



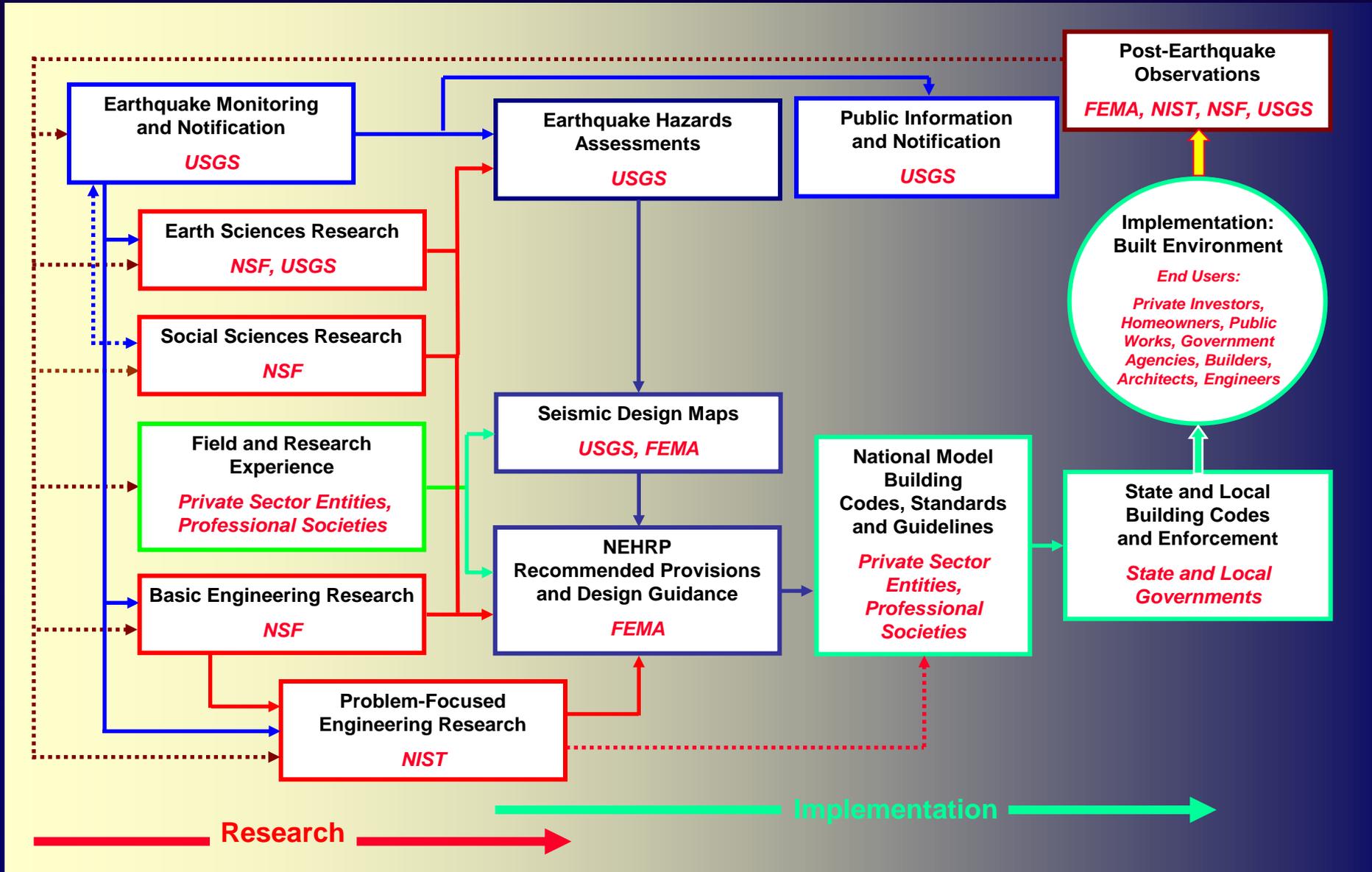
NEHRP Interactions with Other Hazards Activities

