

# ResilientAmerica Roundtable: Building Community Resilience



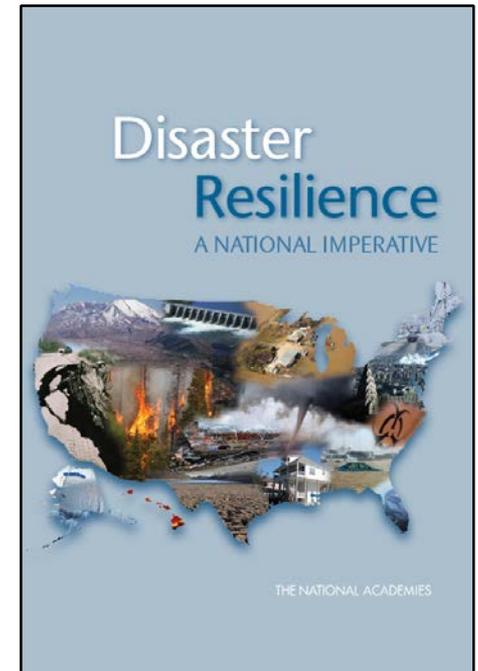
Charlene D. Milliken, Ph.D.  
October 27, 2017  
Community Resilience Panel Meeting  
Minneapolis, MN

# ResilientAmerica Program

*Resilience is “the ability to prepare and plan for, absorb, recover from, or more successfully adapt to actual or potential adverse events.”*

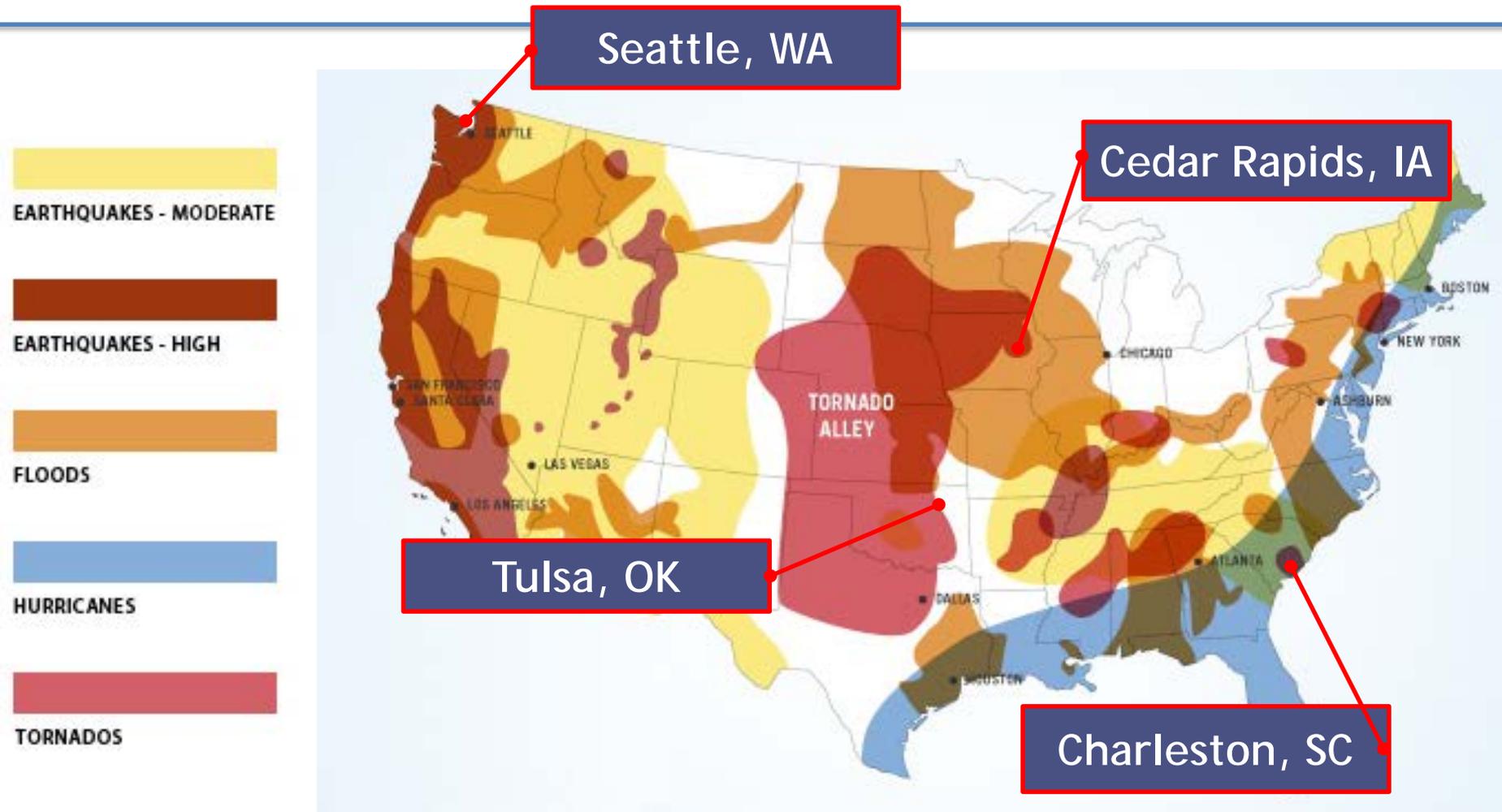
## **4 Recommendations for Building Community Resilience**

