2022 National Earthquake Program Managers Meeting

March 31, 2022 – DAY 3

General Reminders

- This meeting is being recorded.
- Mute phones/video unless speaking.
- Post questions/comments/requests in the chat area.
- Technical issues/support:
  - Brian Blake – bblake@cusec.org
  - Pascal Schuback – schuback@crew.org

NEPM Meeting - Code of Conduct

- Show up on time & come prepared
- Contribute to meeting goals
- Let everyone participate
- Listen with an open mind

NEPM Meeting - Code of Conduct cont.

- Think before speaking
- Stay on point & on time
- Attack the problem, not the person
- Close decisions & ID action items
- Record outcomes & follow up

Day 3 - Agenda

- EQ Program 101 Review
- Logic Model Workshop
- State Updates & Fireside Chats
- Working Lunch: Building Codes Presentation
- Coordinating with SMEs Presentations
- Group discussion & 2023 Planning
- Election of 2022 NEPM committee

CREW
Cascadia Region
Earthquake Workgroup

Earthquake Program 101

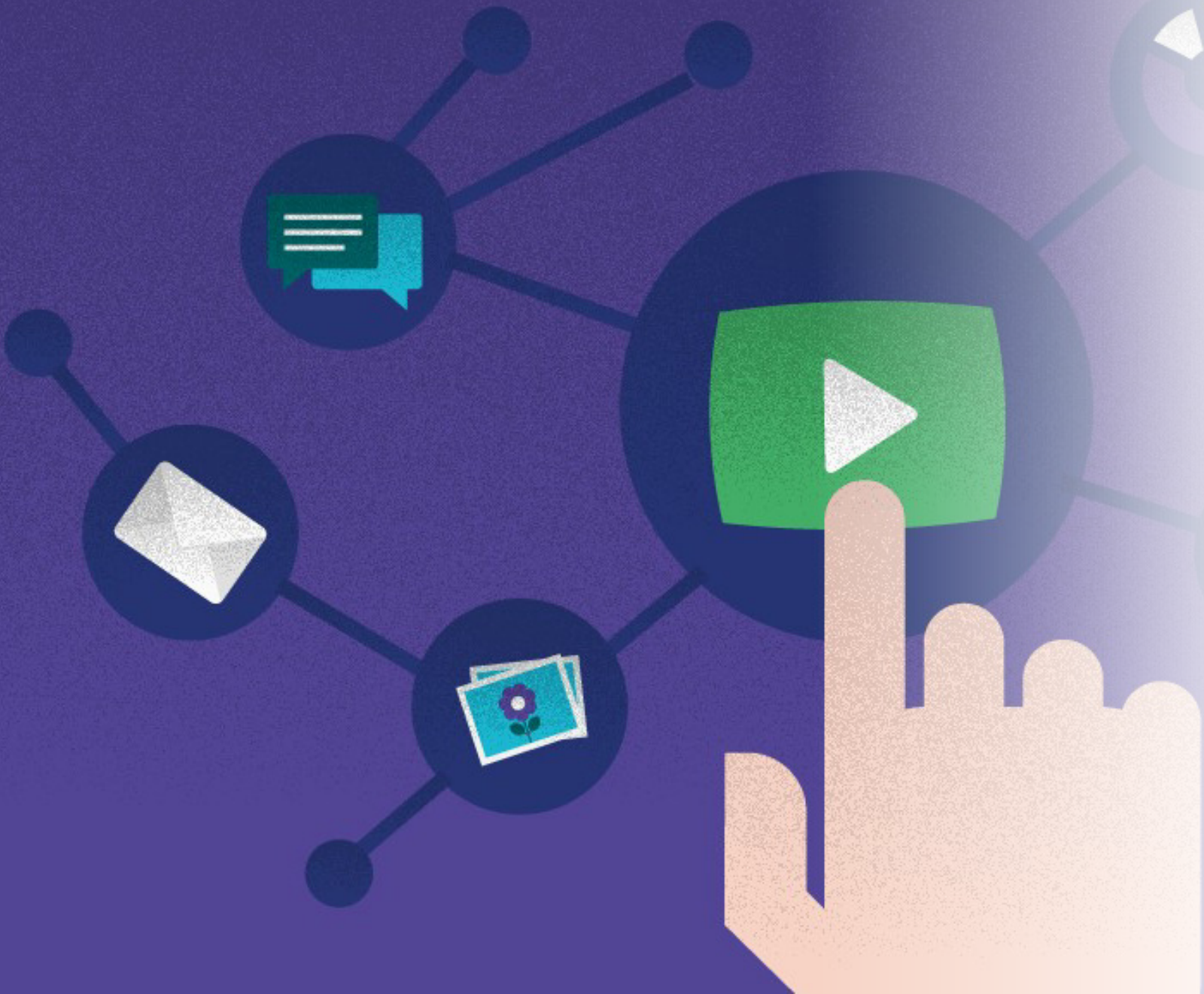
Pascal Schuback

Cascadia Region Earthquake Work Group

EQPM Resource Guide (101)

An On-demand learning resource for Earthquake Program Managers and those who work with them.

CREW
Cascadia Region Earthquake Workgroup



EQPM Resource Guide (101)

Modules would include one or many resources to help provide each subject training

- Videos
- Slides
- Questions
- Collaborative discussions

Modules we are working on now

- You’re the new EQPM (starting point)
- Know Your SHMO
- Hazard Mitigation Assessment
- Community Outreach
- Internal Partners
- What does an EQPM do?

Modules in the pipeline

Ones in the queue to build

- Logic Models (Yes.. John Foster and Brian Blake's presentation)
- Technical Tools for EQPMs

- What other's do you think we should include?

Why ?

- Support you the EQPMs
- Provide an outreach method to promote and increase the awareness on the importance of your role to non EQPMs. (Policy makers, public, partners)
- Measure (Anonymously) usage in order to identify additional resources and topics to help you!
- Provide new EQPMs a good footprint to start in their adventures

?’s

Releasing April/May 2022

NATIONAL EARTHQUAKE PROGRAM MANAGERS MEETING

Logic Model & Performance Measures Training

Jon Foster, CFM

FEMA/NEHRP Program Specialist

Brian Blake

CUSEC

March 31, 2022

Logic Model and Performance Measures Training Overview

- Background
  - Why and Where Did This Come From?
- Performance Measures and Logic Model Requirements per the NOFO
- What is a Logic Model?
  - Key Components
  - Process & Outcomes
- Group Exercise / Workshop
- Review / Discussion
- Evaluation & Progress Reporting

Why and Where Did This Come From?

- New Performance Measures for all Allowable Activities in FY 20 NOFO
- Performance Measures and Logic Models Introduced in FY 21 NOFO
- Office of Management and Budget (OMB) requirement
- Close coordination with DHS Office of Financial Assistance Policy & Oversight (FAPO)

NOFO Requirements

- Performance Measures
  - Valid, Complete, Accurate, and Timely
  - Activities must be consistent with the stated Allowable Activities
  - Activities must result in measurable outputs and outcomes
  - General Performance Measures for each Allowable Activity
- Logic Model
  - Identify long-term goals, outcomes or desired changes and then determine what inputs are needed to get there (Performance Measures)
  - Will help demonstrate that Performance Measures in the NOFO have been met
  - Only the “Activities” and “Inputs” need to be included in the initial Logic Model
  - Final Logic Models should be submitted with Final Performance Progress Report

Sample Logic Model

ACTIVITY	PROCESS			OUTCOME		
				Predicted and Measured Outcomes - Impact		
Allowable Activity	**Inputs** (Resources necessary for	**Activities** (Activities Implemented)	**Outputs** (Direct products from Activities)	Short-Term	Intermediate	Long-Term
1. Support for Seismic Mitigation Planning	1. Human Resources: SHMO, EQ PM, Planner, Communications Specialist, Admin Staff 2. Material Resources: State meeting facilities; Contracted facilitation support.	Four risk analysis and planning sessions conducted during 1st and 2nd Qtr; FY 2022; Draft editing in 3rd Qtr; Plan review and integration conducted in 4th Qtr.	1. New or updated State earthquake risk analysis summary. 2. Creation of Planning Committee and approval of plan development approach.	1. State approval of completed Risk Analysis. State approval of proposed seismic mitigation planning.	1. Stakeholder review of proposed planning. 2. Public review of proposed planning. Incorporation of planning into next update of State Hazard Mitigation Plan. 3. State adoption of new planning information.	1. New State Hazard Mitigation Plan approved by FEMA during next plan cycle. 2. Increased community earthquake preparedness and community resilience.
2. Develop inventories and conduct seismic safety inspections of critical structures and lifeline infrastructure.	1. Human Resources: State EQ PM, Four trained Inspectors, Administrative support staff. 2. Material Resources: Travel and Per Diem for Inspectors, Rental Vehicles, etc.	Inspection of four State facilities determined to be lifeline infrastructure.	Four individual inspection reports, and one consolidated Findings summary report with mitigation recommendations.	1. Identification and seismic inspection of at-risk lifeline infrastructure. 2. Improved collaboration between facilities management and State agency occupants of identified lifeline infrastructure properties.	1. Socialization of reports with State leadership and Stakeholders. 2. Procurement of funding resources to implement proposed activities.	Documented seismic resilience improvements to lifeline infrastructure. Life saving improvements to structures completed.
3. Update building codes, zoning codes, and ordinances to enhance seismic safety.	1. Human Resources: State EQ PM, SHMO, State Building Code Officials, Staff support 2. Material Resources: Meeting spaces or Video conferencing software, editing, publication and printing fees for reports.	Conduct of 4 quarterly planning sessions and two "Listening Sessions" with Local Building Codes officials.	1. Development of Summary Reports on Listening Sessions with local building code officials. 2. Interim Report on "The State of Building Codes." 3. Final Report on "The State of Building Codes and Recommendations for	1. Increased collaboration between State and Local Building Codes Officials. 2. Increased collaboration between States Building Code Officials and State Office of Emergency Management.	Formalized/documented assessment of current state seismic codes and specific recommendations for updates.	1. Adoption and enforcement of updated seismic building codes. 2. Long-term community and economic resilience.
4. Increase earthquake awareness and education.	1. Human Resources: State EQ PM, State SHMO, State Department of Education Dir., multiple school Administrators, Web Design staff, Videographer, support staff. 2. Material Resources: Print Design and Publications.	1. Conduct State-wide middle school competition for best Parent/Child short video essay on the 1901 earthquake.	1. Conduct State-wide, Middle school Video conference on the anniversary of the earthquake of 1901, the largest quake ever to impact the state. 2. Create and distribute on local media markets a PSA on the 1901 earthquake and how Homeowners can mitigate	1. Education of middle school children on earthquake risk and individual household, non-structural hazard mitigation activities that can be implemented. 2. Increased participation in annual ShakeOut drill.	Establishment of unique grant opportunities for Middle Schools that are willing to invest in significant earthquake mitigation projects.	Long-term state resident behavioral changes in individual earthquake preparedness and hazard mitigation. Increased community resilience.
5. Participation in emergency management exercises that substantially benefit earthquake mitigation efforts.	1. Human Resources: State and local EM staff, County EM staff, State and County Geological staff 2. Material Resources: Earned Media/Local Media coverage, Web and print media support.	State Participation in the 10th Annual Lansdown Fault Earthquake Exercise.	Gap Analysis of State emergency response plan for a catastrophic earthquake along the Lansdown fault.	Identification and documentation of gaps of the States emergency response plan for a catastrophic earthquake along the Lansdown fault.	Development of Recommendations for state emergency response plan revisions	Increased individual and community seismic safety.
6. Promotion of Earthquake Insurance.	1. Human Resources: State EQ PM, State Insurance Commissioner, SHMO, Communications Specialists, Web Services 2. Material Resources: Facilities for seminars, associated travel & per	1. Development of State-specific EQ insurance Information Paper and web content. 2. Conduct and record two public EQ insurance seminars. 3. Development of	1. Local television and web media hosting of PSA on Earthquake Insurance. 2. Web-based State EQ Information Paper. 3. Summary report on insurance seminars provided to state leadership.	1. Education of public on availability and importance of EQ insurance. 2. Increased collaboration between State and Private sector insurance providers.	Creation of Multi-year plan for public/private partnership to provide state-wide affordable EQ insurance.	Public/Private partnership to provide affordable EQ insurance. Increase in State, local and individual earthquake hazard resilience.
7. Assistance to Multi-State Groups for the purpose of supporting any or all Allowable Activities under this Funding Opportunity.	1. Human Resources: State EQ PM, Grants Management staff. 2. Material Resources: Sub grant funding in the amount of $20,000.	1. Provide $20,000 to Southwest Earthquake Consortium for the purpose of coordinating Multi-State response support plan.	New Southwest States Earthquake Response Support Plan. Plan specifically addresses the needs of states impacted by the Lansdown Fault.	Increased collaboration with adjoining/partner states that share the same earthquake risks (Lansdown Fault). 2. Increased opportunities to leverage partner	Creation and Approval of Multi-State Earthquake Response and Support Plan.	Increased individual and community seismic safety within multi-state region.

Overview of Presentation

- A program's theory of change and logic model
- Uses of logic models
- Components of a logic model
- How to read a logic model
- How to develop a logic model
- How to apply logic models to evaluation

Objectives

- Describe what a logic model is, and how it can be useful to your earthquake program
- Understand the key components of a logic model
- Learn how to:
  - Develop a basic logic model for your EQ program
  - Use a logic model for evaluation planning

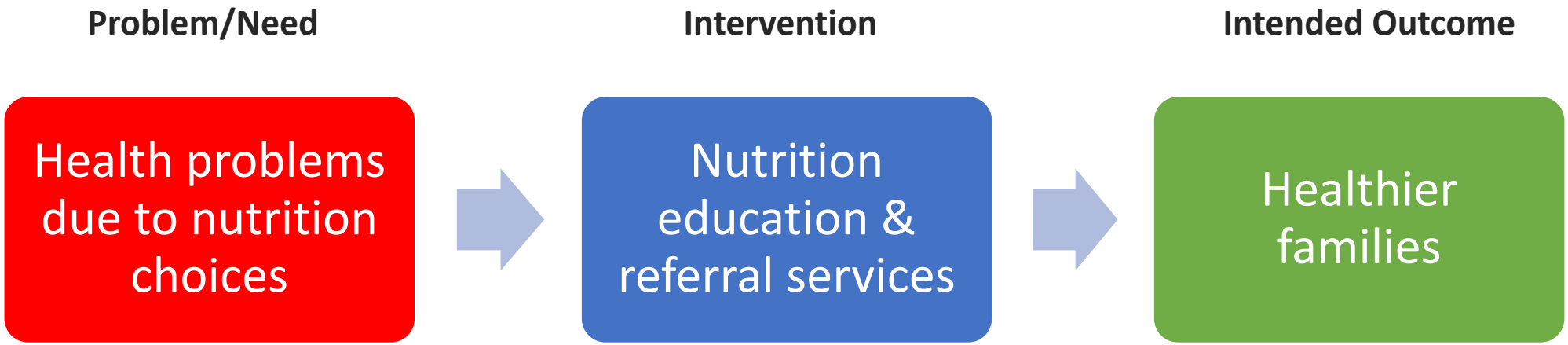
What is a theory of change?

- The underlying idea of how you believe your program's (or program element) intervention will create change.

- Three main elements:

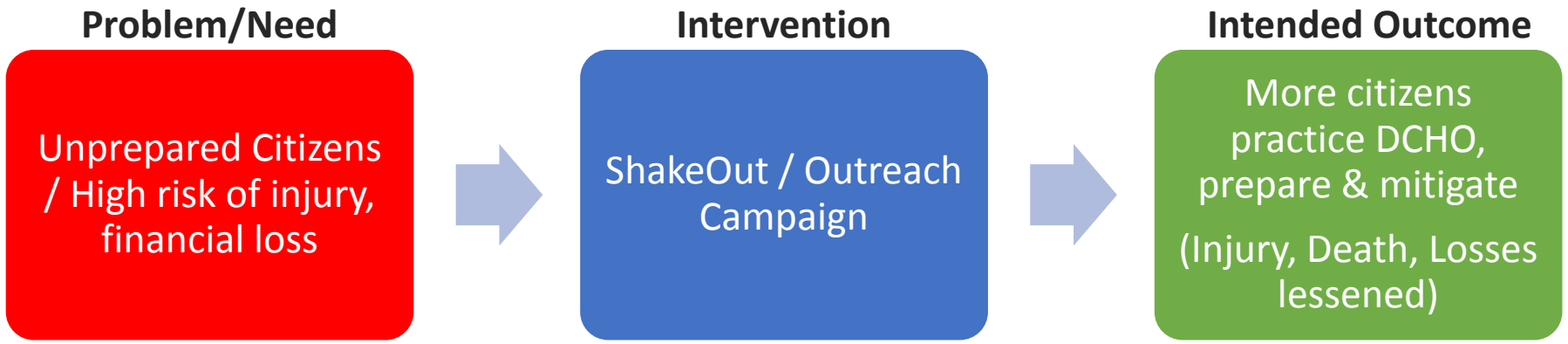
Example Theory of Change: Food & Nutrition

- Families suffer from poor-nutrition related health problems



Example: EQ Public Awareness Program

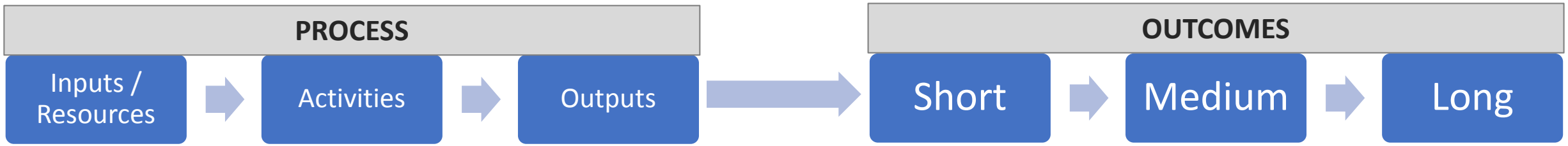
- Many citizens do not know how to protect themselves during an earthquake and have not prepared ahead of time. Our outreach program will educate the general public and inspire action so citizens will take the appropriate pre-earthquake mitigation/preparedness precautions, including securing items, building kits, and practicing how to be safe.



What is a Logic Model?

- A detailed representation of a program and its theory of change.

- Communicates **how** a program works by depicting the intended relationships among program components.



Why Develop a Logic Model?

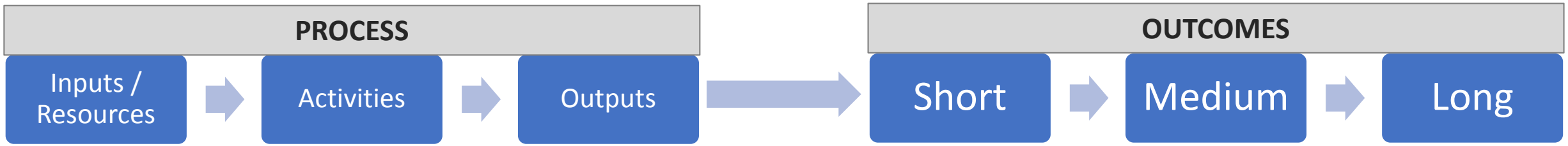
- Generate a clear and shared understanding of how a program works
- Support program planning and improvement
- Serve as foundation for evaluation

Use in Earthquake Program Planning

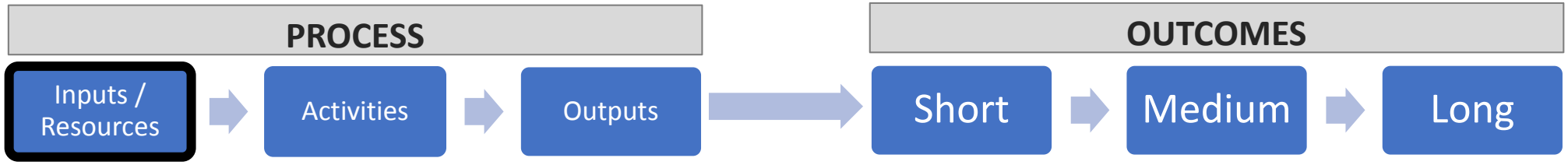
- What is the current situation that you intend to impact?
- What will it look like when you achieve the desired situation or outcome?
- What behaviors need to change for that outcome to be achieved?
- What knowledge or skills do people need before the behavior will change?
- What activities need to be performed to cause the necessary learning?
- What resources will be required to achieve the desired outcome?

Key Components

- Inputs (Resources)
- Activities
- Outputs
- Outcomes (short, intermediate, & long-term)



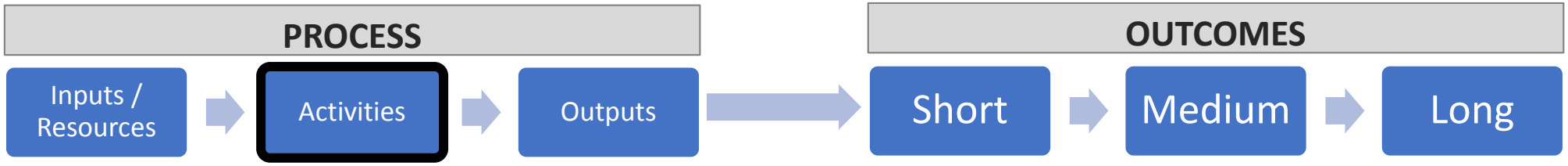
Key Components: Inputs



- **Inputs (or resources)** include human, financial, organizational, and community resources available for carrying out a program's activities

- Examples:
  - NEHRP Funding
  - Earthquake Program Manager
  - Seismic Safety Commission Volunteers
  - Research conducted about program/issue

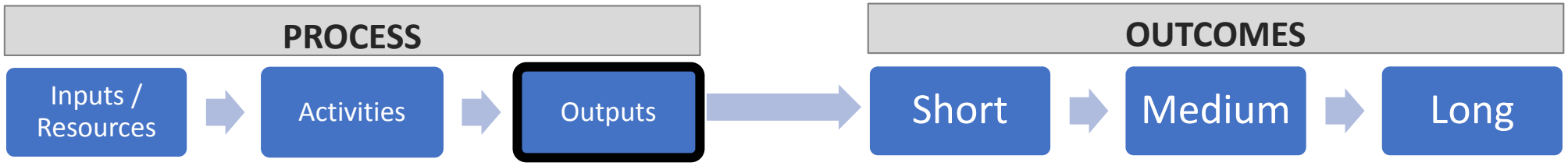
Key Components: Activities



- **Activities** are the processes, tools, events, and actions that are used to bring about a program's intended changes or results.

- Examples:
  - Workshops for stakeholders (e.g. local emergency managers, schools, businesses)
  - Websites, graphics, ads, and media for outreach program
  - Training and presentations delivered

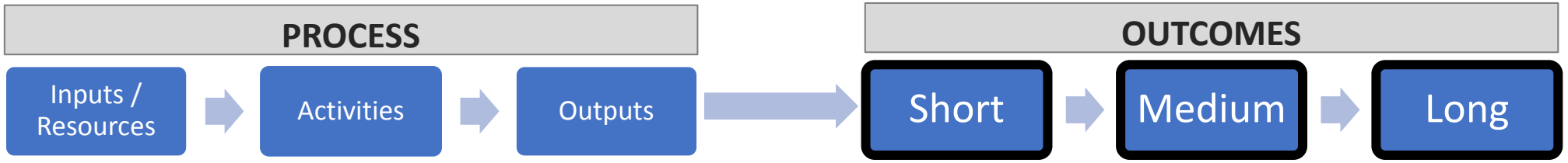
Key Components: Outputs



- **Outputs** are the direct products of a program's activities and may include types, levels and targets of services to be delivered by the program.

- Examples:
  - # of people attending workshops
  - # of people visiting sites, downloading/viewing information, etc.
  - # of people receiving training / attending presentations

Key Components: Outcomes



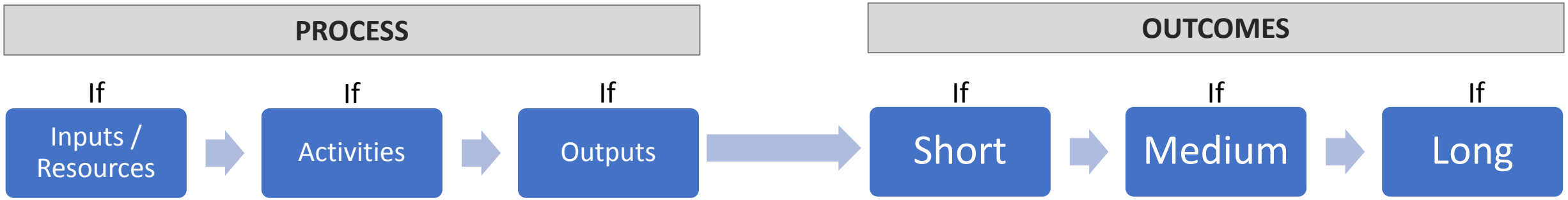
- **Outcomes** are the expected changes in the population served that result from a program's activities and fall along a continuum, ranging from short to long term results:
  - Short-term: changes in knowledge, skills, and/or attitudes (e.g., ↑ knowledge about earthquakes)
  - Medium-term: changes in behavior or action (e.g., ↑ mitigation plans updated, insured against quakes)
  - Long-term: changes in condition or status in life (e.g., ↑ building codes adopted, community resilience)

Differences between outputs vs. outcomes

Outputs	Outcomes
• Direct products of a program's activities / services • Often expressed numerically or can be quantified in some way • Examples: # attending workshops # receiving information # documents disseminated	• Changes resulting from program's activities / services • Quantifiable changes in knowledge, attitude, behavior, or condition • Examples: # participants mitigating, DCHO # counties updating plans # counties w/latest codes

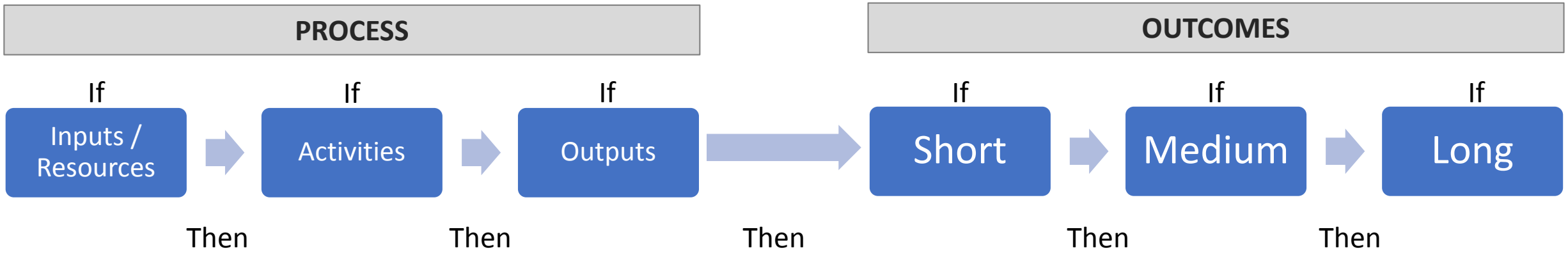
How to Read a Logic Model

- Read from left to right
- Two “sides” to a logic model - PROCESS and OUTCOMES

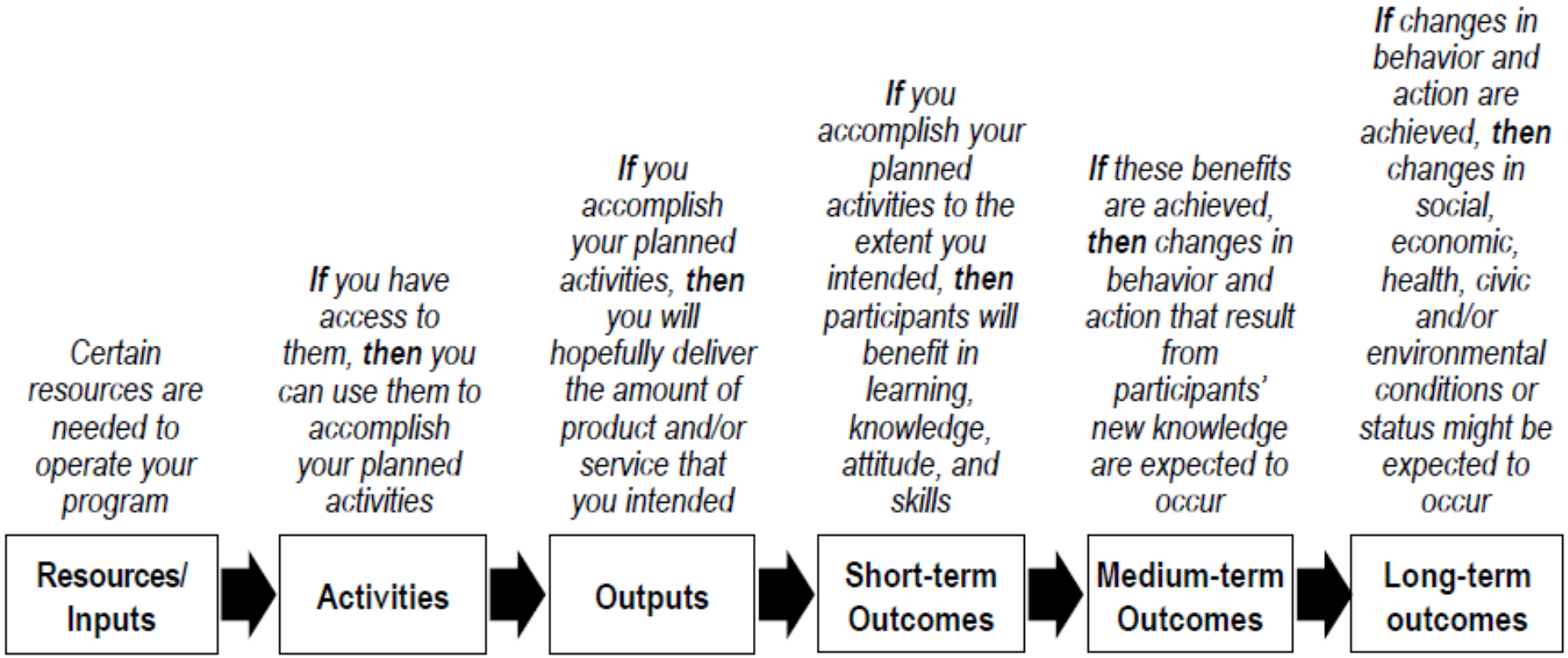


How to Create a Logic Model

- Two Approaches:
  - Forward Logic (left to right) – uses “if…then”
  - Reverse Logic (right to left) – asks “but how”



