

POWERING FORWARD

FEMA's Building Resilient Infrastructure and
Communities Program | April 24, 2020

AGENDA

Welcome

- Lisa Jacobson, President, Business Council for Sustainable Energy
- Lynn Abramson, President, Clean Energy Business Network
- David Terry, Executive Director, National Association of State Energy Officials

FEMA's Building Resilient Infrastructure and Communities Program

- Camille Crain, Section Chief, Building Resilient Infrastructure and Communities (BRIC), Federal Emergency Management Agency (FEMA)

State and Industry Perspectives

- Ben Bolton, Energy Programs Administrator, Office of Energy Programs, Tennessee Department of Environment & Conservation and Co-Chair, NASEO Energy Security Committee
- Megan Levy, Director, Local Programs, Wisconsin Office of Energy Innovation, WI Public Service Commission and Co-Chair, NASEO Energy Security Committee
- Anna Pavlova, Vice President, Government Relations, *Schneider* Electric
- Manny Perotin, Senior Project Manager, CDM Smith

About the BCSE

The Business Council for Sustainable Energy (BCSE) is a coalition of companies and trade associations from the energy efficiency, natural gas and renewable energy sectors.

The Council advocates for policies at state, national and international levels that:

- Increase the use of commercially-available clean energy technologies, products and services;
- Support an affordable, reliable power system; and
- Reduce air pollution & greenhouse gas emissions.

2020 BCSE Members



2020

Sustainable Energy in America

FACTBOOK



Growth Sectors of the
U.S. Energy Economy

The Business Council
for Sustainable
Energy®

BloombergNEF

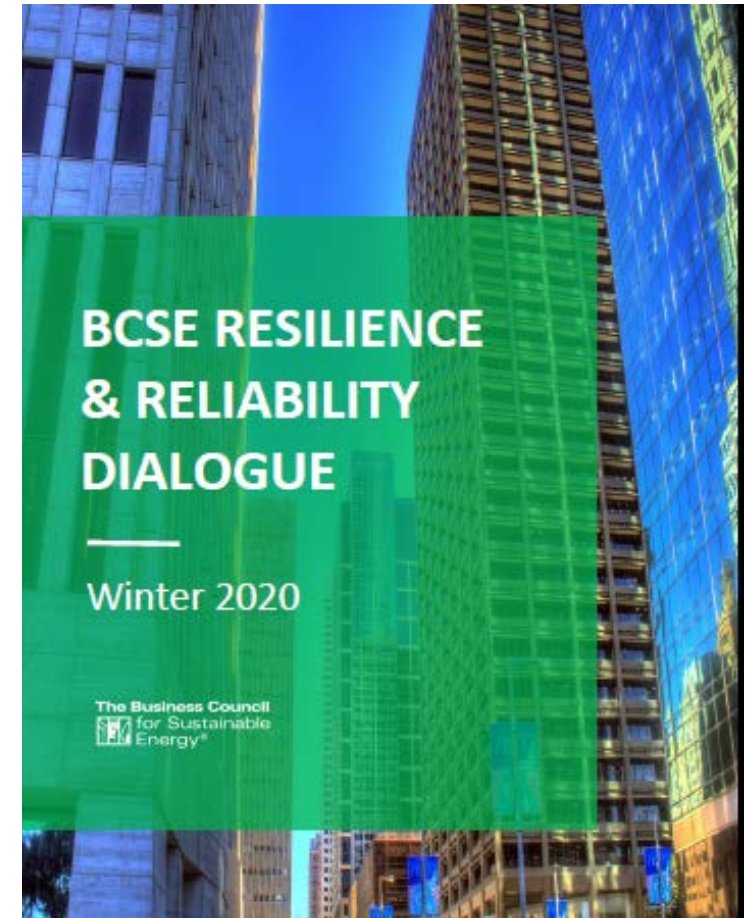
GET THE FACTS

www.bcse.org

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BCSE Resilience and Reliability Dialogue

- *Readiness for Resilience* Project
 - Texas and Puerto Rico
- Thought Leader Speaker Series
- White Paper on Resilience and Reliability
- External education and advocacy initiatives
 - Resilience Project Case Studies



THE SMALL BUSINESS VOICE FOR THE CLEAN ENERGY ECONOMY



Policy Support



Market & Technology
Education



Business Development
Assistance

OUR MISSION

OUR REACH

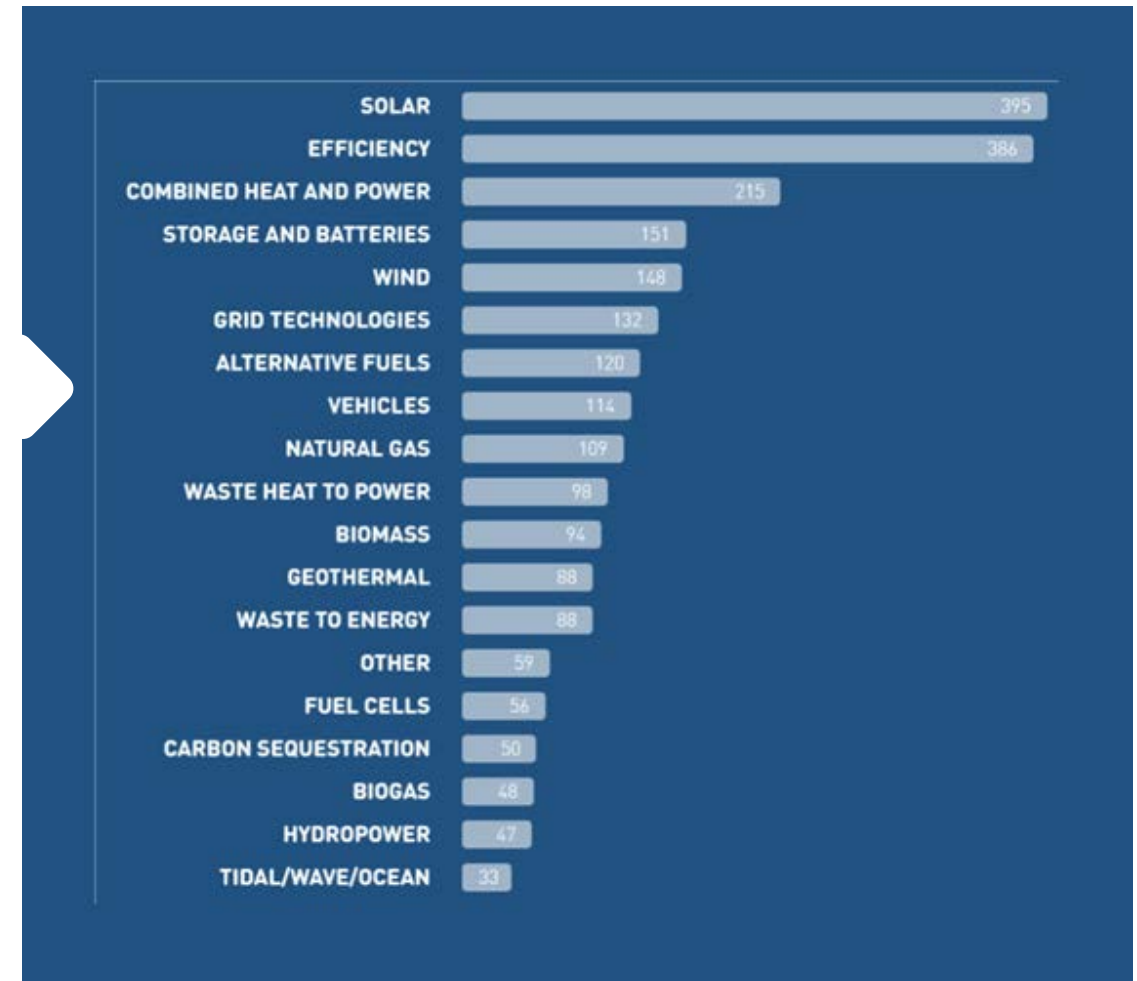
New milestones

3,500+ business leaders across 50 states

50+ premium members



Diverse technologies





Faces Behind the Facts

Success Stories of the
2020 Sustainable Energy
in America Factbook



cebn.org/faces-behind-the-facts/



About NASEO and State Energy Offices

- NASEO is the only national organization whose membership includes the governor-designated energy directors and their offices – *over 3,000 state energy professionals* – from each of the 56 states, territories, and District of Columbia.
- NASEO engages with federal energy policy and regulatory officials and private sector energy organizations on behalf of the states.
- NASEO's structure includes six regions and various topical energy committees.
- State Energy Offices have broad policy and program responsibility over all energy sectors, with over 80 percent having direct access to the governor and/or relevant cabinet secretary,
- State Energy Offices advise and support their governors and state legislators with 50 percent of the State Energy Directors serving as the governor's energy advisor, and others function in an expert supporting role.