1. Understand and communicate disaster risk
2. Identify or develop ways to measure disaster resilience
3. Build and strengthen partnerships with diverse community stakeholders
4. Share and get access to information, tools, data, and experts needed to build resilience



Document and share lessons, approaches, successes and challenges with other communities around the country

# Community Pilot Program



Natural Disaster Risk Map from <http://www.crisishq.com/why-prepare/us-natural-disaster-map/>

# Seattle and Tulsa

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## Seattle, WA

- Partnering with the Puget Sound Regional Council to address climate resiliency in the Central Puget Sound region.

## Tulsa, OK

- Working with stakeholders in the public, private, and civic sectors in Tulsa to explore the potential relationship between sales tax revenue and economic resilience.

# Cedar Rapids and Charleston

Testing and implementing the [Zurich Flood Resilience Measurement Framework](#) to:

- Identify community strengths, challenges, and priorities related to flood
- Identify actions the communities could take to build resilience to floods
- Help the communities better plan for disasters
- Process:
  - Establish the baseline flood resilience (Winter 2016)
  - Implement actions to build resilience
  - Reassess the community's flood resilience (Winter 2017)

# The Zurich Flood Resilience Measurement Framework

- Funded by [Z Zurich Foundation](#)
- Being beta tested in over 100 communities across the world (online platform and smartphone app)
- Goals
  - Demonstrate that the work communities are doing actually enhances their resilience to flood
  - Develop an empirically validated flood resilience measurement tool.
- Key questions being explored:
  - Does the framework help communities become more resilient to floods?
  - Which indicators are good indicators of flood resilience?