Creating a Logic Model: Forward Logic



Source: W.K. Kellogg Foundation Evaluation Handbook (2004), Adapted

How does this apply to NEHRP Grants

1. Develop seismic mitigation plans
2. Develop inventories
3. Update building codes, zoning codes, and ordinances
4. Increase earthquake awareness and education
5. Emergency management exercises with mitigation component
6. Promotion of Earthquake Insurance
7. Assistance to Multi-State Groups to do any of the above

Sample Logic Model from Guidance

ACTIVITY	PROCESS			OUTCOME		
Allowable Activity	**Inputs** (Resources necessary for	**Activities** (Activities Implemented)	**Outputs** (Direct products from Activities)	**Predicted and Measured Outcomes - Impact**		
				Short-Term	Intermediate	Long-Term
1. Support for Seismic Mitigation Planning	1. Human Resources: SHMO, EQ PM, Planner, Communications Specialist, Admin Staff. 2. Material Resou Contr	Four risk analysis and planning sessions conducted during 1st and 2nd Qtr; FY 2022; Draft	1. New or updated State earthquake risk analysis summary. 2. Creation of Planning Committee and	1. State approval of completed Risk Analysis. State approval of proposed seismic mitigation	1. Stakeholder review of proposed planning. 2. Public review of proposed planning. Incorporation of planning into next update of State Hazard Mitigation Plan. 3. State adoption of new planning information.	1. New State Hazard Mitigation Plan approved by FEMA during next plan cycle. 2. Increased community earthquake preparedness and community resilience.
2. Develop inventories and conduct seismic safety inspections of critical structures and lifeline infrastructure.	1. Hum Four t Admin Mater Diem Vehicl			ic e ilities gency eline	1. Socialization of reports with State leadership and Stakeholders. 2. Procurement of funding resources to implement proposed activities.	Documented seismic resilience improvements to lifeline infrastructure. Life saving improvements to structures completed.
3. Update building codes, zoning codes, and ordinances to enhance seismic safety.	1. Hum SHMO Officia Resou Video editing for rep			between Codes aboration Code of	Formalized/documented assessment of current state seismic codes and specific recommendations for updates.	1. Adoption and enforcement of updated seismic building codes. 2. Long-term community and economic resilience.
4. Increase earthquake awareness and education.	1. Hum PM, S Depar multip Web D suppo Resou Public			ool k and -structural s that can sed akeOut	Establishment of unique grant opportunities for Middle Schools that are willing to invest in significant earthquake mitigation projects.	Long-term state resident behavioral changes in individual earthquake preparedness and hazard mitigation. Increased community resilience.
5. Participation in emergency management exercises that substantially benefit earthquake mitigation efforts.	1. Hum local E State 2. Mat Media and pr			ntation of ency trophic sdown	Development of Recommendations for state emergency response plan revisions	Increased individual and community seismic safety.
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7. Assistance to Multi-State Groups for the purpose of supporting any or all Allowable Activities under this Funding Opportunity.	1. Human Resources: State EQ PM, Grants Management staff. 2. Material Resources: Sub grant funding in the amount of $20,000.	1. Provide $20,000 to Southwest Earthquake Consortium for the purpose of coordinating Multi-State response support plan.	New Southwest States Earthquake Response Support Plan. Plan specifically addresses the needs of states impacted by the Lansdown Fault.	Increased collaboration with adjoining/partner states that share the same earthquake risks (Lansdown Fault). 2. Increased opportunities to leverage partner	Creation and Approval of Multi-State Earthquake Response and Support Plan.	Increased individual and community seismic safety within multi-state region.

Sample Logic Model: Inventory/Inspections

ACTIVITY	PROCESS		
Allowable Activity	**Inputs** (Resources necessary for	**Activities** (Activities Implemented)	**Outputs** (Direct products from Activities)
2. Develop inventories and conduct seismic safety inspections of critical structures and lifeline infrastructure.	1. Human Resources: State EQ PM, Four trained Inspectors, Administrative support staff. 2. Material Resources: Travel and Per Diem for Inspectors, Rental Vehicles, etc.	Inspection of four State facilities determined to be lifeline infrastructure.	Four individual inspection reports, and one consolidated Findings summary report with mitigation recommendations.

OUTCOME		
Predicted and Measured Outcomes - Impact		
1. Identification and seismic inspection of at-risk lifeline infrastructure. 2. Improved collaboration between facilities management and State agency occupants of identified lifeline infrastructure properties.	1. Socialization of reports with State leadership and Stakeholders. 2. Procurement of funding resources to implement proposed activities.	Documented seismic resilience improvements to lifeline infrastructure. Life saving improvements to structures completed.

Reverse Logic Model Example: Outcomes

- What is the desired **long-term outcome**?
  –Increased community resilience in highest hazard counties because of hardened structures. ***But how?***

- What is the desired **intermediate outcome**?
  –Increased # of mitigation projects applied for and funded. ***But how?***

- What is the desired **short-term outcome**?
  –Local mitigation plans updated with new RVS data. ***But how?***

Reverse Logic Model Example: Process

- What outputs are needed to achieve the outcomes?
  –RVS reports and Hazus risk analysis completed and compiled for high hazard counties. ***But how?***

- What activities are needed to achieve the outcomes?
  –Conduct RVS of county/municipality critical facilities. ***But how?***

- What inputs are needed to achieve the outcomes? – NEHRP Funding, EQ program staff, SMEs (paid/volunteer), Seismic Safety Commission, County EMA, Facility managers

Verify your Logic Model

- Consider asking the following questions:
  - **Level of detail:** Does your model contain an appropriate amount of detail for its intended use? Does it include all key program components?
  - **Plausible:** Does the logic of the model seem correct? Are there any gaps in logic?
  - **Realistic:** Is it reasonable to assume that the program can achieve the expected outcomes?
  - **Consensus**: Do program staff and external stakeholders agree that the model accurately depicts the program and its intended results?

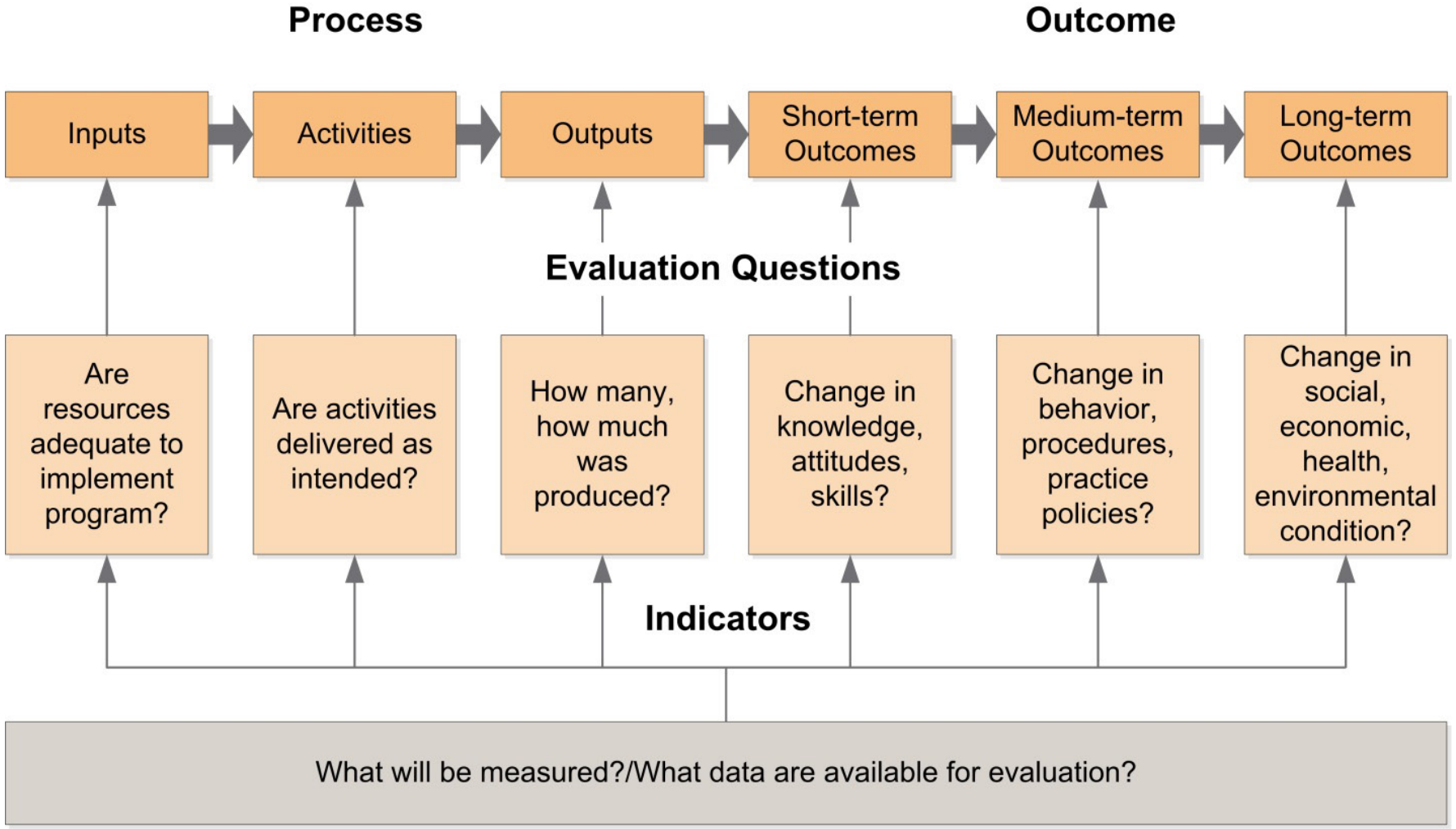
Performance Measurement and Evaluation

Performance Measurement	Program Evaluation
• Ongoing monitoring and reporting of program accomplishments and progress • Explains what level of performance is achieved by the program	• In-depth research activity conducted periodically or on an ad-hoc basis • Answers questions or tests hypotheses about program processes and/or outcomes • Used to assess whether or not a program works as expected and why (e.g., did the program cause the observed changes?)

As a performance measurement tool

- A logic model can serve as a framework for planning performance measurement activities. It can help to:
  - Identify components of your program to include in performance measurement
  - Identify indicators and the measures of progress/performance that align with program components

Evaluating Effectiveness



Group Exercise: NEHRP Project

Exercise #1

Develop a logic model for conducting annual earthquake summit for:

- ***Local government***
- ***Non-profits***
- ***Private sector partners***
- ***Other community stakeholders (e.g. schools***

Questions to Consider

Component		Questions to consider
	Inputs/ Resources	What resources do you need to implement your program?
	Activities	What activities will be or are being carried out to achieve your program's desired outcomes?
	Outputs	What are the direct products of your program's activities?
Outcomes	Short-term	What changes in knowledge, skills, and/or attitudes do you expect from your program?
	Medium-term	What changes in behavior or actions do you expect from your program?
	Long-term	What changes in status or condition do you expect from your program?

Example: EQ Summit Project

PROCESS		
Inputs What we invest	**Activities** What we do	**Outputs** Products/results from activities
• A planning committee • Money • Facility • NEHRP FY 22 Funding • In-kind contributions / sponsorships • Promotional materials • website	• invite guest speakers / pay for travel • Develop agenda w/ committee • Secure the facility • Secure the sponsors • Hold regular committee meetings • Invite audience (send out promotional materials) • Update the summit website • Provide CEUs / get them approved • Conduct the summit • Set up and conduct after-meeting survey • Promotion / social media strategy	• Number of people attending • CEUs • Number of committee meetings • Survey results • Operational guidance update • Increasing network partners • After-action report • Summary of meeting • Thank yous, acknowledgments, et al. • Identify location, date, committee of next meeting • Number of likes (social media) • Number of sponsors (quantify donations) • Executive summary

Example: EQ Summit Project

OUTCOMES		
Short-Term Changes in knowledge, skills, attitudes, etc.	**Intermediate** Changes in behavior or action that result from new knowledge	**Long-Term** Meaningful changes with lasting impact
• **Increase knowledge of seismic risk preparedness strategies** • **New partnerships** • **Community building** • **Feedback on how to improve future summits**	• **Getting engagement w/ other entities over time** • **Have participants update plans, make new partnerships, implement** • **Additional documentation of risk in Hazard mitigation plans** • **Draft BRIC project apps**	• **Save lives, property, & commerce** • **Protect the environment** • **Improve societal resilience** • **Creating greater equity** • **Get critical infrastructure to make meaningful changes** • **Engage academic partners** • **Increased number of project applications approved**

Group Exercise: Seismic Safety Program

Exercise #2

Develop a logic model for URM building inventory and retrofit program.

Utah Example: Outputs and Outcomes

1 Validate and Verify

- URM Public School Inventory.
- Stakeholder Engagement.

2 Begin Mitigation Planning

- Utah Schools in Hazard Mitigation Plans (HMPs).
- Stakeholder Engagement.

3 Identify Funding Opportunities

- Identify and Provide Funding Solutions.
- Stakeholder Engagement.

4 Seismic Mitigation Grant Funding and Action

- Identify Target Mitigation Completion Date.
- Community-Backed Grant Applications.
- Stakeholder Engagement.

Example: URM Inventory Program

OUTCOMES		
Short-Term Changes in knowledge, skills, attitudes, etc.	**Intermediate** Changes in behavior or action that result from new knowledge	**Long-Term** Meaningful changes with lasting impact
• **Identify the problem; understand social & financial challenges** • **Update state & local hazard mitigation plans** • **Building inventory** • **Released inventory report (buy-in of leadership)**	• **Retrofit existing URM buildings; new construction up to code**	• **Protect life, property, environment & commerce** • **Increased equity** • **URM-free state** • **Financial commitment from leadership**

Example: URM Program

PROCESS		
Inputs What we invest	**Activities** What we do	**Outputs** Products/results from activities
• **PIO** • **Support from FEMA Regional & subject matter experts, HQ, & other partners** • **Support from agency leadership** • **Partners (state SHMO, EQPM, engineer associations, etc.)** • **Legislative appropriations (state funding)** • **In-kind work** • **NEHRP funding**	• **Develop engagement strategy** • **Conduct the screenings; develop inventory** • **Conducting stakeholder workshops, presentations, etc.** • **Meet with partners; seismic safety commission** • **Conduct training (for inspectors, volunteers)** • **Developing continuing education requirement / credits**	• **Stronger/Increased partnerships between federal, state & local** • **Buy-in from school districts** • **Report of buildings surveyed; shared with stakeholders** • **Number of engagements with stakeholders (school districts; contractors)** • **Number of buildings surveyed** • **Number of plans updated** • **Identification of gaps** • **Publications of findings**

Things to Consider

- Developing a logic model is not completed in one session or alone.
- There is no one best logic model.
- Logic models represent intention.
- A program logic model can change and be refined as the program changes and develops.
- Programs do not need to evaluate every aspect of a logic model.
- Logic models play a critical role in informing evaluation and building the evidence base for a program.

Resources

- W.K. Kellogg Foundation Logic Model Development Guide

http://www.wkkf.org/resource-directory/resource/2006/02/wk-kellogg-foundation-logic-model-development-guide

- Innovation Network Logic Model Workbook

http://www.innonet.org/client_docs/File/logic_model_workbook.pdf

Additional Resources

- To research logic modeling and performance measures a suggested website is the Corporation for National and Community Service, a federal agency. (http://www.nationalservice.gov/resources/americorps/evaluation-resources-americorps-state-national-grantees)

State Updates & “Fireside Chats”

- Mississippi – Jasmine Johnson-Divinity
- Arizona – Mike Conway
- Indiana – Allison Curry Raspberry Shake Project
- Oklahoma (Virtual)
- California (Virtual)

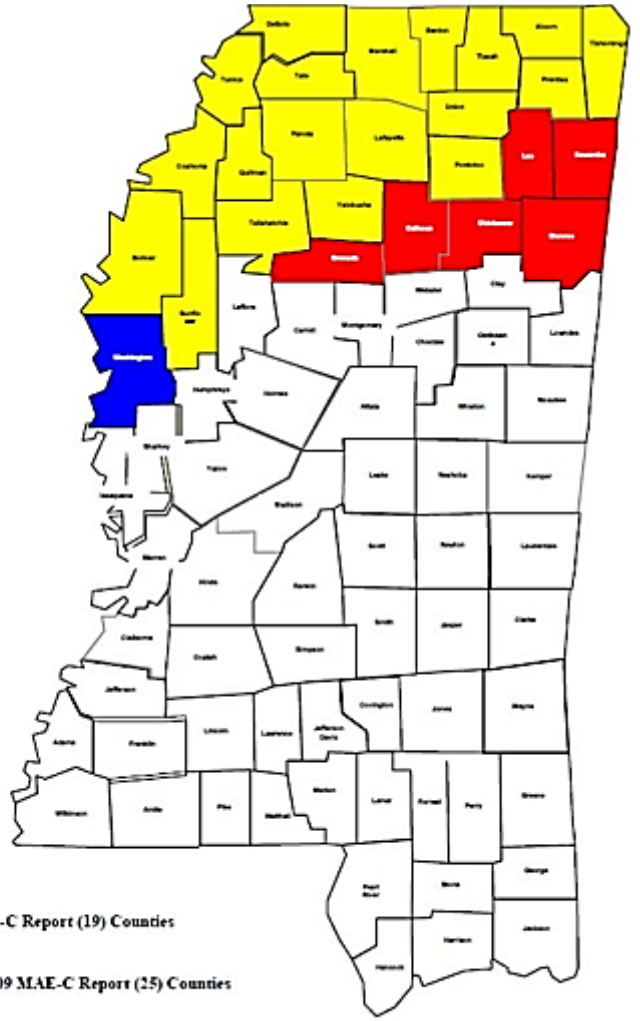
NEPM 2022 Brief

MARCH 29-31, 2022

What's going on in Mississippi?

26 NMSZ
Critical Seismic Counties

DeSoto, Marshall and Tunica Counties border Shelby County, TN (Memphis)



January 20, 2021 – Collins, MS

- **2.1 Magnitude at 1:33 AM**
- **33 miles NW of Hattisburg, MS**

The Great ShakeOut!

2020

229,399 participants statewide

2021

343,658 participants statewide

Join Us in the World's Largest Earthquake Drill.
Register Now at ShakeOut.org
ShakeOut

What's Next?

Mississippi will host three courses this year

FEMA P-767, *Earthquake Mitigation for Hospitals*

- The training introduces participants to earthquake hazards in healthcare settings and methods that can be used to analyze and reduce risks of damage in hospitals and other medical buildings.

FEMA 395, *Earthquake Safety and Mitigation for Schools*

- How to assess and analyze seismic risks typical to school buildings; develop actionable plans for reducing and managing these risks; secure nonstructural components in school facilities; and implement incremental seismic rehabilitation as an affordable approach for protecting existing school buildings and ensuring occupant safety.

FEMA E-74, *Reducing the Risks of Nonstructural Earthquake Damage*

- Describes the sources and types of nonstructural earthquake damage and the effective methods and guidance that individuals and organizations can use to take action now before the next earthquake and minimize future injuries and property losses from nonstructural risks. Nonstructural components of buildings include all elements that are not part of the structural system; that is, the architectural, mechanical, electrical, and plumbing systems, as well as furniture, fixtures, equipment, and other contents.

FEMA

Mississippi NMSZ (Earthquake) Plan Revision

MAECENTER
toward a Multi-hazard Approach to Engineering

ILLINOIS

CONTINUED.

Mississippi NMSZ (Earthquake) Plan Revision

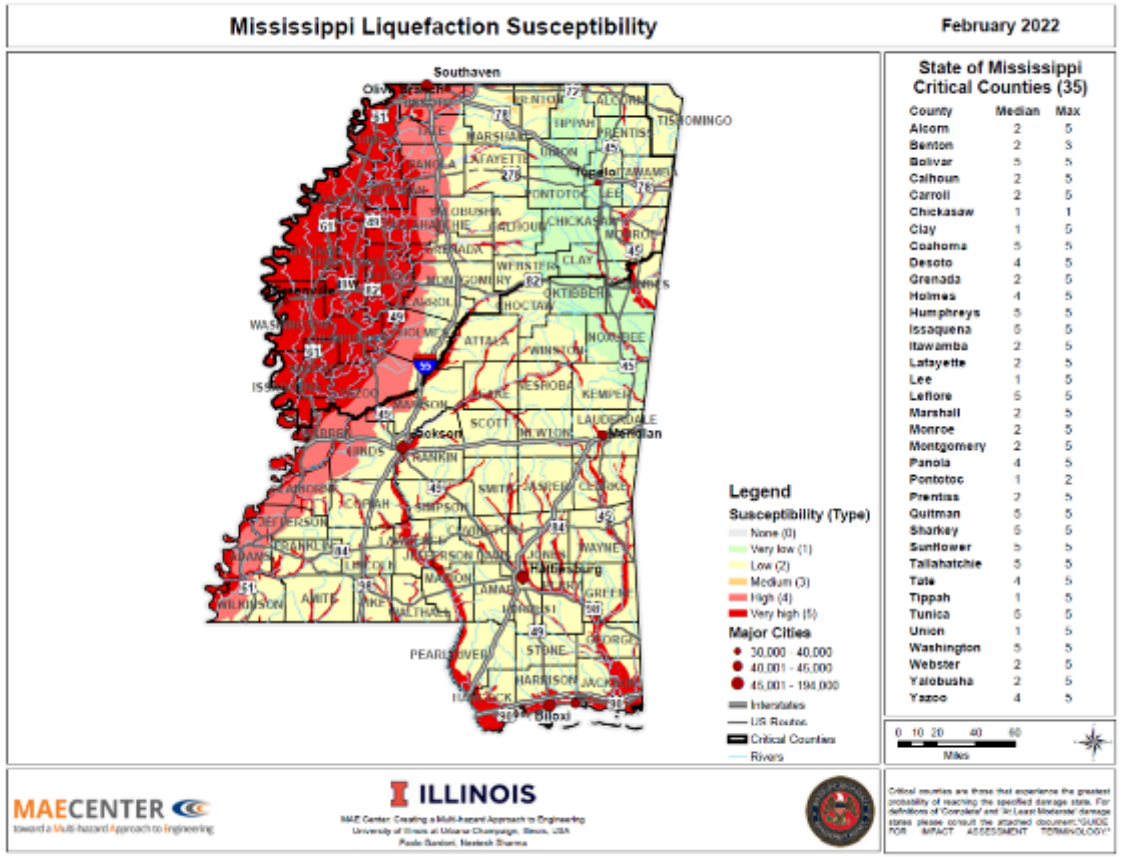


Figure 3: Liquefaction Susceptibility

THE GREAT SHAKEOUT 2022

Preparing for the BIG ONE!

- Visit schools in the highly impacted areas to spread EQ awareness.
- Display billboards in the northern counties to promote the Great ShakeOut Drill.
- FY2022 Promote EQ Insurance
- 2023 Mississippi EQ Seminar

NEW!

Questions?

Contact Information:

Jasmine Johnson-Divinity

Earthquake Program Manager

Northern Bureau Preparedness Officer

jdivinity@mema.ms.gov

601–933–6374 (D)

601–850–8566 ***(C)***

National Earthquake Program Managers Meeting

Arizona Report

i. Pilot URM Study: Flagstaff & Yuma
ii. Earthquake INFO Packages
iii. Fault Studies
iv. ATC Training
v. Great Shakeout

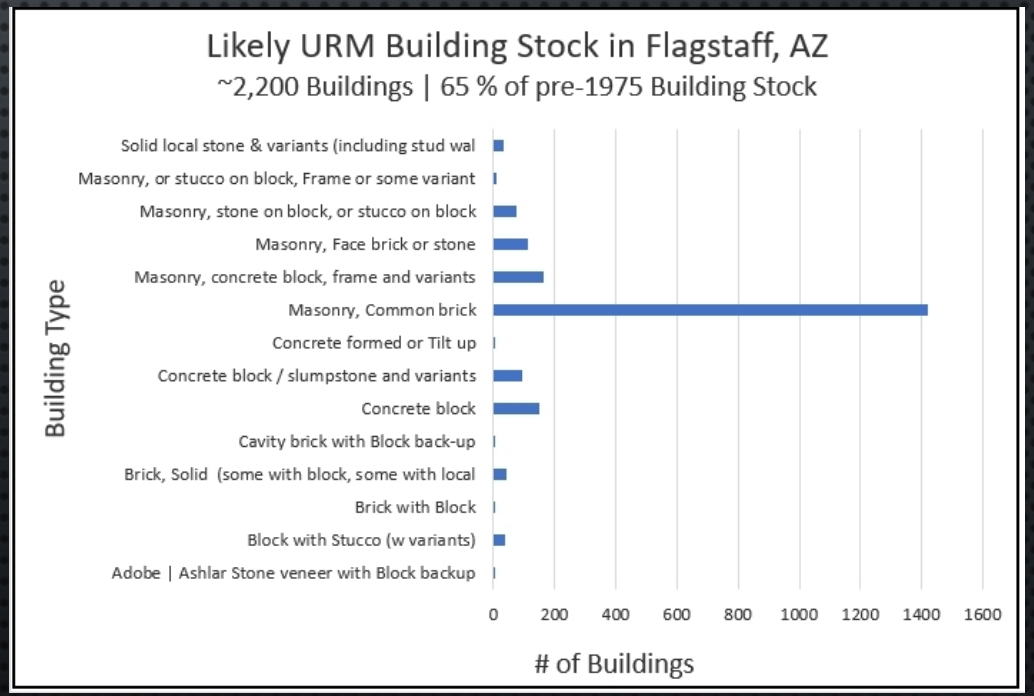
UA SCIENCE
ARIZONA GEOLOGICAL SURVEY
Geosciences serving Arizona since 1887

Photo: L. Friedman

i. Pilot Study - URM

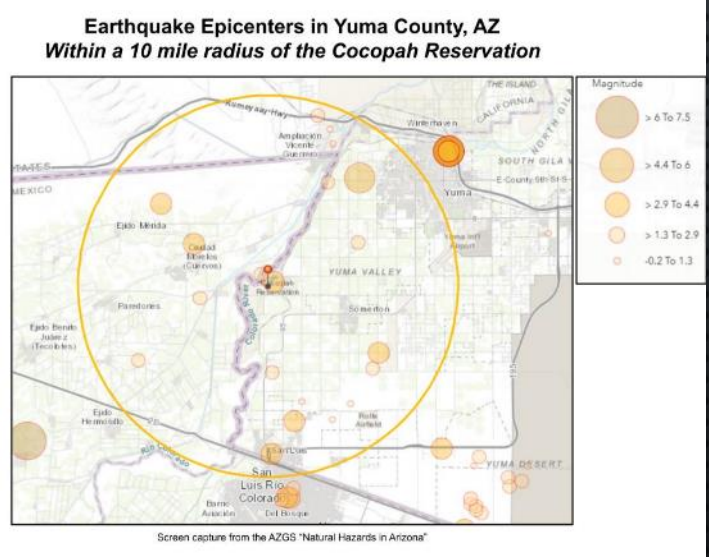
- Flagstaff
- Yuma

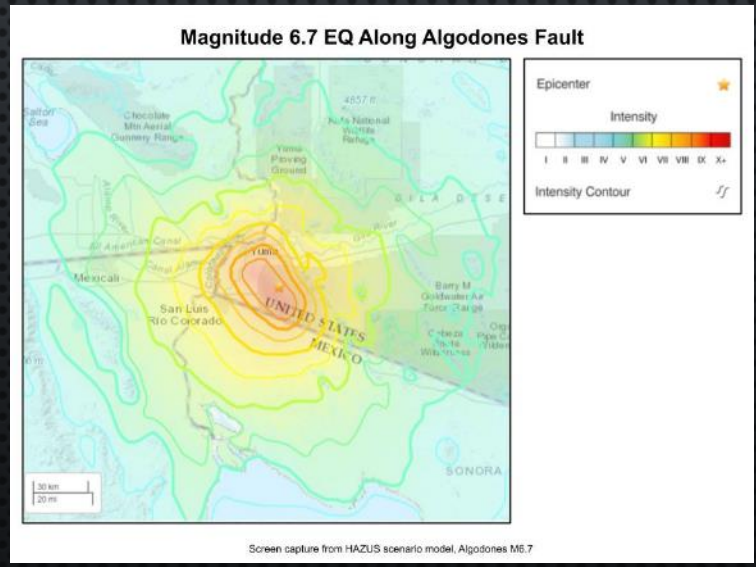
Who knew?