State Energy Office Activities

While State Energy Office activities vary widely, depending upon states' indigenous resources, policies, and needs, most:

- Advise and inform governors and legislators on energy policy and regulatory development
- Lead or co-lead energy security (e.g., ESF12) and resilience across energy sectors – grid, fuels, critical end-use.
- Ensure that the needs and issues of business and residential energy consumers are considered during energy program development
- Aid citizens in adopting energy efficiency measures that lower utility costs and reduce waste
- Demonstrate the application of emerging energy technologies in real-world situations
- Work with other state agencies to deploy cost-effective, state-of-the-art technologies to reduce public facility energy consumption at the state and local levels
- Communicate to the public the importance of energy to economic development and environment

Building Resilient Infrastructure and Communities (BRIC)

Camille Crain | April 24, 2020



FEMA



Agenda

- BRIC Program Overview
- BRIC Policy Key Elements
- Draft BRIC Policy
- BRIC Rollout Timeline
- BRIC Funding
- How is BRIC Different Than PDM?
- Elements of Good Mitigation Projects
- Stakeholder Feedback
- Other Supporting Funding Sources
- Resources

What is Building Resilient Infrastructure and Communities (BRIC)?

Guiding Principles



Support Community Capability & Capacity Building



Encourage and Enable Innovation



Promote Partnerships



Enable Large Infrastructure Projects



Maintain Flexibility



Provide Consistency

Supports FEMA's Strategic Plan

1

Build a Culture of Preparedness

2

Ready the Nation for Catastrophic Disasters

3

Reduce the Complexity of FEMA

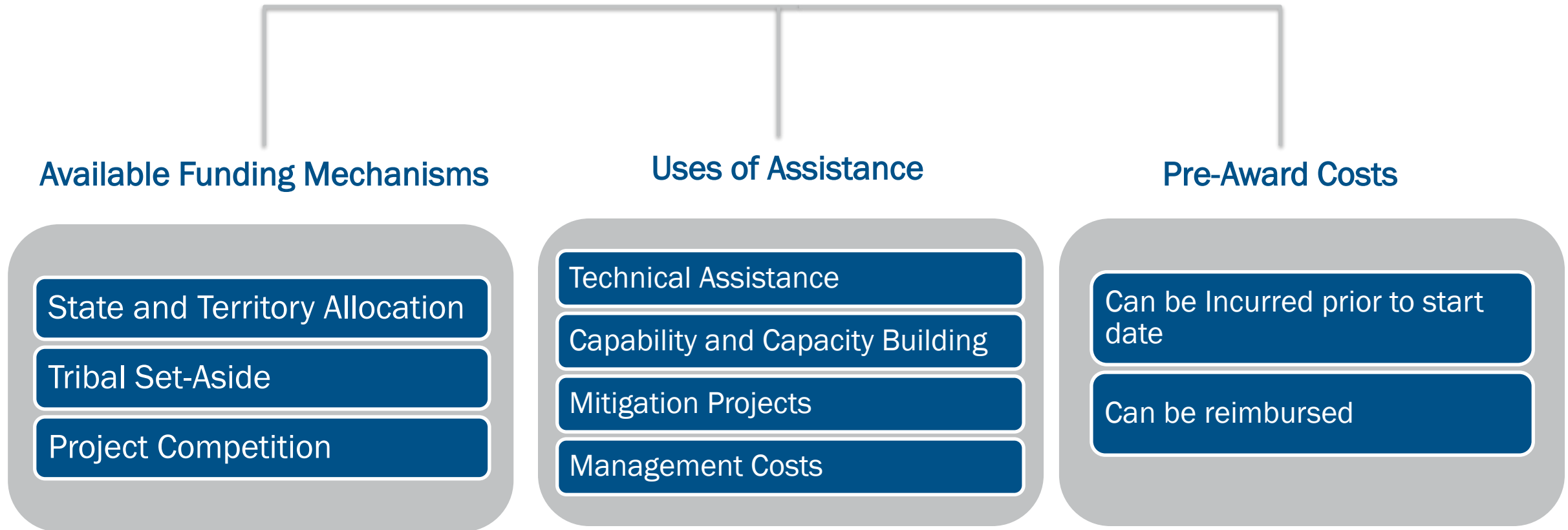


Legislation



- **Disaster Recovery Reform Act (DRRA) Section 1234, which amends Section 203 of the Stafford Act**
- **Funded by a 6% set-aside from federal post-disaster grant funding**
- **Eligible applicants – major disaster declaration in seven years prior**
- **Will replace existing pre-disaster mitigation (PDM) program**

BRIC Policy Key Elements




Draft BRIC Policy

- Public notice of the proposed BRIC policy published in Federal Register on April 10, 2020
- Stakeholders may view policy and provide comments until May 11, 2020 on [regulations.gov](https://www.regulations.gov)

The screenshot displays the Federal Register website interface. At the top, there is a navigation bar with links for Sections, Browse, Search, Reader Aids, and My FR. The main header features the National Archives logo, the text "FEDERAL REGISTER The Daily Journal of the United States Government", and the Presidential Seal. A blue banner below the header contains a "Notice" icon and the word "Notice". The main content area displays the title "Hazard Mitigation Assistance: Building Resilient Infrastructure and Communities" in bold. Below the title, it states "A Notice by the Federal Emergency Management Agency on 04/10/2020". A comment period notice indicates "This document has a comment period that ends in 31 days. (05/11/2020)" with a green button labeled "SUBMIT A FORMAL COMMENT". The bottom section is divided into two columns: "PUBLISHED DOCUMENT" and "DOCUMENT DETAILS". The "PUBLISHED DOCUMENT" column lists the "AGENCY:" as "Federal Emergency Management Agency, DHS." and the "ACTION:" as "Notice, Request for Comments." The "DOCUMENT DETAILS" column lists the "Printed version:" as "PDF", the "Publication Date:" as "04/10/2020", and the "Agencies:" as "Federal Emergency Management Agency".

