

Building Community Resilience: ReliabilityFirst (RF) and OSU Extension’s Model for Community Risk Mitigation

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INTRODUCTION

Well Documented “Need” to Examine Resiliency: The President’s National Infrastructure Advisory Council (NIAC) has found that existing national plans, response resources, and coordination strategies will be outmatched by a catastrophic power outage. Most communities think of a blackout as being contained within a few blocks, and power will be restored in a few days. But the risks (weather, aging infrastructure,...) and complexity (automation, renewables,...) are creating the potential for longer-duration outages on wider scales. This profound risk requires a new national focus.

Why Electricity? Why So Big? Why So Long? Significant public and private action is needed to prepare for and recover from a catastrophic outage that could leave the large parts of the nation without power for weeks or months, and cause service failures in other sectors including water and wastewater, communications, transportation, healthcare, and financial services.

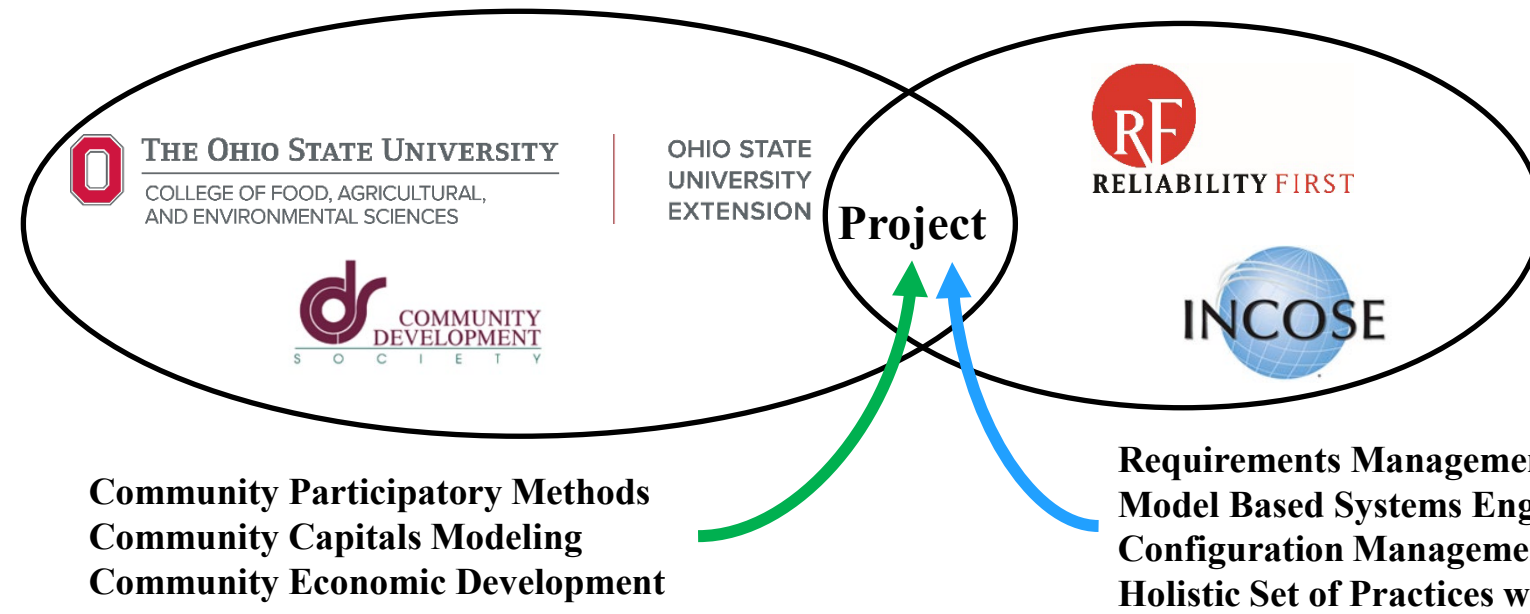
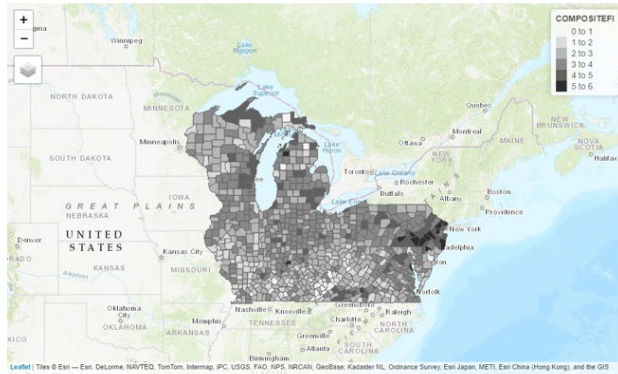
See video clip from Craig Fugate (FEMA)



