



Josh Human

Climate Resilience Strategies

Josh Human

FEMA, BRIC Partnership Coordinator

- Lead FEMA's BRIC program through developing partnerships and expanding the reach of Resilience/Mitigation funding

Arcadis, Principal Resilience Leader

- Developed funding workshops and positioned the company for upcoming stimulus funding (\$B of Resilience Funding)

Stantec, Senior Resilience & Hazard Mitigation Leader

- In five years helped acquire over a \$100M in resilience/hazard mitigation-based projects (HUD, FEMA, CMMS, State EM agencies, Local EM agencies, University EM agencies and others)

University of Louisville Center for Hazards Research & Policy Development, Director

- Mentored over 40 students and employees
- Over \$10M in projects in hazard research
- Research meeting practice
- Geography (Kentucky) & Urban Planning (Tennessee)



Climate Resilience Strategies

What and how...are we building resilience?

What???

- First, understanding what we are building resilience from
 - ✓ FEMA, EPA, NOAA and others have been pumping money into new technologies and programs (planning, mapping, modeling, tools, etc.)
 - ✓ We need **Data** to develop comprehensive resilience strategies
 - ❖ Risk and Vulnerability Assessments (FEMA, EPA, NOAA)
 - ❖ Climate Change Modeling (NOAA, NCAR)



Climate Resilience Strategies

What and how...are we building resilience?

How???

- How do we create movement toward building resilience?
 - ✓ Resilient driven **Planning** (Hazard Mitigation, Resilience, Climate Adaptation, CEDS etc.) help change community thinking and goal setting
 - ❖ 20 years of Hazard Mitigation Planning have been used as a catalyst to change the thoughts and behaviors of the public and local communities
 - ❖ CEDS planning has integrated resilience into the process
 - ❖ Stakeholder engagement, identifying risks/vulnerabilities, identifying projects (infrastructure, training, laws, processes etc.)



Climate Resilience Strategies

What and how... are we building resilience?

How???

- How do we create movement toward building resilience?
 - ✓ Setting resilient driven **Program Priorities** (BRIC) provide incentives
 - ❖ Mitigate the risk to public infrastructure
 - ❖ Incentivize resilient investments in disadvantaged communities, as referenced in EO 14008 (Tackling the Climate Crisis at Home and Abroad)
 - ❖ Mitigate risk to one or more community lifelines
 - ❖ Incorporate nature-based solutions
 - ❖ Enhance climate resilience and adaptation
 - ❖ Incentivize the adoption and enforcement of the latest published editions of building codes



Climate Resilience Strategies







What and how... are we building resilience?

How???

