Doing Resiliency Better 2.0:
Bridging the Gap from Disaster Response to Resiliency

SAME, Philly: Resiliency Day Nov 14, 2019

Tony Vesay, MCFA
Bottom Line …

• While there are many positive Resiliency initiatives nationwide, Resiliency largely remains reactive in nature, somewhat disjointed, underfunded, and performed as an output of federally funded, Disaster Management operations.

• There are tools and key lessons learned available for communities, installations, and agencies to better plan for, lead, and manage critical infrastructure recovery in manners that improve Resiliency.

• We can do Resiliency better…

A Definition: 100 Resilient Cities by Rockefeller Foundation:
Capacity of individuals, communities, institutions, businesses, and systems within a city to survive, adapt, and grow no matter what kinds of chronic stresses and acute shocks they experience.
Bridging the Gap

Disaster Response | Disaster Resiliency

Backward Looking

Forward Looking

Wash, Rinse, Repeat

Changing Mindsets

Buying Down Risk

Tactics, Roadmap, Framework Plan
Video Clip: Netherlands Case Study Follows
SAME, National Resiliency Committee:

**Mission**

Promote Awareness, training, partnerships, w/ members and regional stakeholders regarding Resilience Programs. 
...supports the development of effective policies & technologies...that both improve infrastructure resilience & identifies cybersecurity challenges and solutions at the local and national levels.

Chairman: Joe Manous: [Joe.Manous@usace.army.mil](mailto:Joe.Manous@usace.army.mil); 703-428-7074
Session Overview

• Background/Some Stats
• Resiliency Continuum
• FEMA & HUD/CDBG-DR Processes
• Resiliency Framework
  – Buying Down Risk
• Funding
  – Government
  – Other Funding Sources
• Questions
What I Plan To Accomplish

- Present evidence that we must start investing in Resiliency pre-disaster.

- Seek consensus & dialogue to shift the national mindset from Disaster Recovery to planning/execution for future Resiliency,

  ...and share best practices.
### Background – Top Twelve Events by $$$

<table>
<thead>
<tr>
<th>Event</th>
<th>Cost $B</th>
<th>Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>Katrina – 2005</td>
<td>$166.3</td>
<td>1,833</td>
</tr>
<tr>
<td><strong>Harvey – 2017</strong></td>
<td>$128.8</td>
<td>89</td>
</tr>
<tr>
<td><strong>Maria – 2017</strong></td>
<td>$ 92.7</td>
<td>2,981</td>
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<tr>
<td>Sandy - 2012</td>
<td>$ 72.8</td>
<td>159</td>
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<tr>
<td><strong>Irina – 2017</strong></td>
<td>$ 51.5</td>
<td>97</td>
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<tr>
<td>Andrew - 1992</td>
<td>$ 49.7</td>
<td>61</td>
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<tr>
<td>US Drought/Heat – 1988</td>
<td>$ 44.0</td>
<td>454</td>
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</table>

**2019 Events; & does not include AT/FP events**

<table>
<thead>
<tr>
<th>Event</th>
<th>Cost $B</th>
<th>Deaths</th>
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</thead>
<tbody>
<tr>
<td>Mid-West Flooding 1993</td>
<td>$ 37.3</td>
<td>48</td>
</tr>
<tr>
<td>Ike - 2008</td>
<td>$ 36.0</td>
<td>112</td>
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<tr>
<td>US Drought/Heat - 2012</td>
<td>$ 33.6</td>
<td>123</td>
</tr>
<tr>
<td>US Drought/Heat - 1980</td>
<td>$ 32.8</td>
<td>1,260</td>
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<tr>
<td>Ivan – 2004</td>
<td>$ 28.1</td>
<td>57</td>
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</table>

**Source:**
Resiliency Continuum

FOCUS:
Lessening the impacts of the next event

“A Vision without Resources is an Hallucination.”
—Thomas L. Friedman
Typical Approach

