

National Infrastructure Advisory Council (NIAC)



Regional Resilience Working Group Report and Recommendations

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Agenda

- ❑ Study Overview
- ❑ General Observations
- ❑ Findings
- ❑ Recommendations
- ❑ Questions & Deliberations
- ❑ Executive Engagement in the Electricity Sector

Study Overview

Working Group Members

WG Member	Sector Experience
Constance H. Lau , <i>President and Chief Executive Officer, Hawaiian Electric Industries, Inc. (HEI) Co-Chair</i>	Electricity, Financial Services
Beverly Scott , <i>General Manager, Massachusetts Bay Transportation Authority Co-Chair</i>	Transportation
Jack Baylis , <i>Executive Director and Senior Vice President for The Shaw Group</i>	Water
Glenn S. Gerstell , <i>Managing Partner, Milbank, Tweed, Hadley, & McCloy LLP</i>	Water, Telecommunications
David J. Grain , <i>Founder and Managing Partner, Grain Management</i>	Telecommunications
Margaret E. Grayson , <i>President, Grayson Associates</i>	IT, Defense Industrial Base
James A. Reid , <i>President, Eastern Division, CB Richard Ellis</i>	Commercial Facilities
Michael J. Wallace , <i>Former Vice Chairman and COO, Constellation Energy</i>	Electricity, Nuclear

Regional Resilience Study

Purpose: Identify ways regions can become more resilient and the steps the Federal Government can take to help regions accomplish resilience goals.

Objectives

- 1. Best Practices:** Identify the characteristics that make a region resilient and the steps that can be taken to improve resilience within a region.
- 2. Process Improvements:** Determine how public and private critical infrastructure partners can work together to improve regional resilience.
- 3. Federal Role:** Recommend how Federal Government capabilities and resources can help accomplish resilience goals and address any gaps that can help regions become more resilient.

Information and Data Sources

- ❑ Council member experiences
- ❑ Results from the Superstorm Sandy Case Study
- ❑ 370 documents (reports, studies, videos, news articles, testimonies, and policy directives)
- ❑ 37 interviews with state and local government representatives, national leaders, infrastructure owners and operators, and Federal agencies
- ❑ Insights from the State, Local, Tribal, and Territorial Government Coordinating Council
- ❑ Webinars and conferences with regional government and critical infrastructure representatives