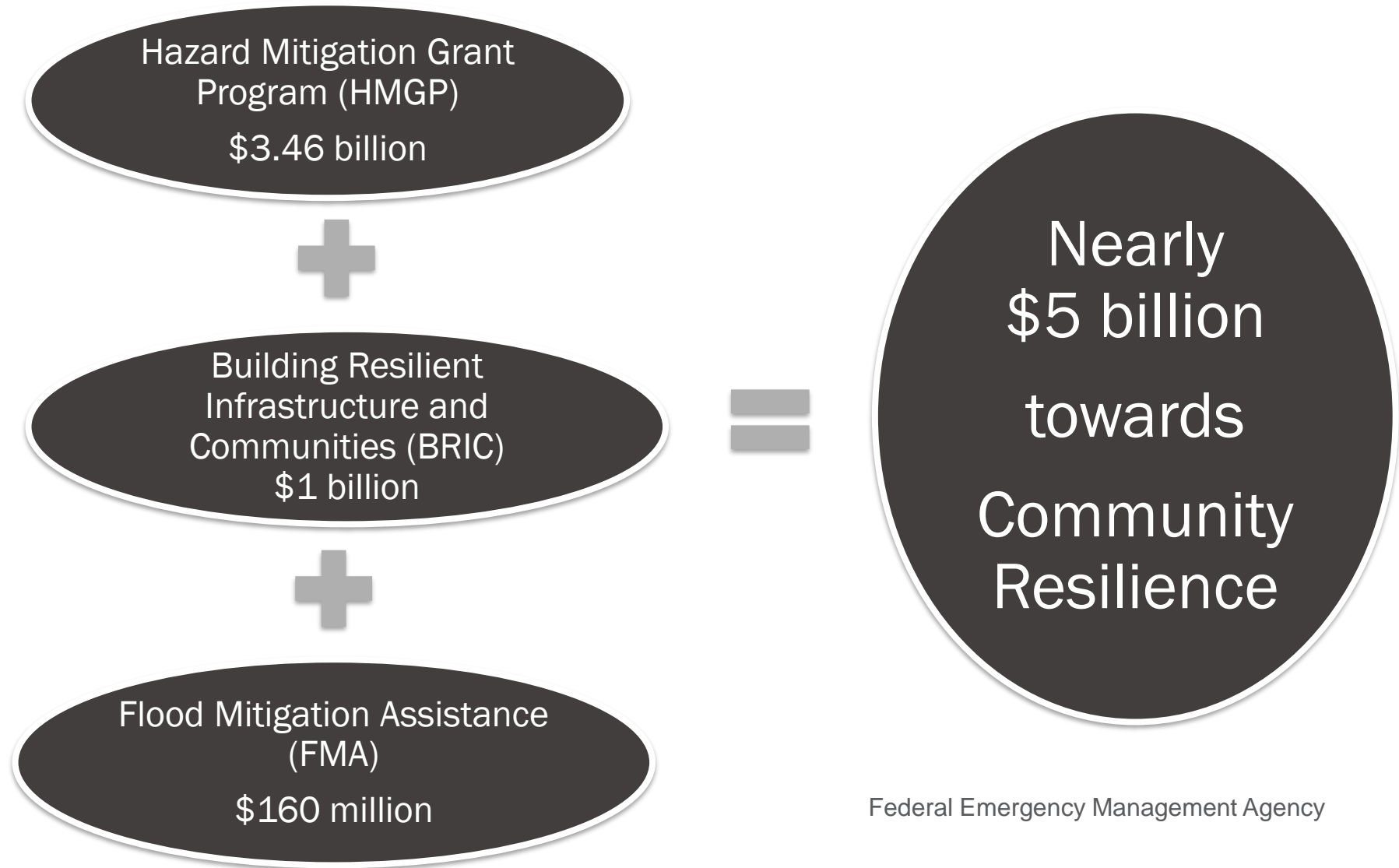
- How do we create movement toward building resilience?
 - ✓ **Funding** (FEMA, HUD, EPA, NOAA, EDA, DOD, DOE, IIJA others)
programs provide the carrot toward implementing resilience projects
 - ❖ Billions
 - ❖ Criteria
 - ❖ Collaborate the planning and funding programs



FEMA Mitigation Funding

	HMA Grant Programs				Public Assistance
Funding Cycle	Annual Grants Cycle		Disaster Grants Cycle		
Mitigation Funding	 Flood Mitigation Assistance (FMA)	 Pre-Disaster Mitigation (PDM)  Building Resilient Infrastructure and Communities (BRIC)	 Hazard Mitigation Grant Program (HMGP)	 HMPG Post Fire	 Public Assistance (PA) Mitigation
When is the Notice of Funding Opportunity (NOFO) released?	No later than (NLT) August	NLT August	N/A	N/A	N/A
When can applicants apply?	Annually: September — January	Annually: September — January	Following the presidential declaration of a major disaster for 12 months	Following the declaration of a Fire Management Assistance Grant (FMAG) up to 6 months after the following fiscal year	Funding is part of the recovery for each major disaster

Available Hazard Mitigation Grants as of August 2021



Hazard Mitigation and Resilience Funding: FEMA Pre-Disaster Funding Trends

- We started with millions and now we are seeing Billions!

