



Mitigation Federal Interagency Operational Plan

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Security

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Introduction

President Obama signed Presidential Policy Directive (PPD)-8 in March 2011. PPD-8 is aimed at strengthening 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. PPD-8 defined five mission areas—Prevention, Protection, Mitigation, Response, and Recovery—and directed the development of a series of policy and planning documents to enhance national preparedness. As part of this effort, PPD-8 required the development of a National Planning System to integrate planning across all levels of government and with the private and nonprofit sectors around key capabilities that can be mixed and matched, as needed, to provide an agile, flexible approach to prevent, protect, mitigate, respond, and recover.

The National Planning System includes the following elements: (1) a set of National Planning Frameworks that describe the key roles and responsibilities to deliver the core capabilities required to prevent, protect, mitigate, respond, and recover; (2) a set of Federal Interagency Operational Plans (FIOPs)—one for each mission area—that provides further detail regarding roles and responsibilities, specifies the critical tasks, and identifies resourcing and sourcing requirements for delivering core capabilities; (3) Federal department and agency operational plans to implement the FIOPs; and (4) comprehensive planning guidance to support planning by local, state, tribal, territorial, and insular area governments, nongovernmental organizations (NGOs), and the private sector.

This FIOP builds upon the National Mitigation Framework (NMF), which sets the strategy and doctrine for how the whole community¹ builds, sustains, and delivers the Mitigation core capabilities identified in the National Preparedness Goal. This FIOP describes the concept of operations for integrating and synchronizing existing national-level Federal capabilities to support local, state, tribal, territorial, insular area, and Federal plans, and is supported by Federal department-level operational plans, where appropriate.

Purpose

The Mitigation FIOP describes how the Federal Government delivers core capabilities for the Mitigation mission area. The purpose of this FIOP is to establish a joint system for supporting local, state, tribal, territorial, and insular area partners and delivering public resources in a coordinated, effective, and proficient manner. Building and sustaining a mitigation-minded culture within Federal department and agency programs can contribute to making the Nation more socially, ecologically, and economically resilient before, during, and after an incident.

To promote these goals, implementation of the Mitigation FIOP will:

- Establish opportunities for Federal partners to jointly discuss interagency mitigation priorities within their existing authorities and resources.
- Identify gaps and support improvements to address current and future risks in current mitigation efforts, where needed.

¹ The whole community includes individuals, families, and households; communities; the private and nonprofit sectors; faith-based organizations; and local, state, tribal, territorial, insular area, and Federal governments. Whole community focuses on enabling the participation in national preparedness activities of a wide range of players from the private and nonprofit sectors, including nongovernmental organizations and the general public, in conjunction with the participation of Federal, state, and local governmental partners in order to foster better coordination and working relationships. The National Preparedness Goal is located at <http://www.fema.gov/pdf/prepared/ngp.pdf>.

- Identify programmatic opportunities where appropriate to better align program funds, products, and services in support of the core capabilities through partnerships with each other and the whole community.
- Describe how programs deliver core capabilities, outputs, and outcomes in the form of incentives, projects, products, guidance, technical assistance, and other services.

Audience

While engaging the whole community is critical to successful integration, the Mitigation FIOP is directed toward Federal agency operations. This FIOP recognizes that success relies upon a whole community approach and is dependent upon Federal interagency collaboration and integration. Departments, agencies, Federal coordinating structures, and interagency partnerships should use this FIOP as a guide to build a hazard resilient Nation through mitigation. Federal departments and agencies will develop and maintain department-level operational plans, as necessary, to deliver capabilities to fulfill responsibilities under the NMF and this FIOP. Departments and agencies may use existing plans, protocols, standard operating procedures, or standard operating guides for the development of such plans.

Mission

Federal departments and agencies will successfully attain the National Preparedness Goal and the principles of the NMF when specific interagency mitigation outcomes are identified and achieved, and capability targets are met through implementation of joint objectives in the Concept of Operations (ConOps).

To connect the National Preparedness Goal to the ConOps in this FIOP, mitigation outcomes should be established through a Federal dialogue with the whole community. The Mitigation Framework Leadership Group (MitFLG) will serve as a central coordination point for the development of joint interagency objectives. Some initial outcomes for success might include:

- Federal department and agency operational plans consider community, regional, or national risk awareness or resilience.
- Community policies and planning, whether for economic development, capital infrastructure investments, or land use decisions consider disaster-resilient, sustainable measures.
- Individuals, organizations, communities, and all levels of government understand risk, plan for it, and take appropriate actions based on a mutually acceptable level of risk. They strive to promote a risk-conscious culture that makes mitigation choices part of an adaptive and healthy community.
- From the Federal level to the individual, mitigation actions reduce long-term risk. Existing Federal resources, programs, and leadership help individuals, organizations, and communities reduce their vulnerabilities. Actions not only help to mitigate impacts, but also mitigate hazards as much as possible so incidents do not become disasters.
- Vital signs of the Nation, whole community, and individual reflect a healthy and sustainable society. Federal entities help reduce the risk and cost of disasters in partnership with local, state, tribal, territorial, and insular area governments with regard to the environment, social stability, and economy. Federal programs make the best use of assets and reduce redundancies in an effective and efficient manner to support local capabilities and build capacity.

- Federal departments and agencies make available standardized, integrated data to support decision makers on how to assess and mitigate risks.

Scope

This document presents a strategy and methodology that recognizes and respects the autonomy of Federal departments and agencies within their legal authorities and Executive Branch roles and establishes a system for departments and agencies to jointly discuss and pursue interagency mitigation initiatives (see the Authorities and References section). It does not organize deployment of resources, assign or adjudicate resources, or direct Federal departments and agencies in conducting mitigation actions. Nothing about the FIOP is intended to alter or impede the ability of Executive Branch departments and agencies to carry out their authorities or perform their responsibilities under law and consistent with applicable legal authorities and other Presidential guidance.²

The scope of this FIOP is not limited to disaster-focused authorities and capabilities, but encompasses a larger scope of authorities as described within the Authorities and References section. Within this broader scope, Federal departments and agencies deliver a capability or capabilities during steady state, before, during, and after an incident. Delivery may be a direct mitigation grant to reduce a community's long-term vulnerability, for example. Application may also be indirect, as when a Federal department or agency incorporates mitigation into its projects and activities, such as locating a facility in a low-hazard area and complying with hazard resilient codes.

Mitigation actions are driven by historical and future risk. As stated above, mitigation is operationally delivered during steady state operations, not only in anticipation of or in the wake of disaster; hence this FIOP for mitigation is always in effect. This FIOP does not present a linear or phased approach to the deployment of resources in support of incidents, but describes how the core capabilities in the Mitigation mission area support delivery of core capabilities in other mission areas. For this reason, the focus of this FIOP is on describing the connections among different Mitigation core capabilities and the integration of mitigation into other National Planning Frameworks and FIOPs under the National Preparedness Goal.

As the Mitigation FIOP supports a new framework and represents a new operational paradigm, it is a living document that should be periodically reviewed and updated (see the Oversight, Plan Development, and Maintenance section for more detail).

Mitigation Core Capabilities

The National Preparedness Goal defines seven Mitigation core capabilities, and the NMF addresses the critical tasks to deliver the Mitigation core capabilities. This FIOP identifies and describes roles and responsibilities and introduces the ConOps for delivering these core capabilities at the Federal level. These capabilities are listed and defined below in Table 1 and further described in Appendix B.

