

National Infrastructure Advisory Council

December 22, 2014

The Honorable Barack H. Obama
President of the United States
The White House
1600 Pennsylvania Avenue, N.W.
Washington, DC

Dear Mr. President:

On behalf of the National Infrastructure Advisory Council (NIAC), we are pleased to submit the Council's Critical Infrastructure Security and Resilience National Research and Development Plan Report and Recommendations as requested in September, 2014.

Presidential Policy Directive 21 (PPD-21) required the development of a national research and development plan. The Council was asked to recommend cross-sector research and development priorities of national significance, describe the rationale for prioritization and strategic drivers for future requirements, and recommendations for public-private partnerships to facilitate national priority investments.

The report identifies the following research and development recommendations for national priority investment:

With regard to removing obstacles to action and investment by the owners and operators of critical infrastructure, examine in depth the role and impact of regulation, public policy, and consolidation within sectors:

- Research and analyze the labyrinth of regulations and policies across all levels that impede and dis-incent investments in security and resilience
- Identify essential elements of enabling policies and regulations that would encourage and facilitate owner and operator investment and gain public acceptance of such investments
- Determine the role of policies, regulation, and consolidation within industries and its impact on resilience, security, and innovation

With regard to identifying and applying best practices to accelerate action and investment:

- Identify and establish the elements for business and public justification for investments from lessons learned
- Develop an effective model of shared industry funding
- Determine design standards and best practices for the replacement, upgrading, and maintenance of critical infrastructure systems that are both cost efficient and minimize operational disruptions
- Identify innovative, cost-efficient, and accelerated approaches to "People Readiness" in developing a skilled workforce
- Determine factors and approaches to accelerate recovery following a disaster

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- Establish resilience metrics

With regard to managing cyber risks:

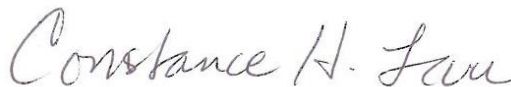
- Develop cybersecurity risk analysis and management tools
- Establish new architectures to “bake in” self-healing and self-protected cyber systems
- Develop automated security analysis and data collection tools and methods
- Understand cross-sector connections that could cause cascading effects
- Measure the effectiveness of security enhancements

With regard to developing and integrating modeling and simulation tools:

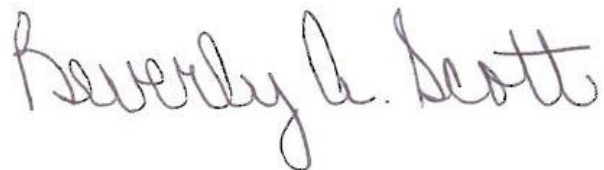
- Develop a standardized risk assessment process to populate both a risk assessment tool and a management decision support tool scalable to local communities and individual institutions
- Develop interdependency and consequence modeling and simulations to support operational decisions to predict and prevent cascading failures
- Manage “Big” Data

Mr. President, on behalf of our fellow NIAC members, we thank you for the opportunity to serve our country through participation in this Council.

Sincerely,



Constance Lau
President and CEO
Hawaiian Electric Industries, Inc.
NIAC Chair



Dr. Beverly Scott
CEO/General Manager, Massachusetts Bay
Transportation Authority, Administrator,
MassDOT Rail & Transit Division
NIAC Vice Chair