Dr. Howard Harary, Director
Engineering Laboratory

Important Role for NEHRP

- Disaster and risk mitigation, including earthquakes, is a Federal priority
- Goal: Outline where the NEHRP effort fits into the overall picture
 - Many interrelated activities ongoing within the disaster space, particularly:
 - Part I: NSTC Committees and Outcomes
 - Part II: PPD-8 and PPD-21
 - Part III: Other Interagency Coordination Groups





NEHRP Impact on the Built Environment



national earthquake hazards reduction program

Part I: National Science and Technology Council

- Established in 1993, this Cabinet-level Council is the principal means within the executive branch to coordinate science and technology policy across the Federal R&D enterprise.
- Organized in five primary committees
 - Environment, Natural Resources and Sustainability;
 - Homeland and National Security;
 - Science, Technology, Engineering, and Math (STEM) Education;
 - Science; and
 - Technology



Primary
NEHRP
Interactions



NATIONAL SCIENCE AND TECHNOLOGY COUNCIL (NSTC)

COMMITTEE ON ENVIRONMENT, NATURAL RESOURCES, AND SUSTAINABILITY (CENRS)

Tamara Dickinson (OSTP), Kathryn Sullivan (NOAA), Glenn Paulson (EPA)

AQRS: Air Quality Research (SC)		SOST: Ocean Science & Technology (SC)*
CSMSC: Critical & Strategic Mineral Supply Chains (SC)	SDR: Disaster Reduction (SC)	SWAQ: Water Availability & Quality (SC)
IARPC: Interagency Arctic Research Policy Committee (IWG)	SES: Ecological Services (SC)	T&R: Toxics & Risk (SC)
ISTS: Integration of Science and Technology for Sustainability (TF)	<u>SGCR</u> : Global Change Research (SC)*	USGEO: U.S. Group on Earth Observations (SC)

CERNS

COMMITTEE ON HOMELAND & NATIONAL SECURITY (CHNS)

Patricia Falcone (OTSP), Alan Shaffer (DoD), Tara O'Toole (DHS)

BDRD: Biological Defense Research & Development (SC)	ISC: Infrastructure (SC)	SOS-CBRNE Standards (SC)
CDRD: Chemical Defense Research and Development (SC)	NDRD: Nuclear Defense Research & Development (SC)	TISTI: Topics in International Science, Technology and Innovation (SC)
D-IED: Domestic IEDs (SC)	FSLFI: Federal Security Laboratory Facilities and Infrastructure (IWG)	

CHNS

COMMITTEE ON SCIENCE (CoS)

Francis Collins (NIH), Philip Rubin (OSTP), Cora Marrett (NSF)

IWGN: Neuroscience (IWG)*	PSSC: Physical Science (SC)	LSSC: Life Science (SC)*
Social, Behavioral, and Economic Science (SC)		

CoS

COMMITTEE ON STEM EDUCATION (CoSTEM)*

John Holdren (OSTP), Cora Marrett (NSF)

FC-STEM: Federal Coordination in STEM Education (TF)

CoSTEM

COMMITTEE ON TECHNOLOGY (CoT)

Thomas Kalll (OSTP)

ASTS: Aeronautics Science & Technology (SC)	AMS: Advanced Manufacturing (SC)*	SG: Smart Grid (SC)
BidM: Biometrics & Identity Management (SC)	DGT: Digital Game Technologies (IWG)	SMGI: Material Genome Initiative (SC)
P2I: Privacy (SC)	<u>NIIRD</u> : Network and Information Technology R&D (SC)*	SoS: Standards (SC)
GIG: Global Internet Governance (SC)	<u>NSET</u> : Nanoscale Science Engineering & Technology (SC)*	
H2FC: Hydrogen & Fuel Cells (IWG)		

CoT

Legend

Underlined = group overseeing an initiative that is supported by a National Coordination Office

* = Congressionally mandated or Congressionally mandated subgroup(s)