² Nothing in this FIOP is intended to interfere with the authority of the Attorney General or Director of the Federal Bureau of Investigation (FBI) with regard to the direction, conduct, control, planning, organization, equipment, training, exercises, or other activities concerning domestic counterterrorism, intelligence, and law enforcement activities.

Table 1: Description of Mitigation Core Capabilities

Core Capability	Description
Threats and Hazard Identification	Identify the threats and hazards that occur in the geographic area; determine frequency and magnitude; and incorporate into analysis and planning processes so as to clearly understand the needs of a community or entity.
Risk and Disaster Resilience Assessment	Assess risk and disaster resilience so that decision makers, responders, and community members can take informed action to reduce their entity's risk and increase their resilience.
Planning	Conduct a systematic process engaging the whole community as appropriate in the development of executable strategic, operational, and/or community-based approaches to meet defined objectives.
Community Resilience	Lead the integrated effort to recognize, understand, communicate, plan, and address risks so that the community can develop a set of actions to accomplish Mitigation and improve resilience.
Public Information and Warning	Deliver coordinated, prompt, reliable, and actionable information to the whole community through the use of clear, consistent, accessible, and culturally and linguistically appropriate methods to effectively relay information regarding any threat or hazard and, as appropriate, the actions being taken and the assistance being made available.
Long Term Vulnerability Reduction	Build and sustain resilient systems, communities, and critical infrastructure and key resources lifelines so as to reduce their vulnerability to natural, technological, and human-caused incidents by lessening the likelihood, severity, and duration of the adverse consequences related to these incidents.
Operational Coordination	Establish and maintain a unified and coordinated operational structure and process that appropriately integrates all critical stakeholders and supports execution of core capabilities.

Capability Targets

Mitigation core capability targets were introduced in the National Preparedness Goal. These targets set initial performance threshold(s) for each core capability. In setting strategic outcomes for mitigation, it is important to be able to measure success and set targets for improvement.

The initial capability targets set in the National Preparedness Goal should be reviewed, updated, or replaced based on the National Preparedness Goal's revision cycle. That process will inform additional vetting and refinement of the initial mission-specific outcomes outlined in this FIOP. This vetting and refinement will take into consideration the perspective of the whole community and any changes to the risk environment. The strategic direction for interagency mitigation; objectives and outcomes; and targets and performance measures can be defined, reviewed, and updated through the MitFLG. On an annual basis, the MitFLG will review the strategic direction, and identify and assess gaps in interagency capabilities and capacity. This type of evaluation will help inform science and technology innovations in support of mitigation. Targets for Mitigation core capabilities are reiterated in Appendix B, where each of the core capabilities is described in more detail.

Situation

Strategic Environment

Mitigation stakeholders exist in a strategic environment that will continue to contain natural disasters, technological/accidental incidents, and adversarial/human-caused incidents, such as terrorism. Issues including globalization, technological innovation, demographic shifts, increasing population in vulnerable areas, escalating resource demands, climate changes, and security concerns, such as proliferation of weapons of mass destruction and the movement of persons across borders, contribute to the complexity of future disasters. These trends indicate a future environment that presents a wide range of problems that occur unpredictably and perhaps simultaneously.

Constraints on resources at all levels continue to force the Nation to reconsider which resilience activities are truly affordable and how partnerships can be built to accomplish the objectives for a resilient Nation. The challenge is to build the capacity of the whole community to be resilient in the face of disruptions, disasters, and other crises while adapting to conditions that have changed as a result of an incident.

Federal departments and agencies are advocates for and ensure that all populations have equal access to acquire, use, and contribute to the core capabilities that strengthen resilience. Engaging all members of the whole community is essential to national preparedness, and individuals and communities are key components. With equal access to the pertinent knowledge and skills, all members of the community can contribute to national preparedness. This includes children, individuals with disabilities, and others with access and functional needs; those from religious, racial, and ethnically diverse backgrounds; and people with limited English proficiency (LEP). Their contributions must be integrated into preparedness efforts, and their needs must be incorporated as the whole community plans for and delivers the core capabilities.

Strategic National Risk Assessment

Risk is the potential for an unwanted outcome resulting from an incident, event, or occurrence, as determined by its likelihood and the associated consequences. Risk is assessed based on applicable threats and hazards, vulnerabilities, and consequences. The Strategic National Risk Assessment (SNRA) identified the threats and hazards that pose the greatest risk to the Nation and provided the basis for establishing the National Preparedness Goal and the core capability requirements for all mission areas. The SNRA was executed in accordance with PPD-8 and captures the threats and hazards that pose a significant risk to the Nation, grouped into three categories. Figure 1, from the NMF, represents examples from the three hazard categories, though it is not an exhaustive list. Other threats and hazards may also become national-level events that pose significant risk.³ Implementers of this FIOP should understand that this threat and hazard information was developed for an SNRA and does not present a full view of the risks facing local communities or differentiate among geographic locations. Appendix C introduces a conceptual model for conducting a threat and hazard identification and risk assessment that is appropriate to the level of risk and complexity of the environment.

Mitigation core capabilities support the continued analysis and development of the SNRA, as well as the Threat and Hazard Identification and Risk Assessments (THIRAs) conducted by local, state, tribal, territorial, and insular area jurisdictions, the Federal Emergency Management Agency (FEMA), and other Federal department and agency regional offices. Analysis that combines THIRAs

³ More information on the SNRA can be found at <http://www.dhs.gov/strategic-national-risk-assessment-snra>.

and the SNRA provides a more comprehensive and granular picture for the Mitigation mission area. Additionally, specialized risk assessments conducted for specific events or situations also can be used by the mitigation community to better understand the risk environment.

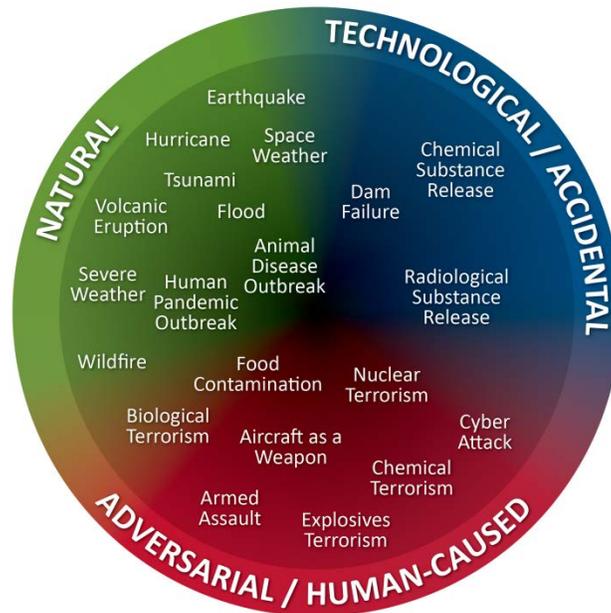


Figure 1: Examples of Threats and Hazards by Category

Planning Assumptions and Critical Considerations

The following information represents the planning assumptions and critical considerations used in the development of this FIOP.

- The NMF and FIOP are based upon a broad definition of mitigation provided by PPD-8 within the context of national preparedness that extends beyond its definition in the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988, as amended (Stafford Act, additional detail can be found in the Authorities and References section). Mitigation activities and actions are not limited to what is eligible within the Stafford Act.
- Current authorizations and legislative language are unchanged by the NMF and FIOP. The NMF does not create new requirements.
- The term “community resilience” is purposefully used with two distinct meanings.
 - Community Resilience is an inclusive, informed process that addresses social, economic, natural and cultural, technical, and organizational dimension within a community—preparing a community to consciously mitigate rather than ignore risks.
 - Resilience is an outcome—the state of being able to adapt to changing conditions and then withstand and rebound from the impacts of disasters and incidents.⁴

⁴ As defined in the National Preparedness Goal and the National Mitigation Framework.