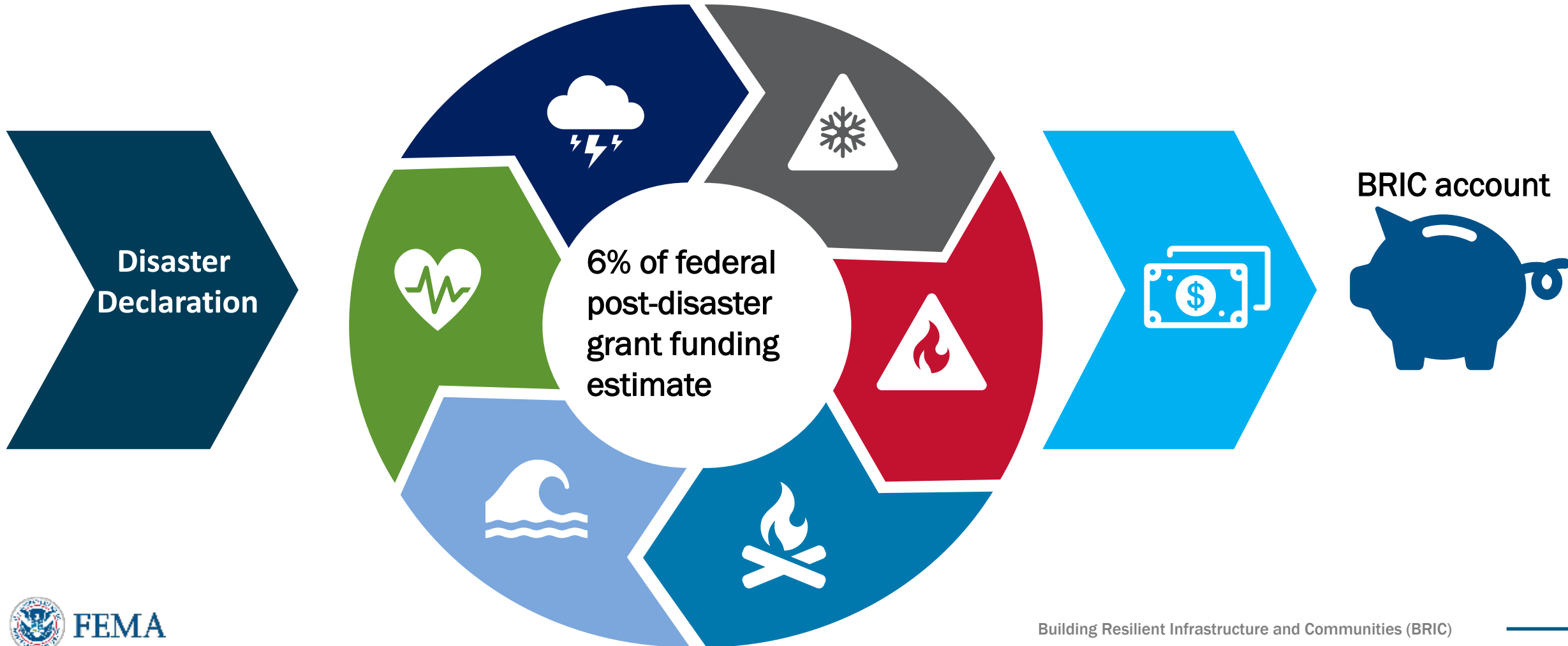
Timeline



 Where we are now

* Timing is estimated as of April 2020 and subject to change.

BRIC Funding





How is BRIC Different than PDM?

Sets Clear Priorities

- Lifelines & infrastructure projects
- Building codes
- Shared responsibility & partnerships
- Innovative projects

Builds Capability

- Capability & capacity-building activities
- In-person non-financial technical assistance
- Mitigation Action Portfolio

Increases Flexibility

- Reduces limitations
- Increases caps
- Allows pre-award costs

Streamlines Processes

- New application process through FEMA GO
- Project extensions
- Phased projects



Elements of Good Mitigation Projects

Risk Reduction

Grant Implementation Approach

Innovation in Project Planning and Implementation

Populations Impacted

Partnerships and Outreach

Future Conditions

Infrastructure and Community Lifelines

What Makes a Project Eligible?

Existing activities are still eligible



Hazard Mitigation Assistance Guidance

Hazard Mitigation Grant Program, Pre-Disaster Mitigation Program, and Flood Mitigation Assistance Program
February 27, 2015



Federal Emergency Management Agency
Department of Homeland Security
500 C Street, S.W.
Washington, DC 20472

Expanded eligibility includes:

- ✓ Project scoping
- ✓ Building code projects
- ✓ Additional activities for wildfire and wind implementation (DRRA Section 1205)
- ✓ Earthquake early warning (DRRA Section 1233)

Projects must:

- ✓ Be cost-effective
- ✓ Reduce/eliminate risk and damage from future natural hazards
- ✓ Meet latest two consensus codes (i.e. 2015 or 2018 international building code)
- ✓ Align with Hazard Mitigation Plan
- ✓ Meet all environmental and historic preservation requirements

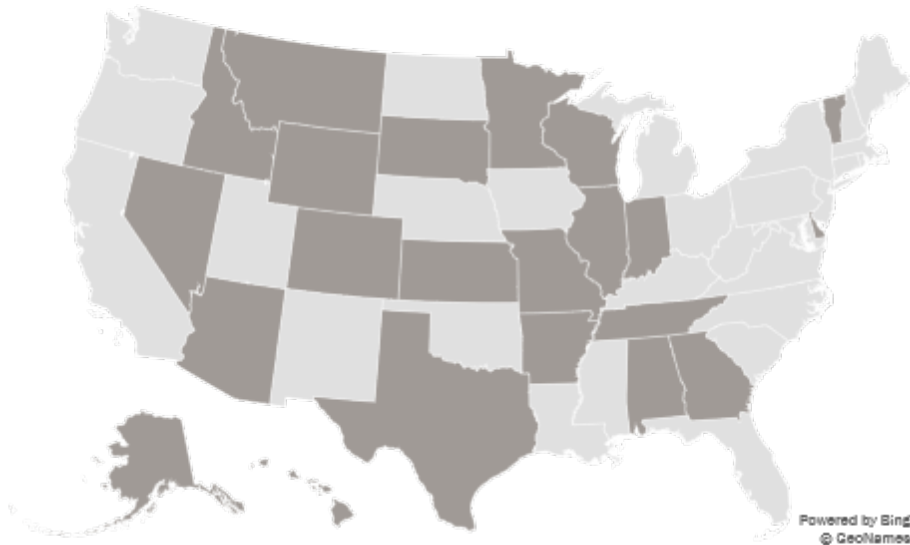


Building Codes

- **DRRA provides legislative mandate to support broader adoption of updated building codes**
- **Projects must be in conformance with latest published codes (either of 2 most recently published editions)**
- **BRIC will fund building code activity**

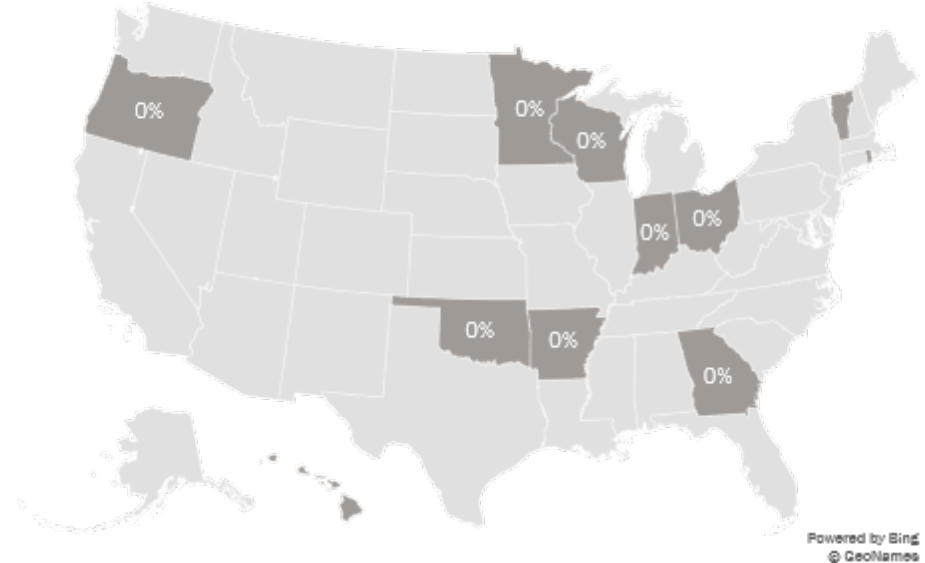
Building Codes

States without 2015/2018 IRC and/or IBC Adoption



- 46% of states and territories (26) have not adopted the 2015/2018 International Building Code and/or International Residential Code

States with a 0% BCEGS Survey Score



- 15 states and territories do not have a community with a Building Codes Effectiveness Grading Schedule score
- 11 more have less than 10% of their communities with a BCEGS of 1-5

Community Lifelines

Lifelines are services communities use. The goals and objectives of FEMA's Strategic Plan promote using mitigation to reduce risk to lifelines before a disaster and to quickly stabilize a community after disaster by preventing cascading impacts. BRIC mitigation grants can go toward projects which help improve these systems.

