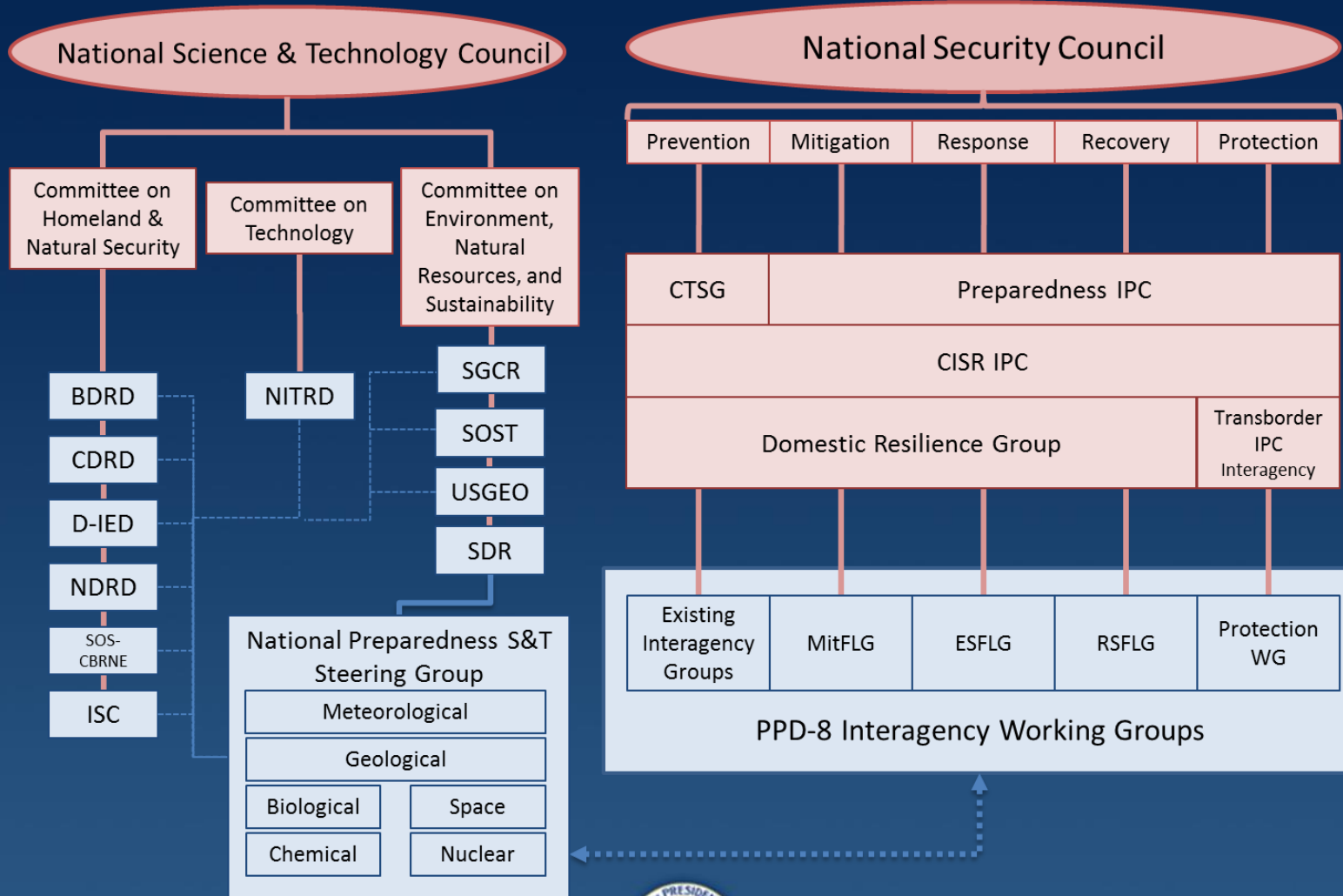




National Preparedness Science and Technology Task Force

DRAFT - PRE-DECISIONAL

National Preparedness Coordination



Task Force Goals

- Address the S&T requirements of PPD-8
- Act as an interagency conduit to more fully integrate S&T into all facets of national preparedness across Federal departments and agencies under PPD-8
 - US Global Change Research Program, NSTC (Subcommittees on Disaster Reduction, Ocean Science & Technology, US Group on Earth Observations, etc.)
 - MitFLG, ESFLG, RSFLG
- Interdisciplinary membership by design