- The Mitigation FIOP assumes that the interagency and partnering entities, to include local, state, tribal, territorial, insular area, and Federal governments, will operate within the constructs of current resources, to include funding sources, authorities, and programs.
- The Mitigation FIOP will address current and future risks using the best available science to guide our actions.
- The Mitigation FIOP will address effects of international incidents on the United States as a component of the FIOP, but will not specifically address international mitigation efforts.
- The Mitigation FIOP is based upon input from an extensive, but not exhaustive, group of representatives from Federal departments and agencies. The FIOP will be revised periodically as described in the Mitigation FIOP Review Cycle section.
- Mitigation core capabilities have interdependencies with capabilities in other National Planning Frameworks. Three core capabilities span the National Planning Frameworks: Planning, Operational Coordination, and Public Information and Warning. Operations supporting two Mitigation core capabilities—Threats and Hazard Identification (THID) and Risk and Disaster Resilience Assessment (RDRA)—will inform and drive operational guidance in the other National Planning Frameworks.
- Implementation of this FIOP should capitalize on existing programs and documents that address mitigation.
- The Mitigation FIOP acknowledges that the discipline of mitigation does not eliminate all risk nor prevent all threats and hazards, but provides a mechanism for managing risk.
- “Federal” efforts refer solely to the Federal Government’s supportive role, or primary and potentially exclusive role such as a military base or federal facility. “National” efforts encompass the whole community, including individuals; families; communities; nonprofit organizations; businesses; local, state, tribal, territorial, and insular area governments; and the Federal Government.

Concept of Operations

Overview

This ConOps provides the common platform for ensuring that Federal actions operate in concert to achieve joint interagency objectives and serves as the vehicle for synchronizing Federal mitigation efforts. It serves to coordinate the delivery of Federal capabilities only. As described in the introduction, this FIOP is always in effect, spans steady state and incident-driven environments, and focuses on the connections among Mitigation core capabilities and the integration with other National Planning Frameworks and FIOPs.

The Mitigation core capabilities (listed and defined in Table 1 above and further described in Appendix B) can be delivered through numerous mechanisms, such as:

- Effective policy changes
- Improved program efficiencies
- A culture of sharing resources and data
- Transitioning research and innovation into capabilities
- Incentives that drive behavior

- Strong partnerships and leadership
- Collectively integrating and leveraging analytical capabilities.

The Mitigation Concept of Operations section is organized into sub-sections around key concepts, which are shown in Table 2 below and discussed in detail in the following pages.

Table 2: Mitigation ConOps Sections

Section	Description
Overview	The ConOps provides the common platform for synchronizing mitigation efforts.
The Mitigation Space	Mitigation capabilities are delivered both during steady state operations and incident-driven operations, and are impacted by adaptive risk management factors.
Interdependent Core Capabilities	Mitigation’s core capabilities provide mutually supportive actions that are overlapping and seldom delivered in isolation.
Incident-Specific Mitigation	Incidents create windows of opportunity for the delivery of Mitigation core capabilities and the characteristics of an incident dictate the need for certain kinds of Mitigation activity.
Federal Mitigation Program and Operational Mechanisms	Federal Mitigation operations span three broad categories or mechanisms: Federal administrative structures, transfer of resources, and capacity building.

Tasks and responsibilities identified in this ConOps provide administrative guidance to Federal departments and agencies for implementation of mitigation. This document is not directive of Federal resources, but serves as the organizing document for how the Federal Government delivers mitigation around joint interagency objectives. Table 3 summarizes coordinated mitigation delivery.

Table 3: Coordinated Delivery of Mitigation

Entity	Role
MitFLG	<ul style="list-style-type: none"> • Identify joint interagency goals and objectives • Provide joint interagency leadership • Representatives promote knowledge and awareness of mitigation mission and goals within departments and agencies
Federal Coordinating Structures (e.g., memorandums of understanding [MOUs], working groups)	<ul style="list-style-type: none"> • Facilitate the preparedness and delivery of capabilities to achieve joint interagency goals and objectives
Federal Partners	<ul style="list-style-type: none"> • Build, maintain, and deliver Mitigation core capabilities

Mitigation successes are realized at the individual, local, state, tribal, territorial, insular area, and national levels, as well as by industry.

Federal departments and agencies support mitigation activities (e.g., building capacity, delivering resources) and apply specific Mitigation core capabilities using their own resources (e.g., hurricane advisories, regulatory risk maps, engineering and design tools for resilience) in conjunction with Federal laboratories, testing facilities, and universities. This includes Federal research and

development programs on new and advanced technology and practices to make Mitigation core capabilities more effective and efficient. Many research and development efforts are funded and conducted by Federal departments and agencies, often in conjunction with the private sector. Mitigation efforts are also coordinated by Federal departments and agencies through existing coordination structures such as the National Science and Technology Council (NSTC).

The Mitigation Space

Mitigation operations are managed under multiple management systems and the associated Mitigation capabilities are delivered both during steady state operations and incident-driven operations. Figure 2 shows that Mitigation core capabilities are delivered across multiple operational states on a continuing basis, including when a disaster occurs.

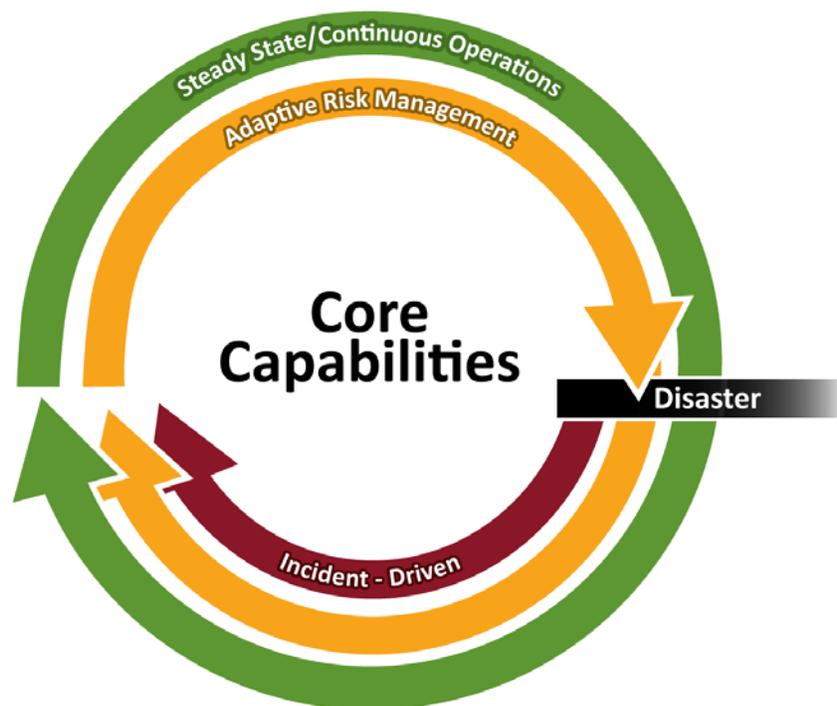


Figure 2: Mitigation Operational Paradigm

- **Steady state/continuous operations.** Mitigation efforts conducted during routine operations incorporate program management structures around shared goals, principles, department and agency initiatives and coordinating structures to maximize Federal performance.
- **Incident-driven operations.** When Mitigation core capabilities are employed to support incident-driven operations, departments and agencies follow the National Incident Management System (NIMS).
- **Adaptive risk management.** Adaptive risk management applies to both steady state and incident-driven activities, and offers opportunities for course correction within each. Operational paradigms for steady state and incident-driven operations include identifying opportunities for continuous improvement. For instance, advances in technology create new and more accurate ways to assess and mitigate hazards, and Federal mitigation action may change based on such advancements.