Program Fiscal Year	PDM Appropriations (in millions)
2003	\$150.0
2004	\$150.0
2005	\$100.0
2006	\$50.0
2007	\$100.0
2008	\$114.0
2009	\$90.0
2010	\$100.0
2011	\$49.9
2012	\$35.5
2013	\$25.0
2014	\$25.0
2015	\$25.0
2016	\$100.0
2017	\$100.0
2018	\$249.2
2019	\$250.0
Total Sum (\$1.7B)	\$1,713.6
	BRIC Appropriations (in millions)
2020	\$500.0
2021	\$1,000.0
Total Sum (\$1.5B)	\$1,500.0



Overview of BRIC Changes for FY 2021

■ Funding

- *Total funding:* doubled to \$1 billion
- *State/Territory Allocation:* increased by \$400,000 per Applicant (to \$1 million per Applicant)
- *Tribal Set Aside:* increased by \$5 million (to \$25 million total)

■ Non-financial Direct Technical Assistance

- Doubled number of communities (up to 20 communities)
- Streamlined process

■ Competition criteria

- Incorporation of equity across multiple criteria
- Tiered building codes points
- Increased points for BCEGS
- Total of 230 points available

■ Economically Disadvantaged Rural Communities

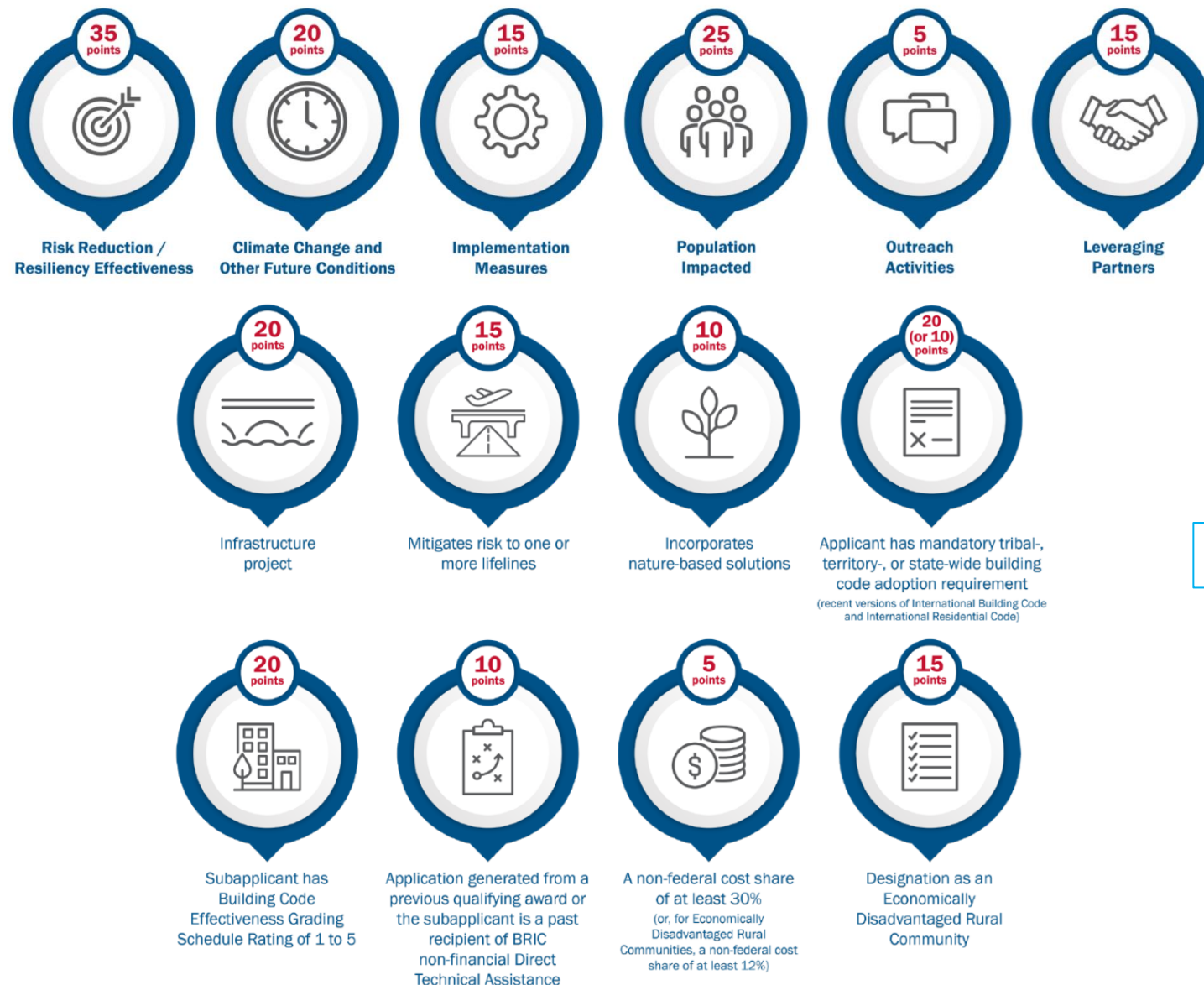


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Hazard Mitigation and Resilience Grant Scoring Criteria:

