



*National Science and
Technology
Council/Subcommittee
on Disaster Reduction*

November 7, 2013

NIST Resilience Initiative

NIST Program to Develop Disaster Resilience Framework and Model Resilience Guidelines

- Natural and man-made disasters cause an estimated \$57B in average annual costs.
- Large single events can cause losses exceeding \$100B.
- Current approach of response and recovery is impractical and inefficient for dealing with natural disasters.
- A resilience-based approach will provide the framework and guidance needed to break the cycle of destruction and recovery, allowing communities to resist, respond to, and recover from hazard events more rapidly and at lower cost.
- The NIST program will develop a Disaster Resilience Framework 1.0 and Model Resilience Guidelines for critical buildings and infrastructure lifelines.



NIST Program on Resilience for Critical Buildings and Infrastructure Lifelines

Through the FY 2013 initiative, NIST will provide the **measurement science** and **convener role** to:

- **Convene** highly diverse stakeholder interests across all hazards to develop and adopt a Disaster Resilience Framework and associated Model Resilience Standards and Guidelines
- Develop a comprehensive **Disaster Resilience Framework** for achieving community resilience that considers the technical interdependence of the community's physical and human assets, operations, and policies/regulations
- Develop **Model Resilience Guidelines** for critical buildings and infrastructure lifelines essential to community resilience based on **existing** model standards, codes, and best practices

Program included in President's Climate Action Plan

- Convene Disaster Resilience Standards Panel
- Deliver Disaster Resilience Framework 1.0



Disaster Resilience Framework 1.0

- The Disaster Resilience Framework 1.0 will focus on the role that buildings and infrastructure lifelines play in ensuring community resilience.
- The Framework will:
 - Establish overall performance goals
 - Identify existing standards, codes, and best practices to enhance resilience
 - Identify gaps that must be addressed to enhance resilience
 - Capture regional differences in perspective on resilience



NIST Technical Team

- Lean NIST program team
 - Resilience Lead/Program Manager
 - Research Engineer/Buildings and Infrastructure Lifelines
 - Research Engineer/Social Scientist
 - Administrative Support
- Resilience “Tiger Team”
 - Access NIST expertise to provide advice
 - Provides for alignment of existing programs related to disaster resilience to achieve broader resilience goals
- Technical and Administrative Support Contractor
 - Applied Research Associates
 - Technical support to draft Disaster Resilience Framework and conduct regional workshops
 - Administrative and logistical support to organize and hold workshops



Federal Stakeholder Engagement is Critical

- Coordinate and collaborate with Federal agency partners
- Federal stakeholders include, but are not limited to:
 - Executive Office of the President (National Security Staff, OSTP, NSTC)
 - Department of Homeland Security
 - Department of Commerce
 - Department of Defense
 - Environmental Protection Agency
 - U.S. Army Corps of Engineers
 - Department of Energy
 - Department of Health and Human Services
 - Department of Housing and Urban Development
 - Department of Transportation
 - U.S. Geological Survey



... As is External Stakeholder Engagement

- Engage the external stakeholder community through a series of regional workshops
- External stakeholders include, but are not limited to:
 - Codes and standards organizations
 - Local and regional managers
 - Insurance/re-insurance industry
 - Architects
 - Engineers
 - Utility operators
 - Urban planners
 - Industry
 - Emergency managers
 - Relief organizations
 - Regulators



Technical Approach

- NIST, working with the contractor, will draft Disaster Resilience Framework 1.0
- Gather input for the Disaster Resilience Framework 1.0 through a series of quarterly regional workshops to gather input and refine Disaster Resilience Framework
- First workshop to be held in Washington, DC in March-April 2014
- Deliver Disaster Resilience Framework in 18 months
- Form a Disaster Resilience Standards Panel (DRSP) using the Disaster Resilience Framework 1.0 as a starting point



Disaster Resilience Standards Panel

- The Disaster Resilience Standards Panel (DRSP) will be formed to represent:
 - The broad interests of the stakeholder community with respect to disaster resilience
 - The regional variations in perspectives on disaster resilience
- The DRSP will:
 - be open to all interested participants
 - have a governing board of 10-15 members
- The DRSP is intended be a self-governing entity, initially supported by NIST
- The DRSP will lead development of:
 - Disaster Resilience Framework 2.0
 - Model Resilience Guidelines



Resilience Strategies for the Built Environment – Scale-Up

If additional funding becomes available, the planned scale-up in FY 2014 will address critical R&D gaps and deliver:

- **Science-based** Next-Generation Model Standards and Guidelines
 - Critical buildings essential to community resilience
 - Communication lifeline systems essential to community resilience
 - Transportation lifeline systems essential to community resilience
 - Utility lifeline systems essential to community resilience



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Questions?