Mitigation capabilities work effectively as part of all operational environments and bring risk-informed decisions to support activity across the whole community of national preparedness. The following sections describe the three conditions—steady state/continuous operations, incident-driven operations, and adaptive risk management—that shape risk management strategies and operational paradigms.

Steady State/Continuous Operations

Federal departments and agencies conduct mitigation on the basis of current and future risks, not solely in response to disasters. Mitigation actions conducted during steady state or ongoing operations may be informally coordinated or bring together differing coordination structures and diverse program expertise, scientific knowledge, and authorities. Steady state mitigation activities require clearly articulated goals, shared strategic objectives, and mutually supportive standards of practice. Mitigation capabilities are delivered continuously in a wide array of departments' and agencies' programs. These capabilities are delivered by professionals from diverse backgrounds, under varied operating procedures, policies, and standards, and in a broad range of environments. Examples of diverse Federal programs and delivery mechanisms are shown below.

Examples:

- Multiple departments or agencies, single mechanism: Includes alignment of planning grants from Department of Housing and Urban Development, FEMA, and Environmental Protection Agency (EPA) to support sustainable and resilient communities.
- Multiple departments or agencies, single mechanism: Includes shared objective programs such as risk transfer through insurance (Department of Agriculture [USDA] crop insurance and FEMA National Flood Insurance Program [NFIP]).
- Multiple departments or agencies, multiple mechanisms: Includes development of sustainable and stronger, more resilient homes and buildings such as the U.S. Army Corps of Engineers (USACE) installations research, the Department of Homeland Security (DHS)/Science and Technology program on resilient, high-performance design of buildings, and FEMA Building Sciences group.
- Multiple programs, single department or agency: FEMA Hazard Mitigation Grant Program (HMGP) and hazard mitigation funding under Section 406 of the Stafford Act, Public Assistance.
- Single program, multiple mechanisms: The FEMA Risk MAP (Risk Mapping, Assessment, and Planning) program affects different communities at different times. It is an activity which involves congressional mandate, strategic planning, program management, procurement action, training, interaction with a community, and a final deliverable that becomes a regulatory product.

Risks addressed by one Federal action are often mutually supportive of other Federal activity, policy, regulation, and executive responsibility. Coordinating and sharing the value of research, development, and expended Federal resources enables mutually supportive resilience activity across all levels of government and the private sector. Discussing opportunities for joint initiatives and demonstrating the shared value of Federal risk management action is the responsibility of the mitigation coordinating structures, such as the MitFLG.

Connecting departments and agencies without compromising their authorities and autonomy requires a decentralized management model that creates linkages, fosters creativity, and capitalizes on the strengths of individual partners to maximize the expertise and capability of different groups, teams, and communities of expertise. This model of management supports autonomous structures and

systems without imposing external organization or command and control structures. Federal partners deliver Mitigation core capabilities under their legal authorities, and around shared interagency objectives with a set of common principles.

Leadership

- Leadership articulates shared interagency objectives through Federal departmental and agency leaders and the MitFLG serves as the central coordination point for Federal mitigation activities. Leadership promotes organizational knowledge of how components support mitigation, composes joint interagency objectives, and empowers action.
- Federal department and agency leadership provides common vision in delivery of their respective missions.

Autonomy

- Federal departments and agencies and programs operate under their existing authorities and develop and deliver solutions by encouraging initiative at the lowest level possible.
- Autonomy is the ability to self-direct with the capacity to make decisions. Autonomy is not isolation, and requires operational coordination and an environment that fosters collaboration.
- Experts are allowed the independence to define solutions.

Contribution and Initiative

- Localized change is powered by effective innovation.
- Federal partners work to maximize the impact of individuals, programs, offices, and departments and agencies contributing to mitigation.
- Trust in individual components to deliver their authorized capabilities based on shared objectives.

Self-organization

- Federal departments and agencies are best suited to determine their own organizational structures when conducting their authorized responsibilities.
- Non-uniform organizational structures provide constructive results when coordinated around shared objectives.

Clear Objectives

- Departments and agencies deliver Mitigation core capabilities in support of clear joint interagency objectives.

Incident-Driven Operations

As the other National Planning Frameworks and interagency operational plans identify phases, states, or stages, they will serve as the platform for integrating mitigation into their activities. Disasters require the use of Mitigation core capabilities. Many integrate into specific operational structures and trigger the exercise of additional authorities, funding sources, and program coordination requirements for Federal departments and agencies. For the majority of events, when Mitigation core capabilities are delivered in support of response and recovery operations, they are subject to the administration and implementation of the National Response Framework (NRF), National Disaster Recovery Framework (NDRF) or associated response and recovery plans.

Examples:

- Informing response and recovery operations with risk analysis, de-escalating an incident, and remediating loss following a disaster are considered short-term mitigation under this ConOps. In response to flooding in Minot, North Dakota in 2011, the U.S. Geological Survey (USGS), FEMA, and Department of Commerce (DOC)/National Oceanic and Atmospheric Administration (NOAA) partnered to link mitigation expertise in data collection and analysis to support disaster response efforts with risk analysis—providing near real-time assessment of flood levels and estimated damages to decision makers. This activity highlights the benefits of DOC/NOAA's and the National Weather Service's "Weather Ready Nation" initiative through the provision of key decision support information to our partners.
- Hazard Mitigation funding under Section 406 of the Stafford Act provides discretionary authority to fund mitigation measures in conjunction with the repair of the disaster-damaged facilities. Use of Section 406 of the Stafford Act mitigation funds is authorized by disaster declarations and managed primarily through Joint Field Offices located near the disaster site, occurring in an operational environment administered under NIMS within the NRF and NDRF.

When mitigation capabilities are delivered in support of incidents requiring a coordinated response, in most cases, Federal departments and agencies operate in support of the NRF/NDRF and in accordance with NIMS.

NIMS provides a systematic, proactive approach to guide departments and agencies at all levels of government to work to prevent, protect against, respond to, recover from, and mitigate the effects of incidents in order to reduce the loss of life and property and minimize harm to the environment. Recommended activities for the private sector and NGOs have also been established that support NIMS implementation and closely parallel the implementation activities that have been required of local, state, tribal, territorial, and insular area governments. NIMS is applicable regardless of the cause, size, location, or complexity of a given event. NIMS provides organized and standardized tenets and practices, which enable organizations and departments and agencies to work together in a predictable, coordinated manner. Components of NIMS operate under the following principles:

- **Flexibility:** The components of NIMS are adaptable to any situation, from routine, local incidents to incidents requiring the activation of interstate mutual aid to those requiring a coordinated Federal response, whether planned (e.g., major sporting or community events), notice (e.g., hurricane) or no-notice (e.g., earthquake). This flexibility is essential for NIMS to be applicable across the full spectrum of potential incidents, including those that require multidepartment, multiagency, multijurisdictional (such as incidents that occur along international borders), or multidisciplinary coordination.
- **Standardization:** Flexibility to manage incidents of any size requires coordination and standardization among emergency management and homeland security personnel and their affiliated organizations. NIMS provides a set of standardized organizational structures that improve integration and connectivity among jurisdictions and disciplines, starting with a common foundation of preparedness and planning. NIMS provides and promotes common terminology, including the establishment of plain language (clear text communications standards) which fosters effective communication among response organizations and agencies.⁵

⁵ National Incident Management System (<http://www.fema.gov/national-incident-management-system>).