Lifeline-focused mitigation projects could involve a wide variety of public, private, and non-profit organizations



Example Infrastructure Projects



Nature-Based Infrastructure

Underground Resiliency Park for a Water Treatment Plant, Hoboken, NJ



Example Infrastructure Projects



Microgrid Installation

Blue Lake Rancheria Tribe Microgrid,
Humboldt Co., CA



CALIFORNIA
ENERGY COMMISSION

TESLA

SIEMENS

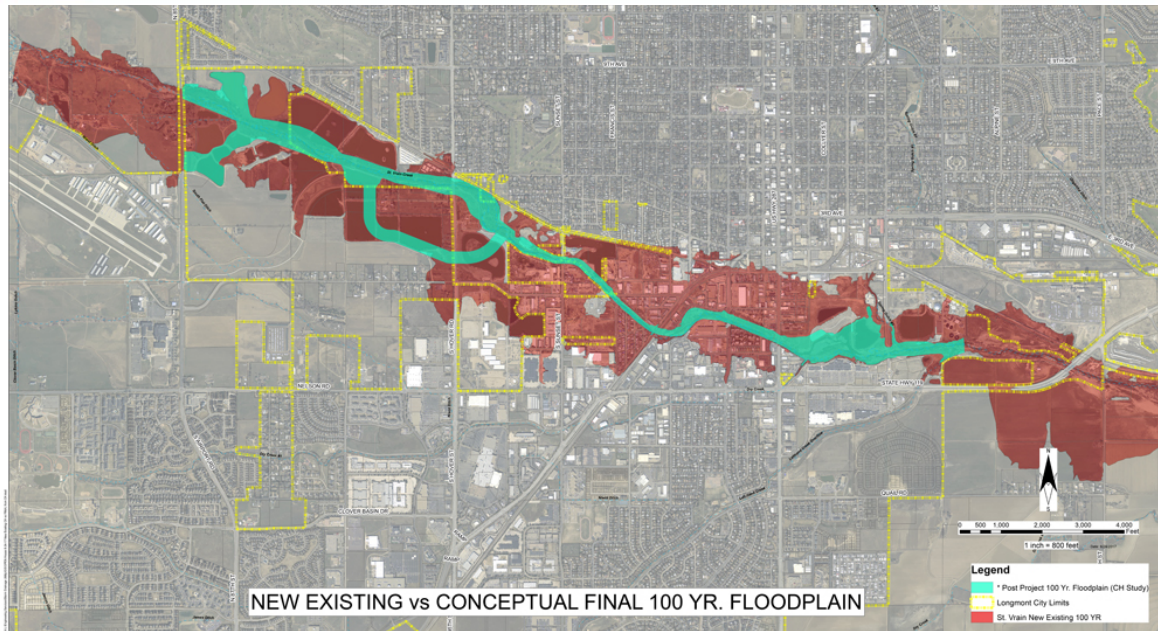


Idaho National Laboratory

Example Infrastructure Projects



Nature-Based Flood Protection Resilient St. Vrain, Longmont, CO



Example Infrastructure Projects



Energy Support for Critical Infrastructure

Texas County Memorial Hospital,
Houston, MO



Project Scoping

What Is Project Scoping?

- Provides states, federally-recognized tribes, and territories with resources to develop mitigation strategies and obtain data to prioritize, select, and develop complete mitigation project applications
- Project Scoping can help states and communities prepare projects for the full launch of BRIC in FY20 and beyond, including years with larger funding available.

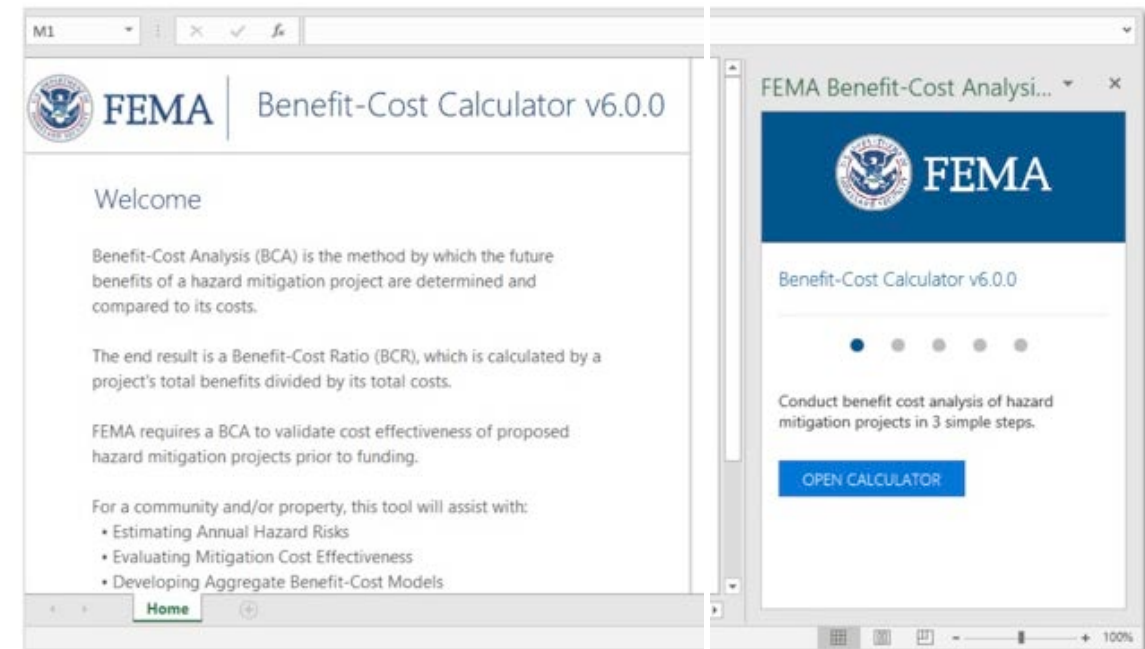
What Activities Are Eligible For Project Scoping?

- Engineering design and feasibility studies for larger or complex projects
- Hydrologic and Hydraulic (H&H) studies
- Obtain staff or resources to develop cost-share strategy and identify potential match funding
- Evaluate facilities or areas to determine appropriate mitigation actions
- Incorporate environmental considerations early into program decisions
- Collect data for benefit cost analyses, environmental compliance and other program requirements
- Evaluation of potential solutions (i.e., alternative analysis)
- Project scoping across a wide variety of programs to incorporate sustainability, resilience and renewable building concepts



Benefit-Cost Analysis (BCA)

- FEMA has a statutory requirement to fund “cost-effective” hazard mitigation projects – to assess the cost-effectiveness of a project, FEMA requires a BCA
- A BCA quantifies the benefits of a project and compares them to its cost, resulting in a Benefit-Cost Ratio (BCR)
- FEMA has released “pre-calculated benefits” for some project types