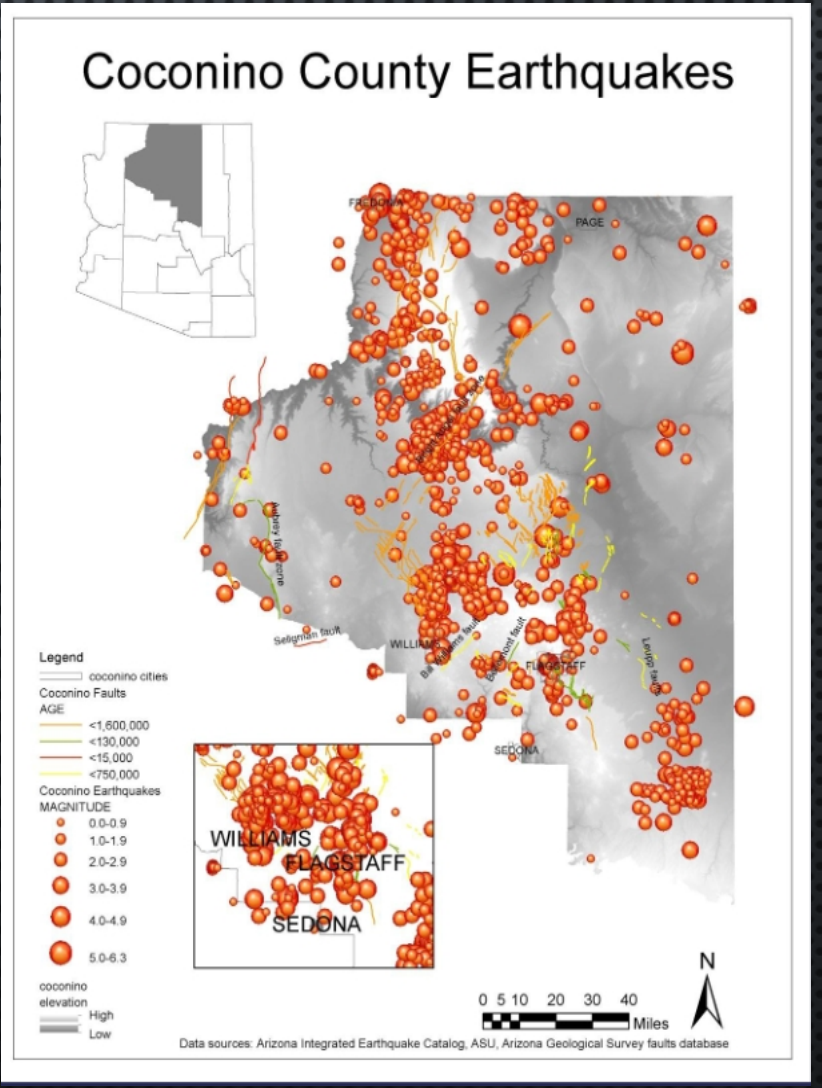


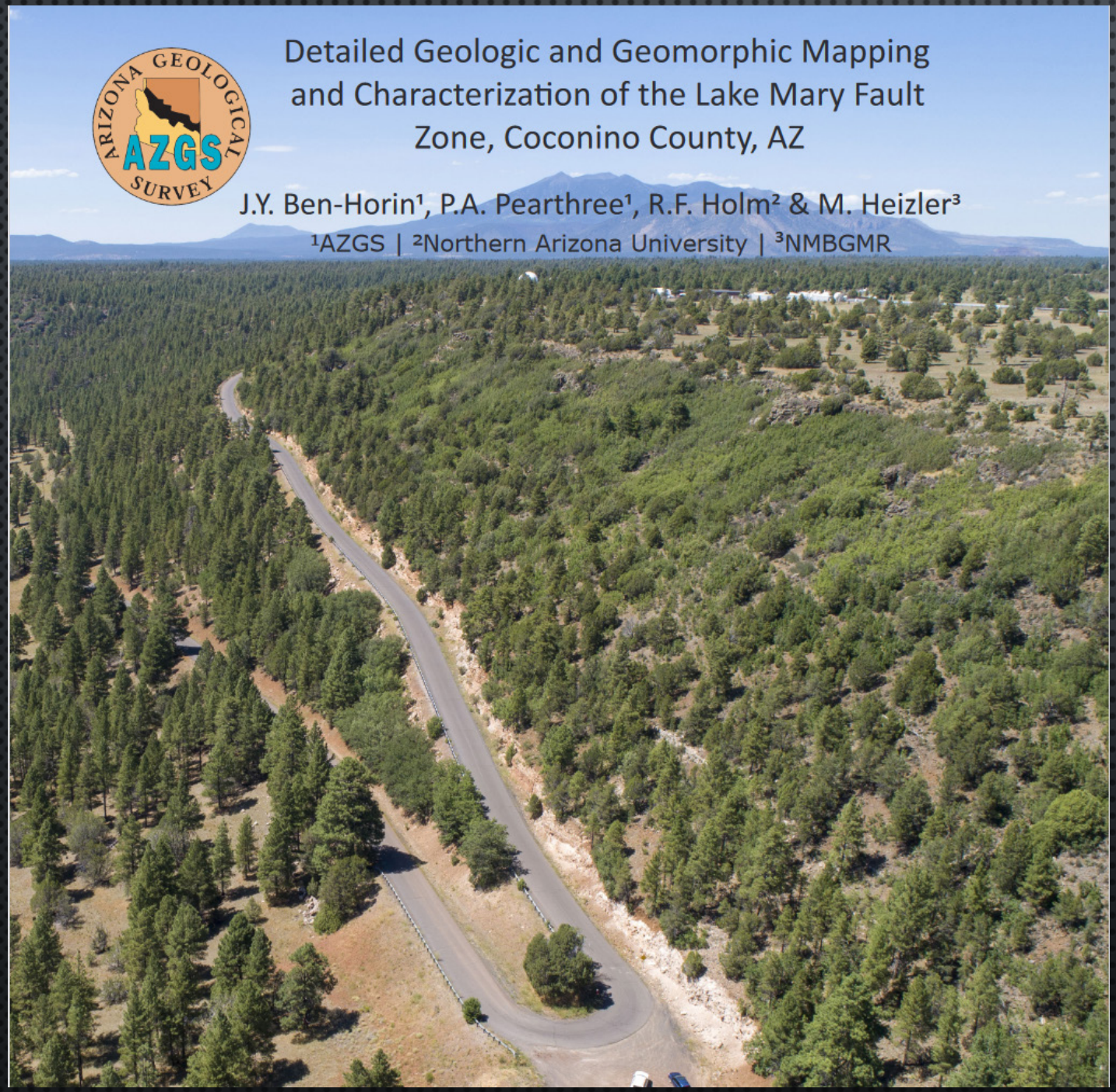
ii. Earthquake INFO Packages: *Just the facts!*

Counties	Tribes
Cochise	
Coconino	Kaibab Paiute
Mohave	Hualapai
Pima	Pasqua Yaqui
Yuma	Cocopah









iii. AZGS Active Fault Studies

- Lake Mary - Flagstaff
- Mead Slope – Lake Mead
- Carefree Fault – NE PHX Basin

Objectives

i. Characterize fault activity – timing, length, orientation

ii. Estimate recurrence & maximum event

iv. Applied Technology Council Training

Spring-Summer 2022

In conjunction with Nevada and Utah:

- ✓ FEMA P-154
- ✓ ATC-20
- ✓ Classroom & Beyond

Shout out ~

John Crofts (UT) and Janell Woodward (NV)
& Ginevra Rojahn (ATC)

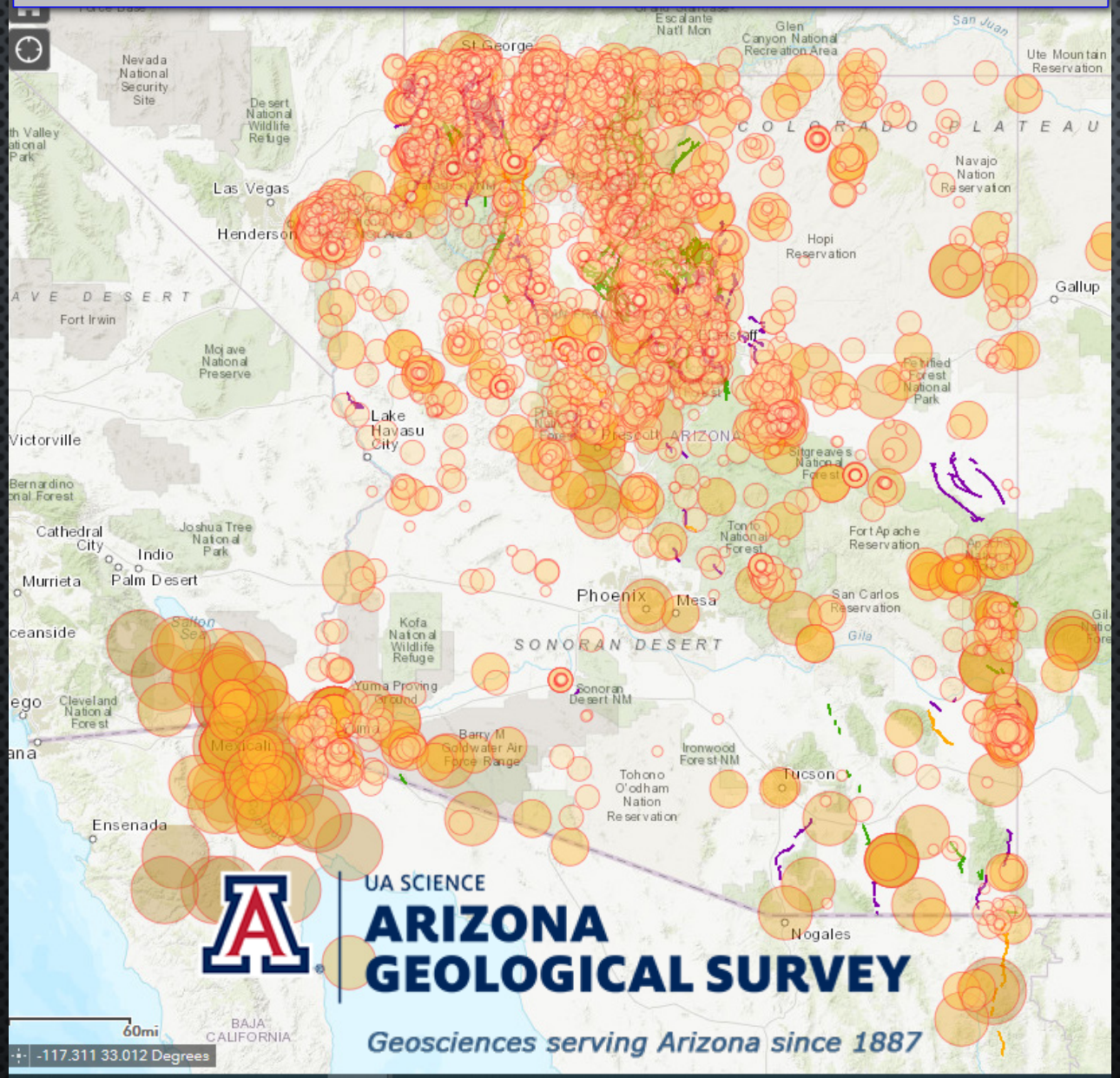
v. Great Arizona ShakeOut

AZGS , DEMA & Partners

Acknowledgments

- ✓ FEMA – NEHRP
- ✓ SCEC
- ✓ DEMA

Faults & Earthquake Epicenters



Michael Conway
Sr. Research Scientist
Arizona Geological Survey
fmconway@arizona.edu

AZGS Websites

- AZGS Portal
- AZGS Mining Data
- AZGS Document Repository

AZGS Social Media

Blog	Arizona Geology Blog
Facebook	AZ.Geological.Survey
Twitter	AZGeology
Instagram	azgeology

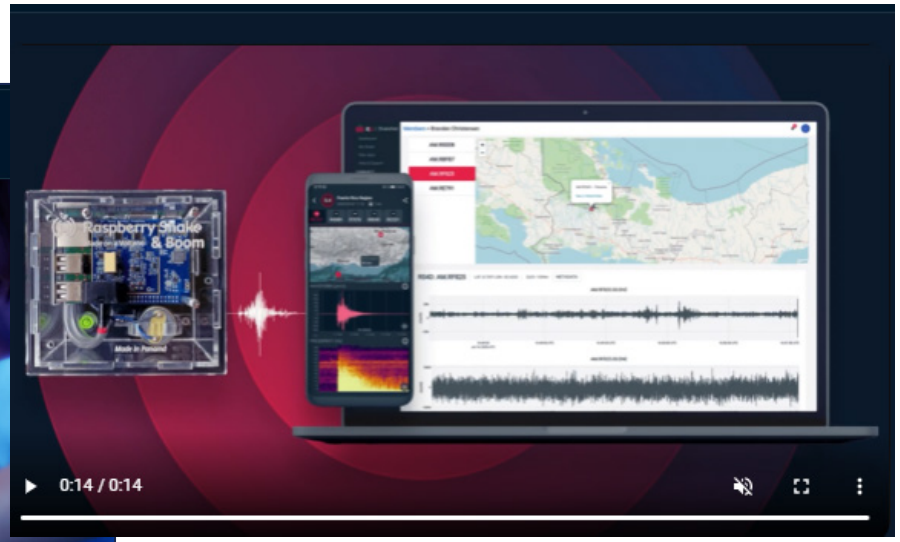
STATE OF INDIANA

Fireside: Raspberry Shake Project

Allison Curry
Natural Hazards Planning Manager
Indiana Department of Homeland Security (IDHS)

RASPBERRY SHAKES

- Introduction of Project – Not NEHRP
  - Know your SHMO; State Hazard Mitigation Plan 2018/Mitigation Grant



RASPBERRY SHAKES

- What are raspberry shakes?
- GOAL: Increase earthquake awareness
  - *Adaptable STEM learning*

RS3D | Turnkey

$949.99 – $1,414.99 USD ★★★★★ (1 customer review)

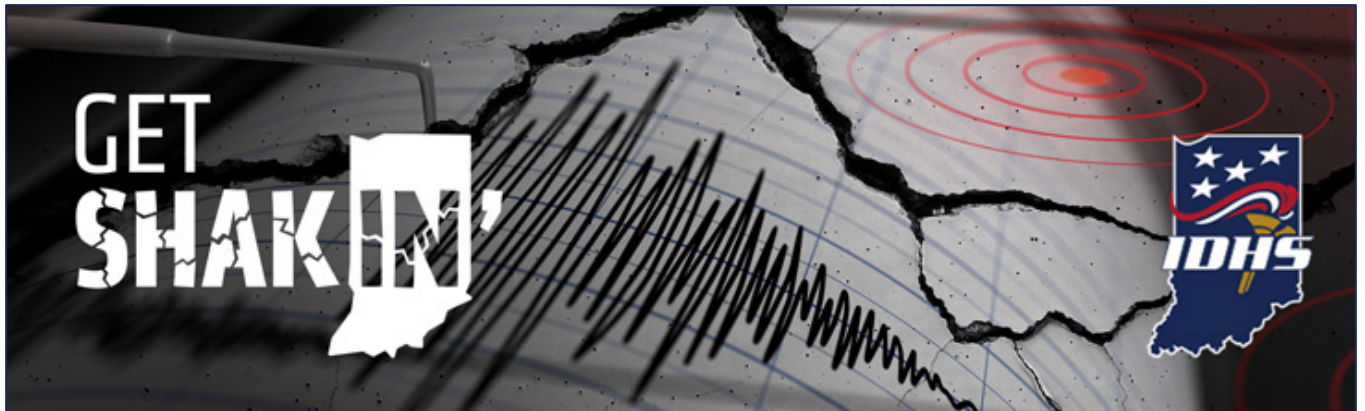
Triaxial Velocity Monitor

- Professional grade seismograph with orthogonal east, north, and vertical geophones
- Measure local and distant earthquake motion both horizontally and vertically
- Detect all magnitude local seismic activity, and larger earthquakes from across the globe
- Advanced sensor capabilities for high quality seismic data across all axes
- **Outdoor Only:** Includes a custom built IP67 rated dust proof, bug proof, all weather enclosure
- All turnkey products come pre-assembled

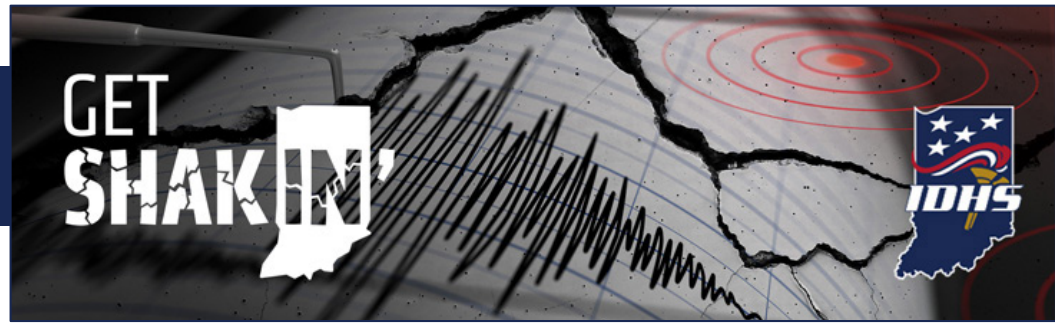
Enclosure : Indoor

RASPBERRY SHAKES

- Process and lessons learned
  - Involved ALL divisions….
    - Know Your SHMO
    - Initial Proposal submitted and approved by FEMA
    - Grants, Legal & Fiscal Division – sole source vendor justification & approval from State Administration office
      - (RS based in Panama)
    - Worked with Dept. of Education → Engaged IDHS PIO



RASPBERRY SHAKES



- Process and lessons learned
  - Voted on the Top 10 video submissions
    - Top 1st Contest Winner hosting our Indiana Geological & Water Survey (IGWS) Quake Cottage

Top 5 Entries

Earth Space & PBL Class
West Washington Jr./Sr. High School
(Washington County)

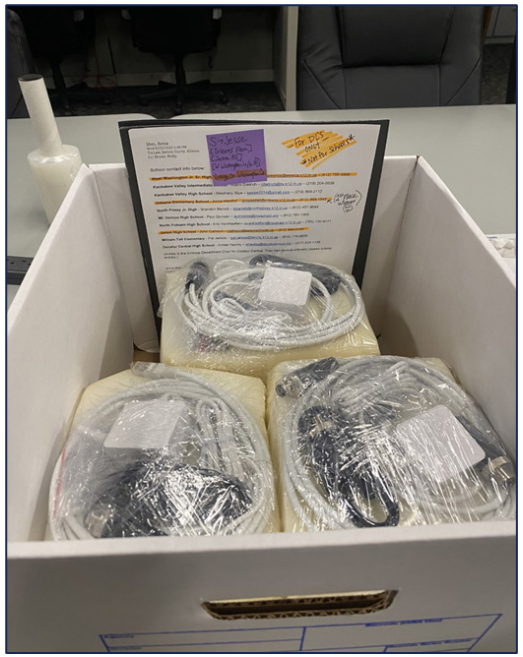
Sipe, Berndt and Misch
Kankakee Valley High School
(Jasper County)

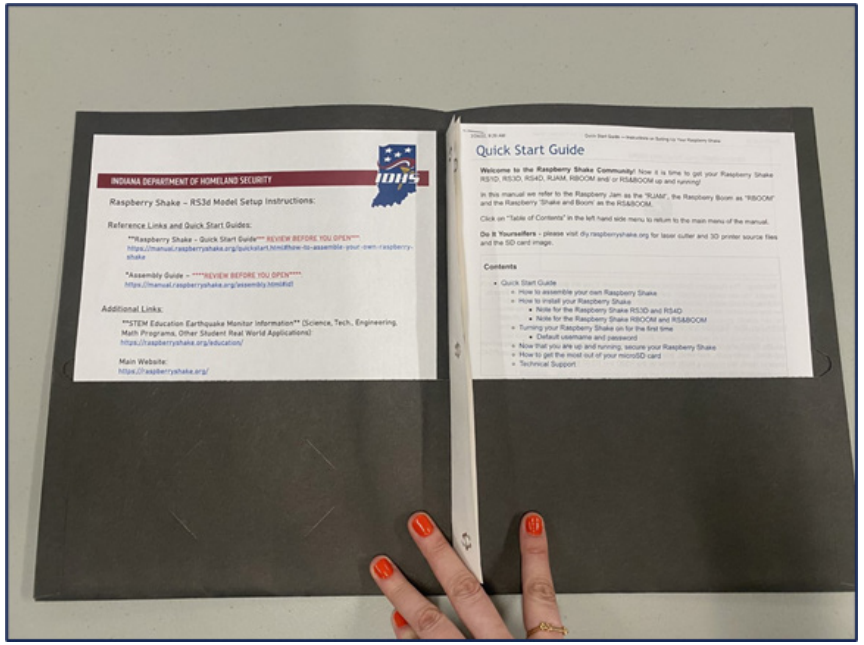
Salem High School Science Club
Salem High School
(Washington County)

High Ability Class, Orleans Elementary School (Orange County)

RASPBERRY SHAKES

- Process and lessons learned
  - Involved ALL divisions…
    - Utilized IDHS District Liaisons for delivery to local communities
    - Prepping packages for teachers





RASPBERRY SHAKES

- Ways Forward…
  - Purchasing remaining 20 Raspberry Shake devices
  - Aiming for annual project
  - Statuses/Checking in with schools – Quarterly Reports

- Future:
  - Strategically placed across all 10 IDHS Districts

Thank you!

ACurry@dhs.IN.gov

California Earthquake Program

California Governor's Office of Emergency Services
Jose Lara, Seismic Hazards Branch Manager
Yvette LaDuke, Earthquake Program Manager
Sheri Blankenheim, Earthquake Program Specialist
Earthquake, Tsunami and Volcano Program

Partnerships

- FEMA
  - Funding and National Level Exercise Support
  - Hazus Support and Training
- California Geological Survey
  - Earthquake Clearinghouse Coordination
  - State Operations Center – Response Technical Support
- University of Southern California, Southern California Earthquake Center
  - Earthquake Country Alliance
  - ShakeOut
- California Earthquake Authority
  - Brace and Bolt Program - $3,000 per Approved Applicant
  - Earthquake Insurance
- Disaster Resistant Business
  - Webinars with Small and Medium Businesses and Organizations
  - Provide Tool-Kit to Support Planning and Resiliency
  - Food Bank Project

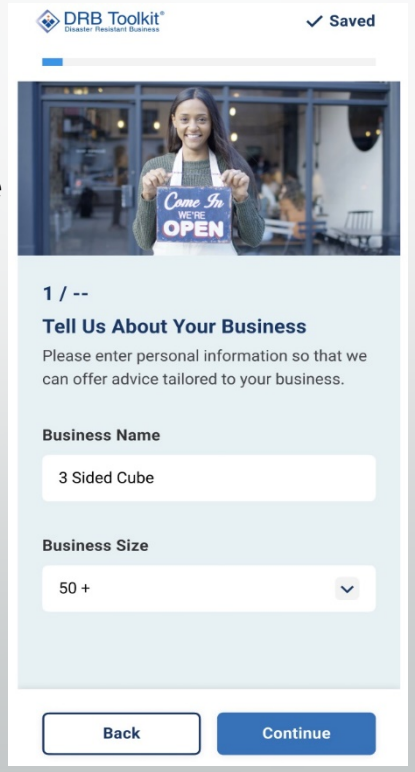
Current Projects

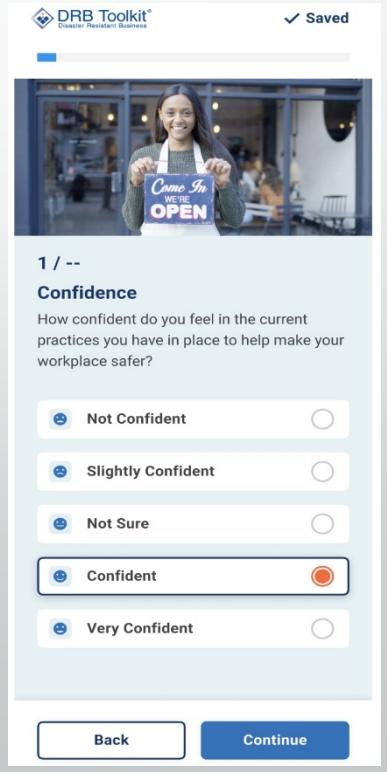
- Individual and Community Preparedness Through Earthquake Country Alliance
  - Support Statewide Preparedness
    - Southern California, Central Coast, Bay Area and Redwood Coast Tsunami Work Group
  - Non-Structural Mitigation Efforts
    - Mini Awards Program
  - ShakeOut Planning and Coordination
- Seismic – Physical Inventory Project
  - Securing a Contractor (Structural Engineer)
  - Develop a Physical Inventory of Critical Facilities
  - Conduct Assessments for Critical Facilities Using Hazus

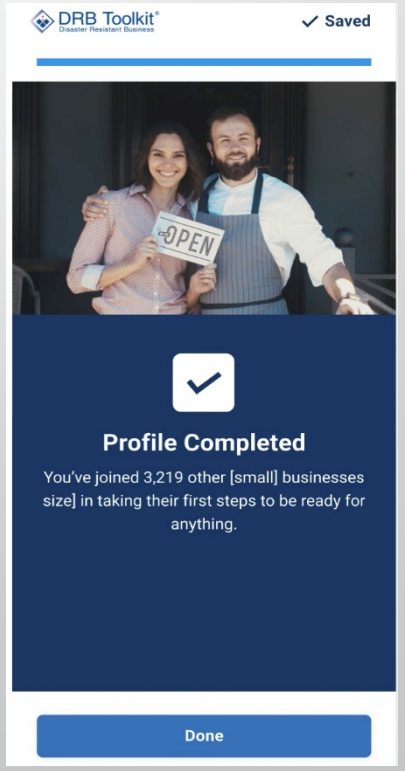
Current Projects

Disaster Resistant Business Toolkit (drbtoolkit.org)

- Champion Business Resiliency to Foster Economic and Community Recovery Following and Earthquake Event
- Conducting 2 Webinars with Small and Medium Businesses and Non-Profit Organizations
- Website
  - Update and Refresh Website
  - Disaster Planning tool:
    - Preparedness Tips
    - "Are You Ready?" Checklist
    - Toolkit Software
  - Mini Tool
    - Draft – Under Development



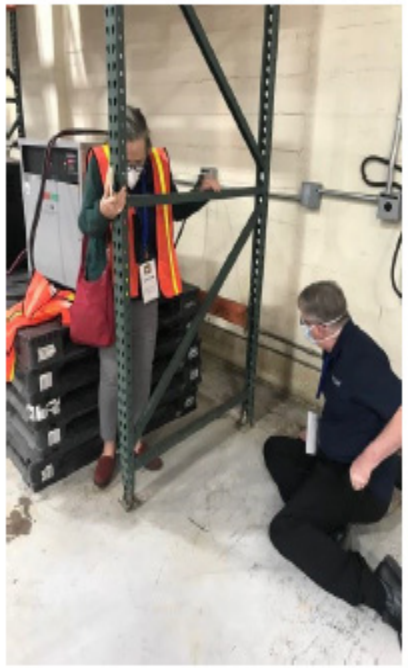


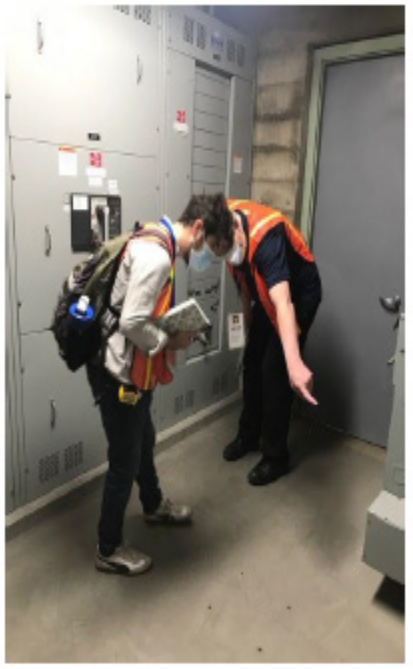


Current Projects

Disaster Resistant Business Toolkit (drbtoolkit.org)

- Food Bank Project – Increase Resilience, Shorten Recovery Time
  - Structural Risk Assessments – 3 Locations
  - Non-Structural Risk Assessments – 10 Locations
  - Mitigation Training Workshop
  - Hazard Mitigation Grant Application Assistance

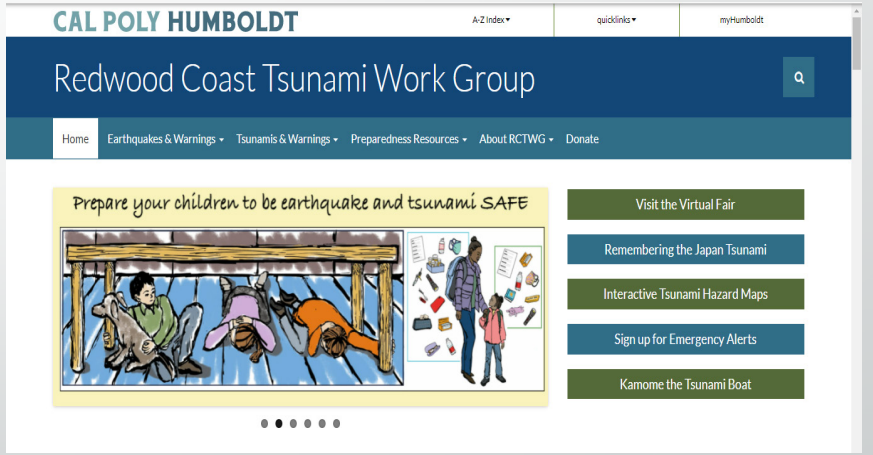




Current Projects

- EQ Clearinghouse
  - Updating Clearinghouse Plan
  - Developing GIS Training for Emergency Managers

- Redwood Coast Tsunami Work Group
  Cascadia Region
  - EQ Education and Outreach
  - Mendocino Triple Junction Video
    30th Anniversary of Cape Mendocino EQ



- MyShake – Expand Use (earthquake.ca.gov)
  - MyShake Expanded to Oregon and Washington

Proposed FY22 NEHRP Projects

- Increased Accessibility
  - Translating Documents and Websites
- Increase Focus on Mitigation
  - Individuals and Businesses/Non-Profit Organizations
  - Expanding
    - Focus on Independent Living Centers - Clients
    - Focus on Socially Vulnerable in High-Risk Communities
- Continue to Expand Outreach and ShakeOut Participation
- Expanding Foodbank Project
- EQ Clearinghouse Tabletop Exercise
  - Catastrophic EQ Requiring 2 Separate Clearinghouses (both sides of EQ fault)
    - Hayward or San Andreas

FEMA

Lunch Presentation:

FEMA Building Code Strategy

Mariam Yousef

FEMA Building Science Branch

FEMA Building Codes / NEPM 2022

Mariam Yousuf, Civil Engineer, FEMA HQ Building Science Branch

March 31, 2022

FEMA

Why Building Codes?