Adaptive Risk Management

Evolving risks and emerging capabilities drive and shape the future operational environment. Adaptive management is critical to success, allowing Federal mitigation partners to be flexible and to modify programs and policies, when permissible, to reflect emerging challenges and new technologies. The importance of understanding risk for the future is vital to mitigation operations. Innovation, new regulation, climate change, population demographics, population health status, political and economic realities, international incidents, global trends and changes in Federal involvement all affect risk management.

The study of the effects of evolving change and variability on vulnerability, and the ability to adapt to changes in hazards, is a relatively new field of research that brings together diverse experts. Ongoing research influences the field of risk management. FEMA's Strategic Foresight Initiative conducted and used analysis in this field to identify sociology and demographics, politics, technology, climate change, economics, and security and terrorism as key focus areas. Analyzing these efforts allows Federal partners engaged in research to prioritize research and implementation requirements.

Examples:

- The EPA has implemented adaptive management in many projects. Among the most notable are the Mississippi River Basin project, which uses models and monitoring to reduce the uncertainties surrounding the biochemical mechanisms of hypoxia, and the Lake Superior Lakewide Management Plan, which calls for a less structured periodic refining of management strategies based on new information and public input.
- DOC/NOAA uses adaptive management, especially in its coastal management and coastal habitat restoration activities. The adaptive management process implemented in these cases is passive, involving iterations of a five-step cycle: plan, act, monitor, evaluate, and adjust. DOC/NOAA emphasizes the monitoring and evaluation elements of adaptive management (note, adaptive risk management follows generally accepted standards of planning, including the five-step planning process).

Changes in the frequency and severity of threats and hazards, along with evolving background conditions and community evolution and growth, mean that Federal risk management practices must be adaptive. Evolving risks are drivers that require a coordinated Federal approach to adaptive risk management in how Federal departments and agencies evaluate and address risks and deliver Mitigation core capabilities. Federal departments and agencies exploit technology, innovation, and advances in science and engineering practices in the delivery of core capabilities. Efforts and developments should be coordinated and shared for optimized application and utilization. This coordination can be accomplished through the various multiple department or agency groups and organizations already in place with which the MitFLG will establish communication and coordination.

Example:

- Local, state, and tribal officials develop and adopt mitigation plans to meet the requirements of the Stafford Act. Approved mitigation plans must be updated regularly in order to accurately reflect changes in community risk. As hazards change, communities evolve, and mitigation takes place, the risk facing that community changes. The FEMA role in supporting these plans is to review their content, help communities identify risks and emerging options for risk reduction, and promote action.

Summary

Mitigation core capabilities are delivered across multiple National Planning Frameworks, and integrate into multiple organizational structures that include both decentralized models and command and control systems. Under this ConOps, Federal partners adhere to the appropriate management systems, which are necessary or required to administer their actions during steady state and incident-driven operations. Change outside of incidents (e.g., demographic shifts, calendar events, evolving risks, and developing technologies) drives mitigation activity in the same way incidents do. Mitigation operational structures by operational state are depicted in Table 4.

Table 4: Mitigation Operational Structures

Mitigation Operational Structures	
Steady State Operations	Incident-Driven Operations
Adaptive Risk Management	
Federal departments and agencies deliver Mitigation core capabilities around their objectives and shared interagency objectives with a set of common principles: <ul style="list-style-type: none"> Leadership Autonomy Contribution and initiative Self-organization Clear objectives 	When Mitigation core capabilities are delivered under incident-driven National Planning Frameworks (NRF and NDRF), Federal departments and agencies will adhere to the appropriate management systems identified for Response or Recovery interagency operations (NIMS): <ul style="list-style-type: none"> Flexibility Standardization

Interdependent Core Capabilities

Mitigation’s core capabilities are mutually supportive, overlapping actions seldom delivered in isolation. In order for effective mitigation to occur, understanding the connections among capabilities is as critical as understanding the internal disciplines and requirements of each capability.

Individual capabilities are examined and categorized in detail in Appendix B, which is designed as a reference point for the internal coordination of discrete actions within each capability.

Delivering Mitigation core capabilities under this FIOP is an interdependent activity, whether it occurs during steady state operations, after an incident, or in response to evolving risks. Table 5 demonstrates how all Mitigation core capabilities are interdependent activities—each Mitigation core capability supports the work of others—and outlines the interdependent model for delivering Mitigation core capabilities in concert under this ConOps. For example, the core capability THID produces the data required for input to the RDRA capability. More specifically, flood hazard

identification information, such as the likelihood that an area of interest will experience a flood event, can be combined with population and property data to determine the event's consequences and a community's flood risk.

The interoperability and interdependence described in Table 5 apply to all Federal mitigation action. Boxes in white describe how the core capability identified in each row supports the core capability listed in the individual columns. Boxes in grey provide abbreviated definitions for each core capability. While Table 5 describes the relationship among Mitigation core capabilities, the Connection to Other Mission Areas section of the ConOps describes the integration points among the Mitigation FIOP and other FIOPs under the National Planning Frameworks.

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Table 5: Interdependence of Mitigation Core Capabilities

