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# Federal Leadership in Infrastructure Resilience and Renewal March 7, 2013

**Dr. Mary Ellen Hynes**

**Science and Technology Directorate  
U.S. Department of Homeland Security**

**Mr. Allan Manuel, Esq.**

**Office of Science and Technology Policy  
Executive Office of the President**

**National Science and Technology Council  
Infrastructure Subcommittee**



# Infrastructure Subcommittee: Essential Information

# Infrastructure Subcommittee

Leadership  
Dr. May Ellen Hynes, Co-Chair (S&T Directorate, DHS)  
Mr. Allan Manuel, Esq. Co-Chair (OSTP/EOP)  
Dr. Paul Domich, Executive Secretary (formerly NIST/DHS/OSTP, retired)

Purpose  
**Purpose :** This Subcommittee serves as a forum within NSTC to develop consensus and resolve issues associated with the coordination of R&D agendas, policy, and programs related to developing, protecting, and ensuring the resiliency of the Nation's infrastructure from all-hazard threats. The ISC provides R&D guidance and coordination aimed at supporting advances in resilient infrastructure, including buildings, with a particular focus on new and emerging technologies.

Scope  
**SCOPE:** The scope includes basic research, applied research, engineering research, technology development, and demonstrations. All-hazards includes natural, man-made, and technological threats, including infrastructure aging, corrosion effects, and other salient or hidden threats.



# Presidential Policy Directive 8

- PPD-8 is a Presidential Policy Directive to strengthen the security and resilience of the United States through systematic preparation for the threats that pose the greatest risk to the security of the Nation, including:
  - Acts of terrorism,
  - Cyber attacks,
  - Pandemics, and
  - Catastrophic natural disasters
- It highlights that National preparedness is the shared responsibility of all levels of government, the private and nonprofit sectors, and individual citizens.
- Outlines the development of a National Preparedness Goal, National Preparedness System, and 5 National Planning Frameworks

This policy directive calls on federal departments and agencies to work with the whole community to develop a national preparedness goal and a series of frameworks and plans related to reaching the goal.



Signed 3-30-2011

# Presidential Policy Directive 21: Critical Infrastructure Security and Resilience

DHS in coordination with OSTP shall provide input to align those Federal and Federally-funded research and development (R&D) activities that seek to strengthen the security and resilience of the Nation's critical infrastructure, including:

- Promoting R&D to enable the secure and resilient design and construction of critical infrastructure and more secure accompanying cyber technology;
- Enhancing modeling capabilities to determine potential impacts on critical infrastructure of an incident or threat scenario, as well as cascading effects on other sectors;
- Facilitating initiatives to incentivize cybersecurity investments and the adoption of critical infrastructure design features that strengthen all-hazards security and resilience; and
- Prioritizing efforts to support the strategic guidance issued by the Secretary of Homeland Security.

Within two years, release a **National Critical Infrastructure Security and Resilience R&D Plan** that takes into account the evolving threat landscape, annual metrics, and other relevant information to identify priorities and guide R&D requirements and investments.



Signed 2-12-2013

# Subcommittee Membership

Department of Agriculture  
Department of Commerce  
Department of Defense OSD  
Department of Defense USACE  
Department of Energy  
Department of Health and Human  
Services  
Department of Homeland Security  
(Co-Chair)  
Department of Housing and Urban  
Development  
Department of the Interior  
Department of Justice/Federal  
Bureau of Investigation  
Department of Labor

Department of State  
Department of Transportation  
Department of Treasury  
Department of Veterans Affairs  
Environmental Protection Agency  
General Services Administration  
National Aeronautics and Space  
Administration  
National Science Foundation  
Nuclear Regulatory Commission  
Office of the Director of National  
Intelligence  
Office of Science and Technology Policy  
(Co-Chair)





# Draft Presidential Executive Order on Federal Leadership in Infrastructure Resilience and Renewal

# Goal

The goal of the directive is to establish an integrated federal strategy for infrastructure resilience and renewal and to make the reduction of all-hazard risks to federal buildings and infrastructure a priority for Federal agencies. The order requires federal agencies to methodologically examine vulnerabilities to their facilities and to create and execute long-range plans to make their facilities more resilient to disasters.





# Scope

The scope of the directive is broadly directed at all federal physical- infrastructure types.