Building Codes Save Lives and Property:

- Hazard-resistant building codes are projected to prevent $132 billion in losses over 30 years
- Building codes have $11:$1 return on investment
- Hazard-resistant building codes reduce the impact of climate change
- Protect vulnerable and underserved communities
- Advance equity by making resources, policies and best practices serve all communities

2021 Southeastern United States Tornadoes

FEMA

FEMA Building Codes: Where We've Been

- Over 30 years of codes and standards advocacy have advanced earthquake, hurricane, flood and other hazards resilience (exceeds NFIP requirements and compliance with NEHRP-recommended provisions).
- Thousands of buildings and structures have been repaired, retrofitted and rebuilt using disaster resistant codes, FEMA hazard mitigation guidance and federal assistance.
- Countless lives have been saved, billions of dollars in damages have been prevented, and losses have been avoided through pre- and post-disaster mitigation and recovery.
- FEMA issued its first policy on building codes in 2016 (FP: 204-078-2 Risk Reduction Minimum Codes and Standards Policy).

Evolution of Building Codes at FEMA

What Has Changed:

- The DRRA was passed in 2018 with significant building codes requirements.
- FY21 OMB supported part of FEMA's PDO request for the Building Codes Strategy (8 new positions).
- Nationwide hazard-resistant code adoption is trending upward at 25 percent, but there is still a long way to go.
- In recent years, there has been a growing resistance to timely building code adoption.
- FEMA has built a foundation demonstrating the value of building codes (NIBS Mitigation Saves studies, Building Codes Save study, NFIP-related studies and reports, National Mitigation Investment Strategy, ATC-117 Report, etc.).

Disaster Recovery Reform Act of 2018

- The Disaster Recovery Reform Act of 2018 represents one of the most comprehensive emergency management reforms since the creation of the Stafford Act. Its provisions reflect a historic investment in pre-disaster mitigation and community capacity building.
- By aiding the Nation in reducing risk, these reforms also support the reduction of disaster costs.
- You can learn more about the implementation of over 50 new authorities throughout the agency here: https://www.fema.gov/disaster/disaster-recovery-reform-act-2018.

FEMA

DRRA Provisions Linked to Building Codes

	FEMA BSB Lead
DRRA Sec. 1206(a), Eligibility for Code Implementation and Enforcement	Greg Wilson
DRRA Sec. 1206(b), Eligibility for Code Implementation and Enforcement	Greg Wilson
DRRA Sec. 1208, Prioritization of Facilities Margins	Shane Crawford
DRRA Sec. 1233, HMA for Earthquake Early Warning	Mariam Yousuf
DRRA Sec. 1234, National Public Infrastructure Pre-Disaster Hazard Mitigation	Juan Nieves
DRRA Sec. 1235(a), Additional Mitigation Activities	Juan Nieves
DRRA Sec. 1235(b), 406 Codes and Standards	Shane Crawford
DRRA Sec. 1241, Post-disaster Safety Assessment	Mariam Yousuf

Historic Funding Opportunities for Resilient Building Codes

FY2021 Resilience Funding

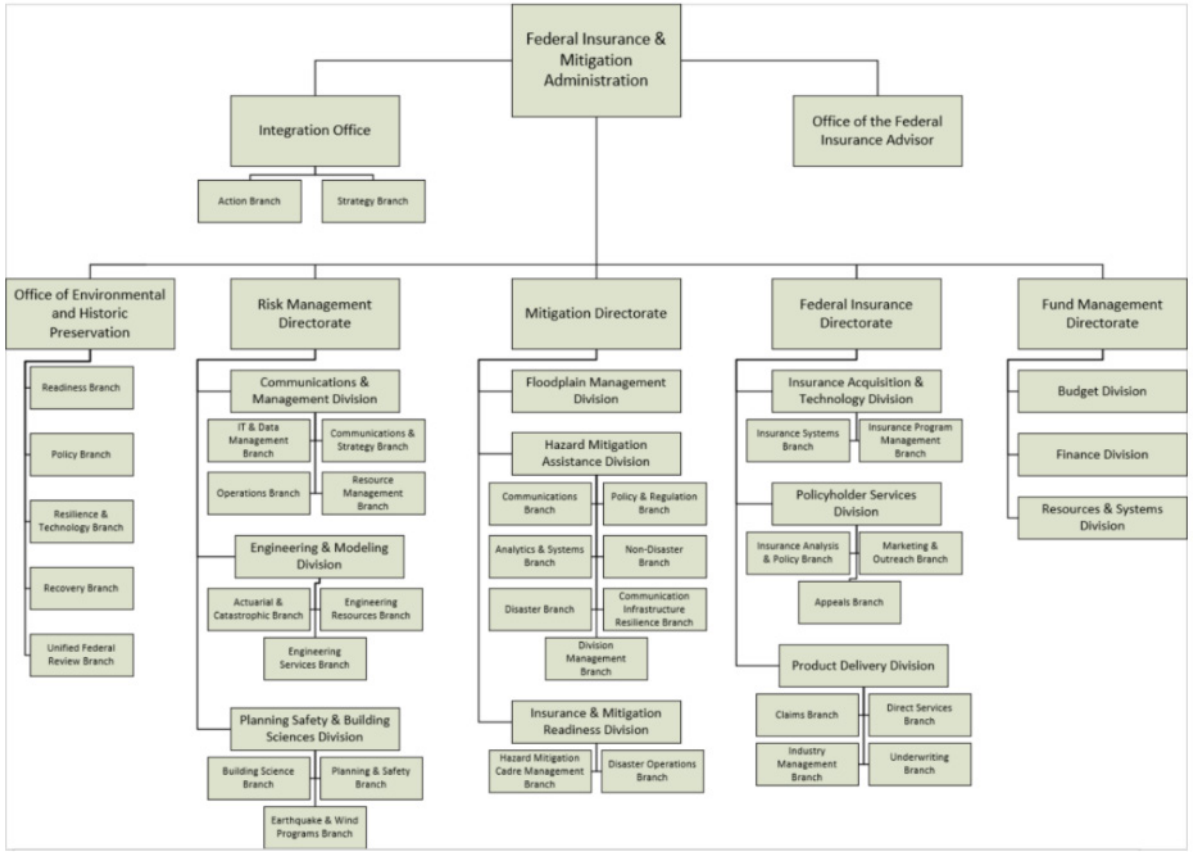
- **BRIC** State/Territory/Tribal set-aside (includes eligible building code activities) **increased to $1M**
  - Continues incentivizing adoption of building codes based on **latest published editions** of building codes
  - Includes new priority to **enhance climate resilience and adaptation**, prioritizes benefits to **disadvantaged communities**, and partially implements **Federal Flood Risk Management Standard (FFRMS)**
- **FMA** total funding increased to $160M ($10M for project scoping; $70M for community flood mitigation projects; $80M for technical assistance, flood hazard mitigation planning, and individual flood mitigation projects)
- **HMGP** funding received $3.4B from covid relief

Infrastructure Investment and Jobs Act (Nov. 15, 2021)

- Enables FEMA to act now to empower communities to adapt to and recover from **climate change impacts**
- Provides an additional $1B over five years for BRIC
- Provides **$3.5B in FMA grants** over five years and provides adjusted cost shares for socially vulnerable and lower-income communities and individuals
- Provides **$500M to STORM Act**, including funding local governments to establish and carry out the latest published edition of relevant building codes, specification, and standards for the purpose of protecting health, safety, and general welfare of the building's users against disasters and natural hazards

Planning, Safety Building Science Division Org Chart

- Planning, Safety and Building Science Division (PBD) falls under Resilience => FIMA
- Currently consists of 3 branches



FEMA

FEMA HQ Building Science Team

Our Mission: Lead the advancement of state-of-the-art design and construction to create safer communities

FEMA

FEMA Building Codes Program – Hiring Recap

- A total of 8 positions will be filled in FY22,
  - 1 being the HQ Building Code Coordinator (GS-14)
  - 7 in the Regions (GS 12/13 Ladder, GS13 depending on Region preference)
- 3 positions will be filled in FY23
- **PDO's related to Building Codes Program currently being developed for future fiscal years**

Org. Charts and PDs by Region Receiving PINS in FY22

Region	Org Chart Submittal	Position Description Classification
1	Risk Analysis Branch	Community Planner
2	Risk Analysis Branch	Architect/Civil Engineer
5	Risk Analysis Branch	Civil Engineer
7	Mitigation Division	Program Specialist (Project Manager)
8	Risk Analysis Branch	Architect Civil Engineer Interdisciplinary or Physical Scientist
9	Risk Analysis Branch	Interdisciplinary
10	Risk Analysis Branch	Architect/Civil Engineer

*Regions 3, 4, 6 getting one additional position each in FY23

FEMA

The Need for a FEMA Building Codes Strategy

Existing Gaps:

- Lack of consistent building codes policies and guidance across the agency.
- Need for consistent HQ and regional messaging and outreach to SLTTs.
- Insufficient training, implementation and guidance for FEMA and its stakeholders.
- Need to leverage existing and new partnerships to increase building codes adoption and enforcement.

FEMA-Wide Membership

ENTERPRISE STEERING GROUP

- Dep. Associate Administrator, FIMA (**Chair**)
- Senior Leadership, Resilience
- Assistant Administrator, Risk Management
- Senior Leadership, Mission Support
- Assistant Administrator, Mitigation
- Assistant Administrator, Insurance
- Assistant Administrator, Nat. Preparedness
- Dep. Associate Administrator, OPPA
- Senior Leadership, Office of Chief Counsel
- Senior Leadership, Office of the Chief Financial Officer
- Assistant Administrator, Response
- Assistant Administrator, Recovery
- Deputy Administrator, U.S. Fire Administration
- FEMA Regions
- Regional Administrators (coordinated through Regional Ops)
    - Region I
    - Region IV
    - Region X
- Director, External Affairs
- Director, ODIC

SECRETARIAT

- BCWG Co-Chairs
- Secretariat Lead
- Contracting Officer Representative (COR)
- Building Science Branch
- Earthquake and Wind Programs Branch
- FEMA Regions
- FIMA Integration Office
- Program Management
- Production & Technical Support

WORK GROUP

- BCWG Co-Chairs
- Secretariat Lead
- Contracting Officer Representative (COR)
- Office of the Administrator
    - Office of Disability Integration and Coordination
- Office of Policy and Program Analysis
- Office of External Affairs
- Resilience
    - FIMA (Federal Insurance Directorate)
    - FIMA (Mitigation Directorate)
    - FIMA (Risk Management Directorate)
    - National Preparedness
- Office of Response and Recovery
    - Response
    - Recovery
- U.S. Fire Administration
- FEMA Regions
    - Region IV
    - Region VI
    - Region VIII
    - Region X

FEMA Building Codes Strategy

Building Codes Strategy: Vision and Mission

Vision

A resilient nation with superior building performance in disasters.

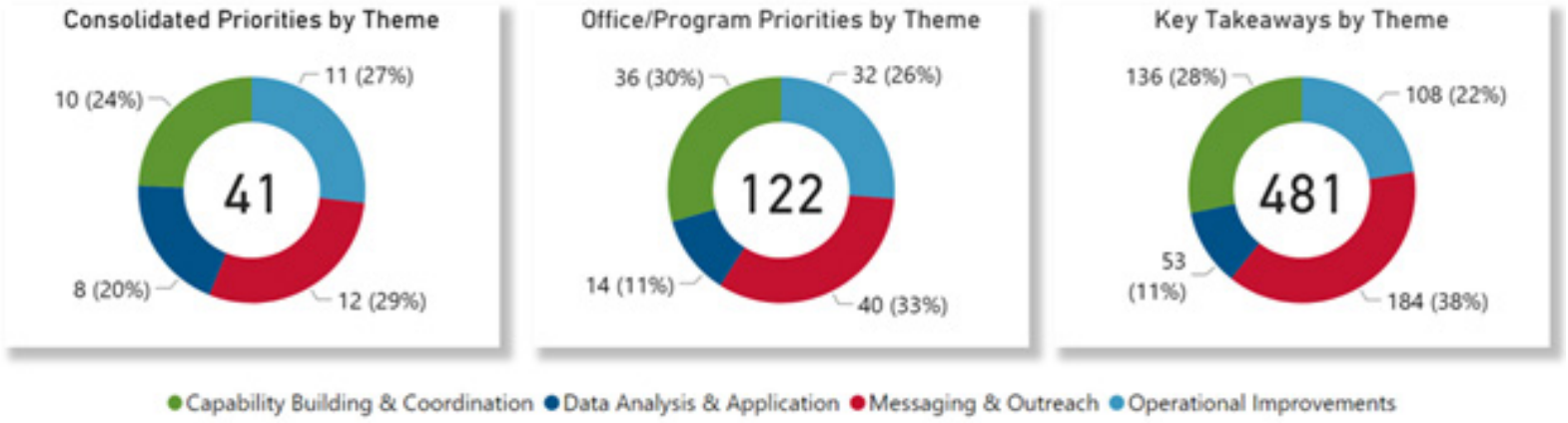
Mission

Coordinate and prioritize FEMA's activities to advance the adoption and enforcement of disaster resistant building codes and standards for FEMA programs and for communities nationwide.

Building Codes Strategy: Development

Interviewed 150+ FEMA staff

- 500+ data points
- 41 building code priorities
- 4 strategic themes
- 3 goals and 14 objectives



Building Codes Strategy: Goals and Objectives

Goal 1
Integrate Building Codes and Standards Across FEMA

1.1: Understand stakeholder needs to identify opportunities that advance building code adoption and enforcement

1.2: Advance building code research, including the impacts of climate change

1.3: Use data-driven decision making to guide the application of building codes in program delivery

1.4: Reduce future losses by implementing current building codes across FEMA policies and programs

1.5: Leverage FEMA policies and programs to promote building codes, standards and community resilience

1.6: Improve coordination and governance of building code activities throughout the agency

Goal 2
Strengthen Nationwide Capability for Superior Building Performance

2.1: Establish and maintain building code expertise across FEMA

2.2: Improve HQ and regional coordination before and after disasters

2.3: Build the capability of external partners through funding, collaboration, training and exercises

2.4: Expand support to underserved individuals and vulnerable communities to increase resilience

Goal 3
Drive Public Action on Building Codes

3.1: Create unified, tailored, data-driven agency messaging on building codes

3.2: Leverage partnerships to promote FEMA building code messaging

3.3: Amplify climate science messaging to increase public demand for building codes and standards

3.4: Target building code adoption and enforcement outreach to the most vulnerable communities

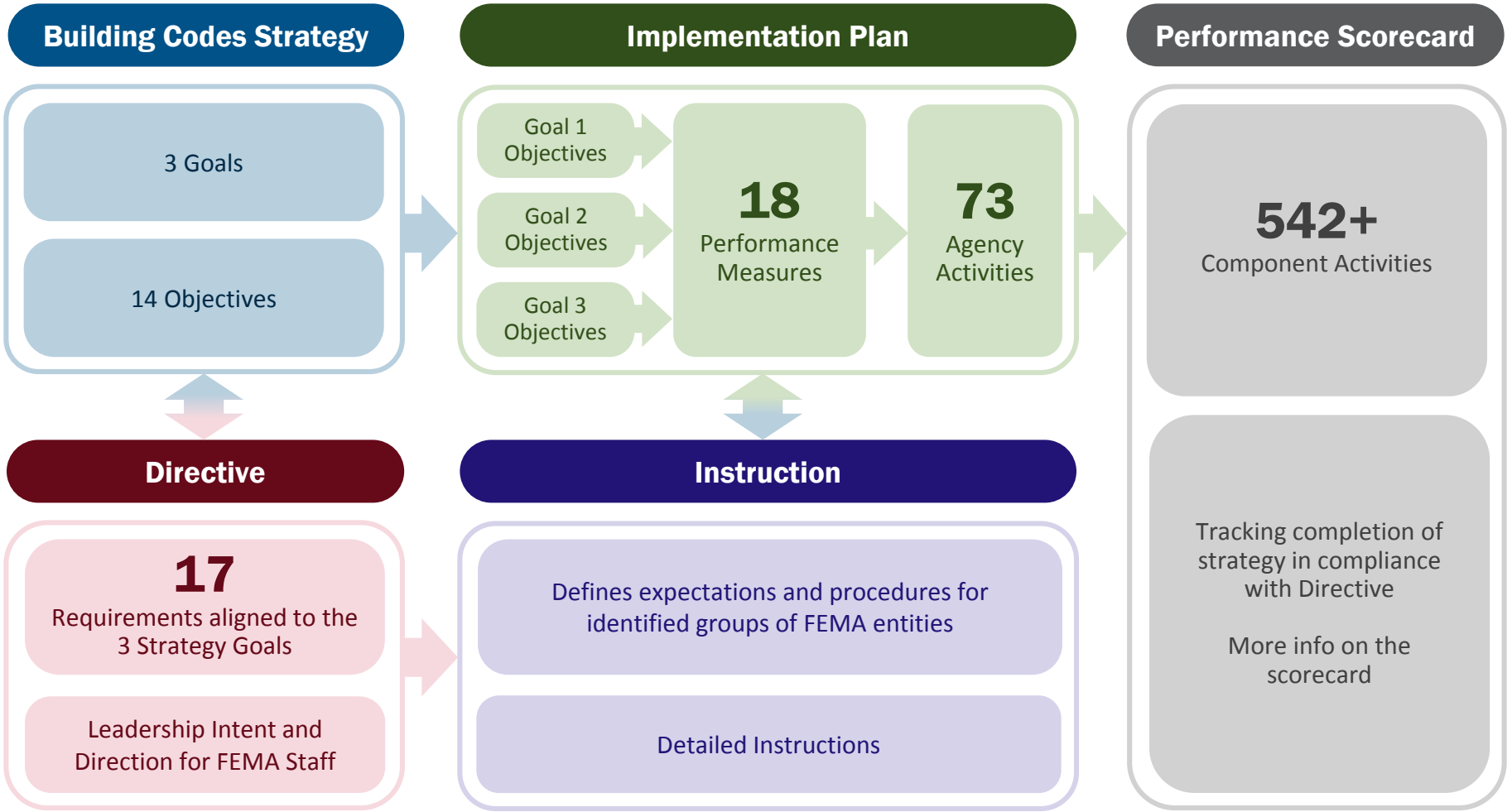
FEMA

Building Codes: Supporting the FEMA Strategic Plan

- **Goal 1: Instill Equity as a Foundation of Emergency Management**
  - Expand support to underserved individuals and vulnerable communities to increase resilience
  - Understand stakeholder needs to identify opportunities that advance building code adoption and enforcement
- **Goal 2: Lead Whole of Community in Climate Resilience**
  - Amplify climate science messaging to increase public demand for building codes and standards
  - Advance building code research, including the impacts of climate change
- **Goal 3: Promote and Sustain a Ready FEMA and Prepared Nation**
  - Improve HQ and Regional coordination before and after disasters
  - Reduce future losses by implementing current building codes across FEMA policies and programs

FEMA

Strategy Alignment



Implementation Plan

- Defines the operational processes necessary to achieve the goals and objectives of the Strategy.
- **18 performance** measures aligned to each objective.
- Structured by **component activities - action-oriented tasks** to be carried out by individual FEMA components.
  - 23 components engaged in working sessions to review and validate activities.
- A **performance scorecard** is in development to track the success of component activities; will undergo regular monitoring and updating.
- In **Final Draft**; 10+ HQ components and regions actively involved in development.

Building Codes Strategy Implementation - Successes

- Developed the ***Building Codes Dashboard*** – new collaborative tool for HQ and Regions to share data, actions and reports
- Building Science & Regional POC's **submitted 18-pages of public comment** to the FEMA NFIP minimum standards RFI; comments advocate updating NFIP minimums
- FEMA State and Local Mitigation Planning Guidance is including the "**how we build"** into "**where we build"** recommendations
- Region IV **leading extensive training sessions** and workshops on building codes with state and local partners
- Region V produced the ***Building Science and Building Codes Work Group Annual Report*** which lays out efforts to increase collaboration and promote building codes
- Region VI-JRO in Louisiana for Hurricane Ida is **funding a task order for technical assistance** to restore freeboard and ASCE 24 to the LA Statewide Code
- Region VIII **preparing to conduct a building performance study** on the Colorado Wildfires
- Region X discussed building codes with State of Alaska – **respective agency is now acting on the provided building code recommendations**

FEMA

FEMA Directive (Hazard-Resistant Building Codes, Specifications and Standards for Risk Reduction) and Instruction

FEMA Directive 206-22-0001: Hazard-Resistant Building Codes, Specifications and Standards for Risk Reduction

- Updates FEMA Policy 204-078-2, which was due for review and update in 2020.
- Supports the Building Codes Strategy
  - Achieves the Strategy's Goals by setting requirements that uniformly integrate building codes and standards across FEMA.
- Establishes requirements for FEMA programs and FEMA real property.
- Provides direction and guidance to FEMA staff.
- Encourages incentives for SLTT governments to adopt codes.

Building Codes Directive: Requirements

A. Integrate Building Codes and Standards Across FEMA

Outcome: FEMA will integrate, and where legally permissible, consistently require, at a minimum, the current or next most recent published editions of building codes into its programs, policies and guidance.

B. Strengthen Nationwide Capability for Superior Building Performance

Outcome: FIMA, with input from the Planning, Safety and Building Science Division and other FEMA components, will inform the update of and provide technical assistance regarding the understanding, development, application, adoption and enforcement of building codes across the agency, other federal agencies and the nation, especially among vulnerable communities.

C. Drive Public Action on Building Codes

Outcome: With expanded support for vulnerable communities and communities at greatest risk to climate change impacts, FEMA components will advance partnerships to drive SLTT application, adoption and enforcement of building codes integrated with inclusive mitigation and community planning processes, without weakening the natural hazard and fire-related provisions, and will promote a consistent understanding of building codes.

Building Codes Directive: Instruction

- Provides guidance for FEMA staff on the implementation of the Directive
- Supplements the high-level requirements in policies and directives with more detailed information, including processes and procedures
- To be published Summer 2022

FEMA

Federal Alignment on Building Codes

Federal Alignment: Landscape Analysis Participation

Federal Feedback Form

- Cybersecurity and Infrastructure Security Agency (CISA)
- Department of Homeland Security, Science & Technology Directorate (DHS S&T)
- General Services Administration (GSA)
- National Institute of Standards and Technology (NIST), Wildland Urban Interface (WUI) Fire Group, Disaster and Failure Studies, Community Resilience, Materials and Structural Systems, Engineering Laboratory
- National Oceanic and Atmospheric Administration (NOAA), National Sea Grant Office, Office for Coastal Management
- U.S. Army Corps of Engineers (USACE)
- U.S. Department of Agriculture (USDA), Office of Homeland Security, Rural Utilities Service and Rural Development
- U.S. Department of Defense (DOD)
- U.S. Department of Housing and Urban Development (HUD)
- U.S. Fire Administration, Wildfire Program (USFA)
- U.S. Consumer Product Safety Commission (CPSC)
- U.S. Department of Energy (DOE)
- U.S. Geological Survey, Earthquake Hazards (USGS)

13 Agencies
15 Offices

Interviews

9 Agencies
12 Offices

- CISA
- DOE
- DHS S&T
- Environmental Protection Agency (EPA)
- GSA
- HUD
- NIST - WUI Fire Group, Disaster and Failure Studies, Community Resilience, Materials and Structural Systems, Engineering Laboratory
- White House, Office of Science and Technology Policy
- USDA - Office of Homeland Security, Rural Development

Focus Group Discussions

- EPA (Policy, Homeland Security, Region 2 Recovery, Sustainable Products and Purchasing, Environmental Justice, Community Revitalization, Sectors Programs)
- NOAA (National Weather Service, National Sea Grant Office, and Office for Coastal Management)

2 Agencies
10 Offices

FEMA

Federal Alignment: Emerging Themes

FEMA

Building Codes Strategy: Next Steps

FEMA Strategy	Coordinate and prioritize FEMA's activities to advance the adoption and enforcement of disaster-resistant building codes and standards for FEMA programs and for communities nationwide	**Complete**
Federal Alignment	Through the MitFLG, increase collaboration and coordination on disaster-resistant codes across the federal government, SLTTs and ensure federal programs and policies reflect building codes to offset the rising cost of climate and weather disasters	**Ongoing**
National Implementation	Develop National Implementation in coordination with the public and private sectors	**Future**

FEMA

Strengthen Nationwide Capability for Superior Building Performance

FEMA Building Code Adoption Tracking

Jurisdictions are evaluated for whether they are at **high risk** to **flood, damaging wind, hurricane wind, tornado, or seismic** hazards.

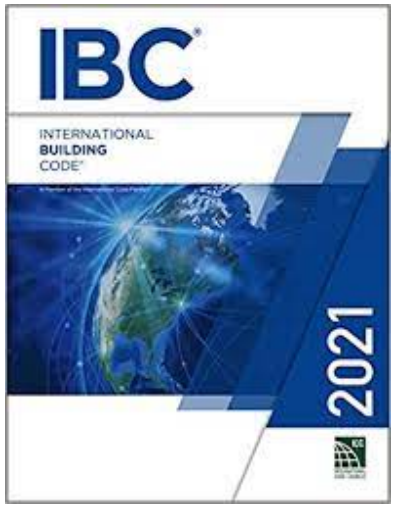
Jurisdictions are then evaluated for whether they are **resistant** to those hazards.