	Threats and Hazard Identification	Risk and Disaster Resilience Assessment	Planning	Community Resilience	Public Information and Warning	Long-term Vulnerability Reduction	Operational Coordination
Threats and Hazard Identification	Identify threats and hazards, determine frequency and magnitude, and incorporate into analysis and planning processes to clearly understand needs	Provide data and intelligence for current and future risk analysis and resilience assessment	Serve as scientific basis for risk-based prioritization and preparation	Drive community action with sound hazard information	Provide foundation for risk communication	Serve as scientific basis for risk-based decisionmaking	Support operational decisions with data—from long-term to real-time hazard information
Risk and Disaster Resilience Assessment	Identify the need for more refined or focused threat or hazard information	Assess risk and disaster resilience so that decision makers can take informed action to reduce risk and increase resilience	Provide analytic link between threat and hazard information and projected consequences, providing basis for risk reduction strategies	Establish foundational understanding of current and future risk and resilience	Provide vulnerability information that leads to messaging, communication and risk reduction guidance	Establish connection between risk information and targeted vulnerability reduction activity to increase resilience	Drive risk-informed operations
Planning	Set priorities for re-evaluating threat and hazard data	Identify use and requirements to update risk and disaster resilience information	Conduct a systematic process, engaging the whole community to develop strategic, operational, and community-based approaches to meet objectives	Provide forum to establish risk-based decisionmaking that improves resilience	Assess communication gaps; enact plan to address communication of risk, needs for training, and implementation of guidance	Through community engagement, select appropriate risk reduction measures, establish priorities and sequence for action	Integrate appropriate plans and coordinate planning activities to promote risk-based decisions
Community Resilience	Establish leadership, partnerships, and collaboration that drive the identification of threats and hazards and recognize the need for quality data	Lead an integrated effort to understand, communicate and promote the benefits of risk and disaster resilience assessment data	Driving force of leadership that engages and mobilizes the community to plan for future resilience	Lead the integrated effort to recognize, understand, communicate, plan, and address risks and also develop a set of actions that accomplish mitigation and improve resilience	Credible, influential leaders communicate targeted messages to receptive listeners	Compel communities to prioritize risk reduction activities and consider current and future risk when making investments	Successfully deliver multiple mitigation capabilities through established, trusted relationships and partnerships
Public Information and Warning	Risk communication and a more informed public affect the kinds of threat and hazard communications which can be delivered	Social vulnerabilities and communication factors affect overall risk analysis	The capacity and need to communicate current and future risks to the public following an incident affect planning assumptions	Provide science-based strategies and techniques for delivering information that promotes behavior change to support a resilient community	Deliver coordinated, prompt, reliable, and actionable information to the whole community through clear, consistent, accessible, and culturally and linguistically appropriate methods	Federal stakeholders must deliver information about long-term vulnerability reduction actions, funding, training, and guidance	How well public information is delivered drives operational requirements and vice versa
Long Term Vulnerability Reduction	Long-term vulnerability reduction actions change the threat and hazard profile of a community, and may lead to re-identification of threats and hazards	Long-term vulnerability reduction actions change the current and future risk profile of a community, and may initiate re-assessment of risk and disaster resilience	Long-term vulnerability reduction actions are executed based on planned priorities and evolving plans	Implementation of risk reduction activities demonstrates progress toward achieving community resilience	Long-term vulnerability reduction actions require notification of stakeholders, communication, the implementation of guidance, training and a wide array of communication efforts	Build and sustain resilient systems and communities to reduce vulnerability by lessening the likelihood, severity, and duration of adverse consequences	Coordinate delivery of risk reduction activities with all appropriate stakeholders
Operational Coordination	Identifying and quantifying threats and hazards requires mitigation stakeholders to coordinate assessment, analysis, and delivery of information	Conducted both during steady state and in incident-driven operations, requiring a combination of command and control and other operational structures	Planning brings together threat, analysis, operational, and community stakeholders and planning professionals; developing plans requires seamless coordination around a single effort	Coordination of stakeholder actions is an essential characteristic of a resilient community	The delivery of training, guidance, forecast, and advisory information is initiated through defined operational requirements in all phases	Effective coordination may result in vulnerability reduction and occurs in both steady state and incident-driven environments	Establish and maintain a unified and coordinated operation structure that integrates stakeholders and supports execution of core capabilities

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Incident-specific Mitigation

Incidents create windows of opportunity for the delivery of some and focused development of other Mitigation core capabilities, and the characteristics of an incident dictate the need for certain kinds of mitigation activity. As such, incident-specific mitigation actions that support incident-driven operations include a broad spectrum of activity. These mitigation actions fall under response and recovery structures in the immediate pre- and post-disaster environment and are administered under the appropriate framework and FIOP.

Near real-time mitigation actions are designed to inform response, remediate impacts, reduce the cascading effects of incidents, and advise recovery efforts. These actions include certain fire suppression activities, chemical spill remediation, activities that manage repeat or cascading terrorist threats, injury prevention, public health interventions, and safety inspections of damaged structures.

Mitigation tools such as real-time data and analysis and hazard impact modeling inform decisionmaking—controlling operational risk and managing short-term objectives. Supporting short-term mitigation actions may also require the deployment of mitigation expertise to collect and analyze data after an incident. Mitigation also includes longer term risk management actions, such as rebuilding, outreach, analysis, planning, and implementation activities—following a disaster—to produce longer term risk management gains. Disasters generate critical opportunities to enact community changes that may result in longer term and more sustained reductions in risk. They also present the opportunity and access to resources, such as expertise, data and modeling or better analysis, and understanding of risk and create a window of opportunity for affecting behavior change as well as structural and infrastructural mitigation.

Longer term mitigation actions that occur concurrently with response and recovery actions encompass forensic data collection and post-incident analysis and, as a result, require longer term mitigation assets to function as part of response and recovery efforts. These activities may be closely coordinated through the Federal Disaster Recovery Coordinator.

Federal Mitigation Mechanisms

Federal departments and agencies support whole community mitigation efforts by applying their own programs and capabilities across individual and coordinated operations, both in support of incidents and in response to risk. Regulatory responsibilities, oversight authorities, and obligations to support and inform stakeholders also serve to support and encourage mitigation. Leadership to promote national resilience comes from individual departments and agencies, the MitFLG, and other coordinating structures.

Delivery of Federal Support

Federal support for mitigation includes:

- Technical assistance and expertise from subject matter experts
- Training, outreach, and education (e.g., stakeholder engagement, guidance, exercises)
- Products and services (e.g., models; data and information; consultation; planning; technical assistance; insurance; and technology transfer, commercialization, and deployment)
- Projects (“bricks and mortar”), including planning, design, construction, operation, and maintenance

- Funding, including grants, contracts, cooperative agreements, partnerships, incentives, and tax policy.

Capacity Building

Capacity building is a specialized form of technical assistance that serves the shared objectives of Federal mitigation partners and provides leverage when applying Federal capabilities within a community. It is a focused effort to nationally elevate and increase the level of mitigation expertise, creating a more resilient Nation. It includes planning; research and development; innovation; partnership; and collaboration. Capacity building also helps identify and execute solutions that link Mitigation core capabilities and practitioners across the whole community.

Federal Roles and Responsibilities

This FIOP identifies and describes Federal roles and responsibilities to guide the Federal Government's implementation of the NMF. Interagency activities in the form of coordinating structures, strategic planning, and cooperative activities, such as those described in the Concept of Operations section, already exist and should likewise be capitalized upon to implement the NMF.

Existing National Strategic Planning and Interagency Activities

National strategic objectives have been set in numerous reports and plans of both Federal and non-Federal entities. Federal strategic planning can be an effective way to set shared objectives and align resources. Where these plans currently exist and identify interagency activities supporting mitigation, Federal departments and agencies should capitalize on those plans and look to align their authorities and resources in such a way to meet common strategic goals and objectives as discussed in the NMF. Many current Federal plans identify a broad range of mitigation opportunities designed to make a more secure and resilient Nation, such as the department and agency specific Strategic Sustainability Performance Plans required under Executive Order 13514 Federal Leadership in Environmental, Energy and Economic Performance (2009). Additional examples include:

- “Grand Challenges for Disaster Reduction,” NSTC, Committee on Environment and Natural Resources, A report of the Subcommittee on Disaster Reduction, 2005 with implementation plans in 2008 and 2010.
- “Federal Actions for a Climate Resilient Nation, Progress Report of the Interagency Climate Change Adaptation Task Force,” and “National Action Plan for Managing Freshwater Resources in a Changing Climate,” Council on Environmental Quality (CEQ), 2011.
- “Strategic Plan for the National Earthquake Hazards Reduction Program (NEHRP), Fiscal Years 2009–2013” submitted to Congress by the Interagency Coordinating Council of NEHRP, 2008.
- “Crisis Response and Disaster Resilience for 2030, Forging Strategic Action in an Age of Uncertainty,” FEMA, 2012.
- “National Strategy for the Marine Transportation System, A Framework for Action,” Committee on Marine Transportation Systems, 2009.
- “National Health Security Strategy,” Department of Health and Human Services (HHS), 2009.
- “Unified National Program Management for Floodplain Management,” 1994.
- “National Infrastructure Protection Plan, Partnering to Enhance Protection and Resilience,” DHS, 2009.