NSTC Committee on Environment, Natural Resources and Sustainability

Subcommittees

- Air Quality Research
- Critical and Strategic Mineral Supply Chains
- **Disaster Reduction**
- Ecological Services
- Global Change Research
- Ocean Science & Technology
- Water Availability & Quality
- Toxics & Risks
- **US Group on Earth Observations**

Committee Members

- Department of Agriculture
- **Department of Commerce**
- Department of Defense
- Department of Energy
- Department of Health and Human Services
- **Department of Homeland Security**
- **Department of the Interior**
- Department of Justice
- Department of State
- Department of Transportation
- Environmental Protection Agency
- Federal Emergency Management Agency
- National Aeronautics and Space Administration
- **National Science Foundation**
- Smithsonian Institution



Subcommittee on Disaster Reduction (SDR)

- SDR provides a Cross-Agency Federal forum for:
 - information sharing;
 - development of collaborative opportunities;
 - formulation of science- and technology-based guidance for policy makers;
 - and dialogue with the U.S. policy community to advance informed strategies for managing disaster risks.

Subcommittee Members (NEHRP Agencies Highlighted)

- Agriculture
- **Commerce**
- Defense
- Energy
- Environmental Protection Agency
- Federal Energy Regulatory Commission
- Health and Human Services
- **Homeland Security**
- Housing and Urban Development
- **Interior**
- National Aeronautics and Space Administration
- National Geospatial-Intelligence Agency
- **National Science Foundation**
- Nuclear Regulatory Commission
- State
- Transportation



SDR Produced a Grand Challenges Report

- In 2005, SDR published the **Grand Challenges for Disaster Reduction**
 - Grand Challenges is a **ten-year national strategy** document for **prioritizing Federal investments in science and technology** to reduce disaster risks and promote resilient communities.

<http://www.sdr.gov/grandchallenges.html>



SDR Grand Challenges: Implementation Plans

In 2008, SDR published the Grand Challenges Implementation Plans for 15 specific hazards, including earthquake

- Coastal Inundation
- Drought
- Earthquake
- Flood
- Heat Wave
- Human and Ecosystem Health
- Hurricane
- Landslide and Debris Flow
- Space Weather
- Technological Disasters
- Tornado
- Tsunami
- Volcano
- Wildland Fire
- Winter Storm



NSTC - U.S. Group on Earth Observations (USGEO)

The **purpose** of the USGEO is to:

- (1) coordinate, plan and assess **Federal Earth observation activities** in cooperation with domestic stakeholders;
- (2) foster **improved Earth sharing system data management and interoperability** throughout the Federal Government;
- (3) **engage international stakeholders** by formulating the U.S. position for, and coordinating U.S. participation in, the **intergovernmental Group on Earth Observation (GEO)**.

Departments and Agencies

- Agriculture
- **Commerce**
- Defense
- Energy
- Environmental Protection Agency
- **Homeland Security**
- **Interior**
- National Aeronautics and Space Administration
- **National Science Foundation**
- **Smithsonian**
- US Agency for International Development



USGEO: National Plan for Civil Earth Observations (2014)

- Sustained Observations for Public Services
 - Tier 1 Observations: These measurement groups represent the highest priority measurements in the category of sustained observations for public services:
 - Priority 3: Elevation and geo-location: Observations in this measurement group support food and later security, **hazard and risk mapping**, and natural-resource management. These observations particularly include topography and bathymetry, surface modeling, hydrologic data, and ecosystems-related data as derived from radar and laser sensors on satellite-based, airborne, and terrestrial platforms, as well as positioning, navigation, and timing satellites, such as those used for the Global Positioning System (GPS).
 - Tier 2 Observations: These measurement classes are of next-highest priority and importance in the category of sustained observations for public services.
 - **Geo-hazard monitoring** for **earthquakes**, volcanoes, landslides, regional and local subsidence (e.g., sinkholes), inundation, and **tsunamis**