METHODS

Heat Map Development – RF has developed a heat map of its 13-state footprint that looks at the likelihood of a county experiencing a 3-week blackout based on past reliability metrics and proximity to electric system infrastructure, combined with county’s ability to mitigate a 3-week blackout should one occur.

Most Vulnerable Counties: Likely to blackout for 3 weeks, and weak in inherent mitigation? COMPOSITE: LIKELIHOOD X (1-MITIGATION)



Why the transdisciplinary team? Aren’t traditional CDS methods enough to tackle Resiliency?
 Resiliency is a Sociotechnical Grand Challenge! Likely, several approaches will emerge to address Resiliency. In this approach, the strengths of cutting edge Community Development are fused with contemporary practice in Systems Engineering.

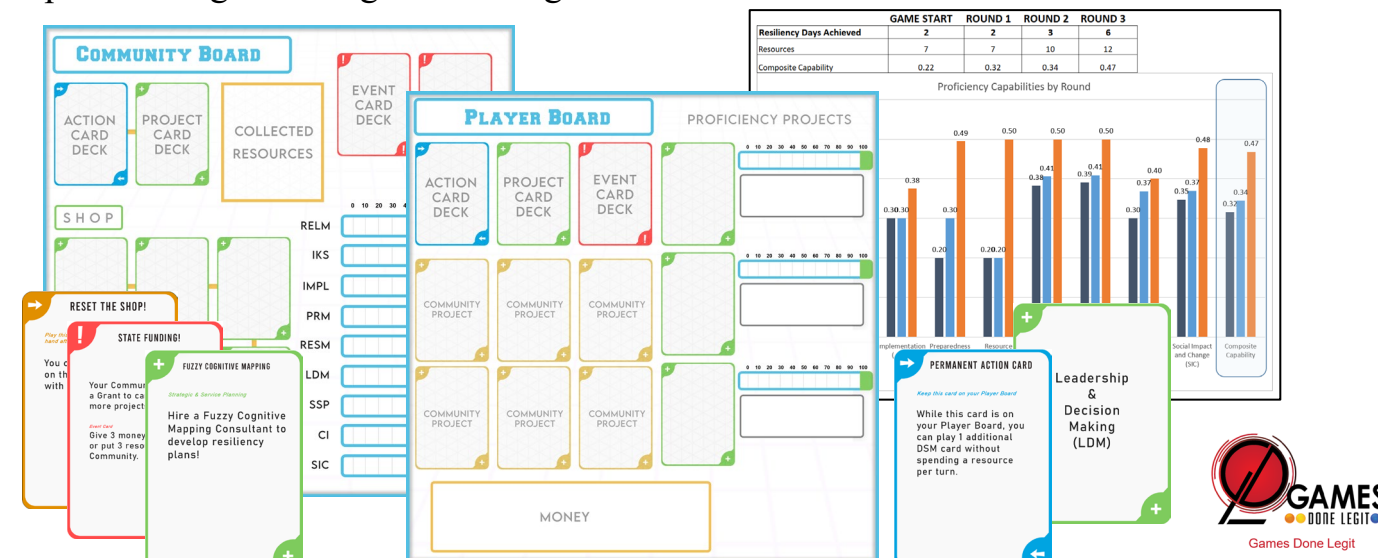
The Partnership: RF, a FERC authorized regional organization ensuring electric grid reliability and security, and Ohio State University Extension have developed a Community Appraisal Project to help communities gain the technical and social capacity needed to mitigate impacts of 14+ day power outage.

The Community Appraisal Team Can Help: A cross-functional team will perform an “Appraisal” of local communities current capabilities with a focus on the ability to sustain long-term (7-21 day) power outages and their planned interactions with local power providers to determine the potential impact to “way of life.”