Resistance generally means:

- Adoption of the **2018 or later IBC & IRC** without weakening any of the resilience provisions for the given hazard

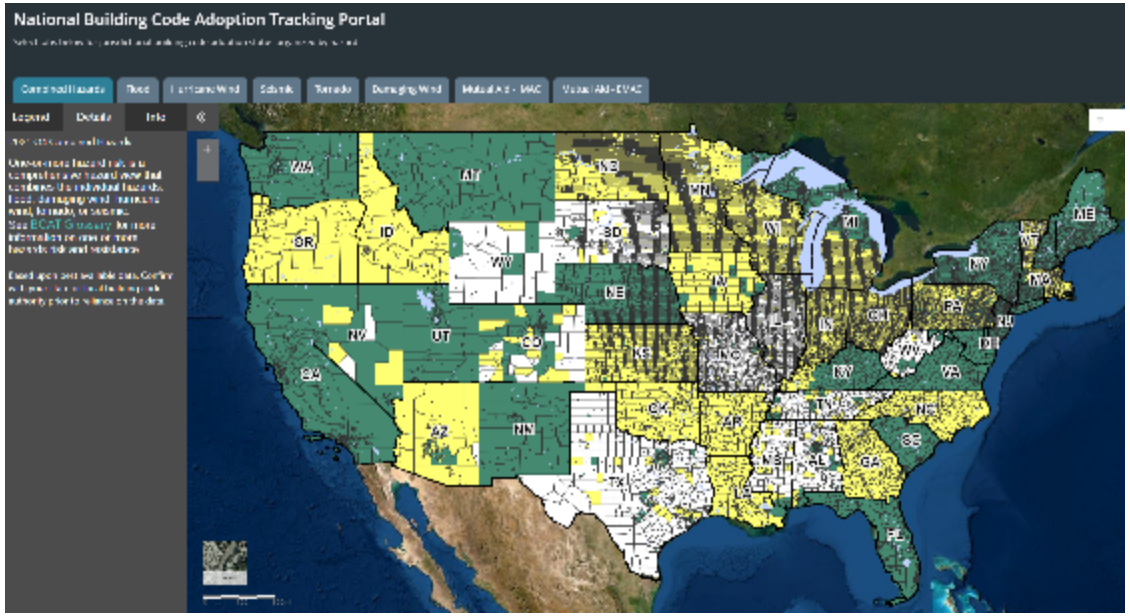
Exceptions:

1. Tornado resistance only requires adoption of the **IBC**, not the IRC.
2. Flood resistance also requires the jurisdiction to participate in the **NFIP**.

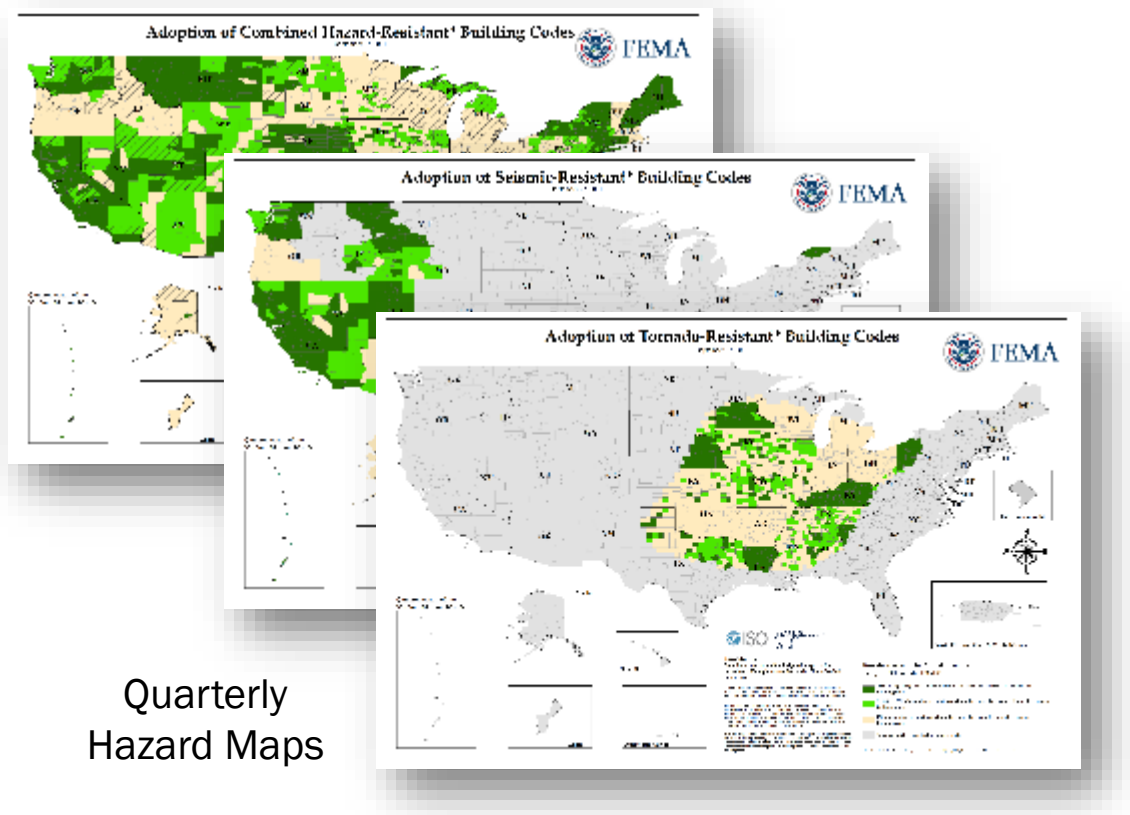


FEMA Building Code Adoption Tracking

While 2/3 of the Nation's communities have some type of building regulation, **less than 1/3 have adopted a current hazard-resistant building code**.



FEMA BCAT WebGIS Portal



Quarterly Hazard Maps

For more information

Building Codes Save - https://www.fema.gov/emergency-managers/risk-management/building-science/building-codes-save-study

Building Code Adoption Tracking Portal - https://www.fema.gov/emergency-managers/risk-management/building-science/bcat

Building Codes Strategy - fema-building-codes-strategy@fema.dhs.gov

FEMA Building Science - https://www.fema.gov/emergency-managers/risk-management/building-science

FEMA Building Science Helpline
FEMA-BuildingScienceHelp@fema.dhs.gov

Mariam Yousuf, Civil Engineer
(C) 202-704-3006
ariam.Yousuf

FEMA

Coordinating with SMEs

- Building Codes: Challenges EQPMs Face
- 2 Weeks Ready App (CREW)
- Critical Facility Inventory/Evaluation (CUSEC)
- RVS & Mitigation Projects (Missouri & FEMA RVII)
- Messaging & Awareness (SCEC & FLASH)
- Charleston Response Planning (FEMA RIV)

Building Codes Save

National Findings of Modeled I-Codes© Savings

Total Losses Avoided *Based on building and content damages*	Number of Post-2000 Structures	Money Saved annually, on average
Flood	786k	$484 million
Seismic	2.4m	$60 million
Hurricane Wind	9.2m	$1.1 billion

Group Discussion: Building Codes & Challenges EQPMs Face


humanitarian
TOOLBOX

HTBox was created over 10 years ago to help bring together the humanitarian and technological sectors together to streamline, reduce duplication and build sustainable technological solutions to support the need.

- Diverse representation of not knowledge and skills
- Volunteer driven & corporate supported
- Develop and educate at the same time
- 501c3

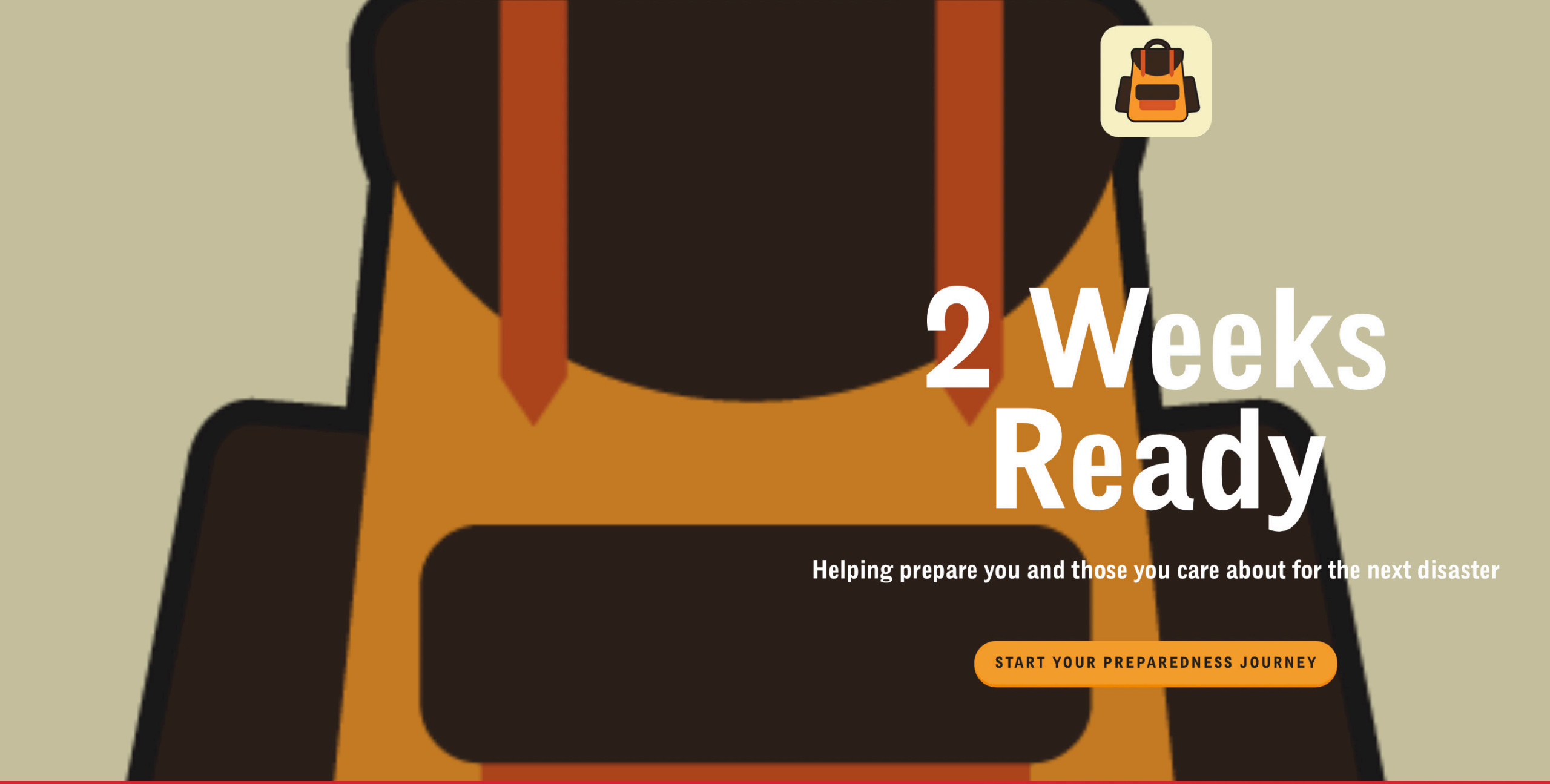
2 Weeks Ready

Mobile

- Open-source project
- Built on a privacy first platform
- Built by the volunteer community
- Supported by private sector corporations through donated services in support of the application objectives
- No Ads, no push for profits

Digital Security is Human Security

- HTBox/2WR does not own your personal data
- Encryption is used from phone to phone
- Data stored on your phone and shared phones you choose.
- Data stored on the server is encrypted by your phone from your phone.
- Server storage is only used for you to access and restore your application on your device (ie a new phone)
- **WE DO NOT SELL or SHARE YOUR DATA THROUGH PARTNERSHIPS**

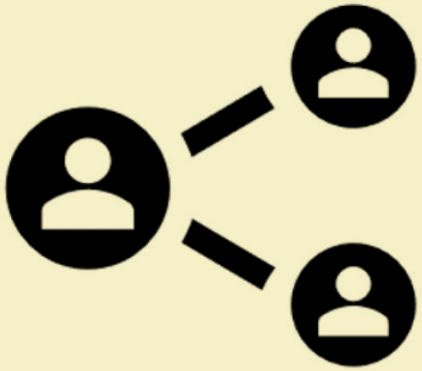


2 Weeks Ready

Helping prepare you and those you care about for the next disaster

START YOUR PREPAREDNESS JOURNEY

2 WEEKS READY IS...



Easy

During times of crisis, we make it **easy** to find the information and resources you need. Keeping it simple for you, your family, and friends to prepare for the next disaster.

Sharable

Create and **share** your family emergency plan with the people you care about. It's customizable and secure. No gimmicks or data mining involved.

Time-Saving

This app will **save you time**. Have all your emergency plans, contacts, and important documents in one place on the go! You can also build your kits with ease using our emergency kit calculator. We make it simple.

2 WEEKS READY HELPS YOU...

Build Your Emergency Kits

Build kits for you, your family, and your pets! 2 Weeks Ready will help you organize what you need and what you already have, manage the expiration dates of consumables, and make it easier for you to build kits over time.

Plan and Share

Create your family emergency plan and **share it directly with anyone you choose, securely**. Have all the information you need already loaded on your family's phones before you experience a disaster. This includes sharing emergency contact information, where to meet, and key steps to take to survive a disaster. This plan can be synchronized automatically and securely with the people you care about.

Learn Your Hazards

Learn about what type of disasters are likely to happen in your area and what risks they pose to you and your family. Disasters ranging from earthquakes to global pandemics can impact you and those you care about when you least expect them to. Know what to do to be prepared so you can survive the next disaster!

Humanitarian Toolbox

The Humanitarian Toolbox is a sustained effort to leverage technology and skilled volunteer communities to solve the needs of response organizations and communities affected by disasters.

We strive to bring together the greatest diversity of contributors (across experience levels, opportunity, and disciplines) to grow their own skills while they design, code, test and deploy solutions for good.

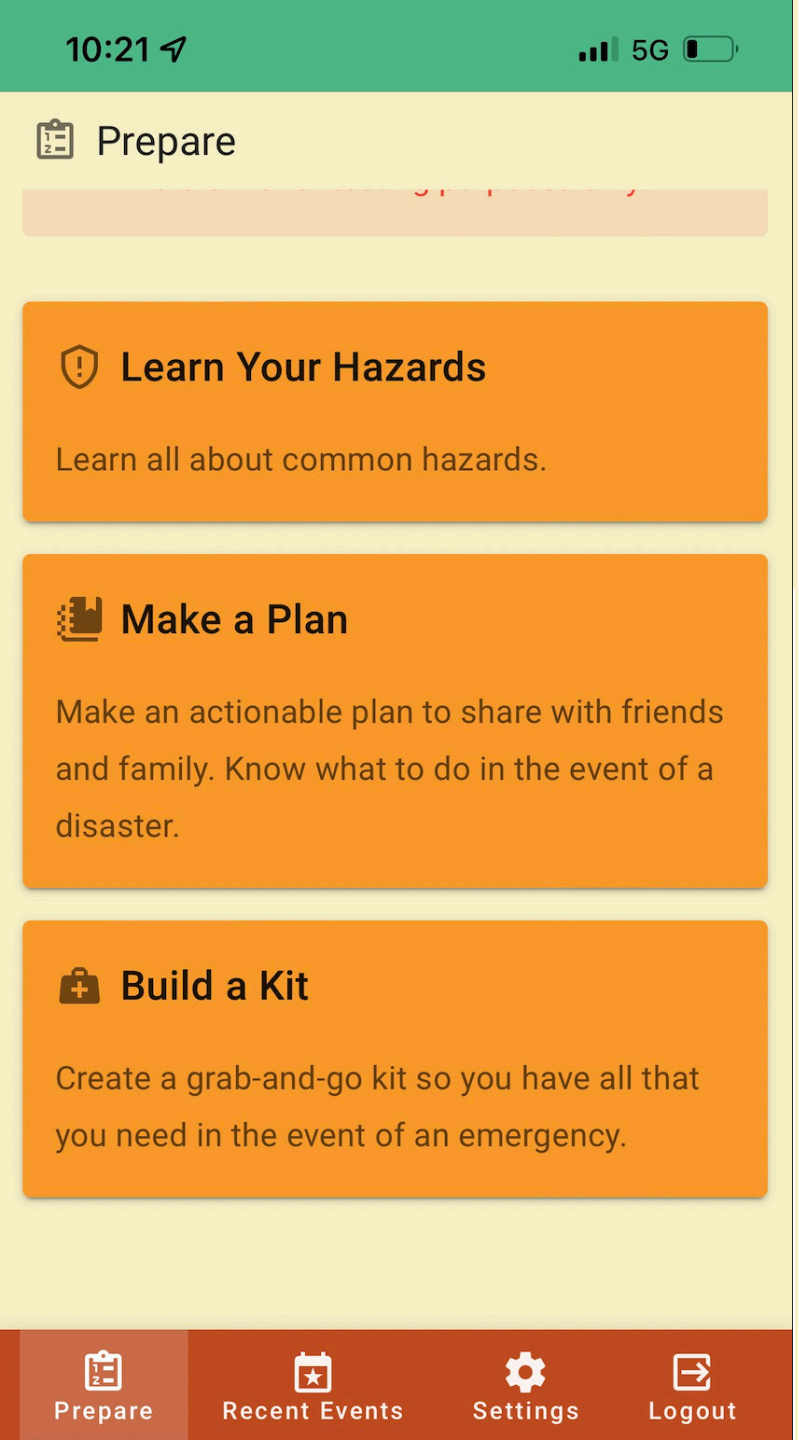
Our "toolbox" of open solutions can then enable responders and organizations to deliver relief more efficiently and grow communities' access to information and resiliency as they prepare for, recover from and rebuild after disasters.

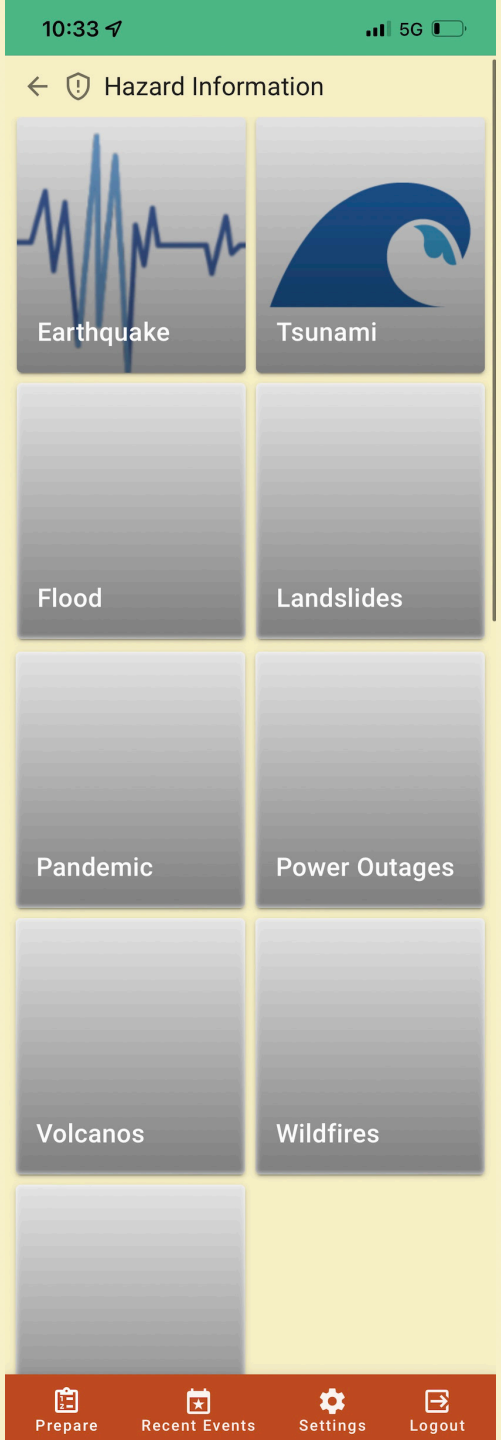
LEARN MORE ABOUT US

Washington Emergency Management Division

The Washington Emergency Management Division leads and coordinates mitigation, preparedness, response and recovery in Washington State to minimize the impact of disasters and emergencies on the people, property, environment and economy in Washington state.

LEARN MORE ABOUT US


10:21
5G
Prepare
Learn Your Hazards
Learn all about common hazards.
Make a Plan
Make an actionable plan to share with friends and family. Know what to do in the event of a disaster.
Build a Kit
Create a grab-and-go kit so you have all that you need in the event of an emergency.
Prepare
Recent Events
Settings
Logout


10:33
5G
Hazard Information
Earthquake
Tsunami
Flood
Landslides
Pandemic
Power Outages
Volcanos
Wildfires
Prepare
Recent Events
Settings
Logout

10:21 5G

Prepare

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Make an actionable plan to share with friends and family. Know what to do in the event of a disaster.

Build a Kit

Create a grab-and-go kit so you have all that you need in the event of an emergency.

Prepare | Recent Events | Settings | Logout

10:33 5G

Earthquake

An earthquake is a sudden, rapid shaking of the ground. Earthquakes can cause injuries and property damage by causing heavy items to fall, windows to break, and damage to buildings, roads and other structures.

Earthquake Safety

BEFORE

DURING

AFTER

Earthquake Resources

- https://mil.wa.gov/earthquake
- https://mil.wa.gov/alerts
- https://mil.wa.gov/shakeout

Prepare | Recent Events | Settings | Logout

09:01 5G

← Family Plan

Bainbridge

WALKTHROUGH MANAGE

Home Address

Phone Number

- Emergency Contacts
- Out of Area Contact
- Reunification
- Children
- Pets

Prepare | Recent Events | Settings | Logout

09:01 5G

← Bainbridge - Emergency Contacts

Heather Schuback

123-456-7890
First@last.com

School Information +
Work Information +
Medical Information +

Notify this person of last known location ☑
Share Plan? ☑

Paul Schuback

503-916-4430
Dad@email.com

School Information +
Work Information +
Medical Information +

Prepare | Recent Events | Settings | Logout

09:02 5G

← Pets

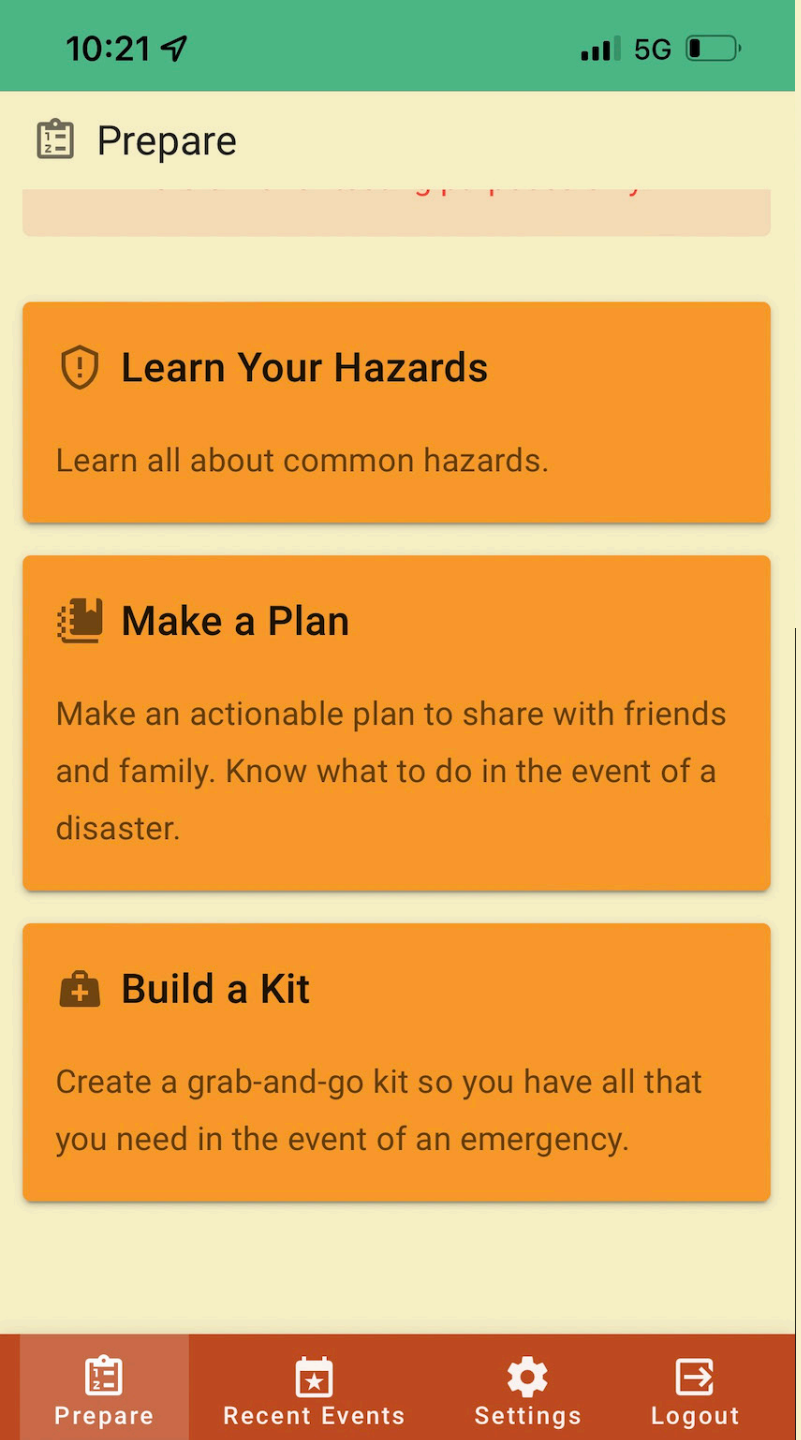
Pet's Name
Lulu Guggenheim Schuback

Pet Type
Dog - Australian Labradoodle

Microchip ID
01285-88453-35882

Description
Dark chocolate in the winter and light chocolate in the summer.
50lbs
Long tail
Energetic

Prepare | Recent Events | Settings | Logout


10:21
5G
Prepare
Learn Your Hazards
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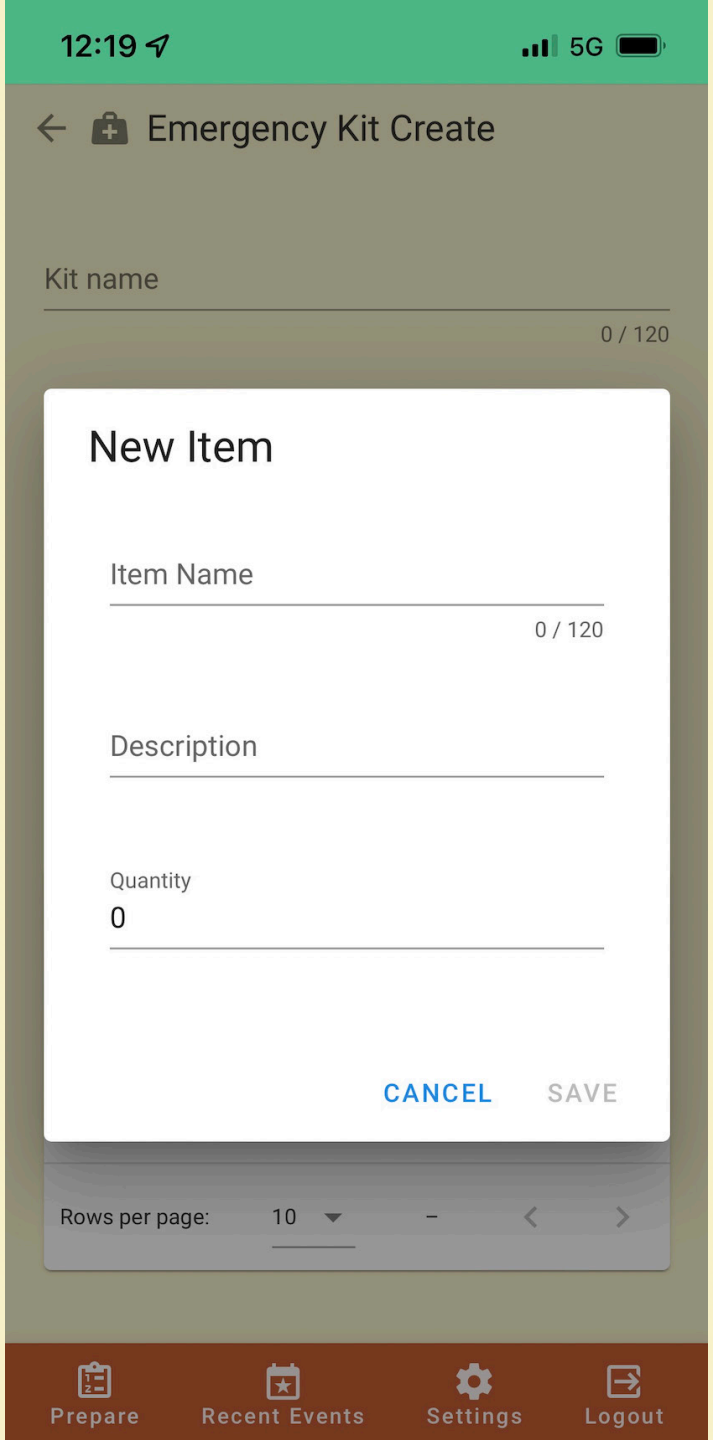
Prepare
Recent Events
Settings
Logout