General Observations

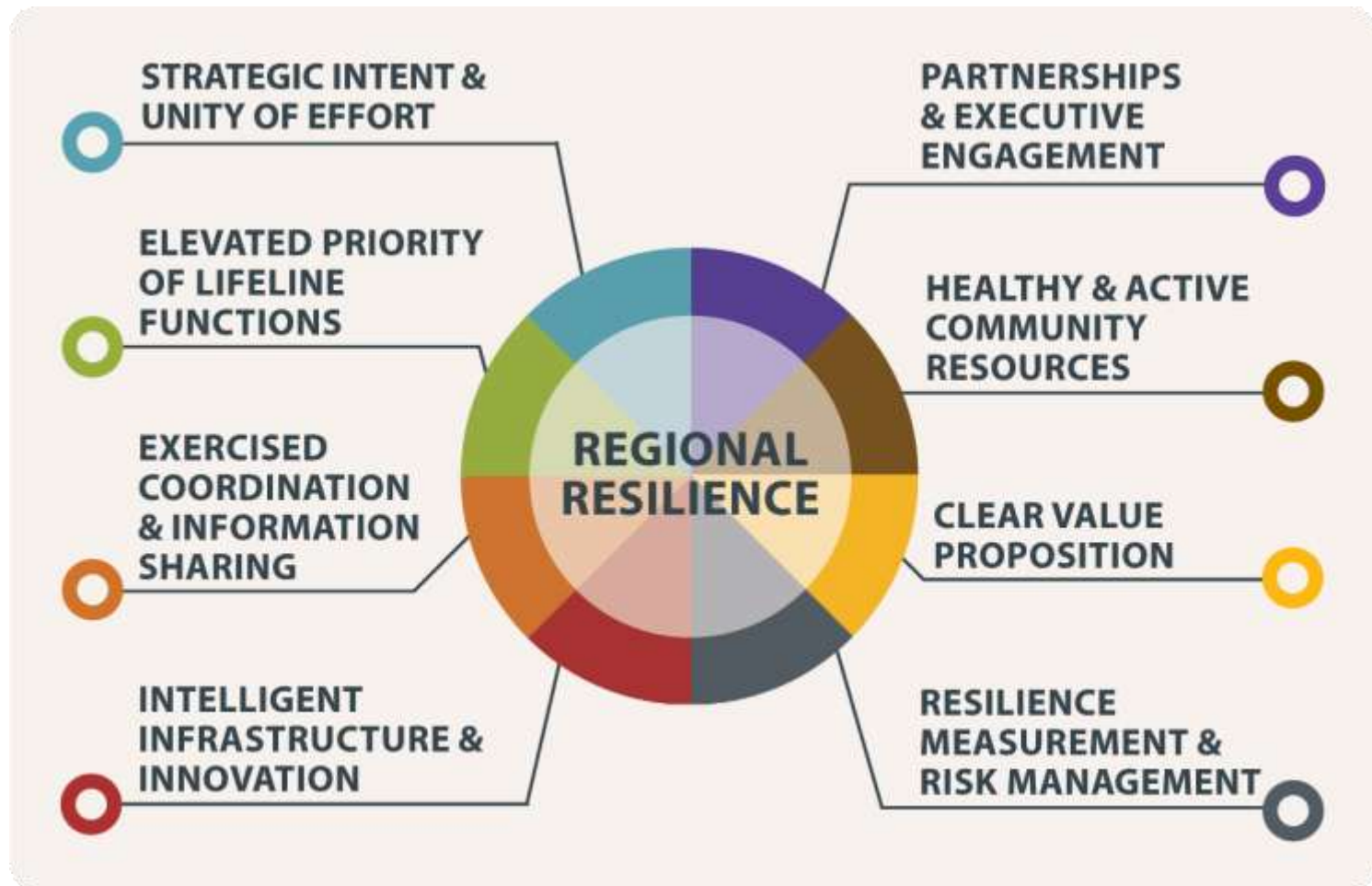
Today's Realities

1. We live in a **dynamic risk environment of increasing complexity** and interdependence of related communities, regions, and lifeline infrastructures that must be reflected in our national strategies.
2. The model for planning and decision-making must include the **collective expertise, commitment, and resources of key security partners**, including owners and operators; Federal, state, and local government; non-profits; and communities.
3. Despite our best efforts, disasters will continue to occur, requiring more **flexible and agile systems** to rapidly respond to and recover from events.

Principles of Regional Resilience

1. Resilience requires a **whole-of-nation approach** that integrates top-down policy and leadership with bottom-up community capability to withstand and survive disasters.
2. Regional resilience strategies must be tailored to the **distinct needs of each region** and designed to manage complex regional risks that span multiple jurisdictions and sectors.
3. Creating strong public-private partnerships and relationships with **senior executive involvement** is the most effective and enduring strategy for achieving sustainable resilience.

Characteristics of Resilient Regions



Findings

Six Key Findings

1. **Lifeline sectors are top priorities for achieving regional resilience** and their growing complexity creates hidden risks.
2. Regional resilience efforts are most successful when **tailored to the characteristics and needs of each region**.
3. **Senior executive engagement creates strong public-private partnership**, which is the most effective strategy for achieving long-term resilience within regions.
4. **Social media has emerged as a powerful but underutilized tool** for communicating and collecting data during emergencies.
5. **Complex rules, regulations, and processes hinder rapid recovery** of lifeline infrastructures.
6. **Without a strong value proposition, owners and operators are unable to invest** in new and innovative infrastructure that can mitigate long-term structural risks within regions.

Recommendations

Recommendation 1. Form partnerships with senior executives from the lifeline sectors.

- 1.1** Within six months, the President should direct the heads of appropriate Sector-Specific Agencies to **convene a meeting with CEOs from each lifeline sector to explore the formation of a partnership** to address high-priority risks to the sector's infrastructure.
- 1.2** The Department of Energy, in collaboration with the Department of Homeland Security (DHS), should **work with the electricity and nuclear sectors to document the process used for CEO engagement** in the electricity sector to discern lessons learned that can guide senior executive partnerships in other lifeline sectors.
- 1.3** The President should task the NIAC **to identify the highest priority cross-sector risks affecting national security and resilience** and produce a written report to the President within 18 months recommending executive-level, cross-sector action.

Recommendation 2: Identify or develop regional, public-private, cross-sector partnerships, led by senior executives.