**FOCUS:** Restoring services and rebuilding facilities to replicate pre-event conditions
FEMA vs. CDBG Processes

**FEMA (1-2 Years)**
- Declaration
- PDA
- Initiate FEMA Programs
- Applicant Briefing
- Engage State Programs
- Project Formulation
- Kickoff Meeting
- Submission Request
- Project Review
- Approval
- Funding
- Grantee
- Disaster Closeout
- Project Closeout
- Self Audit
- Subgrantee

**CDBG (5-6 Years Following FEMA Ops)**
- Case Management
- Environmental / Historical Clearance
- Scoping / Design
- Grant Management
- Construction Management
- Closeout
It takes a TEAM Effort …

- Superstorm Sandy, NYC
- Elevated Homes, CDBG-DR
Resilient Initiatives: Examples to Benchmark Against

- Resilient Cities (Resilient 100 worldwide)

Source: https://action.100resilientcities.org/page/s/join-the-global-resilience-movement#/-_/

SAME Philadelphia Post: Resiliency Day Nov 14, 2019
USACE applies resilience thinking through four principles that spring from our definition of resilience. The PARA principles frame & guide actions that build resilience throughout the considered lifecycle.

USACE Engineer Construction Bulletin (ECB) 2018-2, issued in January 2018, requires application of the PARA principles in practices and development of standards and criteria.
Funding Sources

Public:
- Pre-Disaster: Hazard Planning Mitigation Grants
- Other Grants (e.g. Rebuild by Design)
- Post-Disaster: FEMA 404, 406 Programs
- 'FEMA 6%' (implementing guidance pending)

Private
- P3s
- Bonds/Referendums
  - Needs Prioritization w/ other Competing Needs (e.g. Miami Beach)
- Private Insurance Companies (water or wind?)
- Green/Climate Bonds
## Major Signatories to the National Response Plan:

- Dept of Agriculture
- Dept of Commerce
- Dept of Defense
- Dept of Education
- Dept of Energy
- Dept of HHS
- Dept of Homeland Security
- Dept of Housing & Urban Development
- Dept of the Interior
- Dept of Justice
- Dept of Labor
- Dept of State
- Dept of Transportation
- Dept of the Treasury
- Dept of Veterans Affairs
- Director of National Intelligence
- Environmental Protection Agency
- FBI
- Small Business Admin
- Nuclear Regulatory Commission

### Funding Source v Duration-Project Type

<table>
<thead>
<tr>
<th>FUNDING TYPE</th>
<th>Pre-Event</th>
<th>Post-Event</th>
<th>1-2 yr Post Event</th>
<th>2-6 yr Post Event</th>
<th>Utility Infrastructure</th>
<th>Buildings</th>
<th>Housing</th>
<th>Roads</th>
<th>Flood Control/Protection</th>
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<tr>
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<tr>
<td>Severe Repetitive Loss</td>
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<td>FEMA Public Assistance</td>
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<td>406 Hazard Mitigation</td>
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<td>CDBG-DR</td>
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</tbody>
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**Action Plan Framework - Buying Down Risk**

- **Strategic Planning** (risk, drivers, systems)
  - ID Critical Facilities (hospitals, IT)
  - Scenario Models (H&H, drones)
- **Impact Analysis** (Economic, Lifesim…)
- **Capital Improvement Program**
  - Scope/Budget Prioritization
  - Execute Program (iterative process)

*What cities do we save first?*

**Developed By:**
- APWA
- ACEC
- ASCE
• So…it’s Not just about ‘bouncing back’…

...an ideal response to any pending disaster/event is one that is continually planned for, programmed/budgeted, and executed (with or without the Feds)

• “...to survive, adapt, and grow no matter what kinds of chronic stresses and acute shocks they experience.”

‘We Can Do Resiliency Better…’

Assess & Address: Be able to answer, ‘what is the avoided loss?’; ‘what are the collateral benefits?’
Questions???
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Some Recommended Reading