- Incentivize resilient behavior through grant scoring criteria...Program Priorities!

Qualitative



Example Building Code Adoption and Enforcement Activities



Evaluate adoption and/or implementation of codes that reduce risk



Enhance existing adopted codes to incorporate more current requirements or higher standards



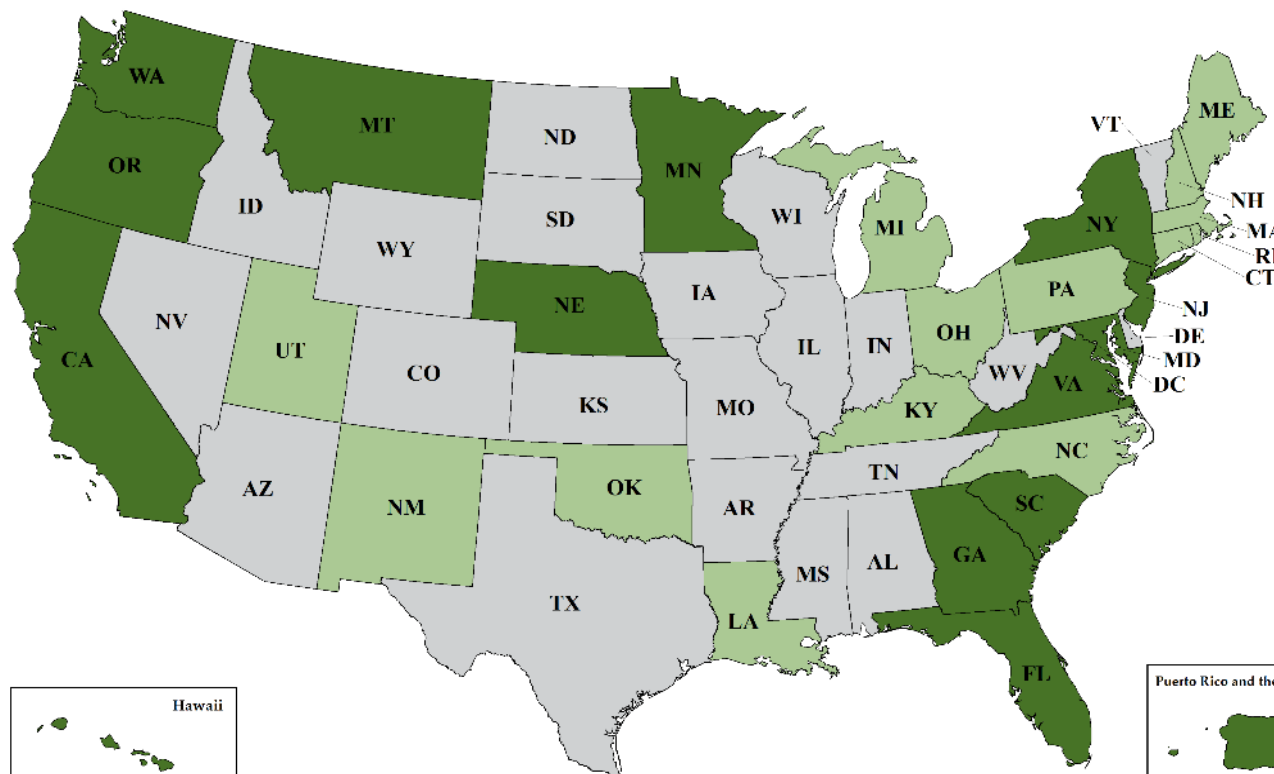
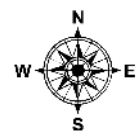
Develop professional workforce capabilities through technical assistance and training



