KAMM 2014

406 Hazard Mitigation Grants

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Unbridled Pursuit of Excellence
Why Mitigate?

• Nationwide natural disasters cost taxpayers over $50 billion each year in restoration efforts
• Reduce excessive losses
  o Break the" disaster – rebuild - disaster" cycle
  o Strengthen existing infrastructure and facilities
  o Address natural hazards
## 2008 - 2012
Eleven Disasters

<table>
<thead>
<tr>
<th>Disasters Included</th>
<th># of Counties Affected</th>
<th># of Applicants</th>
<th>Disaster Damage Estimate</th>
<th>Population Affected</th>
</tr>
</thead>
<tbody>
<tr>
<td>DR 1746 Severe Storms/Tornadoes</td>
<td>18</td>
<td>62</td>
<td>$6 Million</td>
<td>396,231</td>
</tr>
<tr>
<td>DR 1757 Severe Storms/Flooding</td>
<td>15</td>
<td>32</td>
<td>$5 Million</td>
<td>203,487</td>
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<tr>
<td>DR 1802 Severe Storms/Wind</td>
<td>34</td>
<td>251</td>
<td>$25 Million</td>
<td>1,763,728</td>
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<tr>
<td>DR 1818 Winter Storm/Flooding</td>
<td>103</td>
<td>778</td>
<td>$330 Million</td>
<td>3,578,753</td>
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<tr>
<td>DR 1841 Severe Storms/Flooding</td>
<td>22</td>
<td>58</td>
<td>$44 Million</td>
<td>458,396</td>
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<tr>
<td>DR 1855 Severe Storms/Flooding</td>
<td>2</td>
<td>38</td>
<td>$27 Million</td>
<td>701,729</td>
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<tr>
<td>DR 1912 Severe Storms/Flooding</td>
<td>77</td>
<td>189</td>
<td>$37 Million</td>
<td>1,505,594</td>
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<tr>
<td>DR 1925 Severe Storms/Flooding</td>
<td>6</td>
<td>19</td>
<td>$15 Million</td>
<td>220,674</td>
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<tr>
<td>DR 1976 Severe Storms/Flooding</td>
<td>76</td>
<td>173</td>
<td>$40 Million</td>
<td>1,919,735</td>
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<tr>
<td>DR 4008 Severe Storms/Flooding</td>
<td>7</td>
<td>18</td>
<td>$7 Million</td>
<td>140,730</td>
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<tr>
<td>DR 4057 Severe Storms/Tornadoes</td>
<td>16</td>
<td>68</td>
<td>$15 Million</td>
<td>412,668</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>118</strong></td>
<td><strong>1658</strong></td>
<td><strong>$543 Million</strong></td>
<td><strong>4,285,424</strong></td>
</tr>
</tbody>
</table>
Kentucky Counties Affected by Disasters
2008 - Present

<table>
<thead>
<tr>
<th>Disasters</th>
<th>Counties</th>
<th>Population NOT Affected</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>2</td>
<td>53,943</td>
</tr>
<tr>
<td>1</td>
<td>12</td>
<td>637,185</td>
</tr>
<tr>
<td>2</td>
<td>21</td>
<td>764,630</td>
</tr>
<tr>
<td>3</td>
<td>43</td>
<td>1,935,912</td>
</tr>
<tr>
<td>4</td>
<td>22</td>
<td>674,572</td>
</tr>
<tr>
<td>5</td>
<td>15</td>
<td>232,222</td>
</tr>
<tr>
<td>6</td>
<td>4</td>
<td>32,654</td>
</tr>
<tr>
<td>7</td>
<td>1</td>
<td>8,249</td>
</tr>
</tbody>
</table>

Total Population Affected: 4,285,424
Kentucky Population: 4,339,367
Two (2) Types of FEMA Hazard Mitigation Funding

1. 406 Mitigation is funded through the Public Assistance Recovery Program and is only for elements damaged by the declared disaster

2. 404 Mitigation funding is available statewide for projects which will lessen future damages
Disaster Damages

- Levels of damages are the foundation for the declaration request
  - $3.50 in damage per person per county
  - Statewide damages must exceed $6.1M
- State must prove that recovery from the event is beyond the capacities of the state and local governments by providing information:
  - Socioeconomic makeup
  - Financial capacity of state and impacted co.s
  - Work of volunteers
  - Condition of critical facilities
Public Assistance provides grants to eligible applicants to:

- Restore damaged facilities
- Remove debris
- Provide emergency protective measures
- Apply hazard mitigation efforts to damaged facilities
Public Assistance Mitigation effort restrictions:

- Applied to the damaged element
- Permanent work
- Reduce or eliminate the threat of future damage to the facility from a similar event
- Be cost effective
- Cannot increase risk or cause adverse affects
- Cannot be applied to buildings eligible for replacement
PA Eligibility

Facility

- Any structure, works system, or equipment (built or manufactured)
- Certain improved and maintained natural features
PUBLIC ASSISTANCE PROCESS

Disaster Event

PDA

Governor’s Request

Declaration

Submission of Request

Applicants’ Briefing

Kick-off Meeting

Formulation of Projects

Project Review

FEMA Approval

Grantee / KYEM

Subgrantee / Applicant

Funding

CLOSURE
Eligibility Structure

- Applicant
- Facility
- Work
- Cost
Who is Eligible for Public Assistance?