- 2.1** The Secretary of Homeland Security should work directly with governors, mayors, local government, and senior executives from the lifeline sectors to **facilitate the development of sustainable cross-sector partnerships within selected regions**, with the objective of improving the region's resilience to very large-scale events that could impact national security, resilience, and economic stability.
- 2.2** The Secretary of Homeland Security should **initiate a pilot program with state and local governments in select regions to conduct regional joint exercises**, develop risk maps of critical sector interdependencies, and extract lessons learned on regional needs and gaps for government and sector partners.

Recommendation 3. The President should designate energy, communications, water, and transportation as lifeline sectors.

- 3.1** DHS should **examine how the Federal Government, state governments, and regional entities currently coordinate action** and provide support to the lifeline sectors in event response.
- 3.2** The Federal Emergency Management Agency (FEMA) National Response Coordination Center, Federal agencies, and state and local governments should modify their processes and plans for emergency operations to **include the co-location of representatives of lifeline sectors in their emergency operation centers during major disasters.**
- 3.3** The President should **require that Federal agencies: a) explicitly consider and address the differences among regions when promulgating security and resilience rules, programs, or guidance;** and b) expressly state how they have customized implementation to each region if there is not generic applicability.

Recommendation 4. Integrate social media into public alert and warning systems and develop social media training and information sharing capabilities.

- 4.1** FEMA and the FCC should **convene a task force to examine how new and emerging social media apps, platforms, and capabilities can be used** to support emergency notification and response.
- 4.2** FEMA, the FCC, and social media providers should **integrate social media platforms into FEMA's Integrated Public Alert and Warning System (IPAWS)**.
- 4.3** FEMA non-disaster preparedness funding to SLTT emergency management agencies should **require recipients to designate personnel through the IPAWS system to issue targeted emergency alerts**.
- 4.4** FEMA and DHS S&T should work through the SLTTGCC to **develop a conference or webinar series on innovative social media use and best practices in state and local emergency management** including examining social media successes in recent large-scale disasters.

Recommendation 5: Launch a cross-agency team to develop solutions to site access, waiver, and permit barriers during disaster response.

- 5.1** DHS's Office of Infrastructure Protection (IP) and FEMA should collaborate with SLTT governments and owners and operators to **develop a commonly applied process or system to credential lifeline sector owners and operators** and grant them access to disaster areas.
- 5.2** DHS should work with SLTT governments and owners and operators to **catalog the waivers and permits commonly required during various disaster scenarios and develop a streamlined process for rapidly issuing those permits** and waivers at the Federal, state, and local level.
- 5.3** DHS should work with lifeline sector regulators **to identify actions that will expedite waivers and remove impediments to fleet movement**, including driver-hour limitations, road and weight restriction, port access restrictions, and toll crossing processes.

Recommendation 6. Create the value proposition for investment in resilient lifeline infrastructures and adoption of innovative technologies.

- 6.1** Within one year, the Department of Energy should **complete a pilot analysis of the value proposition for investment in grid modernization** and recommend any approaches that encourage long-term investment to modernize lifeline infrastructures. **All lifeline sector SSAs should then work with their sector partners to establish the value proposition for investment in critical sectors.**
- 6.2** The President should direct the National Oceanic and Atmospheric Administration (NOAA) and appropriate Federal agencies to **examine existing weather and climate forecasting models to ensure they provide the best available prediction of severe weather events** to enable private, state, and local partners to make informed investment decisions that manage risk.
- 6.3** DHS should work through Federal research organizations, academic institutions, and the national laboratories to develop Applied Centers of Excellence for Infrastructure Resilience **to provide an operating environment to test and validate innovative technologies and processes that build resilience into new large-scale infrastructure projects.**

Questions/Deliberation

Executive Engagement in the Electricity Sector

Principles of Successful Public-Private Partnerships

1. Executive engagement
2. Trusted relationships
3. Simple process
4. Value proposition
5. Trusted executive facilitator

Why Executive-Level Engagement?

- ❑ CEOs have the authority to:
 1. Set strategy and direction
 2. Establish priorities and importance of the topic down the management line
 3. Provide resources (people, money, time)
 4. Exercise accountability through follow-up
- ❑ CEOs have a "fiduciary duty" to their stockholders to manage the "risks" that could impact the success of the business.