- Executive Order 12777, “Implementation of Section 311 of the Federal Water Pollution Control Act of October 18, 1972, as amended, and the Oil Pollution Act of 1990” (as amended), White House, 1991.
- “National Critical Infrastructure Protection R & D Plan,” NSTC, Infrastructure Subcommittee, 2004.
- DOC/NOAA's Next Generation Strategic Plan, 2010; that includes the long term goals: “Climate Adaptation and Mitigation, Weather Ready Nation, Healthy Oceans, and Resilient Coastal Communities and Economies.”
- “Strategic Plan for the National Dam Safety Program (NDSP) Fiscal Years 2012-2016,” NDSP, FEMA, 2012.

Example:

The **Strategic Plan for the NDSP for Fiscal Years 2012 through 2016** sets the national agenda for dam safety, as prescribed by the Dam Safety Act of 2006 (Public Law 109-460), and informs and supports other dam safety programs at the state and Federal levels. The plan's purpose is aligned with the collaborative approach of FEMA to address dam risk in the context of the emergency management lifecycle and to improve the unity of effort across the entire dam safety community. The successful implementation of this strategic plan over the next five years will support the Nation in preparing for, protecting against, responding to, recovering from, and mitigating dam failures and the risks and vulnerabilities posed by dams.

The plan provides a straightforward, realistic, and executable strategic direction for the NDSP based on the most efficient and effective uses of NDSP resources to reduce losses from dam failures in the United States. The goals, objectives, strategies, and priorities will serve as formal guidelines for all NDSP efforts.

Other national and international documents exist that can inform Federal activities and help set a shared vision from other stakeholder groups and academic institutes. These documents can reflect global, national, regional, and local perspectives that can align Federal roles and resources to support those objectives. They include, but are not limited to reports such as:

- “Regional Disaster Resilience, A Guide for Developing an Action Plan,” The Infrastructure Security Partnership, 2011.
- “Sustainable Critical Infrastructure Systems, A framework for meeting 21st century imperatives,” National Research Council of the National Academies, 2009.
- “Building Community Disaster Resilience Through Private-Public Collaboration,” National Research Council, 2011.
- “Recommendations for an Effective National Mitigation Effort,” National Emergency Management Association White Paper, 2009.
- “National Earthquake Resilience: Research, Implementation, and Outreach,” National Research Council, 2011.
- “Improved Seismic Monitoring—Improved Decisionmaking: Assessing the Value of Reduced Uncertainty,” National Research Council, 2006.
- “Effective Emergency Management: Making Improvements for Communities and People with Disabilities,” National Council on Disability, 2009.

- “Disaster Resilience: A National Imperative,” The National Academies, Committee on Science, Engineering, and Public Policy, Committee on Increasing National Resilience To Hazards and Disasters, 2012.

Mitigation Framework Leadership Group

The MitFLG is an interagency and intergovernmental body that facilitates information exchange and coordinates policy implementation and successful implementation of the NMF. The primary role of the MitFLG will be to serve as the central coordination point for interagency mitigation activities. The MitFLG will coordinate and promote NMF implementation, increase awareness of mitigation throughout the Federal Government, and support the advancement of Mitigation core capabilities through whole community mechanisms. The MitFLG will include representatives from relevant local, state, tribal, territorial, insular area, and Federal governments. It is chaired by FEMA in consultation with leadership in the DHS. The MitFLG will coordinate with the Domestic Resilience Group (DRG) under the National Security Council (NSC), and other Interagency Policy Committees (IPCs) or sub-IPCs as relevant. Membership in the MitFLG will include department and agency senior officials who can speak authoritatively on behalf of their respective organizations (see MitFLG membership below, as found in the NMF). The MitFLG may establish ad-hoc working groups as needed.

Private industry and nongovernmental coordination with the MitFLG will come through existing mechanisms, such as structures available to Sector-Specific Agencies (SSAs). The MitFLG will be a coordinating structure for integrating Federal efforts, and related councils, task forces, and committees will coordinate through the MitFLG. Nothing about the formation and operation of the MitFLG is intended to alter or impede the ability of executive departments and agencies to carry out their authorities or their responsibilities under law and consistent with applicable legal authorities and other Presidential guidance.

The MitFLG, through its coordination role, will help set strategic direction and define the shared goals and objectives of the group, encourage specific and collaborative programs, and provide input to the annual National Preparedness Report.

Mitigation Framework Leadership Group

Local, state, tribal, territorial, and insular area representatives

Federal membership includes, but is not limited to:

- 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

Existing Federal Coordinating Structures

Coordinating structures are composed of representatives from multiple Federal departments and agencies, public and/or private sector organizations, or a combination of such groups. Pursuant to Presidential directive, the Secretary of Homeland Security is the principal Federal official for domestic incident management. The Secretary of Homeland Security is responsible for coordinating the domestic all-hazards preparedness efforts, including mitigation activities, of all Executive departments and agencies,⁶ in consultation with local, state, tribal, territorial, and insular area governments, NGOs, private sector partners, and the general public; and for developing the National Preparedness Goal. The Secretary's preparedness responsibilities also include overseeing the broad "emergency management" and "response" activities of FEMA and other DHS components.

The Federal Government has several established structures for coordination of a variety of activities that address the range of natural, technological, and human-caused/adversarial threats and hazards. These include Government Coordinating Councils (GCCs), Sector Coordinating Councils (SCCs), Committees, and Task Forces. Understanding the relationships between the implementation of the FIOP and these existing organizations is critical. The MitFLG will define the appropriate relationships between these existing organizations and mitigation efforts. Structures that have mitigation-related missions include:

- The NSC is the President's principal forum for considering national security policy matters with senior national security advisors and cabinet officials.
- The DRG is a senior level IPC under the NSC.

⁶ The Secretary of Homeland Security is not responsible for those law enforcement response, counterterrorism, counterintelligence, and criminal investigative activities of the Attorney General and the Director of the FBI.

- CEQ coordinates Federal environmental efforts and works closely with departments and agencies and other White House offices in the development of environmental policies and initiatives. The Interagency Climate Change Adaptation Task Force is co-chaired by CEQ, DOC/NOAA, and the Office of Science and Technology Policy (OSTP).
- OSTP, NSTC, Committee on Environment, Natural Resources, and Sustainability, Subcommittee on Disaster Reduction serve as part of the internal deliberative process for the NSTC on disaster reduction issues.
- OSTP, NSTC, Committee on Homeland & National Security, Infrastructure Subcommittee serve as part of the internal deliberative process for the NSTC on issues related to resilient and sustainable design of buildings, lifelines, and other types of physical infrastructure.
- OSTP, NSTC, Committee on Technologies, Subcommittee on Standards enable responsive and timely coordination among Federal departments and agencies for more effective Federal department or agency engagement in the development and use of standards and raise awareness of best practices in standard policy issues affecting national priorities.
- The Federal Interagency Floodplain Management Task Force improves coordination, collaboration, and transparency among the Federal departments and agencies in floodplain management efforts, and works closely with local, state, tribal, territorial, and insular area governments, the private sector, and nonprofit organizations.
- The National Response System is the Federal Government's mechanism for mitigation planning of hazards associated with, and emergency response to, discharges of oil and the release of hazardous substances to navigable waters or environment of the United States. The National Oil and Hazardous Substances Pollution Contingency Plan is the framework for the National Response System, which functions through a network of interagency and intergovernmental relationships, such as the National Response Team and the Regional Response Teams.
- SSAs were designated by Presidential directive and given the responsibility to provide institutional knowledge and specialized expertise, as well as lead, facilitate, or support the security and resilience programs and associated activities of its designated critical infrastructure sector in the all-hazards environment.
- NDSP has two supporting coordinating structures: the National Dam Safety Review Board and the Interagency Committee on Dam Safety.
- NEHRP, Interagency Coordinating Committee acts in the public interest to assess: trends and developments in the science and engineering of earthquake hazards reduction; effectiveness in carrying out the activities under Section 103(a) (2) of the Earthquake Hazards Reduction Act of 1977, as amended; the need to revise the Program; and its management, coordination, implementation, and activities.
- National Institute of Building Sciences provides a forum for government and private sector interaction on research, development, codes, and standards for the built environment and by supporting advances in building sciences and technologies for the purpose of improving the performance of buildings and structures while reducing waste and conserving energy and resources.
- The Public Health Information Network is an HHS Centers for Disease Control and Prevention initiative to establish and support shared policies, standards, practices, and services that facilitate efficient public health information access, exchange, use, and collaboration among public health agencies and with their clinical and other partners.