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Building Resilient Infrastructure and Communities (BRIC)

October 1, 2021



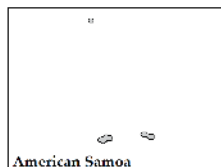
Commonwealth of the Northern Mariana Islands



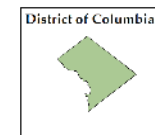
Hawaii



Guam



American Samoa



District of Columbia



Puerto Rico and the U.S. Virgin Islands

Building Resilient Infrastructure and Communities (BRIC)

- Qualifies for 20-point allotment (mandatory state-wide or territory-wide 2018 or later IBC & IRC)
- Qualifies for 10-point allotment (mandatory state-wide or territory-wide 2015 or later IBC & IRC and at least one is 2015 edition)
- Does not qualify for 10- or 20-point allotment (lacks mandatory state-wide or territory-wide adoption of 2015 or later IBC and IRC)

Map reflects adoption information as of October 1, 2021, and is subject to change before the BRIC grant application deadline.

Map is based on data provided by FEMA Building Science through contract HSFE60-15-D-0005 with Strategic Alliance for Risk Reduction (STARR II) Joint Venture.

Contact the FEMA Building Science Helpline with any inquiries regarding this map:
FEMA-BuildingScienceHelp@fema.dhs.gov

FY 2021 BRIC
Technical Criterion 4

Building Code
Adoption Status Map
(as of October 1,
2021)



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Federal Emergency Management Agency

Example FY 2020 BRIC Selection: The Lumberton Loop: Greenspace Mitigation, Partnerships, Equity, City of Lumberton, NC



Partners: City of Lumberton, the NC State University Coastal Dynamics Design Lab, The Conservation Fund, resident stakeholders, and numerous affiliates at the North Carolina Office of Recovery and Resiliency, the North Carolina Department of Transportation, North Carolina State Parks, and the Lumber River Conservancy

Issue: The City of Lumberton experiences flooding during hurricanes and other large rain events - Hurricanes Matthew and Florence caused extensive damage.

Project Benefits:

- **Nature-Based Infrastructure:** Lumberton Loop connects over 100 parcels and develops 800-acre trail system.
- **Improves Environment:** Project restores stream channels, constructing wetlands, reforesting floodplains, improves water quality.
- **Improves Human Condition:** Develops multi-modal paths to reduce future flood losses and enhance the equity of park space to disadvantaged populations.

Example FY 2020 BRIC Selection: Utility Relocation and Stormwater Management Project, Town of Princeville, NC



Hurricane Matthew flooding impacts in Princeville, North Carolina

Town of Princeville, North Carolina

- Relocation of the utilities (electrical, water, wastewater) outside the Special Flood Hazard Area
- 25% of population and associated utilities will be relocated to 53-acre parcel
- Phased project through BRIC for relocation of utilities
- Coordinated funding with FEMA HMGP and Public Assistance, along with HUD CDBG-DR funds, for acquisition/relocation of residences, public infrastructure, and improved stormwater management



Project Benefits:

- Federal Emergency Management Agency

FY 2020 BRIC Tribal Selection Examples

Microgrid Project

- Paskenta Band Of Nomlaki Indians
- Strong alignment with BRIC priorities and competition criteria; infrastructure, lifeline, and partners, risk reduction, future conditions, and population impacted

Project Scoping (C&CB project type)

- Swinomish Indian Tribal Community
- The Tribe proposes to conduct project scoping for Infrastructure Improvement-Replacement project to mitigate earthquake, severe storm, tsunami, and flood risk to sewer, water, storm water infrastructure



Swinomish Channel



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In Closing: My 20 Years of Resilience & Hazard Mitigation...

- Worse Disasters...Mainstream News!
- True Policy Change and Funding is Occurring
- Resilience Positions in both Private and Public Sector!
- Climate Change and Social Equity are Big Topics

Mainstream

Josh Human, BRIC Partnership
Coordinator

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- Sea Level Rise: Military, Banks, Insurance Companies
- Peer Learning is on the Rise
- More organizations are focused on Resilience, Hazard Mitigation, Disasters, Adaptation, Sustainability
- I am Hit at Parties!