Critical Infrastructure Resilience Institute (CIRI)

- Established as a DHS Center of Excellence in June 2015.
- Mission:
  - To conduct research and education to enhance the resiliency of the nation’s critical infrastructures and the businesses and public entities that own and operate those assets and systems.
- Focus:
  - Engaging universities and national laboratories for research, development, and education.
  - Bridging research and industry.
  - Real-world testing and deployment.
CIRI research themes

- Understanding resilient critical infrastructure systems.
- Application of critical infrastructure in the real world.
- Business case for infrastructure resiliency.
- Future of resilience.
- Education and workforce development.
2016 Infrastructure Resilience Grants: Vision

Suites of projects that can lead to specific, practical, deployable outcomes.

Overcoming gaps and barriers:
- Understanding systems
- Data collection
- Analytical methods
- Economics/policies/human behavior
- Modeling and simulation
- Visualization
- Assessment tools
- Technological solutions
- Validation and demonstration
- Workforce development
Approach: Targeting three thrust areas

• Resilience insurance.
  – E.g., the development of measurable performance indicators for insurers.

• Macro and micro industrial supply chain.
  – E.g., the identification and reduction of risk to:
    • Business continuity of inter-business supply chains.
    • Productivity within a facility or industrial operation.

• Infrastructure dependencies and interdependencies (at a local or regional level).
  – E.g., the analysis of how disruptions across infrastructures affect regional costs, business continuity, and economic recovery.
Project selection

Within the realm of the thrust areas, we’ll assess technical merit and look for synergies among technically sound proposals.

We’ll work with DHS to more clearly define 2 or 3 target outcomes.
Project refinement

- We’ll work with individual teams to align work scopes, schedules, and milestones.
- We’ll issue a more targeted RFP in early 2017 to address additional known barriers.
- We’ll coordinate project clusters to stay on track.
- We’ll establish stage gates to efficiently identify dead ends or needs for additional activities, including industry/government engagement.
2016 request for proposals

ciri.illinois.edu/rfp-2016/

Important dates:

• September 30: Letters of intent due (optional, but desired)
• October 24: Proposals due
2016 request for proposals

ciri.illinois.edu/rfp-2016/

- Projects selected for negotiation: ~ End of November
- Contracting in place: ~ End of December
  - Typical awards: $70,000 - $150,000
  - Maximum award: $200,000
- Proposed additional work scope: July 1, 2017 – June 30, 2018
  - Maximum addition: $350,000
  - Detailed extension work scopes will be by invitation with no new proposal process.
Proposal requirements

• Read the RFP!
• Narratives ≤ 9 pages.
• Resumes of key personnel (@ ≤ 2 pages).
• Commitment letters from key partners.

• Read the evaluation criteria!
  – Technical merit: 30%
  – Impact: 25%
  – Capability: 20%
  – Collaboration: 15%
  – Cost: 10%
Questions DHS hopes the projects will help answer

• What investments were made in resilience following significant catastrophic events, and what investments were made to restore things to a less-than resilient state? What influenced the way that these communities and infrastructure systems responded?

• Why do some communities show a resistance to adopting resilience while others readily adopt preparedness efforts and – perhaps – become more resilient?

• Address information technology and operations technology convergence in the manufacturing sector. Examples of research topics include identifying existing risk assessments, supply chain risk management methods, cybersecurity capabilities that can benefit owners and operators of critical manufacturing facilities, other paths to increasing sector resiliency, etc.
Questions DHS hopes the projects will help answer

- How can emerging threats and hazards, evolving vulnerabilities, changing consequences, and dynamic risks with homeland security, be better considered in resilience policy analyses and community planning efforts?
- In order to improve government planning and decision-making capabilities, identify successful strategies used by governance bodies to enhance the resilience of their communities. Include policies, governance structures, and regulations that support and enable timely and responsive actions.
- How can infrastructure owners and operators work with risk management professionals to integrate improved and comprehensive methods for conducting risk assessments across critical infrastructures?
- Following a disruption of port operations, what are the secondary and tertiary effects of the port disruption on other modes of transport (trucking, rail, pipeline) and what are the economic impacts of such an incident?
Questions DHS hopes the projects will help answer

- How can communities evaluate the utility of resilience programs?
- What are effective and measurable evaluation factors when infrastructure owners are considering vendors or contractors and what are measurable performance indicators to confirm compliance with emerging data protection requirements?
- Which types of partnerships are preferred by private sector entities and why?

What types of public-private partnership business models in the homeland security mission space are most successful and why?

- Identify methods and provide options to structure resources that can encourage the market to enhance cybersecurity insurance products. Explore and analyze business models to sustain proposed services and resources. Additional areas that may be addressed include: data repositories, risk modeling, market awareness surveys, etc.
Questions DHS hopes the projects will help answer

- What policy approaches (e.g., tax incentives, liability limits, property rights, regulations, etc.) performed “best” during the Center’s real-world testing and evaluations to enhance mitigation of the effects of future catastrophic incidents?
- How would they impact an entity’s business operations and response to incidents?
- Perform an economic review to identify actors who benefit and suffer loss throughout the various phases of the emergency management cycle. For example, use real world examples as case studies to quantify how a community’s tax base is affected following a disruptive event, the impact on businesses, where public investment or relief funds are spent, tax rate changes, length of time to recover to pre-event population levels.
Questions DHS hopes the projects will help answer

- How does business continuity contribute to community resilience? Determine the positive impacts of business continuity planning on community resilience planning. How does community resilience contribute to business continuity? Illustrate the importance of community resilience planning on business continuity planning. Present a case for why business executives should participate in community resilience planning as part of business continuity planning.

- What next generation predictive analytics will help analysts to identify patterns, deviations, and anomalies in future sensor networks (cyber and physical assets) and how can those approaches turn that data into actionable information?
Future funding opportunities

- Remember that we’ll likely issue a new RFP for the July 2017 to June 2018 period that will target remaining gaps and barriers.

- CIRI may periodically fund projects beyond the scope outlined here to address specific DHS needs.
Thank you
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