# 88 Indicators of Resilience: How Each Indicator is Tagged

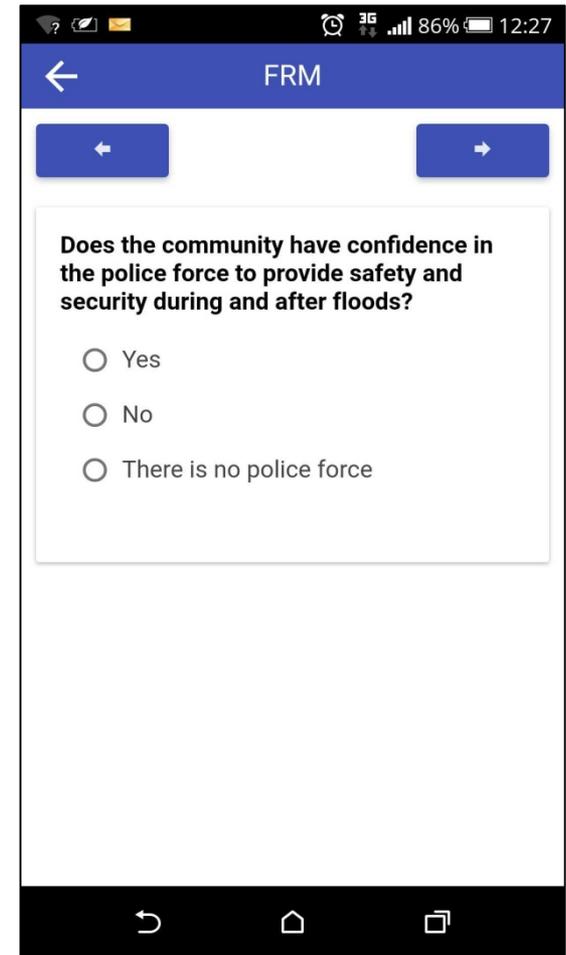
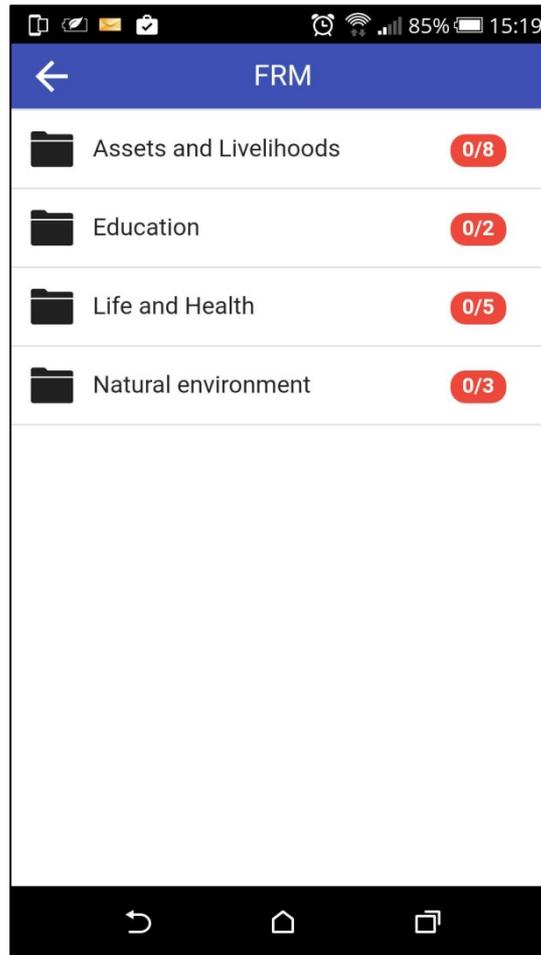
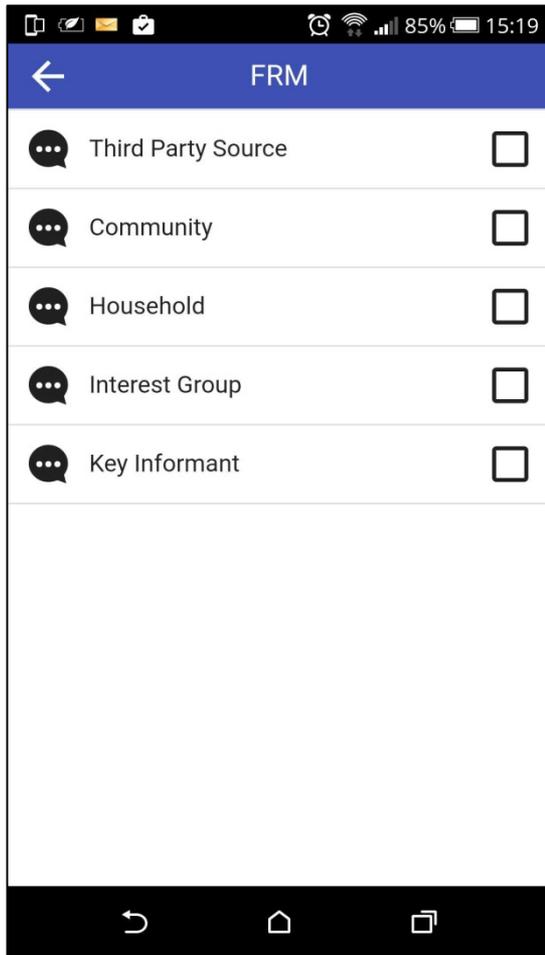
- **Capital**
  - Human
  - Social
  - Natural
  - Physical
  - Financial
- **Disaster Risk Management Cycle**
  - Crisis preparedness
  - Coping
  - Reconstruction
  - Corrective risk reduction
  - Prospective risk reduction
- **Context in which a source is embedded**
  - internal
  - external
- **Theme**
  - Assets and livelihoods
  - Education
  - Energy
  - Food
  - Governance
  - Life and health
  - Natural environment
  - Transport and communications
  - Waste
  - Water
- **Resilient Property**
  - Robustness
  - Resourcefulness
  - Rapidity
  - Redundancy

# Data Collection Methods\*

- Household surveys
- Community discussions/exercises
- Interest group discussions
- Key informant interviews
- 3<sup>rd</sup> party, secondary information

\*Gathering data from multiple sources will help validate the results, reduce bias when assessing resilience, and pinpoint community strengths and challenges.