Electricity Sector Executive Engagement: Catalyst

- ❑ NIAC report of 2010 energized CEOs
- ❑ CEO wrote to POTUS to request engagement
- ❑ Principles of successful public-private partnerships become mantra:
 1. Executive engagement
 2. Trusted relationships
 3. Simple process
 4. Value proposition
 5. Trusted facilitator/executive champion
- ❑ Building a successful track record of executive engagement
 - Kaleidoscope

Building Trusted Relationships

- ❑ July 2012: CEOs met with Secretaries of DOE and DHS to explore partnership.
- ❑ Sept 2012: Gov't provides first-ever cleared briefing for 70+ industry CEOs on threat environment.
- ❑ Oct 2012: Critical CEO coordination in Superstorm Sandy
- ❑ Jan 2013: Key industry CEOs meet with Secretaries of DHS and DOE and White House staff
- ❑ 28 CEOs form Joint Electric Executive Committee; engaged COOs and CIOs to form Executive Working Group focused on tactical deliverables
- ❑ Executive facilitator (w/ high level clearance) gathered executive-level industry input to federal entities on tools and technologies, information sharing, and event response capabilities and plans – facilitated partnership dialogue

Clear and Tangible Progress

- ❑ May 2013: Second meeting of CEOs, White House, and DOE/DHS Deputy Secretaries
 - Transitioned to Electricity Sub-sector Coordinating Committee led by a 9-member steering committee
 - Several Executive Working Groups of COOs and CIOs met over coming months with Assistant Secretaries
- ❑ “Poison Apple” cyber security tabletop exercise involved CEO participation

Results: Actions to Reduce Risk

- ❑ Sept. 2013: Third significant meeting of CEOs, White House, DOE/DHS Deputy Secretaries with hard commitments set
- ❑ Based on trusted relationships with cleared industry executives, CEOs reduce risk by deploying hardware and software.

Results: GridEx II

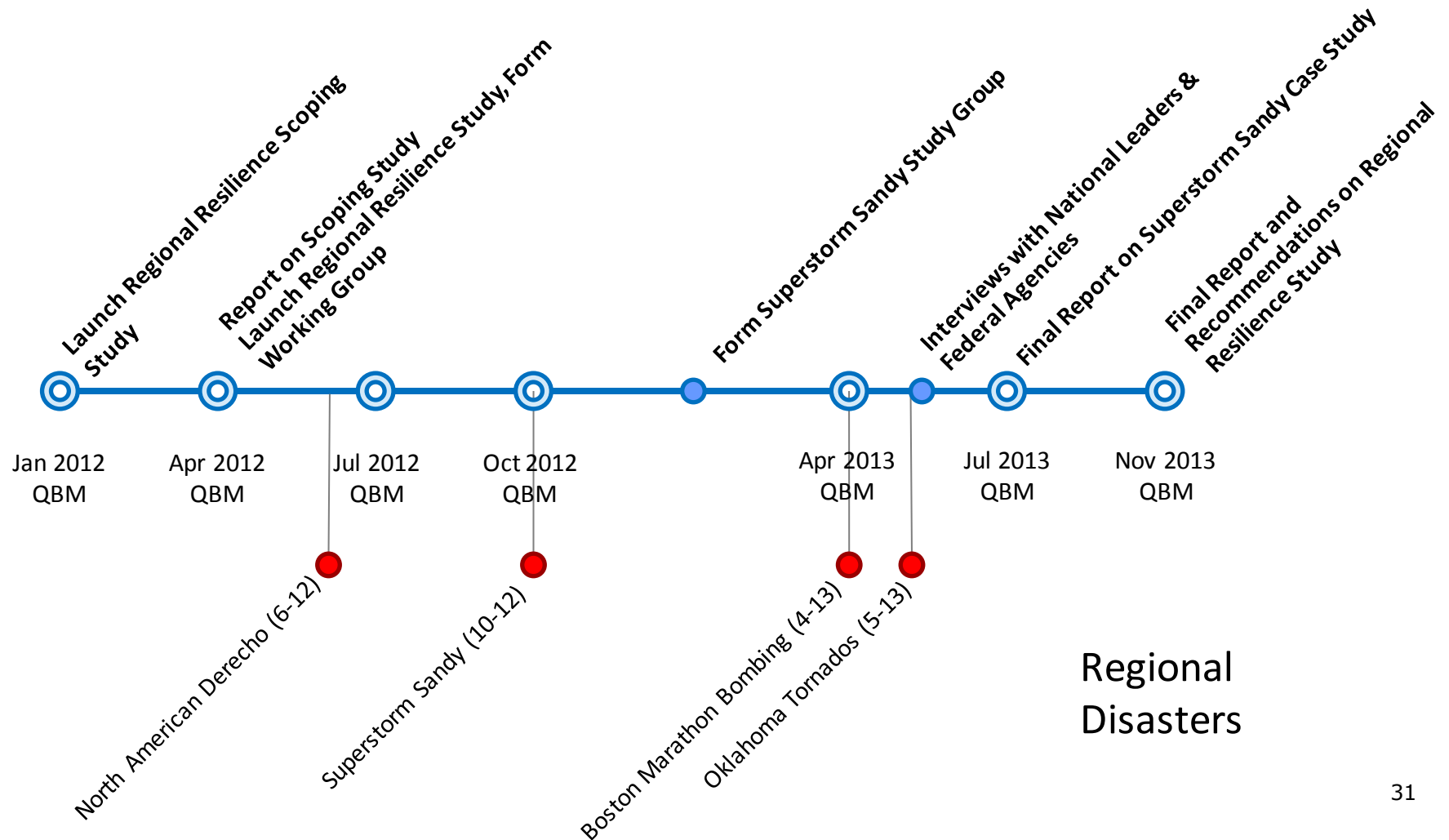
- ❑ Nov. 13-14, 2013: 200 venues with more than 1,800 participants exercised cyber and physical attacks to the grid
- ❑ 31 key “executive players” from industry and government, including CEOs and the Deputy Secretaries of DOE and DHS, White House, NorthCom, and others as the grid was subjected to a “catastrophic cyber failure.”