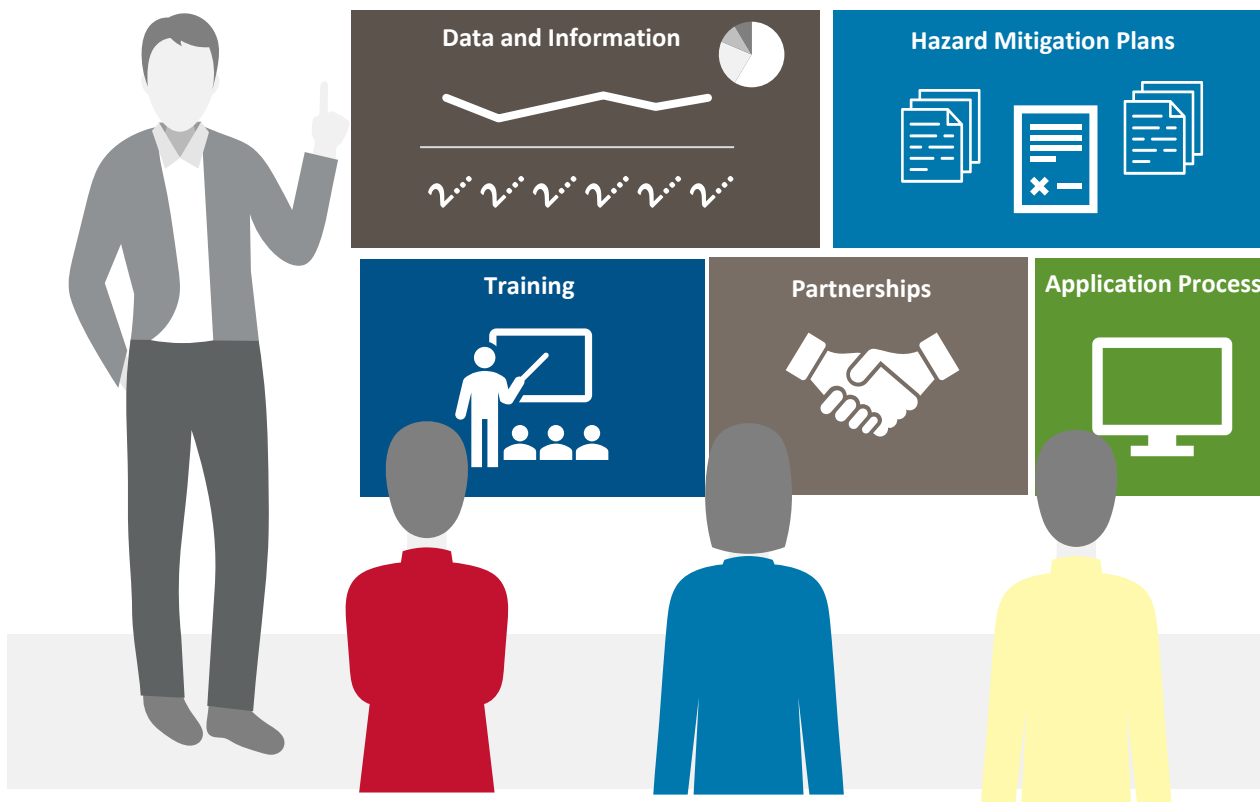


FEMA’s BCA Toolkit, pre-calculated benefits, and other resources may be found at

www.fema.gov/benefit-cost-analysis



Technical Assistance



We heard that communities need technical assistance, application advice and have other information needs. FEMA is offering tools and resources for stakeholders such as:

- Mitigation Action Portfolio – A guidebook with project examples and best practices
- Educational Opportunities:
 - BRIC Engagement Webinars (July 2020)
 - BRIC NOFO Webinars (August/September 2020)
- Non-financial technical assistance with select communities to help build local capability and capacity



Partnerships

Guiding Principles:

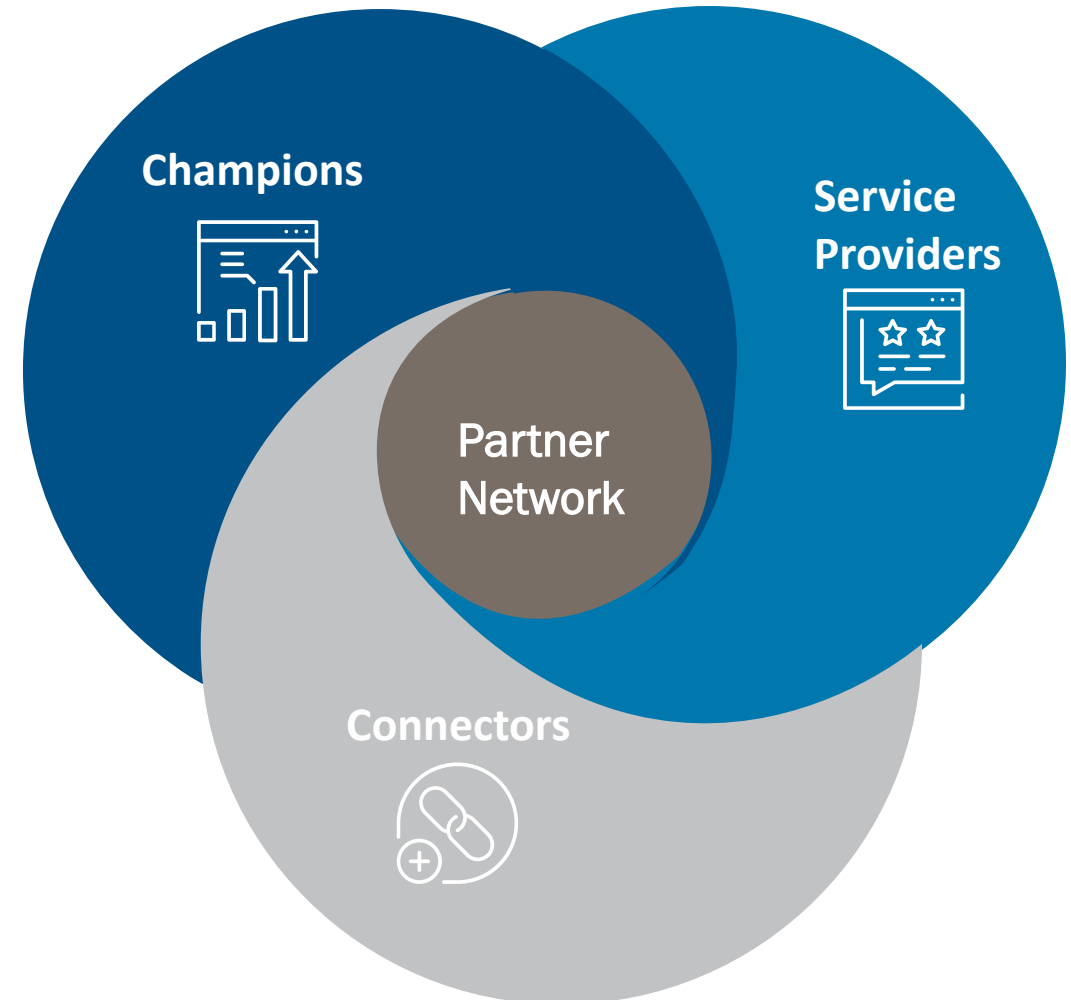


**Support Community Capability
& Capacity Building**

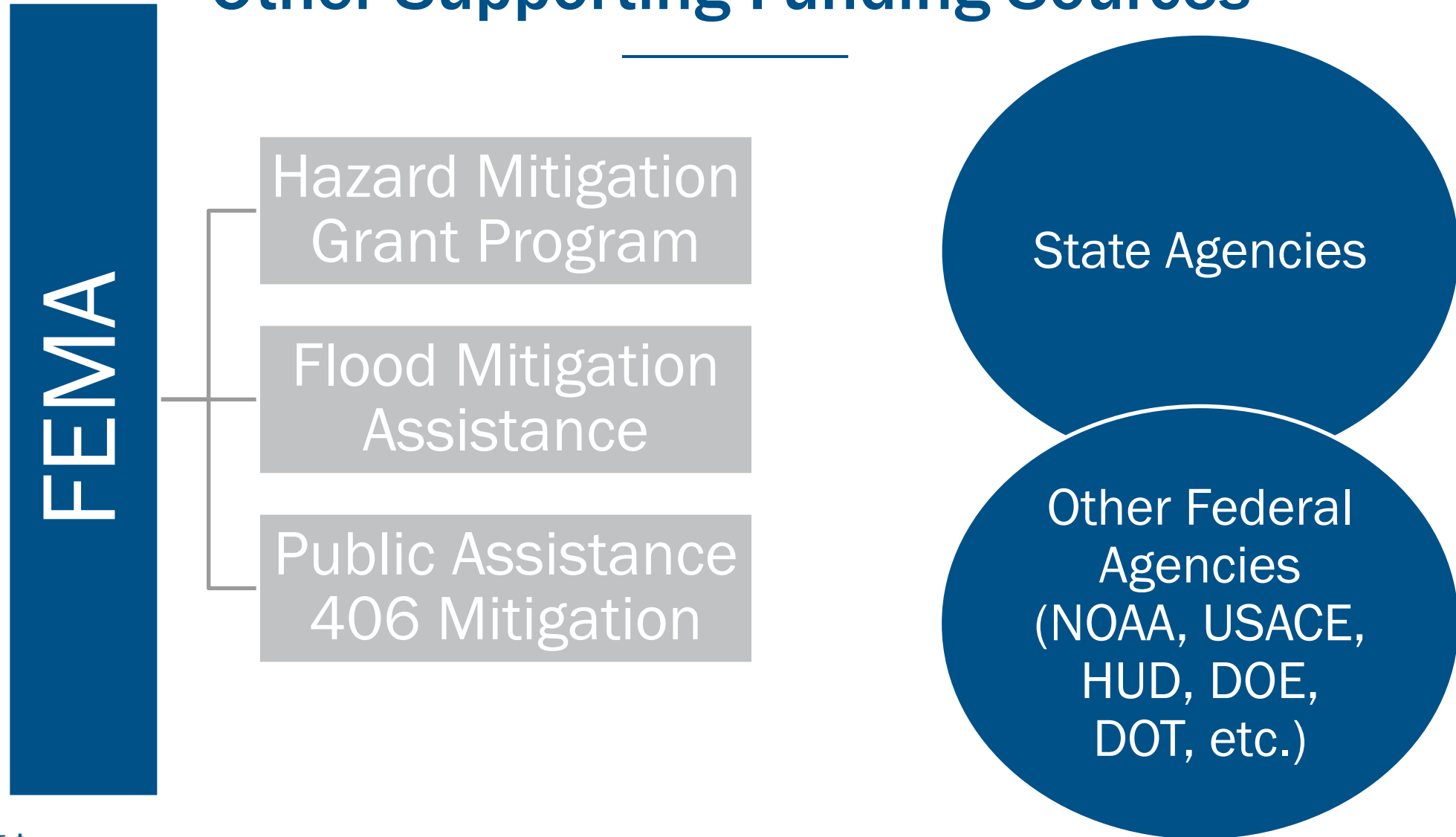


Promote Partnerships

Partnering with other **federal agencies and state, local, tribal, and territorial governments, the private sector, and non-governmental organizations** amplifies mitigation investment and its effects