Roles and Responsibilities of Task Force (Functions)

1. Assess current status of Federal S&T investments across the five PPD-8 mission areas
 - Evaluate progress on the SDR's *Grand Challenges for Disaster Reduction* implementation plans and update as needed
2. Design structured process to identify and prioritize efforts between Federal interagency S&T community and national preparedness community for S&T program planning under PPD-8.
 - Prioritize interagency national preparedness S&T efforts with the DHS and other agencies relevant to national preparedness



Roles and Responsibilities of Task Force (Functions)

3. Develop recommendations for formal protocols to conduct joint, interagency post-event S&T evaluation and assessment
4. Develop recommendations for a process for projecting future science and technology needs in support of national preparedness requirements.



Function 1 Implementation

		PPD-8 Mission Areas					
		Prevention	Protection	Mitigation	Response	Recovery	
Hazard, Threat Categories <small>1.001 NICTD F-1111</small>	Meteorological	Subcmte Ocean S&T					
	Geologic	Subcmte Disaster Reduction					
	Space	SDR - Space Weather Task Force and NEO Sub IPC					
	Chemical	Chem Defense R&D Subcmte					
	Nuclear/ Radiological	Nuclear Defense R&D Subcmte					
	Biological	<i>Bio Defense R&D</i>	<i>Recommend Delayed Initiation of Biological Working Group</i>				



Understanding the Terminology

- **Mission area**
- **Prevention** - Avoid, prevent, or stop a threatened or actual act of terrorism within the US
- **Protection** - Secure homeland against acts of terrorism and manmade or natural disasters.
- **Mitigation** - Reduce loss of life and property by lessening the impact of disasters
- **Response** - Save lives, protect property and the environment, and meet basic human needs after an incident has occurred
- **Recovery** - Help communities affected by an incident in recovering effectively.
- **Core capability** - Distinct critical elements necessary to achieve the National Preparedness Goal



National Preparedness Goal

National Preparedness Goal

A secure and resilient nation with the capabilities required across the whole community to prevent, protect against, mitigate, respond to, and recover from the threats and hazards that pose the greatest risk.

- The National Preparedness Goal
 - Informed by risk of specific threats and vulnerabilities – including regional variations
 - Defines what it means for the whole community to be prepared for all types of disasters and emergencies
 - Addresses prevention, protection, mitigation, response, and recovery
 - Emphasizes a whole community approach that optimizes the use of available resources
 - Describes 31 core capabilities that will help address greatest risks



HAZARD REVIEW GROUPS WILDLAND FIRE S&T



Guidance on Hazard Review Groups

- Membership
 - Representative of Federal agencies producing, and managing S&T (program managers)
 - Representative of Federal agencies responsible for PPD-8 Core Capabilities, Emergency Support Function, Recovery Support Functions
- Four Distinct Activities
 - Activity 1: Identify existing Federal science and technology programs intersection with PPD-8 Mission Areas
 - Activity 2: Identify national preparedness-relevant science and technology gaps necessary to meet PPD-8 mission area requirements
 - Activity 3: Recommend actions to address gaps
 - Activity 4: Output to Task Force – Executive Summary Report



Wildland Fire S&T

Activity 1: Program Inventory

- Method: Asked Task Force members to identify S&T programs within their agencies that are directly or indirectly relevant to wildland fire, bin them into the PPD8 mission areas, and indicate their applicability to multiple hazards