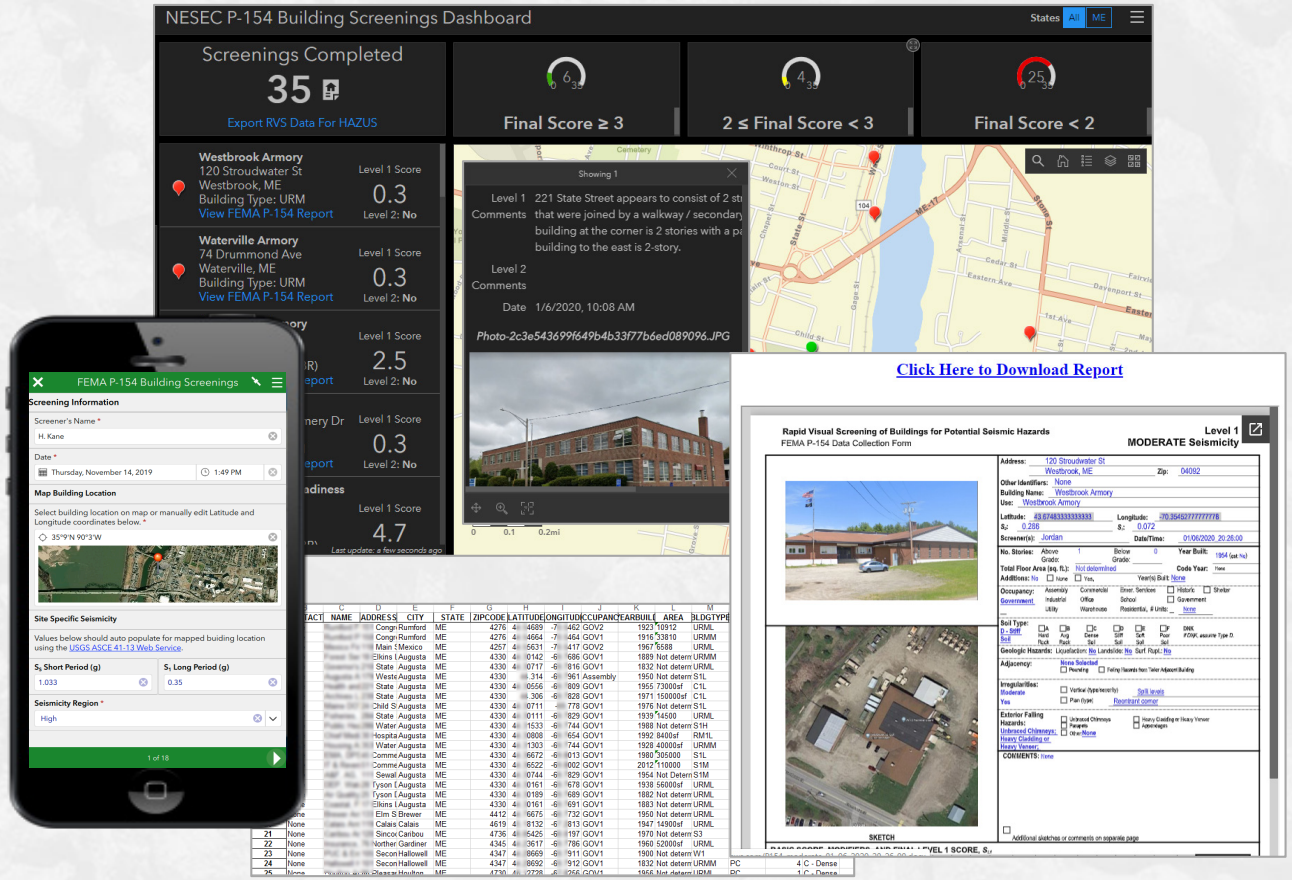

12:19
5G
Emergency Kit Create
Kit name
0 / 120
New Item
Item Name
0 / 120
Description
Quantity
0
CANCEL
SAVE
Rows per page:
10
Prepare
Recent Events
Settings
Logout


WHAT'S NEXT?

Questions ?

Reach out and be a part of the build by the people for the people!

Pascal Schuback
pascal.schuback@htbox.org
@schuback

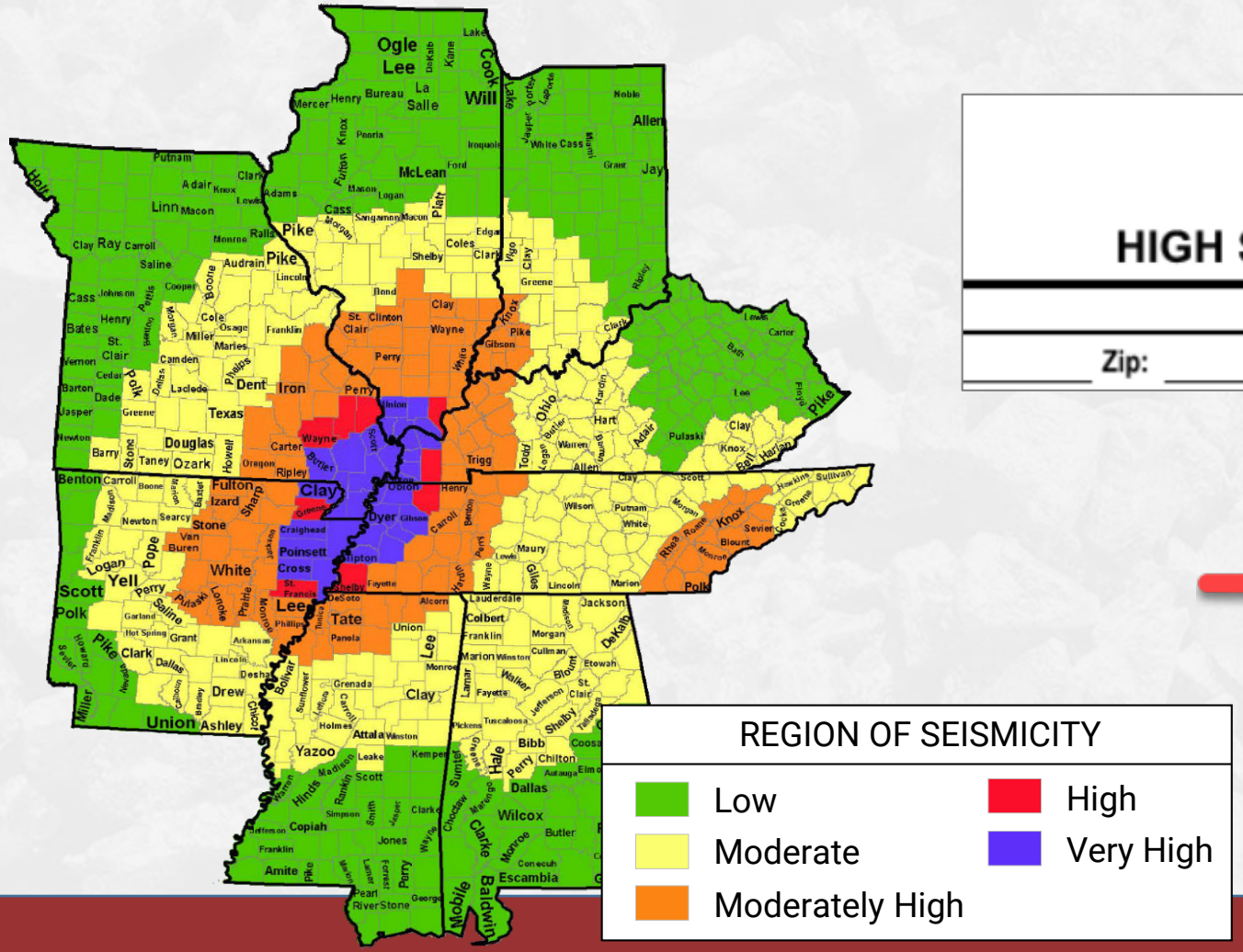


Critical Facility Inventory & Evaluation

Presentation Overview

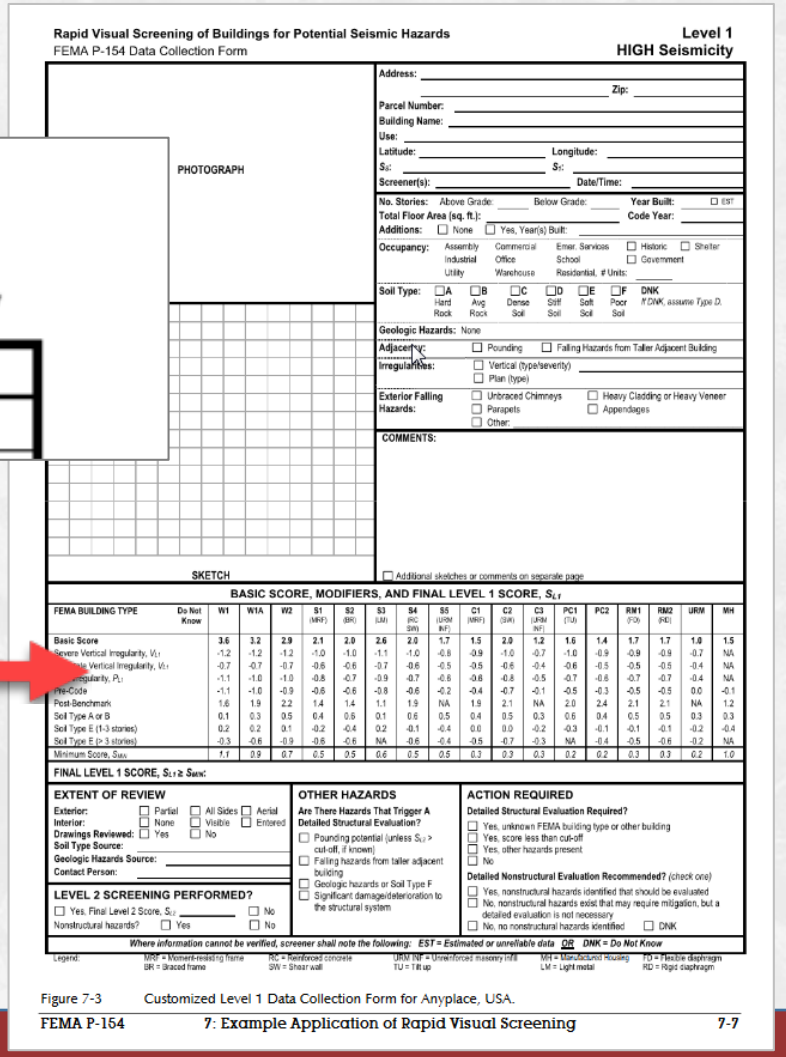
- CUSEC RVS App
  - Fayette Co. TN Pilot Project
- Safety Evaluation App
  - Jefferson Barracks Training
- Critical Infrastructure Planning Tool

FEMA P-154: Rapid Visual Screening



Level 1
HIGH Seismicity

Zip:



Rapid Visual Screening of Buildings for Potential Seismic Hazards
FEMA P-154 Data Collection Form

Level 1
HIGH Seismicity

PHOTOGRAPH

SKETCH

BASIC SCORE, MODIFIERS, AND FINAL LEVEL 1 SCORE, S_{L1}

FEMA BUILDING TYPE	Do Not Know	W1	W1A	W2	S1 (MRF)	S2 (BR)	S3 (LM)	S4 (RC SW)	S5 (URM INF)	C1 (MRF)	C2 (SW)	C3 (URM INF)	PC1 (TU)	PC2	RM1 (TU)	RM2 (RD)	URM	MH
Basic Score		3.6	3.2	2.9	2.1	2.0	2.6	2.0	1.7	1.5	2.0	1.2	1.6	1.4	1.7	1.7	1.0	1.5
Severe Vertical Irregularity, V_{L1}		-1.2	-1.2	-1.2	-1.0	-1.0	-1.1	-1.0	-0.8	-0.9	-1.0	-0.7	-1.0	-0.9	-0.9	-0.9	-0.7	NA
Vertical Irregularity, V_{L1}		-0.7	-0.7	-0.7	-0.6	-0.6	-0.7	-0.6	-0.5	-0.5	-0.6	-0.4	-0.6	-0.5	-0.5	-0.5	-0.4	NA
Irregularity, P_{L1}		-1.1	-1.6	-1.0	-0.8	-0.7	-0.9	-0.7	-0.6	-0.8	-0.8	-0.5	-0.7	-0.6	-0.7	-0.7	-0.4	NA
Pre-Code		-1.1	-1.6	-0.9	-0.6	-0.6	-0.8	-0.6	-0.2	-0.4	-0.7	-0.1	-0.5	-0.3	-0.5	-0.5	0.0	-0.1
Post-Benchmark		1.6	1.9	2.2	1.4	1.4	1.1	1.9	NA	1.9	2.1	NA	2.0	2.4	2.1	2.1	NA	1.2
Soil Type A or B		0.1	0.3	0.5	0.4	0.5	0.1	0.6	0.5	0.4	0.5	0.3	0.6	0.4	0.5	0.5	0.3	0.3
Soil Type E (1-3 stories)		0.2	0.2	0.1	-0.2	-0.4	0.2	-0.1	-0.4	0.0	0.0	-0.2	-0.3	-0.1	-0.1	-0.1	-0.2	-0.4
Soil Type E (> 3 stories)		-0.3	-0.6	-0.9	-0.6	-0.6	NA	-0.6	-0.4	-0.5	-0.7	-0.3	NA	-0.4	-0.5	-0.6	-0.2	NA
Minimum Score, S_{MIN}		1.1	0.9	0.7	0.5	0.5	0.6	0.5	0.5	0.3	0.3	0.3	0.2	0.2	0.3	0.3	0.2	1.0

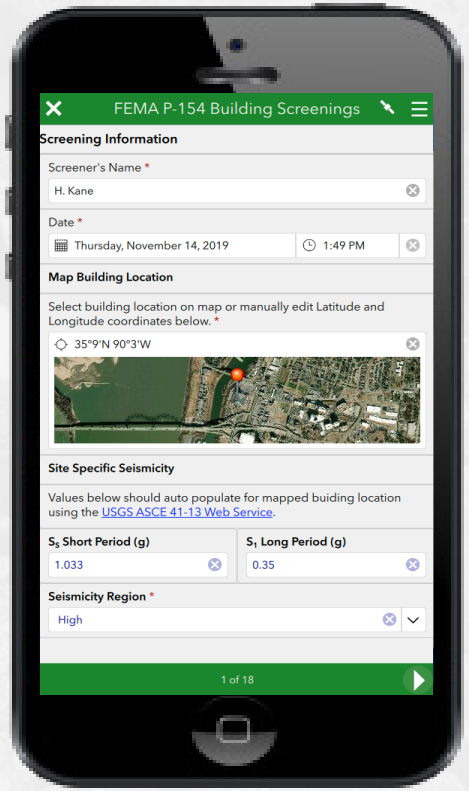
FINAL LEVEL 1 SCORE, $S_{L1} \geq S_{MIN}$:

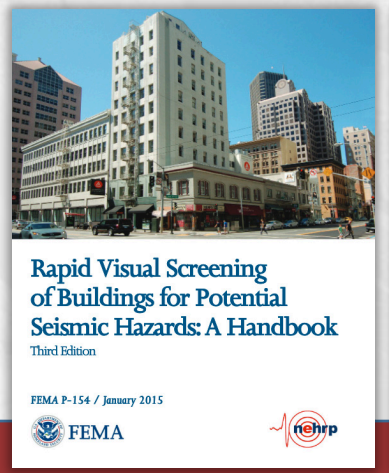
EXTENT OF REVIEW
OTHER HAZARDS
ACTION REQUIRED
LEVEL 2 SCREENING PERFORMED?

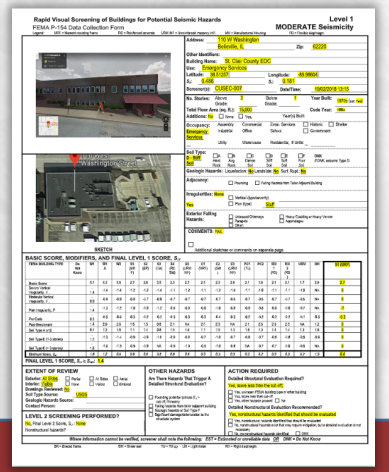
Figure 7-3 Customized Level 1 Data Collection Form for Anyplace, USA.

CUSEC Rapid Visual Screening App

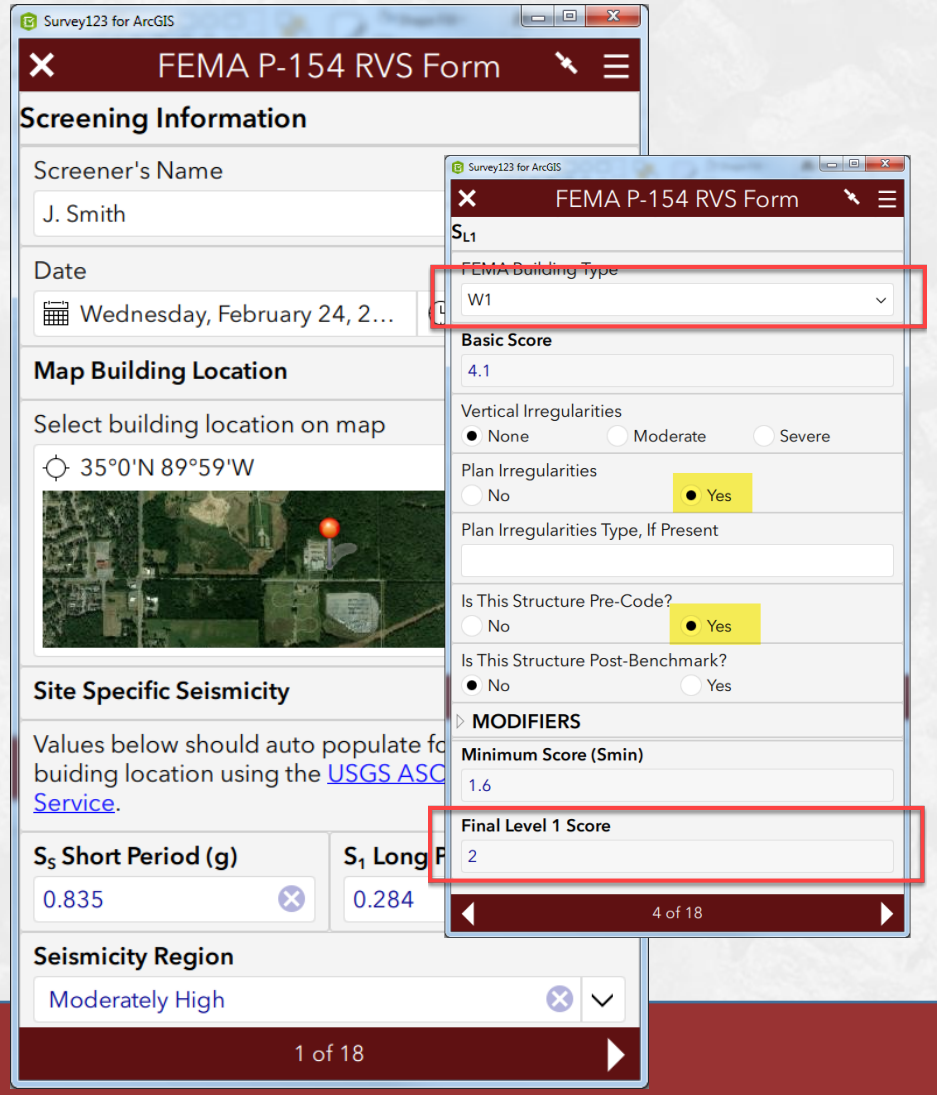
- Mobile/Digital Data Collection
- Inputs → Building information, soil/hazard info & modifiers
- Outputs → P-154 reports, maps, GIS data, & HAZUS compatible data

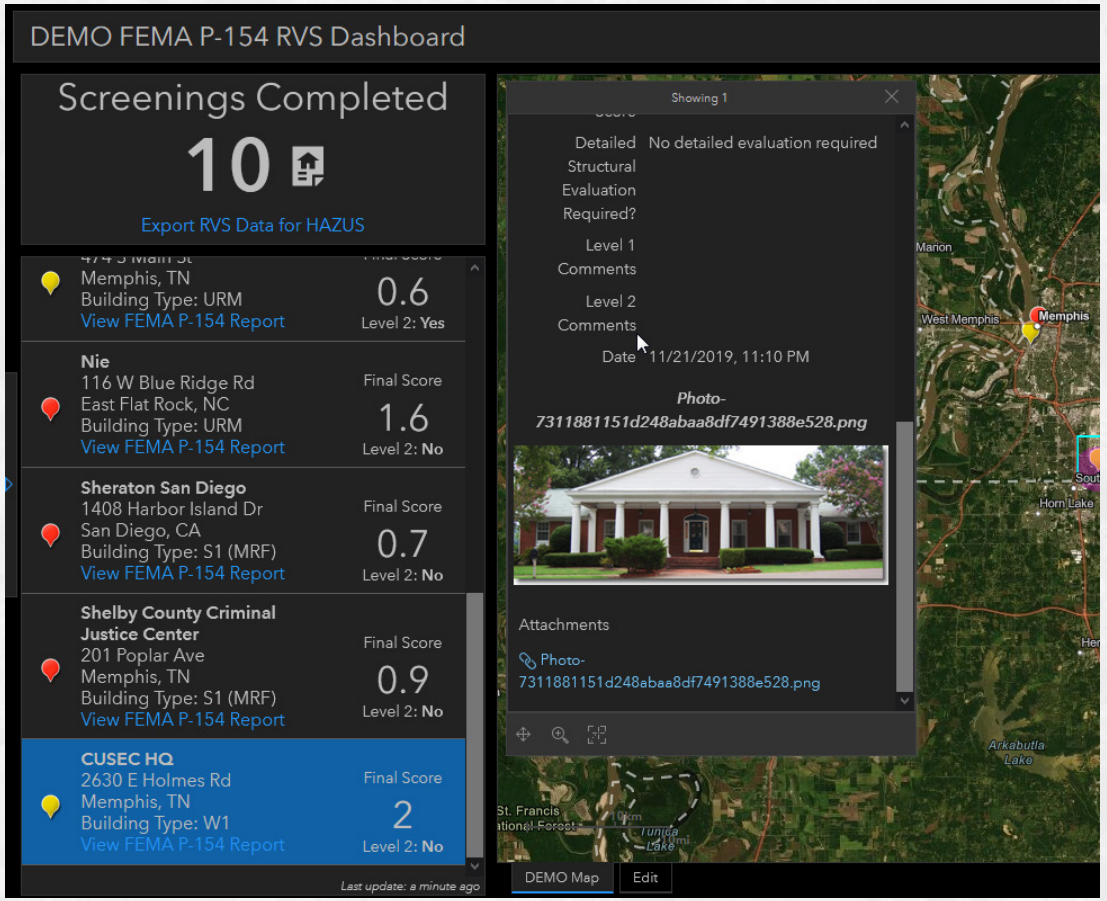




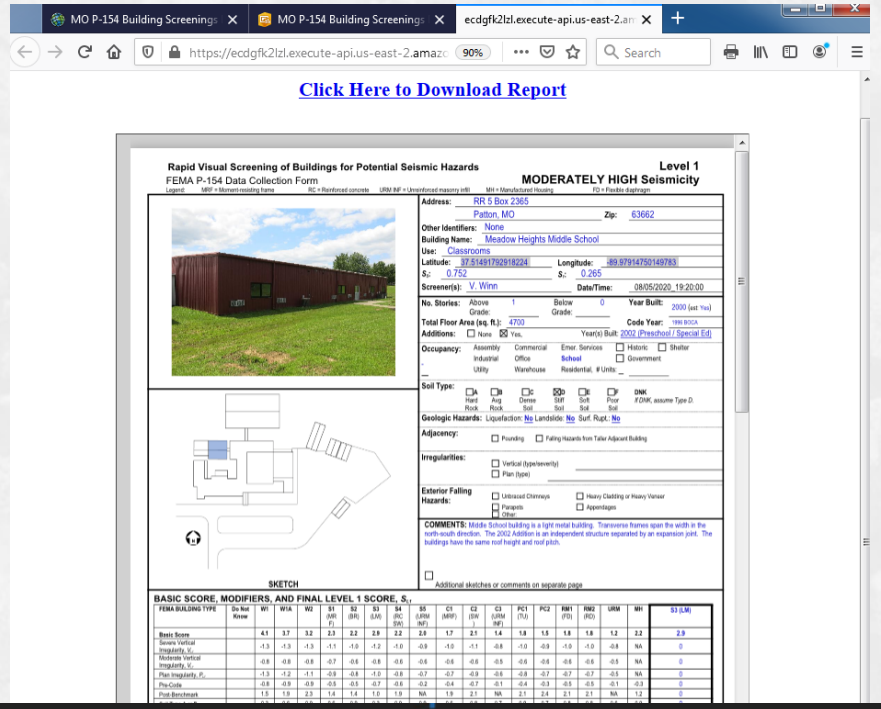


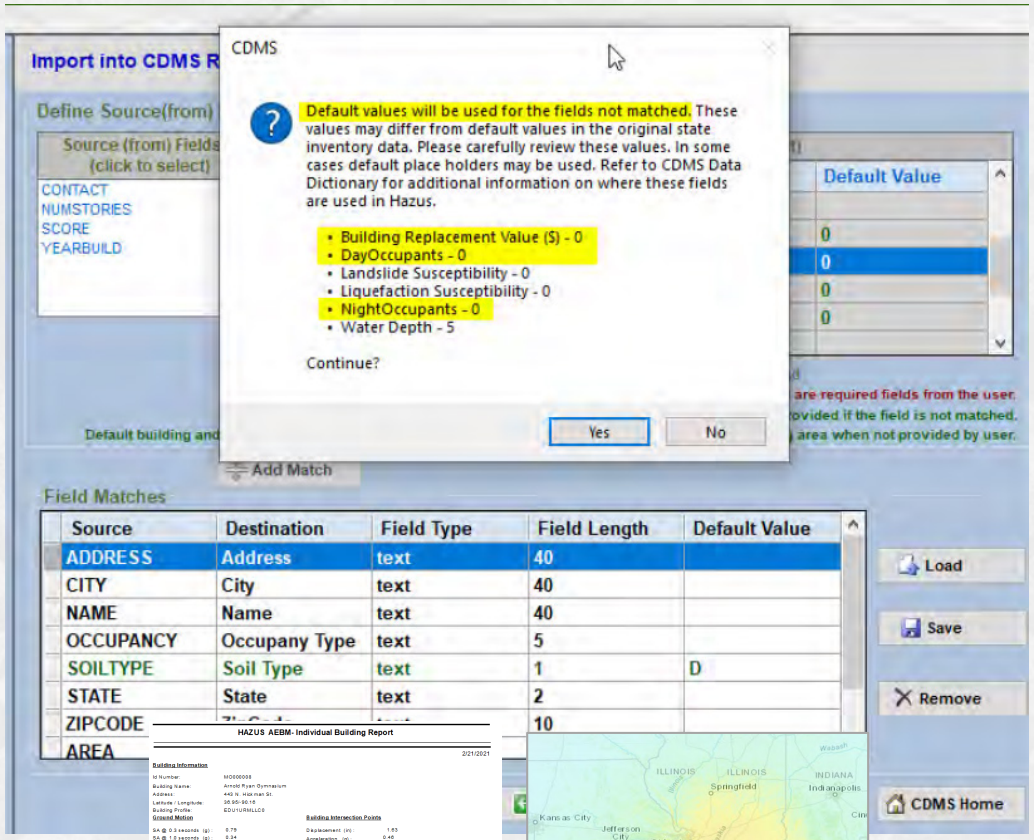
RVS App: Input & Visualization





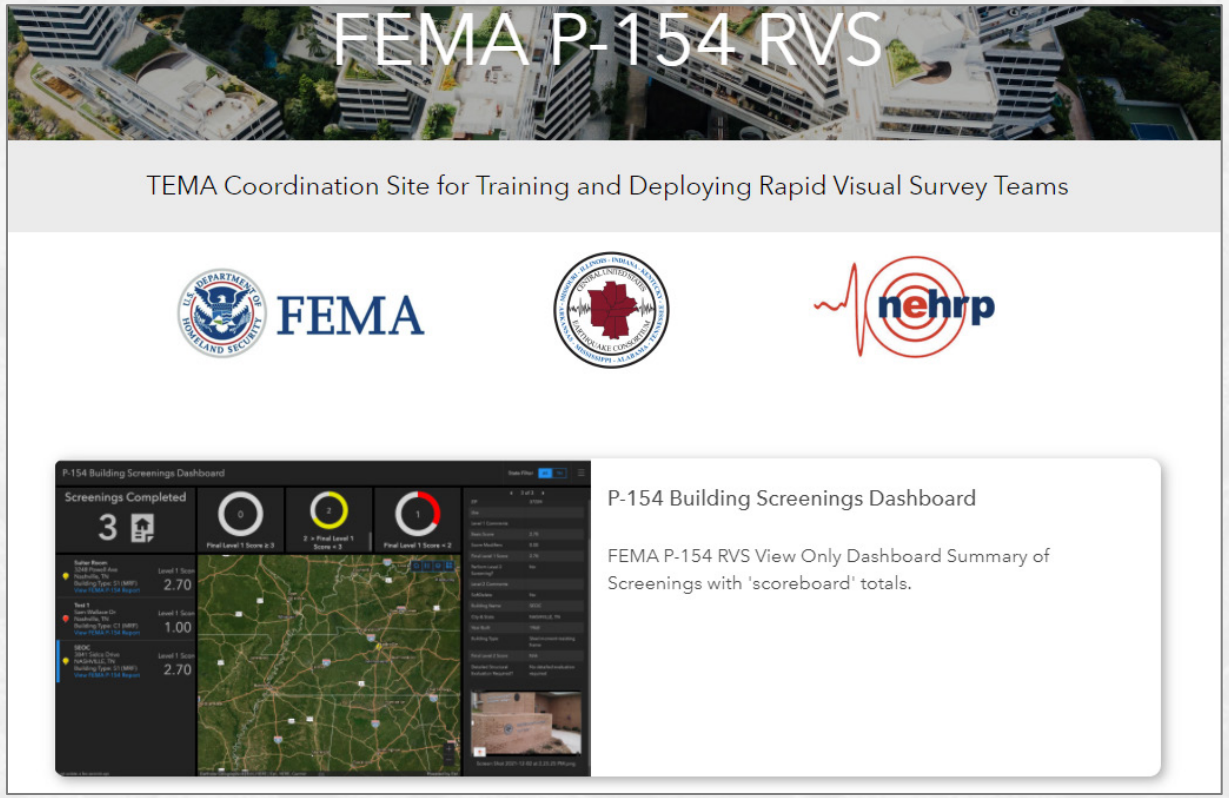
RVS App: Reporting & Hazus Analysis





Fayette Co. Tennessee Pilot Project

- Level 1 RVS Screening
- Facilities selected by County EMA
- Used engineering student interns
- First in the state