- State Agencies
- Local Governments
- Political Subdivisions of the State
- Special Districts (water, sewer, etc.)
- Certain Private Non-Profits
- Medical, Custodial Care, Educational, Emergency, Utility entities
PA Eligibility

Facility

- Any structure, works system, or equipment (built or manufactured)
- Certain improved and maintained natural features

To be considered for eligibility, facilities must:

- Be the legal responsibility of an eligible applicant
- Have been in active use at the time of the disaster
- Have been damaged as a result of the declared disaster
- Be located in the designated disaster area
PA Eligibility

Eligible Work

– The work must be a result of the declared incident
– The activity must be within the designated disaster area and incident period
– The work or expenses must be the legal responsibility of the applicant
Cost Eligibility

– Must be reasonable and necessary
– Must comply with standards for procurement
– No duplication of benefits
– Two types
  • Force account – Inside resources
  • Contract cost – Outside source
Public Assistance - Categories

Emergency Work
A – Debris Removal
B – Emergency Protective Measures

Permanent Work
C – Roads Systems
D – Water Control Facilities
E – Buildings and Equipment
F – Utilities
G – Other (Parks and Recreational Facilities)
- What was there before the disaster?
  Pre-existing conditions
- What did the disaster do or cause?
  Damage description and dimensions
- What is necessary to fix the facility?
  Scope of work
- Are there any Special Considerations?
  Questions
- How much will it cost?
  Value of labor, materials, equipment, contracts
Special Consideration:

issues that affect the scope of work and funding of a Public Assistance project

1. Insurance
2. Hazard Mitigation
3. Environmental Compliance
4. Floodplain Management
5. Historic Preservation
# 404/406 Hazard Mitigation

**KYEM Mitigation staff managed**
- Applied statewide, with a preference to impacted areas
- Cost-effective funding
- Capped at 75/25
- Multi-Hazard
- Any eligible facility

**KYEM PA Staff Managed**
- Only eligible in declared counties
- Cost-effective funding
- Not sapped
- Incident specific
- Damaged element of Facility Only
406 Mitigation Eligibility

• Permanent Work
• Related to damaged element
• Reduce or eliminate the threat of future damage to the facility
• Be cost effective

Not applicable for alternate projects and most improved projects
Types of 406 Mitigation Efforts

- Relocation of facility
- Slope stabilization
- Protection from high winds
- Flood proofing of buildings
- Flood protection of bridges and culverts
- Protection of utilities
Flood Mitigation

Roads

• Most commonly damaged facilities in floods
• Typically damaged by erosion of
  – Ditches
  – Embankments
  – Surfaces and shoulders
Road Damages

• Typically damaged by
  - Insufficient Capacity/Inefficient End Sections
  - Plugging
  - Embankment Erosion
  - Misalignment

• Proper assessment of cause of damage is important
Flood Mitigation

Erosion and Scour
Bridges

Typically damaged due to:
• Misalignment
• Insufficient Capacity (Decks)
• Erosion (Approaches)
• Scour (Piers and Abutments)
• Debris Impact (Piers and Abutments)
Buildings

Typically damaged by:
- Inundation
- High Velocity Flows
Flood Mitigation

Utilities

Typically damaged by:
• High Velocity Flows
• Soil Settlement
• Inundation
Focus on high, extreme wind events

Wind hazards:
- Wind pressures
- Debris impact forces
Wind Mitigation

Roads and Bridges

Mitigation for Wind
- Anchor signs
- Secure utilities
- Strengthen sign poles
- Relocate utilities underground
Buildings

Mitigation for Wind Pressures on Framing

• Construct a shelter
• Install hurricane straps
• Improve end gables
• Secure roof sheathing
• Secure metal siding and roofs
• Anchor structure to foundation
Mitigation for Wind Pressures on Openings

- Reinforce/replace garage doors
- Reinforce entry doors
- Replace gable vents
- Install shutters
- Strengthen window glass
Wind Mitigation

Utilities

Mitigation for Debris Impact

• Install shutters
• Strengthen window glass
• Anchor/eliminate sheds
Mitigation for Wind Pressures and Debris Impact

- Anchor heavy equipment
- Secure tanks
- Strengthen utility poles
- Strengthen poles
- Relocate utilities underground
While there is NO limit in 406 mitigation…

it must be determined to be cost effective.
## Determining Cost Effectiveness

<table>
<thead>
<tr>
<th>Comparison of:</th>
<th>Methods:</th>
</tr>
</thead>
<tbody>
<tr>
<td>The cost of the Mitigation effort</td>
<td>15% rule – Calculations</td>
</tr>
<tr>
<td>to</td>
<td>100% rule – see approved list of mitigation measures</td>
</tr>
<tr>
<td>the value of cost of the possible avoided damages in the future</td>
<td>Benefit-Cost Analysis – percentage of repair costs</td>
</tr>
</tbody>
</table>
Most 406 Mitigation projects do not need a BCA as they meet either the 15% or 100% Rules.
Receiving Mitigation funding without asking . . .

• Codes and Standards
• Good Construction Practices
• Least Cost Alternatives
Codes and Standards Criteria

1. Apply to the repair work being performed
2. Be appropriate to the pre-disaster use of the facility
3. Be reasonable, formally adopted, in writing, and implemented prior to the disaster
4. Apply uniformly to all facilities of the type being repaired with the applicant applicant’s jurisdiction
5. Be enforced during the time that it was in affected

Note: If codes/standards are arbitrary, discretionary, subjective, and all five criteria are not met, then FEMA will not fund upgrades
Good Construction Practices

• Identify as a mitigation measure in the Scope of Work
• “Hazard Mitigation achieved through good construction practice and will not require a benefit cost analysis for approval”
• Identify the cost (or percentage of total PW costs) associated with the construction practice used
QUESTIONS?