

RESILIENTAMERICA PROGRAM

**ITU/WMO WORKSHOP ON  
AI FOR NATURAL DISASTER MANAGEMENT  
SESSION 4: AI FOR COMMUNICATIONS  
15 March 2021**

***Potential AI insights  
for communities and  
understanding vulnerability***

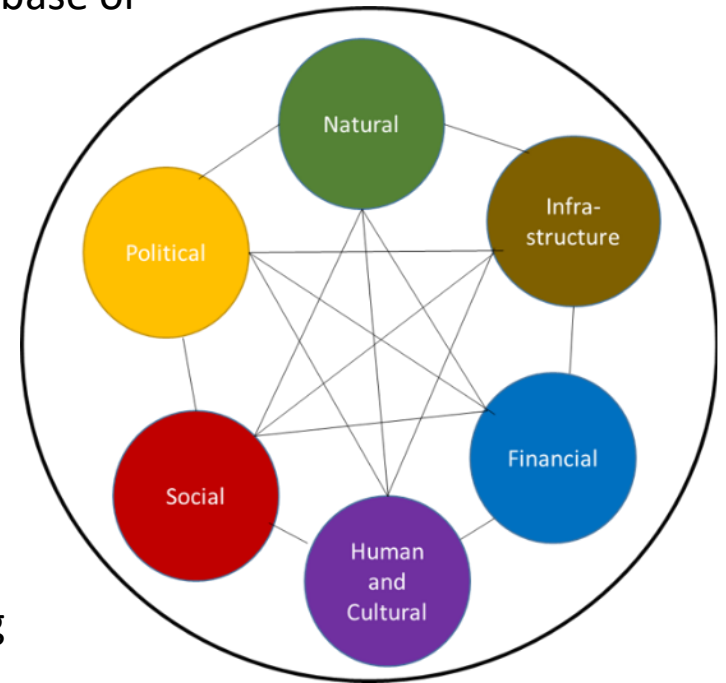
# The ResilientAmerica Program

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

- **Foundation:** Formed in 2014 to implement four key recommendations for building community resilience detailed in the 2012 report, [Disaster Resilience: A National Imperative](#)
- **Objective:** Harness the power of science, information and community experience and knowledge for an adaptive and resilient nation and its communities, with the **aim of reducing damage and suffering**, and enabling robust recovery from current and future threats and disruptions.
- **Focus:** Engage diverse community stakeholders to **build capacities for resilience to disasters and other disruptions**.

# Community Capitals

1. **Natural (or environmental)**: the natural resources base or environmental conditions within communities.
2. **Built (infrastructure)**: the buildings and infrastructure systems within communities.
3. **Financial (economic)**: the totality of economic assets and livelihoods in a community.
4. **Human and cultural**: demographic characteristics, knowledge, skills, health, and physical abilities of community members including language competencies, cultural symbols, and belief systems.
5. **Social**: the social networks and connectivity among groups and individuals within a community.
6. **Political (institutional or governance)**: access to resources and the ability/power to influence their distribution as well as the ability to engage external (to the community) entities in efforts to achieve community goals.



# Community Pilot Program (2014-2018)

Charleston,  
South Carolina



Cedar Rapids/Linn County,  
Iowa



Central Puget Sound,  
Washington



Tulsa,  
Oklahoma

- Flood resilience
- Community Engagement
- Risk Communication

- Flood resilience
- Vulnerable populations
- Disaster preparedness

- Climate resiliency
- Transportation
- Social Equity

- Economic Resilience

# Community Pilot Program

## *What the Pilot Communities Learned*

- Becoming resilient requires a **culture change**.
- **Relationships** are key.
- Building resilience requires:
  - **engaging diverse stakeholders**.
  - building **trust**.
- Communities struggle with how to effectively **communicate risk**.
- Addressing **social equity** and the needs of vulnerable populations are critical.

## *What Resilient America Learned*

- **Local commitment and support** is essential.
- The **process of building resilience** is as important as the outcomes.
- **Communities need to know their baseline** to know if they are making progress.
- **Resilience needs to be mainstreamed** into existing processes and plans.
- There is no resilience without **economic resilience**.

# Insights from AI/ML?

Needs: data sources and analysis techniques to inform our understanding of *current* social capital and vulnerabilities to inform design of equitable programs and policies.

Challenge	Potential AI/ML contribution
<b>Rich and inclusive current understanding of social capital, connectedness and vulnerability, based on the full range of how people and communities connect.</b>	Move beyond traditional connectedness measures (volunteering, voting), leverage current data (social media, mobile phone location) not historical snapshots + AI and predictive analysis
<b>Robust understanding of social capital's role in community resilience</b>	Applying machine learning techniques to big / unstructured data (e.g., social media) and other regularly collected data to generate proxies for social capital
<b>Vulnerability indicators that are linked to hazard types and pre- or post-disaster action</b>	