P-154 Building Screenings Dashboard

State Filter: All | TN

Select a Building Name
Show All Buildings

Screenings Completed

50

8	15	27
Final Level 1 Score ≥ 3	2 > Final Level 1 Score < 3	Final Level 1 Score < 2

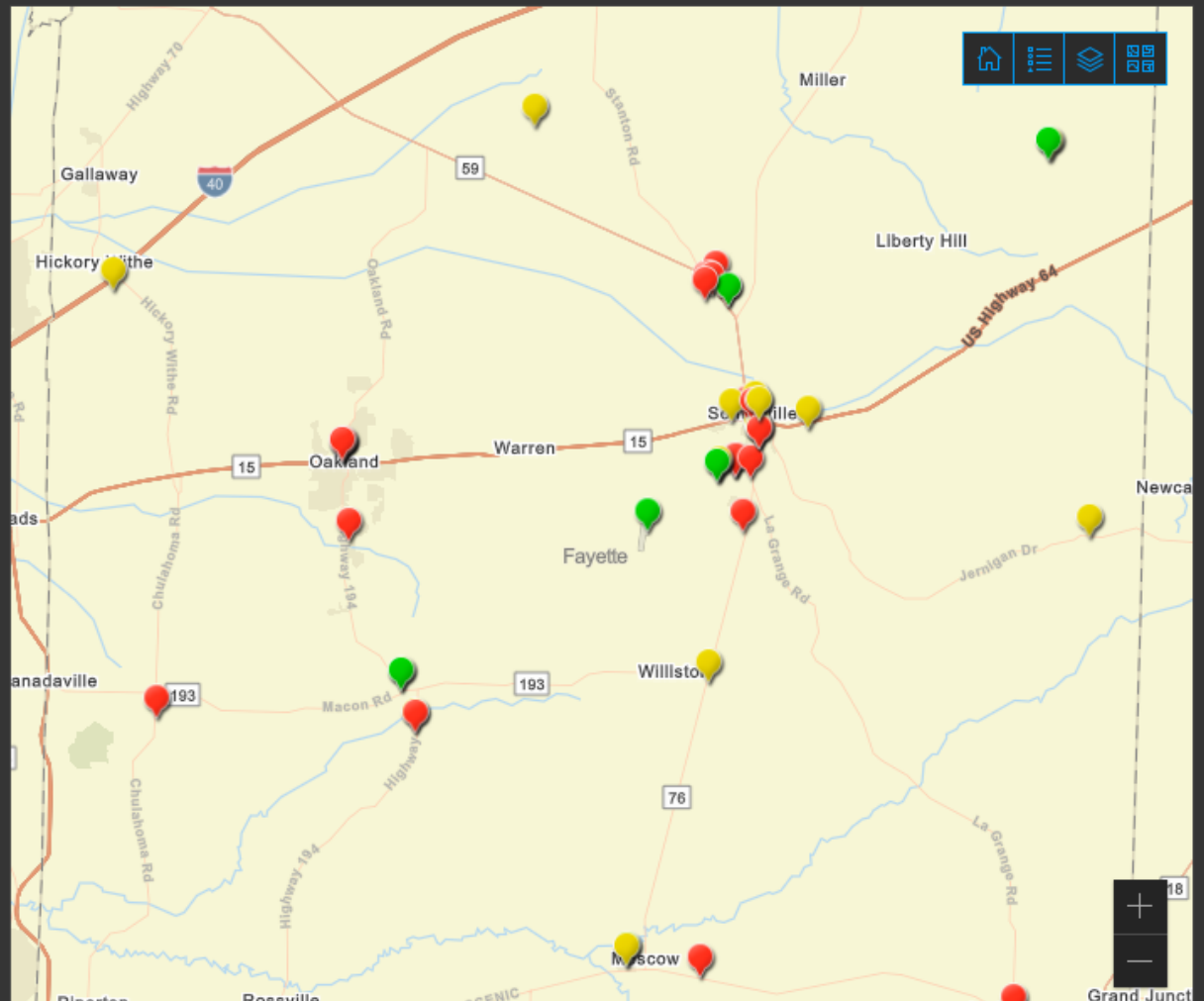
Fayette County Airport Terminal
1099 Airport Rd
Somerville, TN
Building Type: W1
View FEMA P-154 Report
Level 1 Score: 4.30

Former Fayette County School Board Office Building
116 W Market St
Somerville, TN
Building Type: W2
View FEMA P-154 Report
Level 1 Score: 1.20

Fayette County Public Works
Hiawatha St
Somerville, TN
Building Type: S3 (LM)
View FEMA P-154 Report
Level 1 Score: 2.20

Fayette County Court House
1 Court Sq
Somerville, TN
Building Type: C3 (URM INF)
View FEMA P-154 Report
Level 1 Score: 0.50

Fayette County Solid Waste Storage Building
745 Justice Dr
Somerville, TN
Building Type: W2
Level 1 Score: 1.20



27 of 50

Detailed Structural Evaluation Required?
Yes, score less than the cut-off

Photo-20220104-103657.jpg

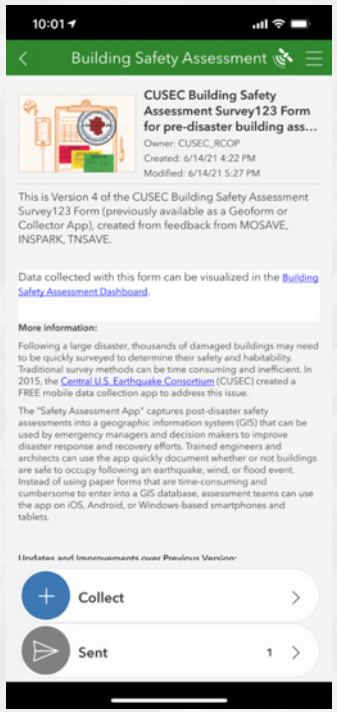
Photo2-20220104-103708.jpg

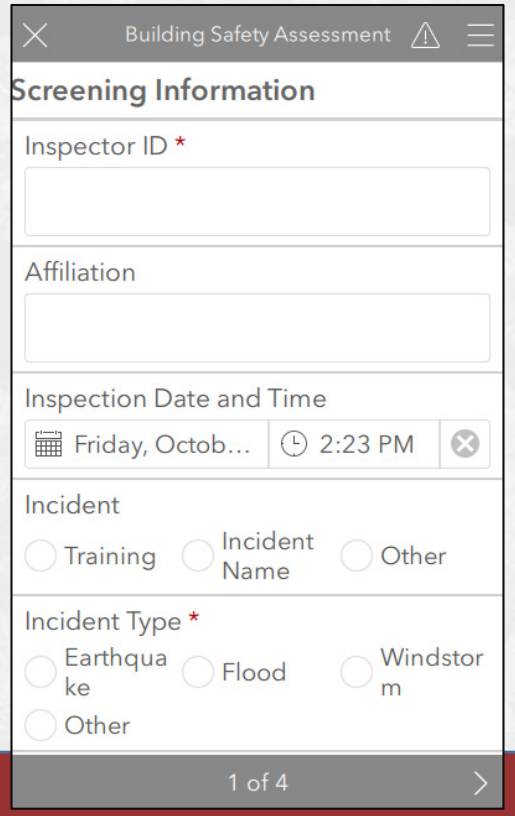
Lessons Learned & Next Steps

- County EMA buy-in critical
- Training and supervision of interns
- Reports, Hazus analysis → Mitigation plan
- Repeat in additional counties AND municipalities

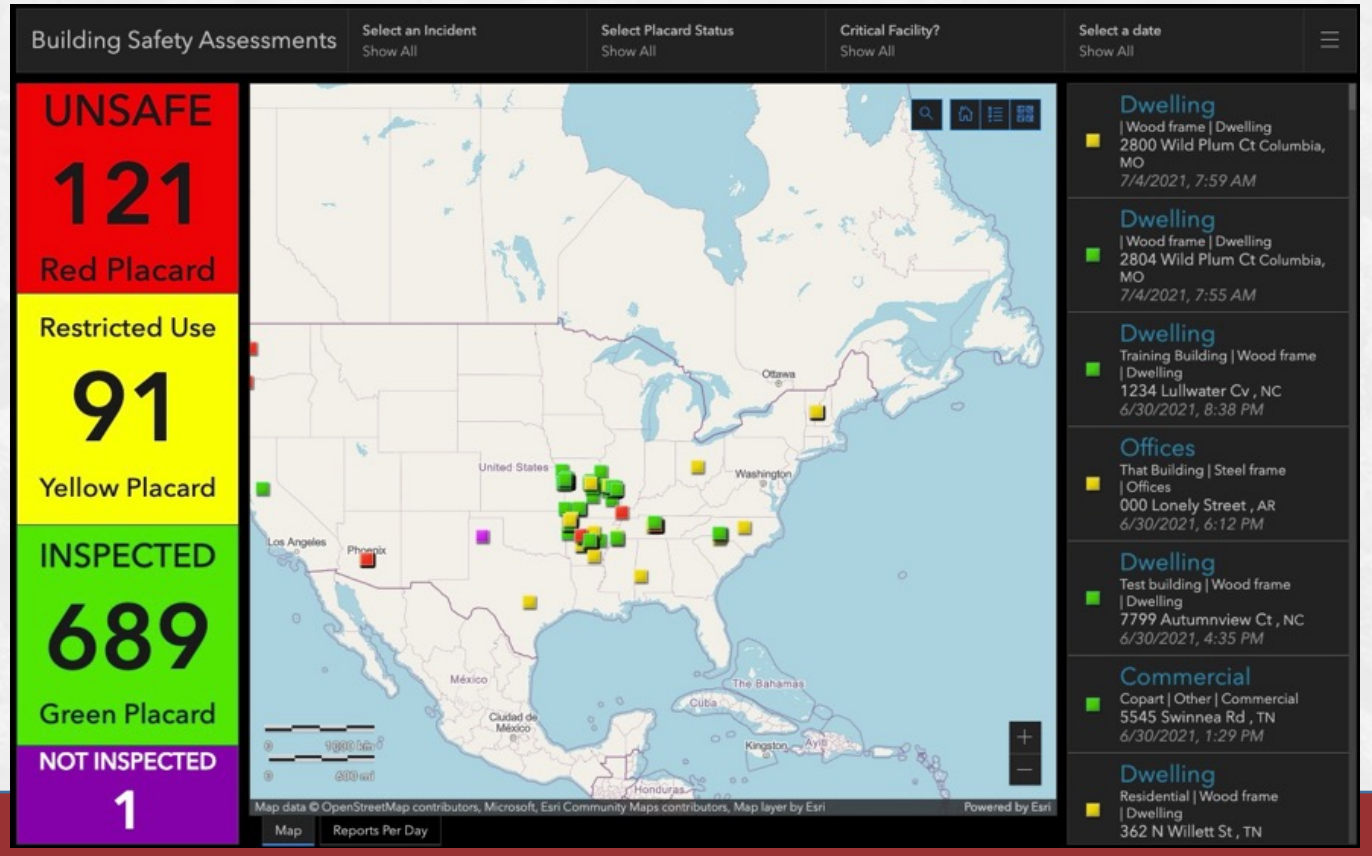
CUSEC Safety Evaluation App

Survey123 Form

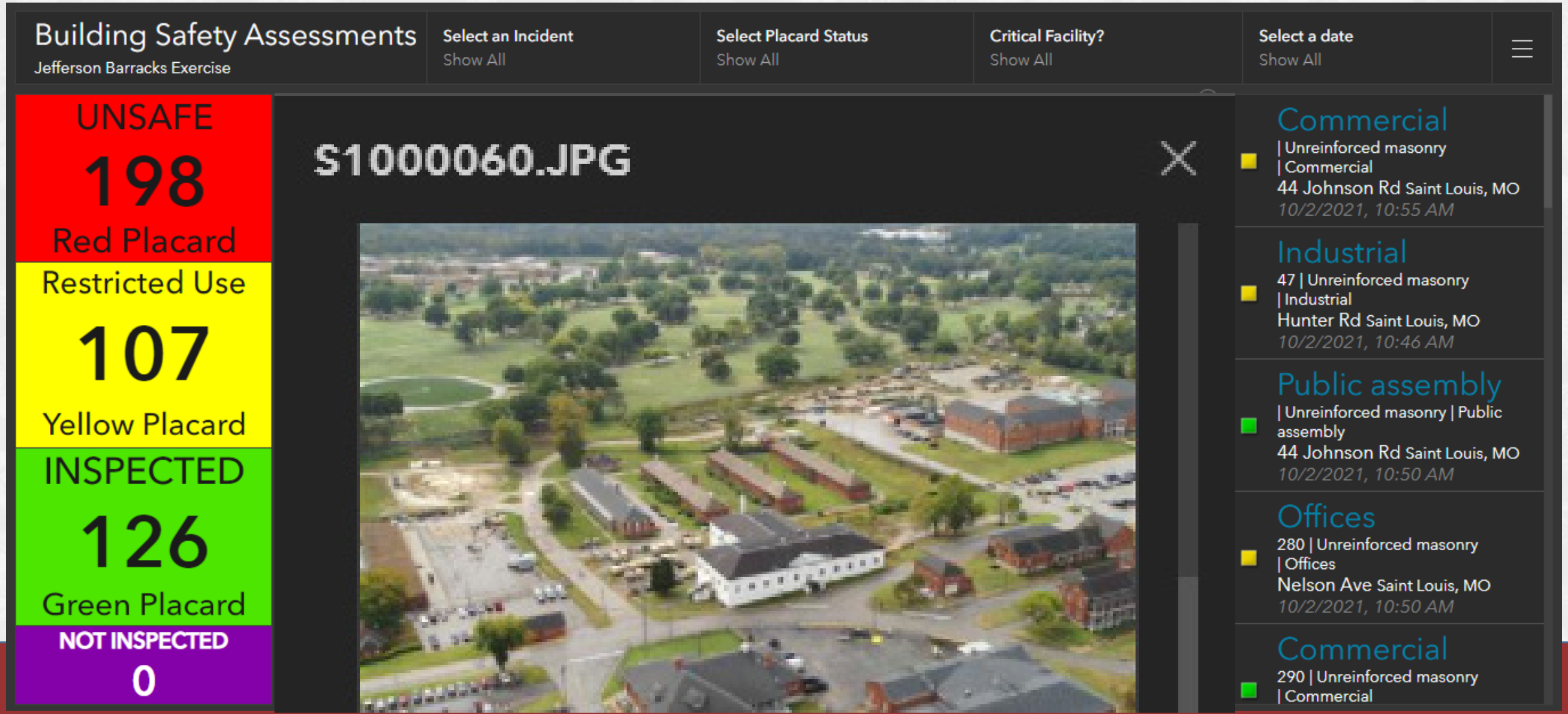




GIS Dashboard



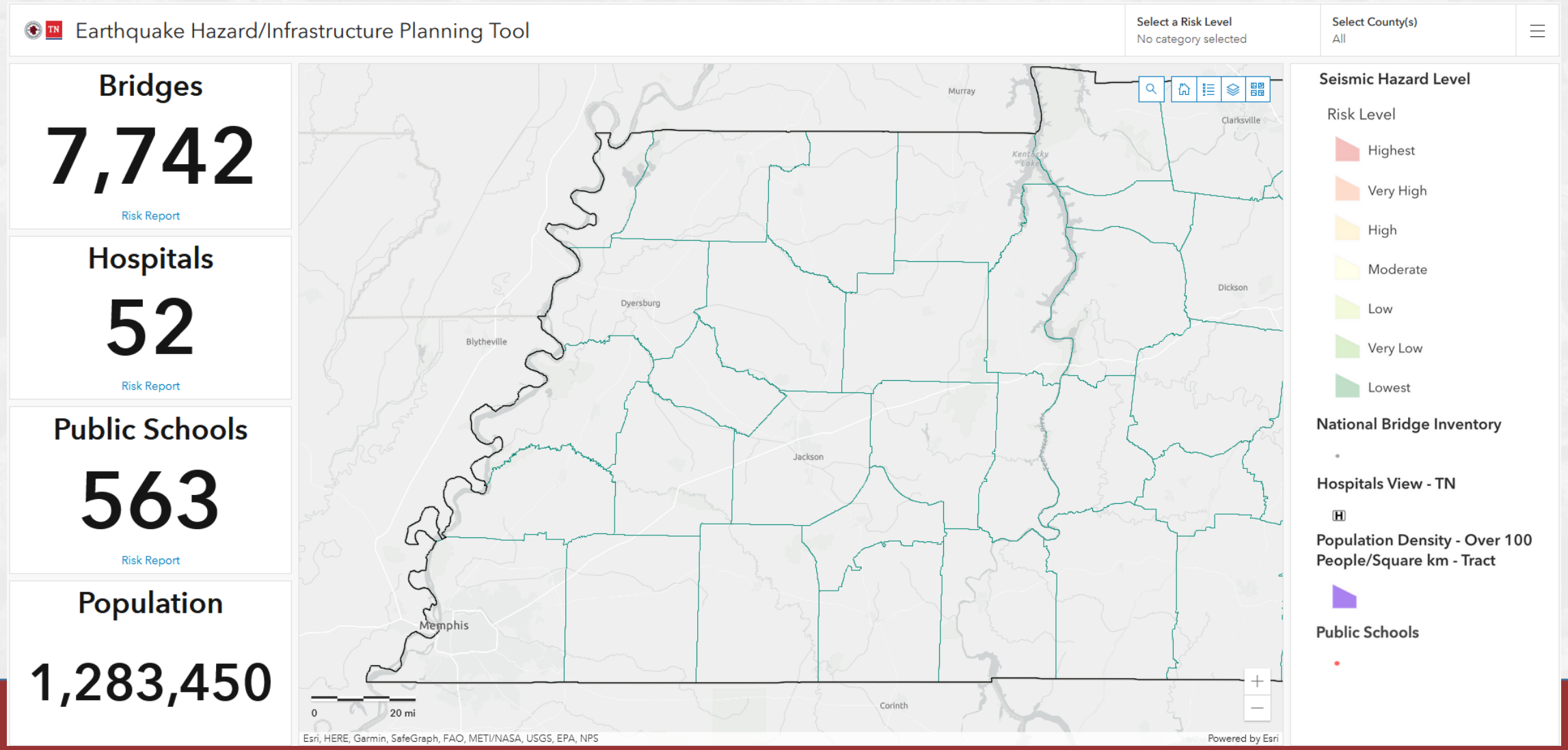
Jefferson Barracks: Oct. 2021



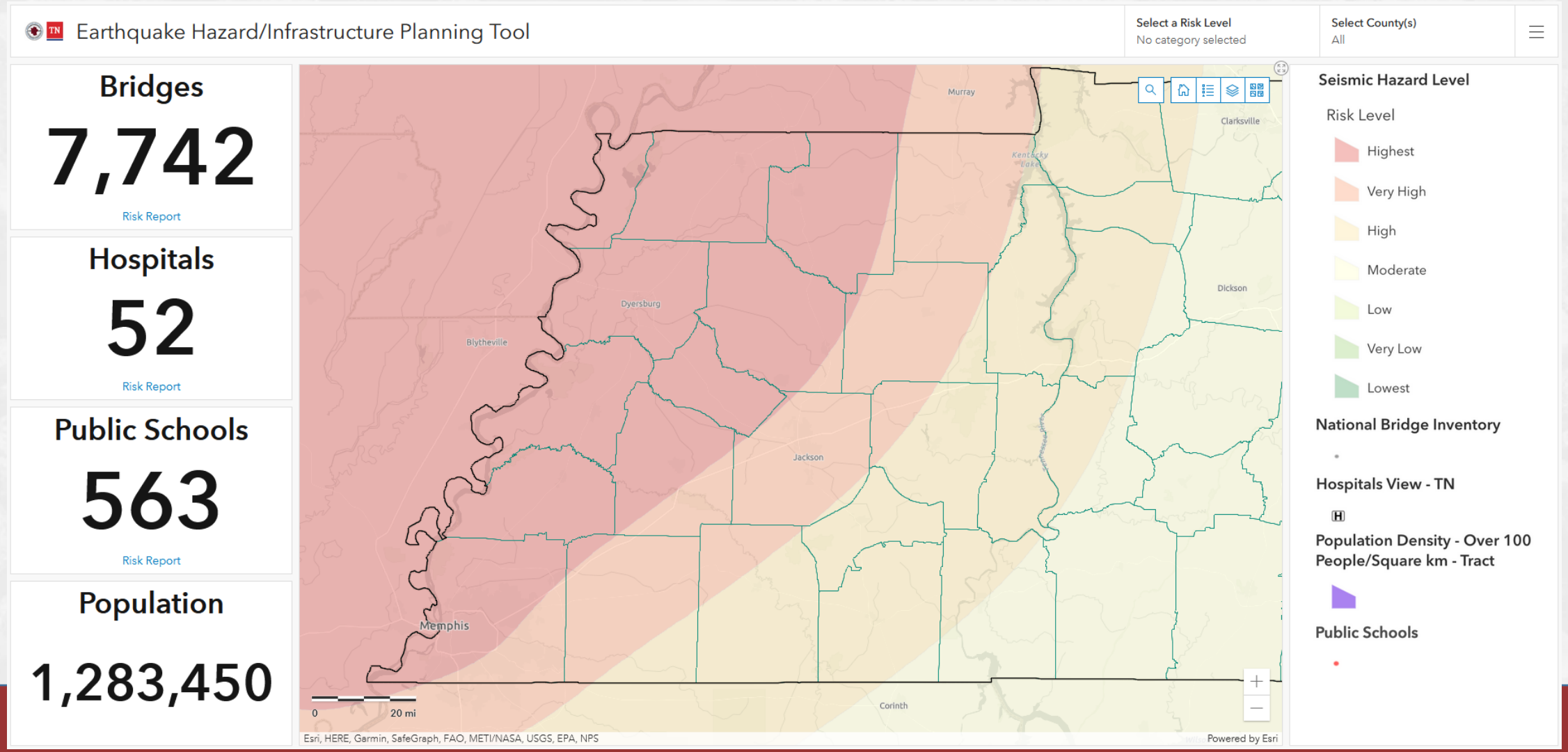
Lessons Learned & Next Steps

- Easier to deploy than 7 years ago
- Need to consolidate applications
- Continued training and app updates
- Deploying to states