Key Outcomes of Electricity Executive Engagement

- Understanding of vulnerabilities that builds shared public-private value proposition
 - Industry is not responsible for national security, but has a fiduciary responsibility to protect assets and business for shareholders.
- Improved industry understanding of the reality of the threat environment.
- *Actual* risk reduction through:
 - Development and exercising of response plans to identify gaps that will reduce vulnerability when addressed.

Supporting Material

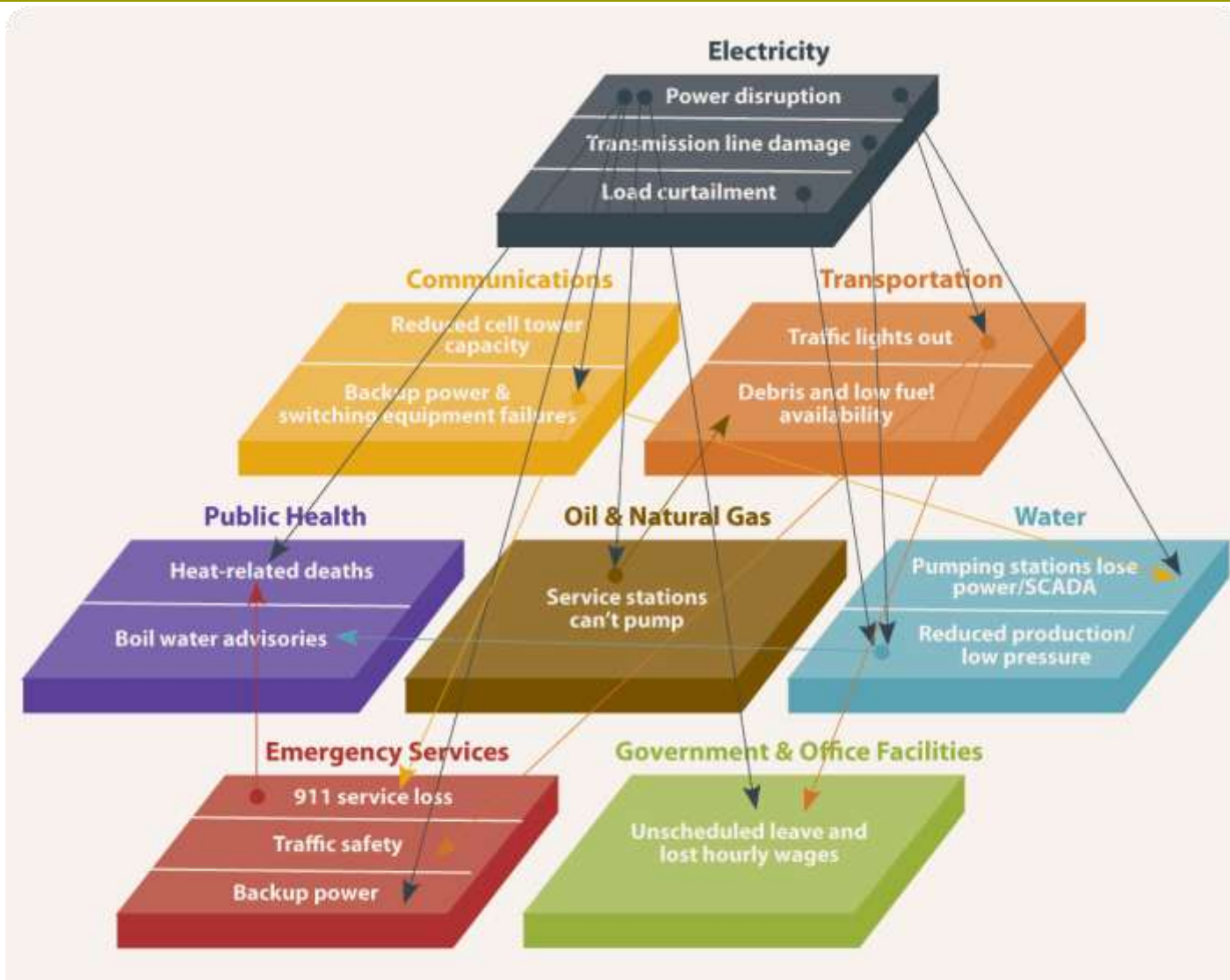
Study Process and Timeline



Defining Features of a Lifeline Sector

- ❑ **Provides essential products and services** that underpin the continued operation of nearly every business sector, community, and government agency.
- ❑ Typically delivers products and services that are ubiquitous in normal circumstances but **can create life-threatening conditions if they are unavailable** for long or even short periods of time.
- ❑ **Encompasses complex physical and cyber networks that are highly interconnected** within their sector, between sectors, and within and between adjacent regions.
- ❑ Its disruption or destruction **can cause failures that cascade across dependent infrastructures and regions**, producing a multiplier effect of impacts.
- ❑ Distinct from “life support” sectors such as Emergency Services

Cascading Impacts of June 2012 North American Derecho



Finding 1. Lifeline sectors are top priorities for achieving regional resilience and their growing complexity creates hidden risks

- ❑ **Maintaining the continuity of services of the energy, water, transportation, and communications** sectors is paramount to regional resilience.
- ❑ **Increasing interdependence creates hidden regional risks** that are not widely understood by businesses, governments, and communities.
- ❑ **Joint regional exercises that engage public and private partners at all levels** are highly effective in exposing gaps, identifying interdependencies, and improving response capabilities.

Finding 2. Regional resilience efforts are most successful when they are tailored to the characteristics and needs of each region.