# Smartphone App



# Grading

Context

Community level

Theme

Life and Health

DRM Cycle

Crisis preparedness

4R

Robustness

Capital

Human

## Flood protective behaviour and knowledge (1/16)

Behavior during a flood event is critical to protecting lives. Assess people's knowledge/skills about how to behave during a flood event, in order to prevent death and injury.

### Grade

- A** Across all groups in the community there is high level of awareness and accuracy of knowledge about evacuating and safety during flood.
- B** The majority of people in the community have a high level of awareness and accuracy of knowledge about evacuating and safety during floods.
- C** Across all groups there is some awareness and knowledge about evacuating and safety during floods, however knowledge is not widespread and/or it contains substantial inaccuracies.
- D** Very few people in the community report accurate knowledge about evacuating and safety during flood.

### Rationale

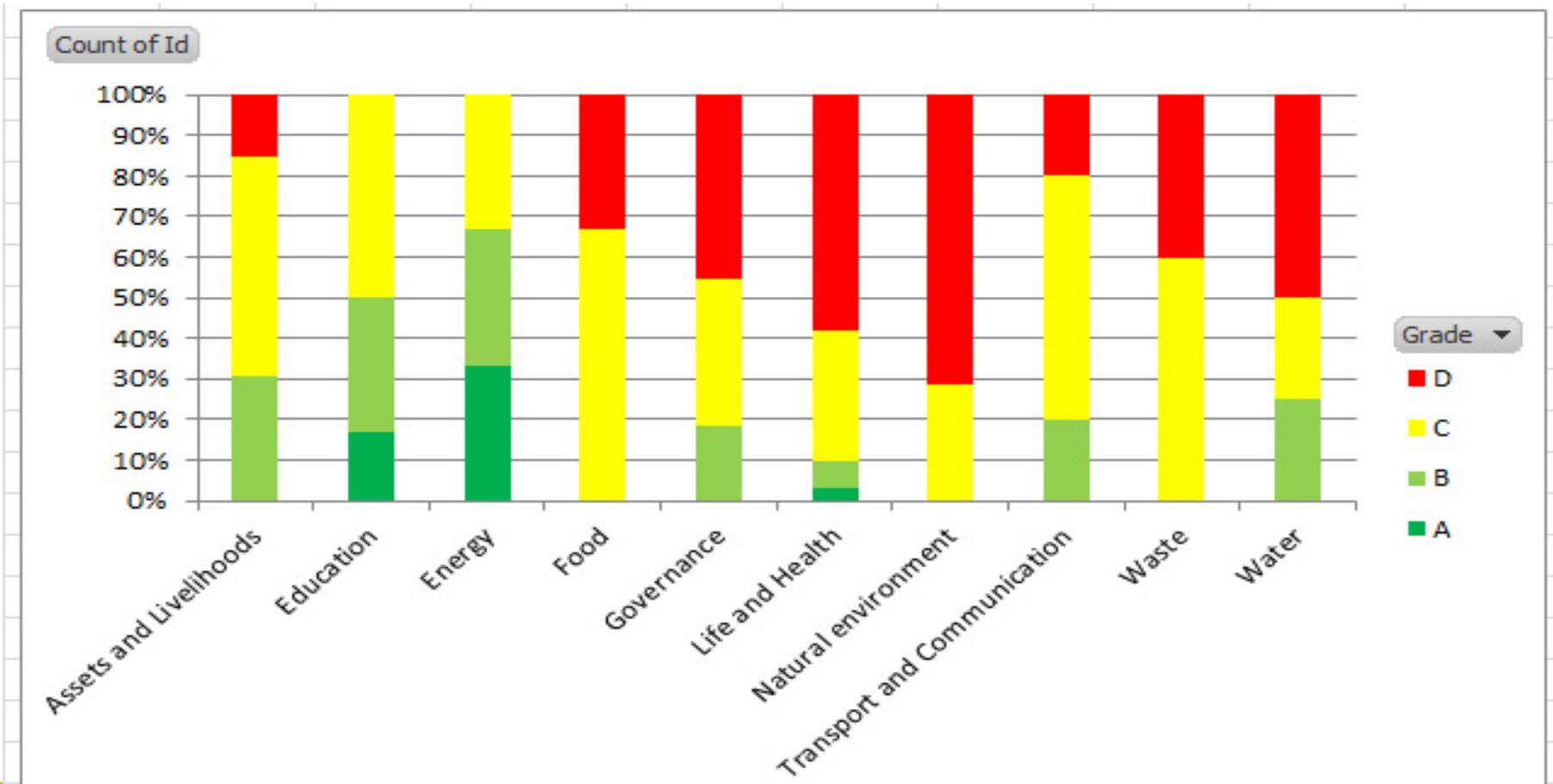
Why did you choose this grade?