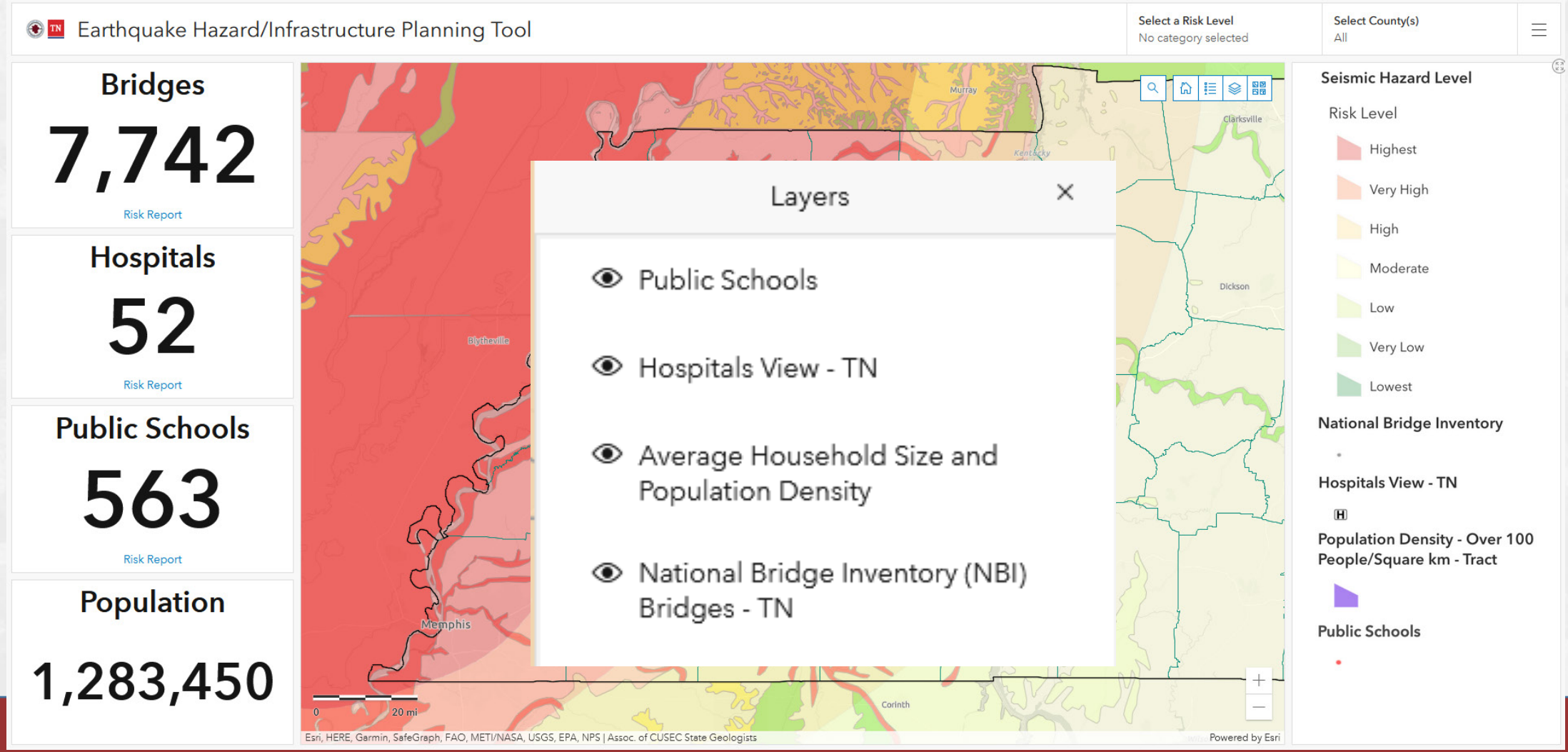
Critical Infrastructure Planning Tool



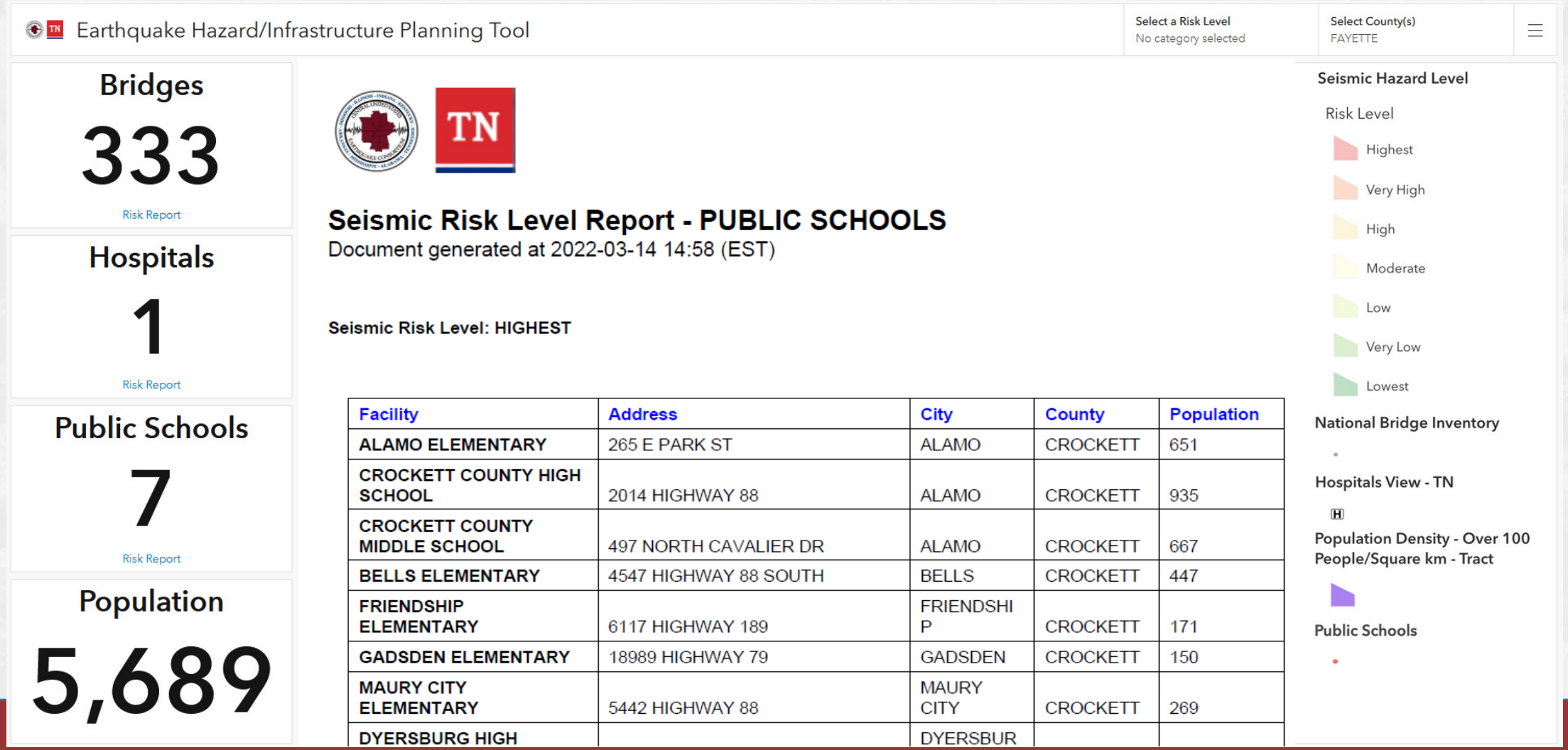
Seismic Hazard Layer



Liquefaction Susceptibility



Infrastructure Layers & Reports



Additional Information

Central U.S. Earthquake Consortium

Brian Blake
bblake@cusec.org
(901) 544-3570

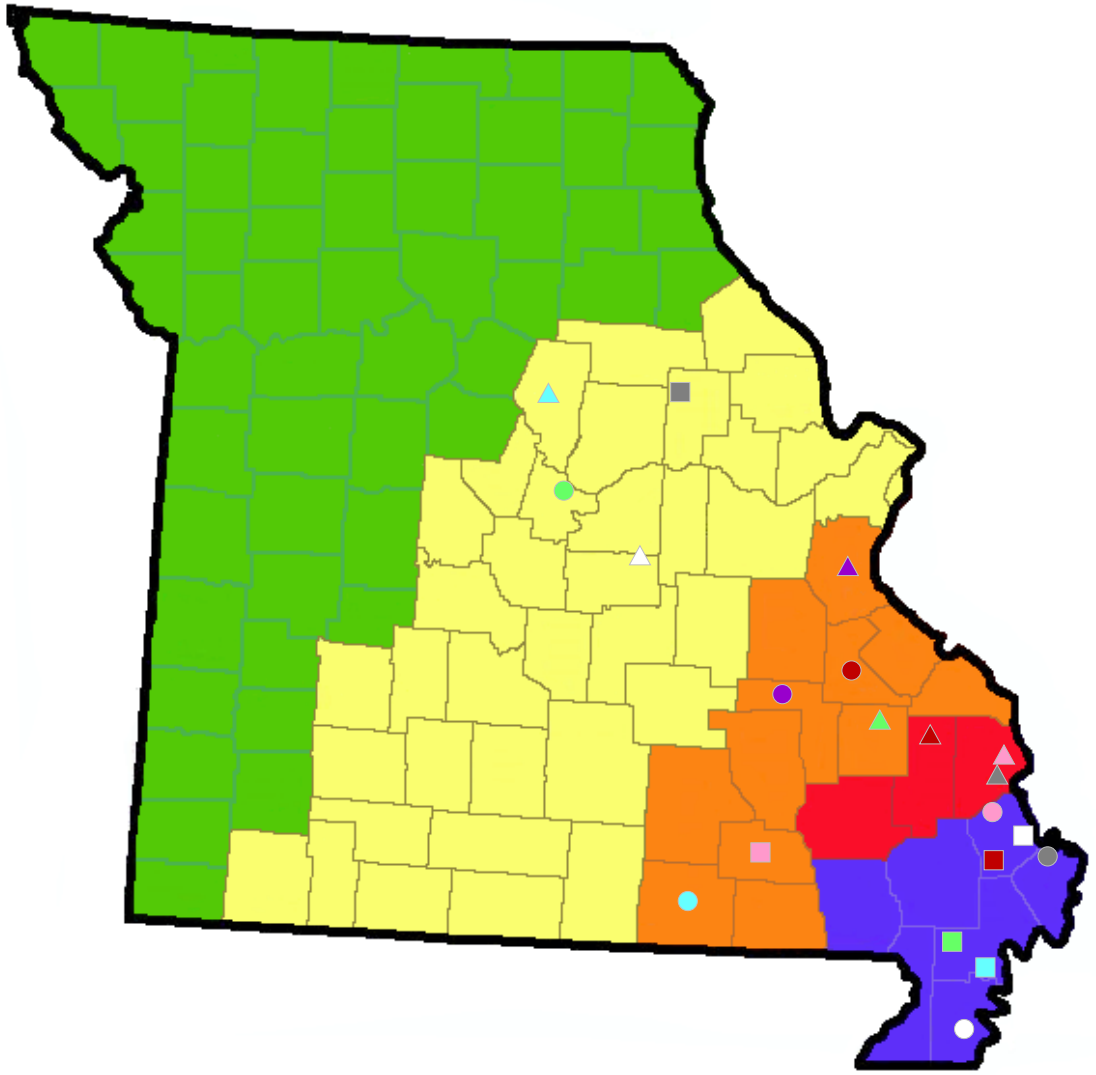
RVS App: rvs.cusec.org

RVS Program & Mitigation Opportunities

Jeff Briggs
Missouri

Cheickh Koma
FEMA RVII

Missouri Seismic Safety Commission FEMA 154 SUMMARY



REGION OF SEISMICITY

- Low
- Moderate
- Moderately High
- High
- Very High

SCHOOL DISTRICT

- Alton R-IV (2016)
- Belleview R-III (2016)
- Blair Oaks R-II (2018)
- Caruthersville #18 (2015)
- Central R-III (2017)
- Chaffee R-II (2013)
- Charleston R-I (2019)
- Delmar Cobble SSD (2019)
- Dunklin R-V (2016)
- Fredericktown R-I (2019)
- Maries County (2018)
- Meadow Heights R-II (2020)
- Nell Holcomb R-IV (2015)
- Notre Dame HS (2020)
- Portageville (2013)
- Puxico R-VIII (2020)
- Risco R-II (2016)
- Scott County R-IV (2019)
- Sikeston R-VI (2015)
- Van Buren R-1 (2017)
- Wellsville-Middletown (2018)

MO FEMA P-154 RVS Viewer Dashboard

States: All | Missouri | MO

Screenings Completed

312

Export RVS Data For HAZUS

De Soto SD#73 - Senior High Theater
Open Google StreetView
815 Amvets Dr
De Soto, Missouri
Building Type: RM1 (FD)
View FEMA P-154 Report
Final Score 3.70
Level 2: Yes

De Soto SD#73 - Senior High South Corridor
Open Google StreetView
815 Amvets Dr
De Soto, Missouri
Building Type: RM2 (RD)
View FEMA P-154 Report
Final Score 5.00
Level 2: Yes

De Soto SD#73 - Senior High Music
Open Google StreetView
815 Amvets Dr
De Soto, Missouri
Building Type: RM1 (FD)
View FEMA P-154 Report
Final Score 3.60
Level 2: Yes

De Soto SD#73 - Senior High Weightlifting
Open Google StreetView
815 Amvets Dr
De Soto, Missouri
Building Type: RM1 (FD)
View FEMA P-154 Report
Final Score 4.40
Level 2: Yes

De Soto SD#73 - Senior High Science
Open Google StreetView
815 Amvets Dr
De Soto, MO
Building Type: RM2 (RD)
View FEMA P-154 Report
Final Score 4.30
Level 2: Yes

De Soto SD#73 - Senior High Gymnasium
Open Google StreetView
815 Amvets Dr
De Soto, Missouri
Building Type: RM2 (RD)
View FEMA P-154 Report
Final Score 4.30
Level 2: Yes

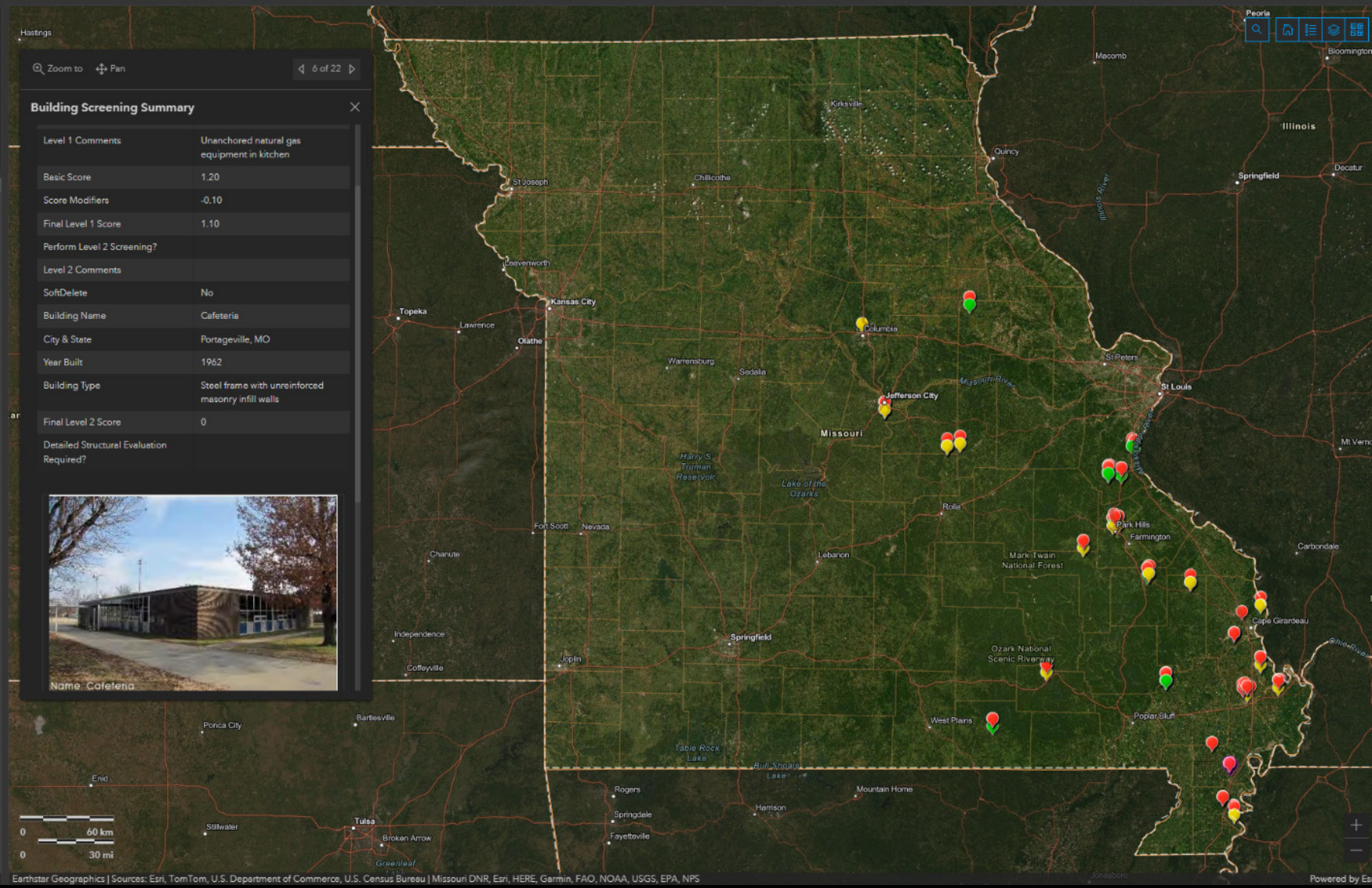
De Soto SD#73 - Senior High

Last update: a minute ago

Zoom to | Pan | 6 of 22

Building Screening Summary

Level 1 Comments	Unanchored natural gas equipment in kitchen
Basic Score	1.20
Score Modifiers	-0.10
Final Level 1 Score	1.10
Perform Level 2 Screening?	
Level 2 Comments	
SoftDelete	No
Building Name	Cafeteria
City & State	Portageville, MO
Year Built	1962
Building Type	Steel frame with unreinforced masonry infill walls
Final Level 2 Score	0
Detailed Structural Evaluation Required?	



Region 4 Charleston Earthquake Plan

Jessica Gibson – Region 4 Deliberate Planner

FEMA

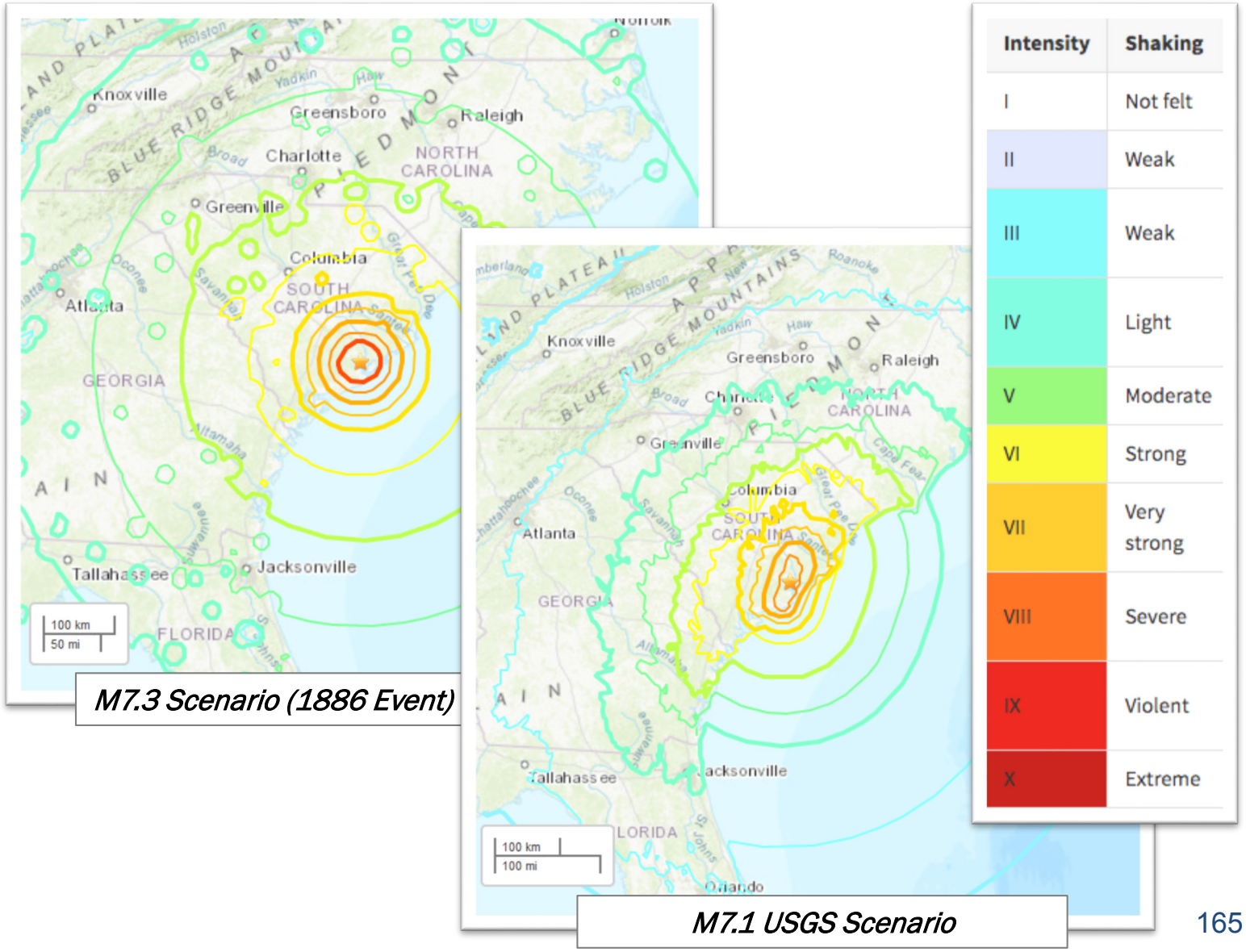
Background

- On August 31, 1886, at approximately 9:50 p.m. a major earthquake occurred, lasting less than one minute but resulted in extensive damage to the city of Charleston.
- Over 2,000 buildings were destroyed, accounting for ¼ of the assets of the city.

FEMA

Charleston Earthquake Planning Scenario

- **Created from two scenarios:**
  - 7.3 earthquake (1886 re-creation) from Charleston
  - 7.1 earthquake near Summerville
  - As a daytime event at 2:00 p.m.
  - During the summer months – height of tourism season
  - Modeling indicates that a tsunami is unlikely



M7.3 Scenario (1886 Event)

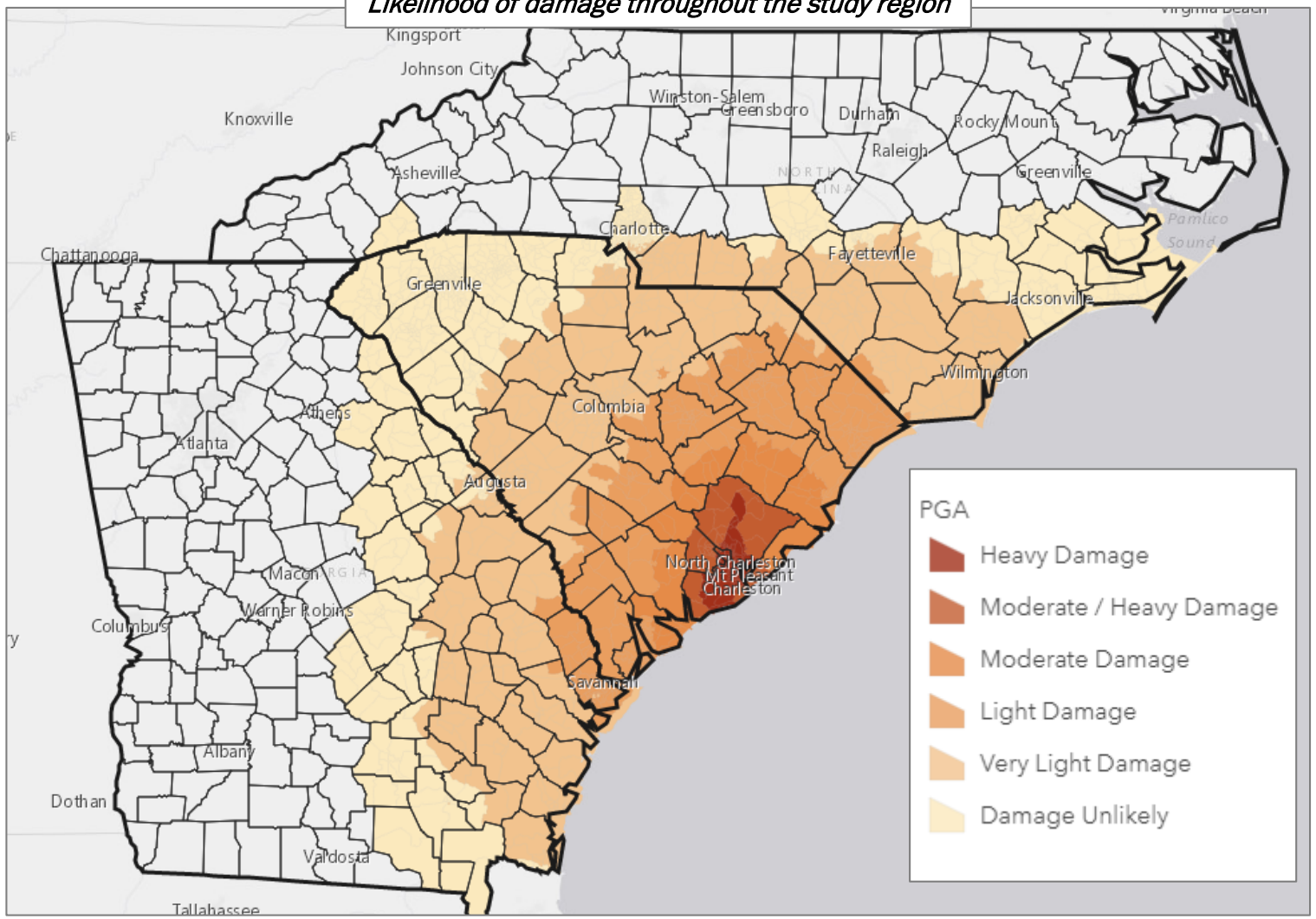
M7.1 USGS Scenario

FEMA

Area of Impact – Study Region

- Study Region (SC, parts of GA, and NC)
  - 3.5 million households within the study region
- Damage will be concentrated in the South Carolina Coastal Zone with lesser shaking throughout the Outer Coastal Plain
  - 1.6 million individuals impacted
- Most severe shaking and damage will be focused around a three (3) county region of concern consisting of:
  - Charleston County
  - Dorchester County
  - Berkeley County

Likelihood of damage throughout the study region



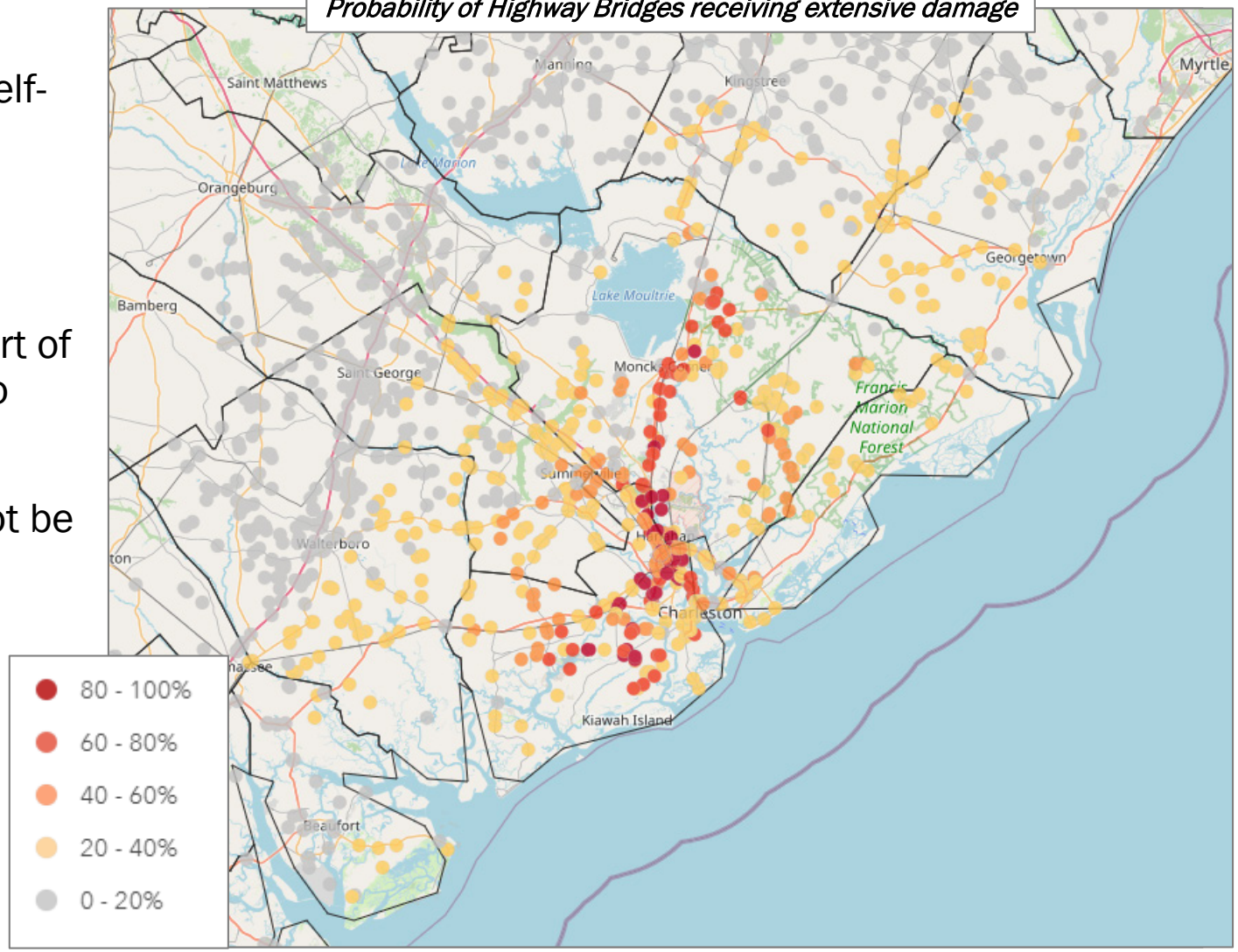
FEMA

Transportation

Assumptions:

- Large-scale evacuations, both organized and self-directed, will occur
- Undamaged roads will become congested with evacuees, impeding both egress and ingress
- Roadways, bridges, and ports (including the Port of Charleston) are likely to be at higher risk due to liquification
- Charleston International Airport runways will not be functional

Probability of Highway Bridges receiving extensive damage



FEMA

Challenges to be addressed

- Evacuations
  - Bridges and roadways in most severely damaged areas will be damaged beyond use limiting roadway evacuation options
  - Loss of bridges creates isolated communities
- Sheltering
  - Significant number of households displaced from the initial earthquake
  - Summer weather will have a threat of severe thunderstorms, high heat, and tropical weather limits sheltering options
  - Height of tourism season (~7.3 million visitors a year)
- Inspections
  - Damaged infrastructure require inspections following initial shake and each aftershock
  - Limited number of inspectors available

FEMA

FEMA

Thanks to the 2022 NEPM Co-Chairs…

Janell Woodward
Nevada

Althea Rizzo
Oregon

And the 2022 NEPM Organizing Committee!

- Mark Benthien, SCEC
- Brian Blake, CUSEC
- Hilda Booth, AR
- Jeff Briggs, MO
- Bob Carey, UT
- John Crofts, UT
- Jon Foster, FEMA
- Noriko Kibble, FEMA RIV
- Pascal Schuback, CREW
- Adam Stewart, TN
- Jim Wilkinson, CUSEC

*Thanks to **Creative Engagement Solutions** for their administrative support!*

2023 Meeting Planning

- 2022-23 Vice-Chair
- Location of 2023 Meeting
- Committee selection

Althea Rizzo - Oregon
2022-23 NEPM Chair

NEPM Follow Up

- Meeting Notes & Roster
- Presentations
- Video Recording(s)
- Post-meeting survey

2022 National Earthquake Program Managers Meeting

--- END OF MEETING ---