Part II: PPD-8 / PPD-21 and the National Planning Frameworks

PPD-8 National Preparedness

PPD-21: Critical Infrastructure Security and Resilience

National
Prevention
Framework

National
Protection
Framework

National
Mitigation
Framework

National
Response
Framework

National
Disaster
Recovery
Framework

Mitigation
Framework
Leadership
Group

Emergency
Response
Function
Leadership
Group

Recovery
Support
Function
Leadership
Group



Mitigation Framework Leadership Group (MitFLG)

- Presidential Policy Directive 8 (PPD-8) on National Preparedness established the mitigation mission area for the first time
- FEMA released the National Mitigation Framework in May 2013.
- The Framework in turn established the Mitigation Framework Leadership Group (MitFLG).

<https://www.dhs.gov/news/2014/04/03/written-testimony-fema-house-transportation-and-infrastructure-subcommittee-econom-0>



Mitigation Framework Leadership Group (MitFLG)

The Mitigation Framework Leadership Group (MitFLG) is a central coordination point for Federal Mitigation activities.

Core capabilities include:

- Threats and Hazard Identification
- Risk and Disaster Resilience Assessment
- Planning
- Community Resilience
- Public Information and Warning
- Long-Term Vulnerability Reduction
- Operational Coordination

Membership includes:

- Department of Agriculture
- **Department of Commerce**
- Department of Defense
- Department of Energy
- Environmental Protection Agency
- General Services Administration
- Department of Health and Human Services
- **Department of Homeland Security**
- Department of Housing and Urban Development
- **Department of the Interior**
- Department of Justice
- Small Business Administration
- Department of Transportation



Part III: Other Interagency Groups

In addition to the National Earthquake Hazards Reduction Program (NEHRP):

- National Tsunami Hazard Mitigation Program (NTHMP)
- Interagency Committee on Seismic Safety in Construction (ICSSC)
- National Space Weather Program (NSWP)
- National Windstorm Impact Reduction Program (NWIRP)
- U.S. Global Change Research Program (USGCRP)



National Tsunami Hazard Mitigation Program

- **Reduce the impact of tsunamis through**
 - hazard assessment
 - warning guidance
 - mitigation
- **A partnership**
 - NOAA
 - USGS
 - FEMA
 - NSF
 - 28 U.S. Coastal States, Territories, and Commonwealths.



Interagency Committee on Seismic Safety in Construction

- Established in 1978 (before national consensus building codes and standards were available) as a part of NEHRP
- Purpose: Assist Federal departments/agencies involved in construction develop and incorporate earthquake hazards (risks!) reduction measures in their construction programs
- With advent of International Building Code ~ 2000, immediate needs of Federal agencies in this area decreased
- Now focused primarily on developing standards for agencies to manage their existing building inventories (e.g., ICSSC RP-8, briefed by Jack Hayes, earlier today)
- FEMA, NIST, & USGS remain involved in ICSSC activities, and NEHRP Director chairs ICSSC



Questions?



National Windstorm Impact Reduction Program

- In 2004, Congress created the National Windstorm Impact Reduction Program (NWIRP) to reduce the loss of life and property from windstorms. The purpose of NWIRP is to improve the understanding of windstorms and windstorm impacts through research and investment and to develop and encourage implementation of cost-effective mitigation measures to reduce those impacts.



U.S. Global Change Research Program

- The U.S. Global Change Research Program (USGCRP) coordinates and integrates federal research on changes in the global environment and their implications for society. The USGCRP began as a presidential initiative in 1989 and was mandated by Congress in the Global Change Research Act of 1990 (P.L. 101-606), which called for "a comprehensive and integrated United States research program which will assist the Nation and the world to understand, assess, predict, and respond to human-induced and natural processes of global change."



National Space Weather Program

- The National Space Weather Program (NSWP) is an interagency initiative to speed improvement of space weather services. It emerged in 1994 from the efforts of several U.S. government agencies to prepare the country to deal with technological vulnerabilities associated with the space environment. The overarching goal of the NSWP is to achieve an active, synergistic, interagency system to provide timely, accurate, and reliable space weather warnings, observations, specifications, and forecasts.