There are major impacts and human losses by flooding and people take not full account of the risk unfortunately.

This can be further improved.

# Analyzing and Interpreting Results

Example of looking through the lens of themes (output from the tool)



# Linn County Baseline Study

## Examples of Opportunities for Building Resilience to Floods:

- Understanding and addressing the needs of vulnerable populations
- Improving small business and NGO preparedness and continuity during disasters
- Developing regional approaches to flood risk and watershed management
- Maintaining engagement and awareness within the community between flood events
- Improving transportation redundancies and reliability particularly during floods

# RAR/Linn County Partnership

## RAR efforts and the 4 Pillars

- **Build and strengthen partnerships**
  - Linn County ground team
- **Understand and communicate risk**
  - [Health Sector Resilience for Disasters of the Future](#)
  - NGO preparedness training (July 2017)
  - Partnership with University of Illinois at Chicago to test a model to determine specific areas in a community that are at risk from flooding (current)
  - Extreme Events game (April 2015)
- **Share information and data**
  - Community Resilience Workshop (April 2015)
  - MitFLG meeting (July 2017)
  - State of Resilience Leadership Forum and Community Workshop (June 2016)
- **Measure resilience**
  - Workshop: Measures of Community Resilience for Local Decision Makers (July 2015)
  - Implementation of the [Zurich Flood Resilience Measurement Framework](#) will be completed in Feb 2018

## Cedar Rapids/Linn County efforts and the 4 Pillars

- **Build and strengthen partnerships**
  - [Middle Cedar Partnership Program](#)
  - [Iowa Watershed Approach](#)
  - Nuclear power plant exercises
- **Understand and communicate risk**
  - FEMA [High Water Mark](#) Initiative
  - Legal Aid [Self-help Toolkit](#) and [Mobile App](#)
  - [Cedar Rapids Flood Control System](#)
  - NFIP Community Rating System ([CRS](#))
- **Share information and data**
  - [SIM Care Coordination Platform](#) (public health collaboration to track/support vulnerable populations)
  - Linn Area Partners Active in Disasters ([LAP-AID](#))

**10 year commemorative event, June 2018**

# Some Lessons Learned

- There is ***no single definition of resilience***. Communities define resilience based on their own goals, priorities and challenges.
- Becoming resilient requires a ***culture shift***.
- ***Relationships are key***...and they take a long time to develop.
- Building community resilience ***requires the participation of local stakeholders across the diverse community sectors***. ***Local government*** is a critical partner.
- To operationalize ***resilience***, it needs to be ***built it into existing efforts***.
- Communities are especially concerned about their ***vulnerable populations and issues of social equity***
- The ***process for building resilience*** – cultivating relationships, identifying challenges and priorities, engaging the entire community in discussions, etc. – is itself an important act of strengthening resilience.
- To measure progress towards meeting resilience goals, ***communities need to know their starting point*** (baseline). That said, most communities struggle with ***measuring resilience***
- Communities struggle with ***how to communicate risk effectively***.

# New NAS Consensus Studies

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- [Measuring Community Resilience](#): a study on effective ways to measure the resilience of a community to natural hazards and other disruptions.
- [Urban Flooding in the United States](#): exploring the issue of urban flooding in 3 to 8 metropolitan areas in order to gain an initial understanding of its extent and causes in the chosen locations.

# Thank you!

Visit us: <http://ResilientAmerica.nas.edu>

Contact us: [Resilience@nas.edu](mailto:Resilience@nas.edu)