Other Supporting Funding Sources





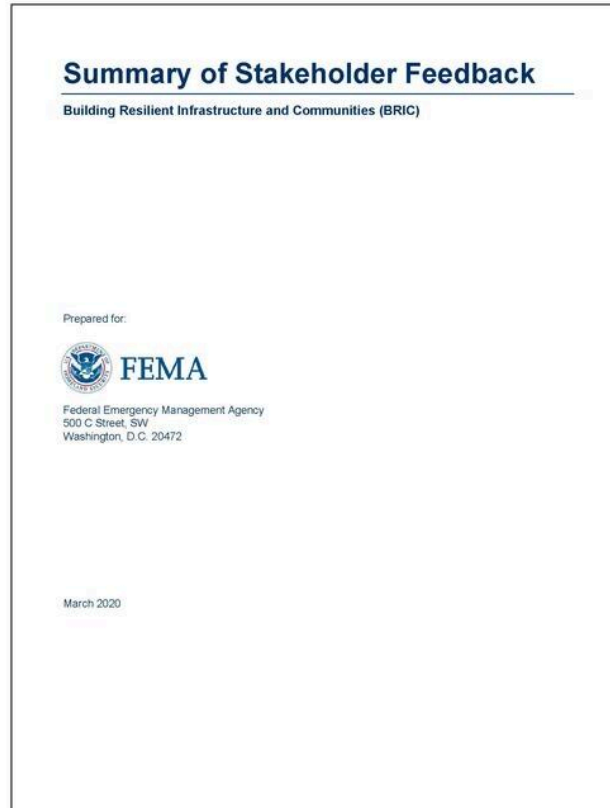
Stakeholder Feedback

In-person engagements

Virtual forums

Emails and letters

Formal comments



Stakeholder feedback was vital to inform the BRIC policy and program design

FEMA gathered feedback from:

- Federal, State, Tribal, and Territorial Stakeholders
- Partners
- Members of the General Public

The Stakeholder Feedback Summary is available online at fema.gov/bric



Stakeholder Feedback: Top Themes and Subtopics

The following themes and subtopics were used to categorize comments received:

Application Process & Requirements

- BCA
- Complexity
- Eligibility
- Eligible project types
- Flexibility
- Project scoping
- Nature-based solutions
- Streamlining
- Technical assistance
- Timeline
- Transparency

Capability and Capacity Building

- Building codes
- Collaboration
- Data
- Funding
- Knowledge / knowledge management
- Partnerships
- Technical assistance
- Technical expertise
- Training
- Small / rural / impoverished communities

Hazard Mitigation Planning and Plan & Project Implementation

- Hazard mitigation plan funding and quality
- Plan contents
- Project implementation

Project Monitoring and Evaluation and Lesson Sharing

- Best practices
- Case studies
- Evaluation

Risk-Informed Decision-Making

- Data accessibility
- Incomplete / outdated risk data

Tribal-Specific Issues

- Hazard mitigation planning
- Capacity and capability building
- Program design
- Project development and application



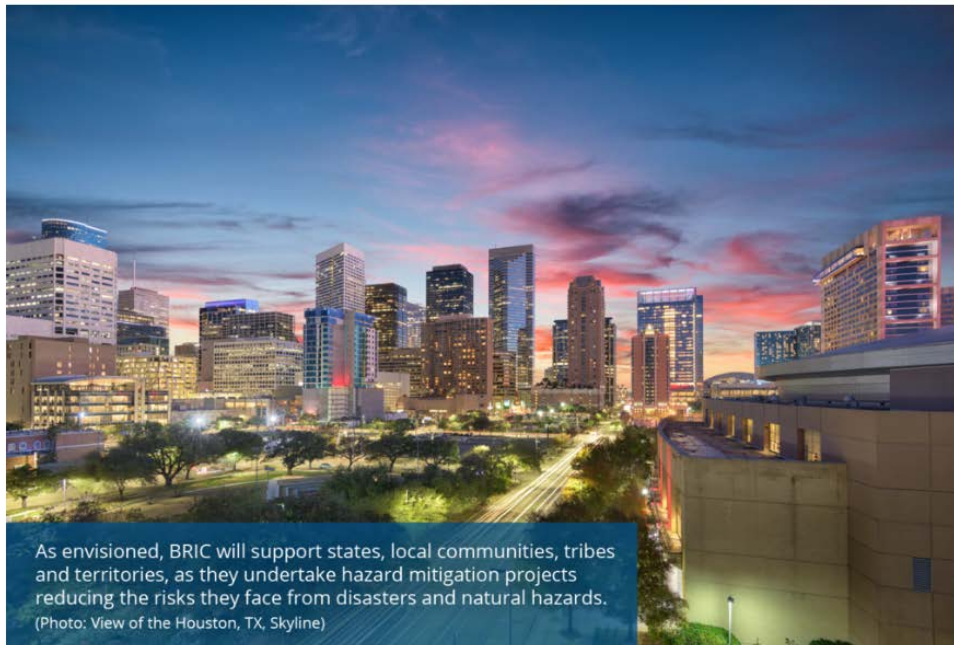
BRIC Summer 2020 Stakeholder Engagement

Purpose and Goals

- Educate stakeholders on all aspects of the BRIC policy and program
- Increase awareness and understanding of key BRIC program components, such as:
 - Eligibility
 - Innovative projects
 - Benefit-Cost Analysis
 - Project Scoping

FEMA Resources

Building Resilient Infrastructure and Communities (BRIC)



This page provides general information about a new pre-disaster hazard mitigation program.

<https://www.fema.gov/bric>

Other Resources:

- Hazard Mitigation Assistance (HMA):
<https://www.fema.gov/hazard-mitigation-assistance>
- Community Lifelines Implementation Toolkit:
<https://www.fema.gov/media-library/assets/documents/177222>
- Benefit Cost Analysis (BCA):
www.fema.gov/benefit-cost-analysis
- Hazard Mitigation Planning:
<https://www.fema.gov/hazard-mitigation-planning>



Thank you!