Table 1: S&T producing programs with wildland fire as a primary focus

Agency	Program Name	Mitigation	Response	Recovery
USFS, DOI	Joint Fire Science Program	X	X	X
USFS	R&D Portfolio A: Core Fire Science	X	X	X
	R&D Portfolio B: Ecological And Environmental Fire Science	X	X	X
	R&D Portfolio C: Social Fire Science	X	X	X
	R&D Portfolio D: Integrated Fire and Fuels Management	X	X	X
	R&D Portfolio E: Science Delivery	X	X	X
	Fire Predicted Services		X	
	Smoke Management		X	
	Missoula Technology and Development Center	X	X	X
	Remote Sensing Applications Center (RSAC)	X	X	X
NSF	Grants for Rapid Response Research (RAPID)		X	
	Hazard Sciences Education Engineering and Sustainability (SEES) Program	X	X	X
NOAA	Office of Atmospheric and Oceanic Research - Global Systems Division	X		
	NWS Office of Climate, Water, and Weather Services	X		
	Incident Meteorologist (IMET) Program		X	
NIST	Reduced Risk of Fire in Communities Program and Disaster-Resilient Buildings, Infrastructure, and Communities Program	X	X	X
NIOSH	National Personal Protective Technology Laboratory		X	
	Wildland Fire Fighter Occupational Safety and Health Program	X	X	X
NASA	Wildland Fire	X	X	X
EPA	Office of Research and Development (ORD)	X	X	X
	Office of Air and Radiation Air Quality Index Program	X	X	
DOE	Los Alamos National Lab Earth and Environmental Sciences Program	X	X	X
DOD	Strategic Environmental Research and Development Program (SERDP)	X	X	X
	Naval Research Lab Fire Storm Detection, Analysis, and Prediction		X	

Agency feedback has not been received on all programs listed in this table so results are preliminary. Also, programs identified as having a "secondary" focus on wildland fire are not included in this table. For example, various USGS and NASA programs deal with subjects such as ecosystems, climate, natural hazards, the water cycle and the carbon cycle, topics which are all relevant to wildland fire.



Table 2: S&T consuming programs with wildland fire as a primary focus

Agency	Program Name	Mitigation	Response	Recovery
USFS, DOI	Firewise Communities	X		X
USFS	Aviation Management		X	
	Fire Predicted Services		X	
	Hazardous Fuels	X		X
	National Coordination System		X	
	Preparedness		X	
	Risk Management		X	
	Smoke Management		X	
	State Fire Assistance	X	X	
	Suppression	X	X	
	Volunteer Fire Assistance	X	X	
	Workforce Development		X	
	Prescribed Fire Program	X		
DOI	Burned Area Emergency Response	X		X
	Burned Area Rehabilitation	X		X
	Fire Facilities		X	
	Preparedness		X	
	Suppression		X	
	Hazardous Fuels Reduction	X		
FEMA	Fire Management Assistance Grants		X	X

Agency feedback has not been received on all programs listed in this table so results are preliminary. Also, programs identified as having a "secondary" focus on wildland fire are not included.



Wildland Fire S&T

Activity 2: Gaps by PPD-8 Mission Area

- **Method:** Extracted statements of S&T-related gaps from literature and recent workshops. Assign each gap to one or more PPD8 mission areas and the categories of Science, Technology and Management.



Table 3: Examples of key S&T gap areas relevant to mitigation, response, and recovery

Type	Gap Area	Sub Area(s)
Science	Modeling	Model validation and uncertainty characterization.
	Fire Behavior	Capability to fully characterize fire across multiple spatial and temporal scales using physics-based fire models.
	Climate Change	Understanding of the connections between climate, weather and fuels.
Technology	Data Management	Data accessibility, storage, standardization and sharing.
Management	Technology Transfer	Handoff between S&T producers and consumers.
	Science Requirements	Balance between short vs. long term and foundational vs. applied science / assessing research needs.
	Science Delivery	Communication of new science to other scientists and fire managers.
	Research Coordination	Coordination with agencies outside of DOI and USFS.



Table 5: Examples of key S&T gap areas relevant to response

Type	Gap Area	Sub Area(s)
Science	Human Factors	Understanding of why individuals evacuate or choose to stay / understanding how the firefighting culture and conditions affect decision making, stress, and employee safety
	Health Impacts	Long-term firefighter health effects from smoke inhalation
	Fire Weather	Modeling of meteorology, plume rise, dispersion, and visibility prediction
	Decision support	Understanding of the tradeoffs of management actions
Technology	Communications	Interoperability of local, tribal, state, and federal radios
	Decision Support	Development of real-time decision support tools to identify lands, communities and structures most at risk during incidents
	Technology Transfer	Keeping abreast of advances in technology (e.g. UAV's) that could be applicable / assessing potential uses of classified technology
Management	Workforce	Updating of training to reflect the best available S&T / ensuring access to continuing education
	Health Impacts	Systematic approach to health monitoring during the fire season



Function 1 Implementation

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