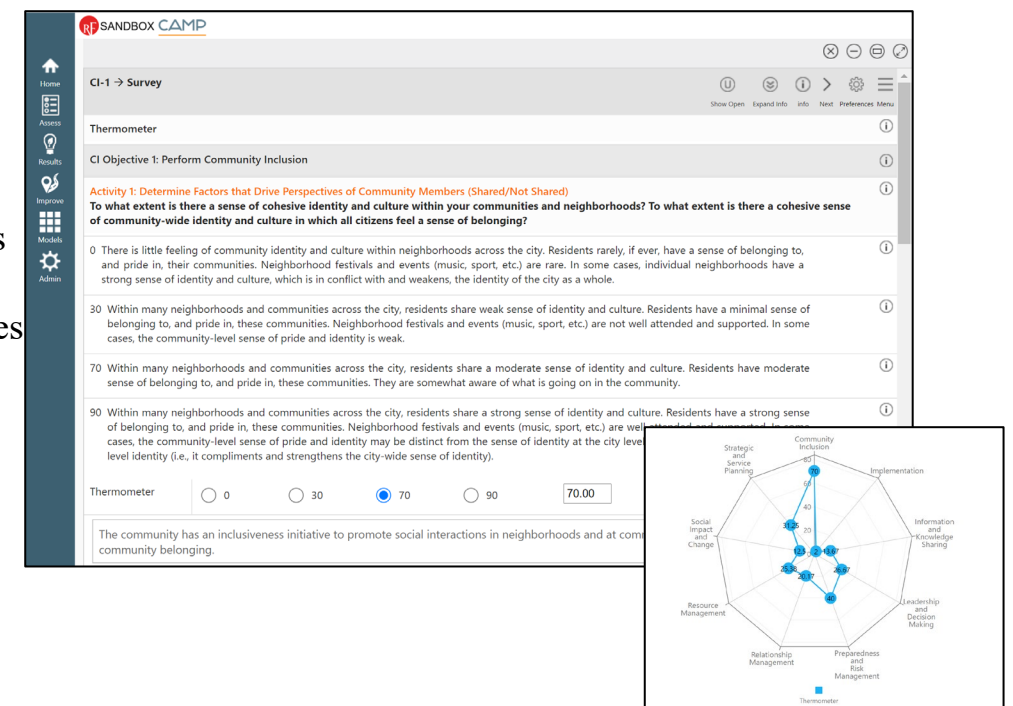
- The Appraisal will benefit the community by:
- Gaining a better understanding of a community’s current level of resiliency and preparedness.
 - Learn ways your community can improve their preparedness and resiliency.
 - Create a roadmap to improve economic and environmental resiliency.
 - Recover rapidly and suffer less from economic downturns if an event should occur.
 - Promote self-reliance and community readiness.
 - Provide metrics to bring to the community leaders and members to grow awareness.
 - Protect human health and the environment.

Interactive Learning through Gaming

RF’s system engineering experts and OSUE’s Community Development professionals have built an engaged “game-based” approach leading communities through an analysis of existing system limitations and developing a plan for targeted mitigation strategies.



Maturity Model Self-Assessment – In a hands-on approach, the team will guide participants through a web-based self-assessment appraisal tool, interpreting the results, and developing initiatives and process improvements to foster their community’s capacity to withstand prolonged power outages and build long-term community resilience.



EXPECTED RESULTS

Community Awareness: It is expected that the community will gain a better understanding of how the different stakeholder roles and functions within the community are interrelated. The community will learn that these dependencies must be considered as they map initiatives geared towards making their community more resilient to an extended power interruption lasting 7-21 days covering a large geographic footprint.

Roadmap and Initiative Planning: The final report provided to the community provides a baseline of community maturity against the Community Appraisal model with both specific and general recommendations for improvement against the model. The community then develops a improvement plan, or portfolio of projects, to directly improve resiliency against potential future power outages. The community plan will consider the interdependencies that were discovered through the gaming and appraisal activities.

It’s a Journey, Not a Destination: The Community Appraisal team will continue to work with the community to see them through the change process over several years. The Mitovia tool is configured to track community maturity over time. The final report becomes a living document that chronicles the community’s journey towards improved resiliency.

Informed Regulator: RF is one of the six regulators of the nation’s interconnected power grid. As community appraisals are completed across the 13-state footprint, RF will learn more about the needs and limitations of the citizens whose livelihoods and quality of life depend upon the reliable supply of electricity. The information regarding aggregate risk in the footprint will be shared with other regulators and federal agencies to ensure the needs of communities and citizens are being met.