fema.gov/bric



State Energy Office Hazard Mitigation

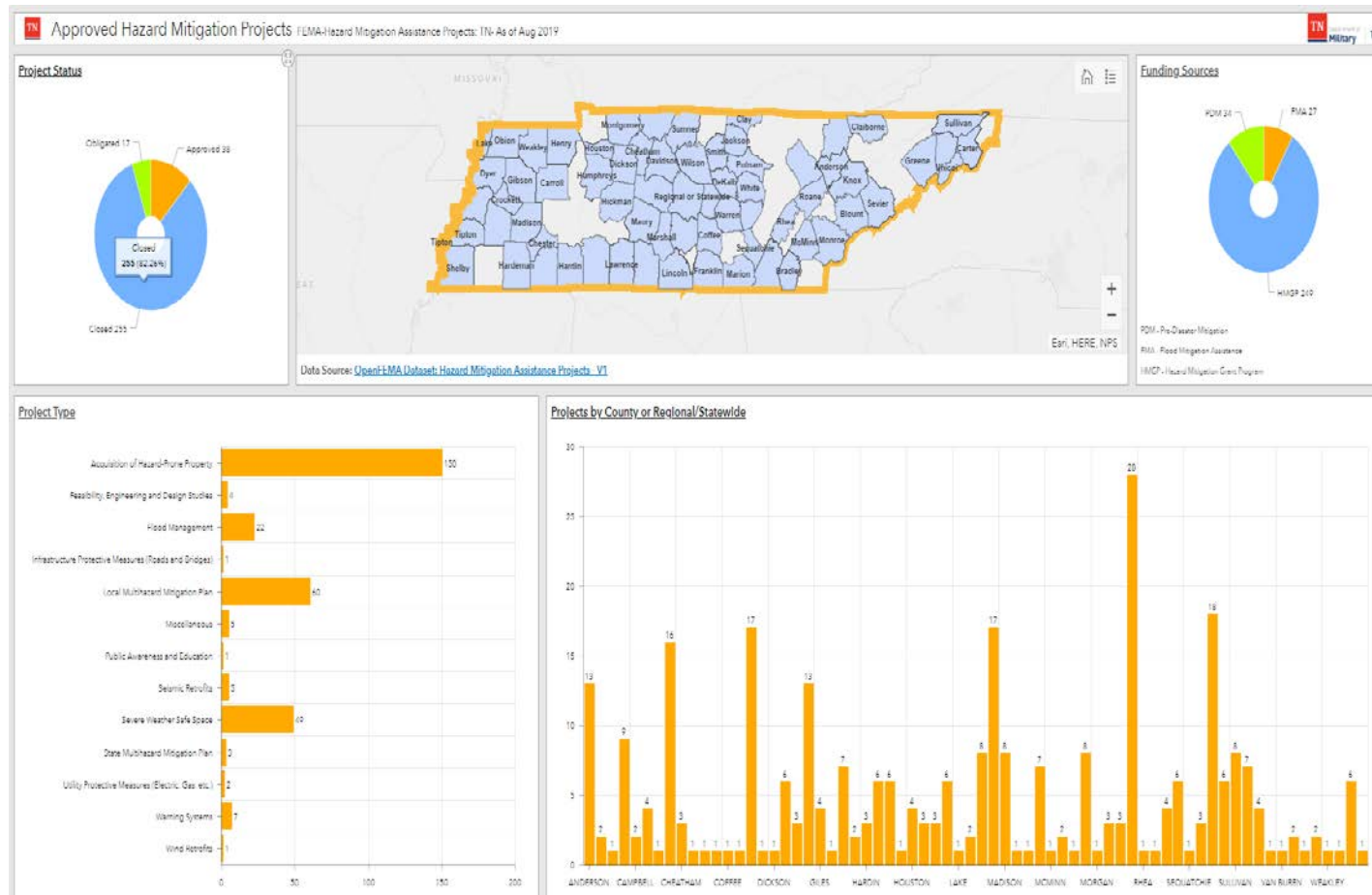
April 24, 2020

Ben Bolton, Energy Programs Administrator, Office of Energy Programs,
Tennessee Department of Environment & Conservation and Co-Chair, NASEO
Energy Security Committee

Megan Levy, Director, Local Programs, Wisconsin Office of Energy Innovation,
WI Public Service Commission and Co-Chair, NASEO Energy Security
Committee



Tennessee Hazard Mitigation Dashboard



ArcGIS-based dashboard with data on approved and proposed hazard mitigation projects by county.

TEMA Local and County Mitigation Planning website

<https://www.tn.gov/tema/emergency-community/mitigation/local-and-county-mitigation-planning.html>



Statewide Assistance For Energy Resilience and Reliability (SAFER2)

- Wisconsin's SEP Competitive grant seeks to assist County and Tribal governments with energy emergency plan (ESF-12) development, identifying critical infrastructure, and exploring resilient strategies beyond diesel back-up.
- Kentucky and other states are working on innovative strategies



**Energy Assurance and Resilience
Tool Kit Project Registration is Open!
Mark Your Calendars - Links Below**



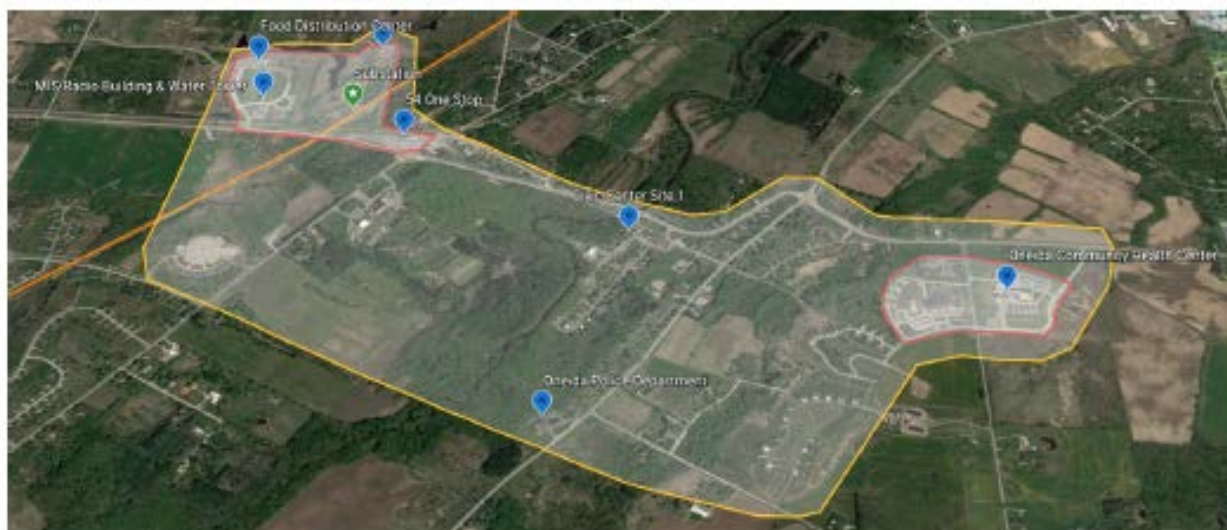
Oneida Nation Critical Infrastructure Microgrid Feasibility study



Partial-feeder campus microgrids:



Full-substation microgrid serving multiple campuses:



- Alternative evaluation matrix will consider:
- Critical needs of community
- Cost effectiveness
- Lifelines supported
- Pollution profile



Opportunities for The Public Private Partnerships under BRIC

Anna Pavlova
VP, Government Relations
Schneider Electric North America

“Embracing Digital Transformation to deliver economic value to your business”

Life Is On

Schneider
Electric

Energy as a Service – a P3 Solution for Resilience

Energy as a Service (EaaS) is a long-term arrangement that **transfers the burden** of financing, installing, owning and managing energy from a customer to a third-party entity.

EaaS involves construction of a microgrid, energy efficiency upgrades, procurement of distributed energy resources, and long-term management and optimization of the end-to-end system.

An entity, such as SE's AlphaStruxure, **designs, builds, owns, operates and maintains** an energy system that meet a customer's comprehensive goals – with no capital cost.

Example of new Business Model: Energy-as-a-Service

Microgrid: Montgomery County, MD

Customer: Public Safety HQ and Correction

Microgrid type: Facility, islandable

Location: Maryland, USA

Capacity: 1.2 MW

Customer pain point

Aging infrastructure with resiliency challenges, budget challenges with no capability to perform upfront investment, aggressive sustainability goals

Solution

Energy as a service business model with Duke Energy, delivering solutions with no upfront cost

“Upgrades to critical facilities improve the county’s resilience, so we can keep residents safe and provide needed services even in the event of prolonged power outages.”

