From Destruction to Production: Flood Mitigation in the Appalachians
Introductions

- Carey Johnson – KY Division of Water Risk MAP Program Manager
- Jimmy Stahl, PE, CFM – AECOM
Kentucky Division of Water (KDOW): FEMA’s Cooperating Technical Partner (CTP)

- CTP since 1999, active CTP since 2005
- “Soup to Nuts” CTP – KDOW responsible for all activities from Discovery through Post-Preliminary Processing, Program Management, and CERC
- CTP relationship with FEMA allows for alignment of risk analysis, floodplain management and insurance and hazard mitigation missions
- CTP relationships with local stakeholders enhances program credibility and allows for more customized tools and products that align with community needs
KY Risk MAP Goals

1) Provide high quality flood hazard information
2) Create tools to empower communities to take action to reduce flood risk
3) Support community resilience activities by providing technical assistance and information to support mitigation activities
4) Communicate flood hazards in a concise but holistic manner
Appalachian Areas of Eastern KY

- Substantial flash flooding risk
- Significant historical flood losses
- Loss of life
- This project focuses on the Levisa Fork watershed

<table>
<thead>
<tr>
<th>Kentucky Counties</th>
<th># of Disaster Declarations</th>
<th># of Major Flood Events</th>
<th>Average Losses per Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Floyd County</td>
<td>23</td>
<td>128</td>
<td>$793K</td>
</tr>
<tr>
<td>Lawrence County</td>
<td>22</td>
<td>34</td>
<td>$188K</td>
</tr>
<tr>
<td>Johnson County</td>
<td>22</td>
<td>44</td>
<td>$533K</td>
</tr>
<tr>
<td>Knott County</td>
<td>25</td>
<td>30</td>
<td>$73K</td>
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<tr>
<td>Magoffin County</td>
<td>24</td>
<td>47</td>
<td>$248K</td>
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<tr>
<td>Morgan County</td>
<td>14</td>
<td>51</td>
<td>$319K</td>
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<tr>
<td>Pike County</td>
<td>26</td>
<td>133</td>
<td>$871K</td>
</tr>
</tbody>
</table>

Source: Lower Levisa watershed Discovery Report
Regional Damage – Johnson County August 2015
FLATGAP, KY:

5 dead
150 homes destroyed
500 impacted
Bird's eye view of flood damage in Johnson County, KY
KY Risk MAP Mitigation Action Strategy

Developed to simplify decision-making process relating to mitigation actions for communities

**PARTICIPATION FRAMEWORK**
- Role in a Risk MAP project
- Contributions towards actions
- Prioritize project types (4 categories)
- Feedback

**IMPLEMENTATION STRATEGY**
- Who?
- What?
- When?
- How?
Creating the Culture for Success

• Local champion(s)
• Partners identified and engaged
• Partners are in agreement
• You have their attention
• Understanding of risk
• Alignment with community goals
• Good projects
• Sense of urgency
• There is a plan
• Funding sources available
Mitigation Project Types

01
Projects that reduce the size or shape of the flood hazard (basin, floodwall, channel re-alignment)

02
Projects that reduce the risk or impact of the hazard on life & property (property acquisition, elevation, flood proofing)

03
Policies or regulations that protect life and property from flooding (higher regulatory standards, development overlays, etc)

04
Outreach to residents and businesses that may be at risk of flooding (signage, mailings, etc)

Project Types selected based on community need
Low Hanging Fruit thru Risk MAP

Structures in 10-year depth grid
• Floodway?
• Repetitive Loss?
• Likely to pass BCA (if needed)
• Priority for mitigation

Identification of stream/road crossings
• Very common in Hazard Mitigation Plans
• Evacuation routes
• Access
• Alternate route identification
• Builds community database for infrastructure upgrades/mitigation
• Section 406 mitigation
Demonstration Projects

2 communities selected where Risk MAP had been deployed

- Post Resilience
- Communities identified need
- Technical assistance (mapping, engineering, etc.) needed
- Recent disaster – HMGP funding available

Mitigation Action Forms (MAFs) developed

- Coordination with KYEM
  - Community Hazard Assessment and Mitigation Planning System (CHAMPS)
- Congressional support
- Projects addressed community needs and priorities
  - Infrastructure
  - Economic development
  - Green elements

“Chum” the water with mitigation
Demonstration Projects – Mitigation Examples

1. Coal Run Village
2. Prestonsburg
Coal Run Village
Coal Run Village – Jones Oil Drainage Mitigation

- Project Award - $250k
- Benefit - $774,663
- BCR – 2.16
- Anticipated next steps -
  - Engineering Analysis
  - Design
  - Construction
Congressional Support + Community Engagement

Dear Ms. Brewer,

I am writing in support of an application submitted by the City of Coal Run for a Hazard Mitigation project to address flooding in the city.

The City of Coal Run is requesting FEMA Hazard Mitigation funds in the amount of $250,000 to construct flood reduction measures such as groins, stormwater infrastructure, upland and riparian vegetation, and stream restoration within the city's Cowpen Creek watershed.

It is my understanding that the project will help reduce flood damages to homes, public health risks, bank erosion, and commercial damages to a downstream oil company during heavy rainfall.

I am urging this proposal receives full and fair consideration under the grant guidelines.

Sincerely,

[Signature]

HAROLD ROGERS
Member of Congress
Prestonsburg

Washed-out roads

(Please don’t try this at home)
Prestonsburg: Trimble Branch Holler Flooding
Prestonsburg

- Project Award - $350k
- Benefit - $974,416
- BCR – 2.63
- Anticipated next steps -
  - Engineering Analysis
  - Design
  - Construction
Successes

• Champions identified in Prestonsburg and Coal Run Village
  – Need more in other communities across the state
• Prestonsburg freeboard requirement – 4 feet
• Prestonsburg and Coal Run independently pursuing new HMGP grants that build on technical support from original grant proposals
  – CTP planted the mitigation seed
• Collaboration – FEMA, KYEM, KDOM, Local communities, USACE, Area Development Districts, Congressional engagement
• Kentucky Silver Jackets
  – Keep other federal, state and regional partners engaged
Outcomes and Moving Forward

• Communities see path to Mitigation
• More risk reduction projects
• More local leadership
• Success stories and best practices provided from local officials to other local officials
Questions?