20%
Types of FEMA Hazard Mitigation Funding

2. 406 Mitigation
Funding is awarded through the FEMA Public Assistance Program for eligible damaged elements for which mitigation measures will lessen the probability of future damages.

Available Funding:
No limit
How is a major disaster declaration achieved?

• Total cost of all PA eligible damages, debris removal, and emergency protective measures must exceed: $6,118,507 (state population X $1.41)

• Counties wanting assistance must meet a threshold of: population X $3.56 (Fayette 295,803 x $3.56 = $1,053,058)

• State and counties must prove need exceeds capacity to recover

Note: Per capita multipliers adjust every September 1
What does the Public Assistance Program provide?

Grant funding to:

- Restore damaged buildings, equipment, roads, bridges, utility systems, parks, etc.
- Remove and dispose of debris
- Provide emergency protective measures
- Apply hazard mitigation efforts to damaged facilities
PA Hazard Mitigation Restrictions

PA Mitigation Measures Must:

- Involve permanent work projects
- Reduce or eliminate the probability of similar damage to the element from a similar event
- Be cost effective
- Not be associated with buildings which will be replaced
PA Project Worksheets Identify:

- Condition of facility prior to the disaster
- Effects of the disaster
- Scope of work needed to get back to predisaster condition
- Any needed permits, consideration of historical or archeological impacts, insurance coverage
- Cost of labor, materials, equipment, contractors
- Mitigation opportunities
PA Eligibility - Applicants

• State Agencies
• Local Governments
• Political Subdivisions of the State (i.e. school districts)
• Special Districts (water, sewer, etc.)
• Certain Private Non-Profits such as hospitals, colleges, utility cooperatives,
PA Eligibility

Facilities (any structure, works system, or equipment and certain improved and maintained natural features)

- Legal responsibility of an eligible applicant
- Inactive use at the time of the disaster
- Damaged as a result of the disaster
- Located in the declared disaster area
PA Eligibility
Work

• Necessary because of the declared event
• Activity is limited to declared area
• The legal responsibility of the applicant
PA Eligibility

Cost

- Necessary and reasonable
- Comply with standards for procurement
- No duplication of benefits
- Activity is limited to declared area
- Can include use of applicant's staff, equipment, and materials
### 404/406 Mitigation Comparisons and Contrasts

<table>
<thead>
<tr>
<th>404</th>
<th>406</th>
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<tbody>
<tr>
<td>KYEM HMGP staff manage</td>
<td>KYEM PA staff manage</td>
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<tr>
<td>Available statewide with a preference to impact areas</td>
<td>Only for applicants in declared counties</td>
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<tr>
<td>Cost-effective funding</td>
<td>Cost-effective funding</td>
</tr>
<tr>
<td>75/25 - limited funds</td>
<td>75/25 - no funding limit</td>
</tr>
<tr>
<td>Multi-hazard</td>
<td>Incident specific</td>
</tr>
<tr>
<td>Any facility eligible</td>
<td>Only damaged element of facility eligible</td>
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406 Mitigation Measures are Considered for Funding if:

- Do not exceed 100% of project cost
- Appropriate to the disaster damage
- Will prevent future similar damage
- Directly related to the eligible damaged element
- Will not increase risk or adverse effects
- Meet standards of good professional judgment
406 Mitigation Examples

- Relocation of a facility out of a flood area
- Stabilization of a slope
- Protection from high winds
- Flood proofing building
- Flood protection of bridges and culverts
- Protection of utilities
406 Mitigation Specifics
Drainage, crossings, and bridges

• Should a damaged culvert be replaced with multiple culverts or a larger structure - is a hydrology study needed?
• Is a low span bridge being damaged by collected debris, increased flooding pattern?
• In remote areas, is a low-water crossing a viable solution
• What about gabion baskets, headwalls, wing walls to control erosion
406 Mitigation Specifics
Sanitary and Storm Water Systems

- Can access covers be elevated to the hydraulic grade line
- Should damaged lines be relocated to avoid future road slips
- Can the damaged sections be encased to prevent infiltration or collapse
- Can pump equipment be elevated above 100 yr. level
- Is there a need for transfer switches or new electric panels to facilitate use of emergency generators
406 Mitigation Specifics
Waste water and water systems

• Elevate equipment and controls
• Dryproof buildings
• Strengthen raw water intakes to prevent erosion, scour, and flood debris impacts
• Encase wells
• Elevate well heads
406 Mitigation Specifics

Electric Power Distribution

• Can transformers be raised above the base flood elevation
• Should multiple poles be used to support transformers
• Should the lines be buried
• Are better poles a solution
• Should communication lines be taken off power poles
• Is there a need for looped/redundant distribution
• Can anchors, guy wires, or other supports be added
406 Mitigation Specifics

Buildings

Substantially damaged under NFIP regulations
• Any measures necessary to meet minimum National Flood Insurance Regulations i.e. dry floodproofing or elevation

Not substantially damaged under NFIP regulations
• Dry floodproof, if feasible: elevation of electric panels, machinery, generators
• If dry is not feasible, then wet floodproof
406 Mitigation Specifics

Roofs

- Low Slope: replace entire covering with secondary membrane and a fully adhered cover not subject to progressive failure
- Curbing/Flashing Failure: Inspect - repair - replace
- Ballasted Roofs - replace with sufficient weight to lessen future wind effect
- Roof-mounted equipment: attach to a solid foundation
406 Mitigation Specifics
Windows/Glass

- Replace with break-resistant material
- Replace glass in mullions
406 Mitigation Specifics

Roads

• Improve ditches
• Change surface slope
• Ensure culverts are properly sized
406 Mitigation Specifics

Bridges

• Align properly
• Is deck size sufficient
• Prevent erosion to approaches
• Protect piers and abutments - wingwalls/headwalls
• Can piers and abutments be redesigned to lessen debris buildup
406 Hazard Mitigation funding is limitless . . .

however, mitigation measures MUST be cost effective.
To Determine Cost Effectiveness:

Compare:

The cost of the mitigation effort

to

the value probable damages which may be avoided in future similar events
Cost Effectiveness Guidelines:

Cost is less than 15% of the total PA project cost: effective

Project is a preapproved mitigation measure: effective

Analysis shows benefits greater than cost: effective
Mitigation Efforts Must:

- Comply with all applicable codes and standards
- Use good construction practices
- Be the least cost alternative
Codes and Standards Criteria

- Do they apply to the work being performed?
- Are they appropriate to the predisaster use of the facility?
- Are they uniformly applied to all similar facilities?
- Are they formal and in effect when the disaster occurred?

If codes and standards are arbitrary, discretionary, or subjective - they will not be funded.
Good Construction Practices

- Ensure 'construction' of the mitigation measure is identified and detailed in the scope of work.
- If identified as a good construction practice, the mitigation measure will not require a BCA.
Plan Your Work - Work Your Plan

To maximize 406 Hazard Mitigation opportunities, entities should:

• Be prepared to identify project needs
• Be able to prove:
  need
  feasibility
  cost effectiveness
• Realize that time frames are quick
• Identify all needed repairs and mitigation measures within 60 days of the first meeting with FEMA
Plan Your Work - Work Your Plan

To maximize 406 Hazard Mitigation opportunities, entities should:

• Keep detailed records of event (even non-disaster) damages and maintenance efforts
• Pre-identify mitigation opportunities for when the next disaster declaration occurs
• When a disaster hits, examine damaged elements for mitigation potential
• Know what mitigation is needed - before FEMA arrives