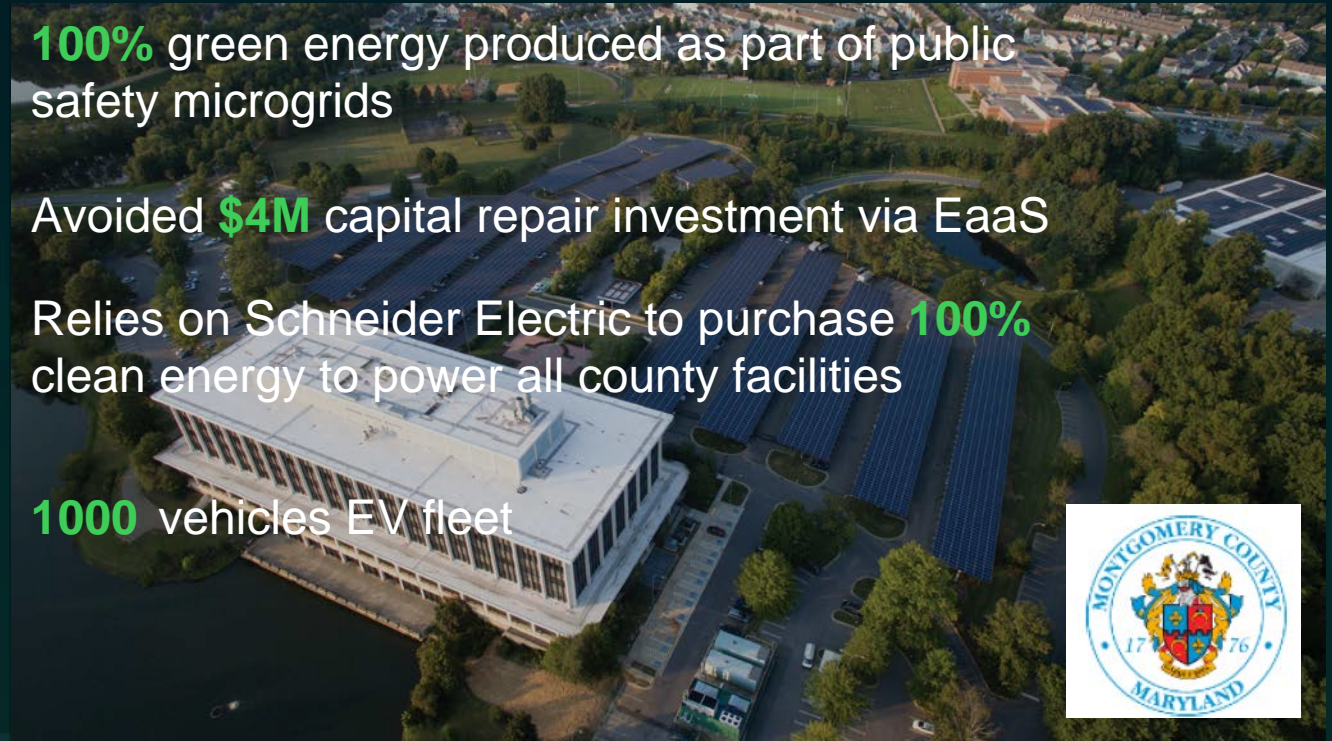
Isiah Leggett, County Executive, Montgomery County

100% green energy produced as part of public safety microgrids

Avoided **\$4M** capital repair investment via EaaS

Relies on Schneider Electric to purchase **100%** clean energy to power all county facilities

1000 vehicles EV fleet



PV



BESS



Industrial
Loads



Gensets

EcoStruxure™ Microgrid **Advisor**

EcoStruxure™ Microgrid **Operation**

BESS + Solar inverters + LV/MV + BMS

Some Considerations as BRIC gets stood up:

- ❑ Utility microgrids usually require rate-basing a larger community that may not see the benefits.
- ❑ **Third-party/P3** microgrids are competitive since EaaS can be financed outside of that framework.
- ❑ Projects should be a real benefit to a set of real customers rather than a vague benefit to a broad base of customers.
- ❑ The asset holder (town, subdistrict) must have flexibility to enter a P3 where the microgrid is owned by a P3 entity – guidelines would need to clarify the ownership aspect of the program.
- ❑ Interconnection rules and property rights need to be fleshed out for speedy deployment. RIGHT of WAY is currently a big impediment to quick growth, and utilities need to allow P3 projects to go forward.

CEBN/BCSE/NASEO Webinar on Building Resilient Infrastructure and Communities (BRIC)

Industry perspectives on BRIC implementation and the types of projects that could be supported by this program

Manny Perotin, PE, PMP, CFM

April 24, 2020



**CDM
Smith®**

Long Island Power Authority (LIPA)

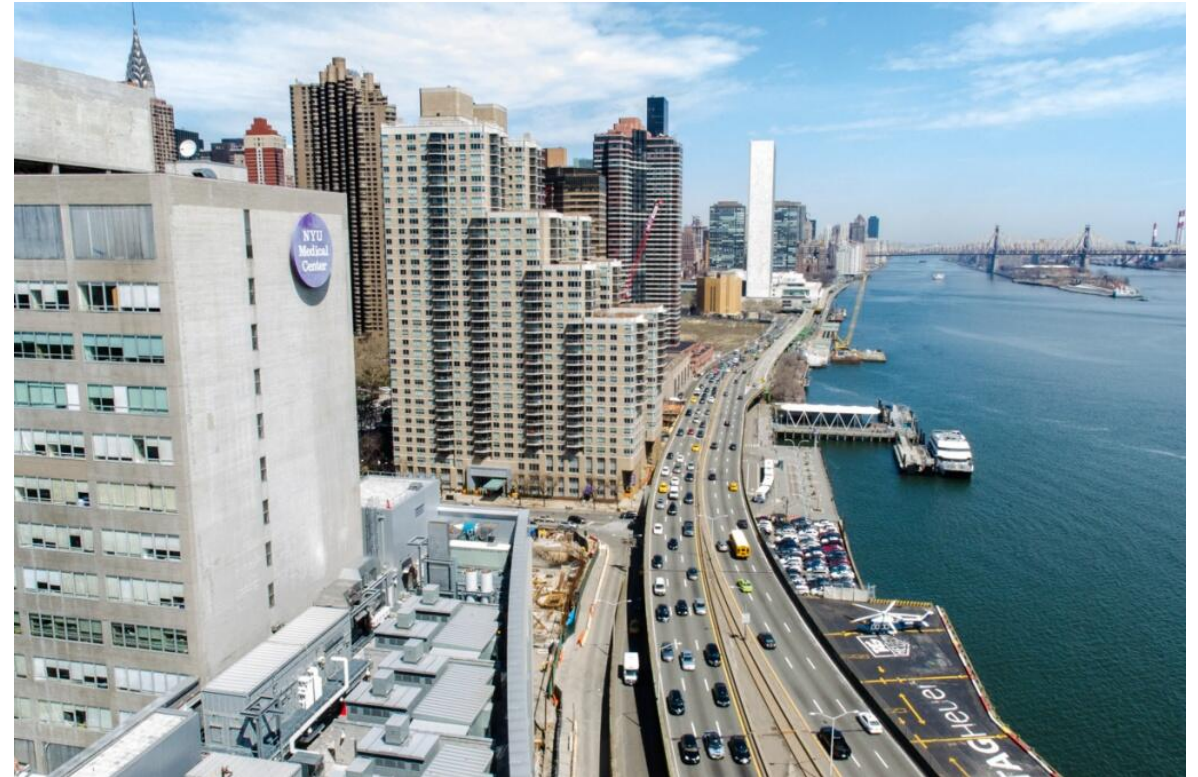
- \$1+ billion for repair of substations as well as overhead electric transmission and distribution lines
- mitigation measures including strengthening transmission/distribution lines and elevating substations



<https://www.hauglandgroup.us/projects/overhead-underground-electrical-distribution/fema-long-island-electric-distribution-storm-hardening>

New York University Langone Medical Center (NYULMC)

- \$982 million to restore damaged buildings
- flood risk reduction mitigation measures designed to protect it from future storms as well as emergency power



Other Resources

- FEMA Loss Avoidance Study
- Hazard Mitigation Assistance: BRIC announcement in Federal Register open through 5/11/2020
- FEMA Hazard Mitigation Assistance “Open Data”
 - 400.1: Utility Protective Measures (Electric, Gas, etc.)
 - Over 700 projects
 - \$600+ Million



Report

Electrical Transmission and Distribution Mitigation: Loss Avoidance Study

Nebraska and Kansas

FEMA-1674-DR-KS and FEMA-1675-DR-NE

April 2008



Federal Emergency Management Agency
Department of Homeland Security
500 C Street, SW
Washington, DC 20472

QUESTIONS?

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David Terry, NASEO
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Next up in POWERING FORWARD

The Clean Energy Economy:
a Decade of Growth, a First Quarter in Crisis

Ethan Zindler, Bloomberg New Energy Finance
Phil Jordan, BW Research

May 20, 2020