- ❑ **All regions are different, requiring a tailored approach** to resilience that reconciles the types and density of a region's infrastructure with regional-based risk assessments.
- ❑ A community's capacity to withstand a disaster is improved when regional emergency managers **engage non-profit and community groups as critical partners** in disaster preparation, response, and recovery.

Finding 3. Senior executive engagement creates strong public-private partnership—the best strategy for achieving long-term resilience in regions.

- ❑ **Public-private partnerships based on senior executive-level engagement are the most robust** because they enable partners to set strategic direction, establish priorities, provide resources, and exercise accountability.
- ❑ **Strong public-private partnerships across all levels** of industry and government are a defining characteristic of resilient regions.

Finding 4. Social media has emerged as a powerful but underutilized tool for communicating and collecting data during emergencies.

- ❑ **Social media can improve situational awareness, inform public decision-making,** mitigate rumors, and enable emergency managers to collect a new stream of real-time information.
- ❑ **Government and businesses** are just learning how to effectively use these tools and **have not fully capitalized on their potential** in disaster response and recovery.

Finding 5. Rapid recovery of lifeline infrastructures is hindered by complex rules, regulations, and processes.

- ❑ Incident response personnel in critical sectors encounter **persistent problems gaining rapid access to disaster areas to repair damaged assets.**
- ❑ **Complex laws and regulations at the Federal, state, and local level** prevent the most effective and logical disaster response and impede interstate fleet movement of mutual aid repair crews in the lifeline sectors.

Finding 6. Without a strong value proposition, owners and operators are unable to invest in new and innovative infrastructure that can mitigate risks.

- ❑ **Investment in resilient infrastructure is difficult** without public support and the ability to recoup costs.
- ❑ **Regions can mitigate long-term risks by building resilience into new or upgraded structures**, and using novel infrastructure designs that are inherently resilient.