Initially, the focus will be placed on Federal buildings and campuses due to the availability of Model Building Codes, performance criteria, and metrics. The scope also includes lifeline services and distribution systems that support the operation of the asset. As the knowledge base expands to other federal infrastructure asset types, additional guidance will be developed for inclusion.



# Overview of the Federal Leadership Approach

- Establish a target for agency-wide initiatives to support resilience and infrastructure renewal at Federal sites in absolute terms by fiscal year 2020
- Create *Strategic Sustainability and Resilience Performance Plans* based on comprehensive risk assessments
- Develop *Guiding Principles for Federal Leadership in High Performance Resilient Buildings*
- Report to OMB and CEQ annually on progress to 2020 targets



# *Agency Strategic Sustainability and Resilience Performance Plans*

- Based on a comprehensive risk assessment:
  - Geographical location, siting
  - Relevant local and regional all-hazard threats
  - Existing and new gray and natural “green” infrastructures
  - Infrastructure aging and business continuity objectives
- Prioritize federal assets based on mission criticality
- Includes risk-deduction targets
- Tied to annual OMB budget review and GPRA



# Types of Resilience Strategies

- Application of new high-performance building materials, technologies, and systems
- Improved design, construction, and placement of new federal facilities and major renovations of existing facilities
- Improved designs for campus generation and distribution systems (e.g., lifeline systems)
- Improved designs for data centers and data information networks that enhance resilience, survivability, and security
- Increased use of recycled water, renewable resources, microgrids
- Implementing natural approaches to threat mitigation when they enhance long-term effectiveness, sustainability and economic efficiency



# Types of Risk-Reduction Strategies

- Improved federal building design and construction for new buildings and major renovations;
- Improved facility location and natural barrier strategies to actively support lower risk;
- New terms for lease agreements for federal office space supporting resilient, high-performance building requirements;
- Revising terms for purchasing and contracting agreements for products and services that lower risk and improve resiliency
- Limit on-site water extraction for purposes other than drinking water to avoid depletion of on-site water supplies
- Implementing and achieving the objectives identified in the *Stormwater Guidance For Federal Facilities*



# Oversight Process

- CEQ, NSS, and OMB would serve as the lead EOP offices to establish and maintain the federal activity for improved resilience
- Initially NSS and OMB would review agency-wide initiatives to support resilience and infrastructure renewal at federal sites to be completed by FY 2020; CEQ would oversee progress and refresh guidance over the long-term
- CEQ and the Office of the Federal Environmental Executive would assume responsibility to include Federal resilience objectives in addition to those responsibilities previously established for sustainability in EO 13514
- OMB would review and approve each agency's initial and subsequent annual update of its multi-year Strategic Sustainability and Resilience Performance Plan concurrent, where feasible, with OMB's review and evaluation of each agency's budget request



# Agency Reporting and Guiding Principles

- Develop a multi-year Strategic Sustainability and Resilience Performance Plan to achieve resilience and sustainability goals;
- Report on an annual basis, progress toward the each agency's multi-year Strategic Sustainability and Resilience Performance Plan;
- NIST, GSA, DOD, and DHS are charged with the development of *Guiding Principles for Federal Leadership in High Performance Resilient Buildings* - appropriate criteria for assessing and enhancing the resilience of federal buildings and campuses/installations;
- GSA, in coordination with DHS, DOD, and DOI, is charged with developing recommended resilience and risk reduction reporting criteria, procedures, and tools.



# Desired Outcomes

Federal leadership in infrastructure resilience and renewal established by this order will enhance continuity of operations of federally agencies and assist the public and private sectors in properly investing in strategies that improve the resilience of their critical assets. Today, relevant guidelines are not readily available nor are specific codes and standards for improving community resilience and continuity of operations — Federal leadership and investment will spur their development.





# Other Desired Outcomes

- Incentivize better community development resulting from federal investment decisions
- Establish and verify a systematic approach for building resilience into campuses and communities
- Raise awareness of proven technologies and priorities for improving the resilience of critical assets
- Over the long term, lower property and economic losses on a national-level resulting from extreme events



# Resilience: A Working Definition



“Resilience”—the ability to adapt to changing conditions and prepare for, withstand, and rapidly recover from disruption”



# Questions?



# Preferences?