The coordinating structures for mitigation should focus on creating a national culture shift that embeds risk management and mitigation in all planning, decisionmaking, and development, as practicable. They should also ensure connectivity with the efforts of the whole community through mechanisms described in further detail in Appendix B. The primary role of the MitFLG will be to serve as the central coordination point for interagency mitigation activities.

Guidance for Department- and Agency-level Plans

As stated in PPD-8, “all executive departments and agencies with roles in the National Planning Frameworks shall develop department-level operational plans to support the interagency operational plans, as needed.” Department- and agency-level operations plans will describe how the organization's capabilities support the application of Mitigation core capabilities, within the respective agency's authorities and funding limitations. Existing plans, standard operating procedures, or guides may be used for the development of these plans. The department- and agency-level plan should contain the level of detail necessary to clearly identify the department or agency's specific critical tasks, responsibilities, and resources required to fulfill mission area tasks as appropriate under the FIOP. The frequency for reviewing and updating these plans will depend on each department or agency's internal business practices.

Suggested plan elements include:

- Description of department and agency's vision for mitigation
- Description of authorities, responsibilities, and ability to implement Mitigation core capabilities
- Summaries of overall trends visible within mitigation
- Identification of Mitigation core capabilities that show the highest degree of progress
- Identification of Mitigation core capabilities that show the most significant gaps/needs for improvement
- Interagency coordination
- Identification of resources to support activities
- Submission date and update schedule consistent with department business practices
- Evaluation and consideration of methods to integrate mitigation strategies across department programs to ensure and supplement the civil rights of individuals with disabilities, from religious, racially, and culturally diverse backgrounds, and with LEP.

In addition, the departmental- and agency-level operational plans could be used to:

- Help promote understanding of mitigation to department mission and operations to increase efficiency of national-level operations and identify possible changes to regulations, guidance, or policy to further the implementation of the Mitigation core capabilities
- Serve as a means through which a self-assessment of department activities can be conducted that have a mitigation connection and/or have mitigation effects and be used as an internal department document and inform plan development
- Develop an action plan with milestones to be consistent with department business practices
- Serve as a source of information for sharing lessons learned.

Federal roles and responsibilities to improve the Nation's resilience should focus, where possible, not only on using and expanding existing strategic planning documents, interagency implementation

activities and coordinating structures, but also on supporting the guidance set forth in this FIOP and in departmental operating plans.

Connection to Other Mission Areas

Cross Cutting Themes

National preparedness activities occur simultaneously across the five mission areas. Therefore, the National Planning Frameworks should be integrated to ensure the greatest degree of coordination possible, and, where appropriate, the smoothest transition from one mission area to another. Further, each framework is inextricably linked to the successful implementation of the core capabilities described in the other National Planning Frameworks. The core capabilities of each mission area should operate in concert with each other to best serve the Nation. For the purpose of the FIOP, integration is the means by which the Federal Government synchronizes operations and works to enhance operations conducted at the local, state, tribal, territorial, and insular area levels either during steady state operations, in support of adaptive risk management, or when a disaster strikes.

Common Core Capabilities

Three common capabilities cut across all five mission areas and serve to provide needed integration—Planning; Public Information and Warning; and Operational Coordination. As established in the ConOps, the goal of integration among the mission areas and across governmental levels is achieved through the three common core capabilities. Each of these capabilities must be coordinated and integrated across mission areas in order to successfully deliver the capability.

The Planning capability acts as a foundation for all mission areas and the entire preparedness system. It calls for the whole community, as appropriate, to use a systematic process to develop and maintain plans for meeting objectives within all mission areas. Within the Mitigation mission area, Planning builds upon existing processes, focusing on the incorporation of risk information to inform decision makers. Planning for critical infrastructure will be coordinated between the Protection and Mitigation mission areas to support shared objectives. Pre- and post-disaster recovery planning will also build on the community-based planning developed through mitigation.

The Public Information and Warning capability helps ensure an engaged, resilient public that can support any of the five mission areas. In mitigation, Public Information and Warning focuses on sharing information and communicating risk awareness and mitigation messages among elements of the whole community. This information is generated by engineers who support the development of building codes, departments and agencies such as DOC/NOAA and USGS, and information from DHS and the Intelligence Community (IC).

Within a unified and coordinated operational structure and process that integrates all critical stakeholders, mitigation activities establish protocols for mitigation data elements. These activities facilitate risk-informed decisions to support the whole community. This can include being a part of command and control structures during response and collaborative coordination structures during recovery and part of decentralized structures during steady state operations.

Mitigation Integration with Other Mission Areas

Mitigation activities reduce the impact of disasters by supporting protection and prevention activities, easing response, and speeding recovery to create better prepared and more resilient communities. Within the entire network of core capabilities each is dependent on the other to yield results that reduce damage and save lives. Mitigation core capabilities work to enhance the execution of core capabilities found in each of the other mission areas through information, assessments, and long term

vulnerability reduction strategies to achieve community resilience. When fully and successfully executed, Mitigation core capabilities may support the prioritization of Protection efforts by identifying threats and hazards, optimizing Response by helping to reduce the impact of disaster, and quickening and enhancing efforts in Recovery by analyzing disaster impacts. Through science and research, mitigation capabilities may also help to synchronize efforts to update and rebuild improved, more resilient communities.

Prevention Mission Area

Threat identification and risk assessment information provide decision makers with awareness of and context for an incident. Once specific threats and risks are ascertained, communities can then devise appropriate measures for mitigating those threats, thereby reducing vulnerability. Prevention reduces threats or the consequences of an attack through effective Federal law enforcement, investigative, intelligence, and operational responses to threatened or actual acts of terrorism within the United States and its territories. It unifies the collective capabilities of the Federal Government to respond to an imminent threat, terrorist attack, and/or follow-on attack. Prevention efforts interact with mitigation efforts to ensure a coordinated Federal effort and, as necessary, to establish joint priorities across mission space. Prevention and mitigation must be in communication during times of imminent threat so that mitigation assets, to the extent practical and appropriate, may be pre-positioned.

Protection Mission Area

Activities in the Mitigation and Protection mission areas are typically performed in a steady state or well before an incident. Protection places particular attention on security and deterrence of threats, while mitigation emphasizes reducing vulnerabilities. Both seek to minimize consequences and have a shared focus on critical infrastructure. Addressing the security of that infrastructure falls within the Protection mission area, while addressing the resilience of the infrastructure falls within the Mitigation mission area. Threats and hazard risk information and analysis are necessary to effectively design successful strategies for mitigation and protection. Integration of risk information, planning activities, and coordinating structures reduces duplication of effort and streamlines risk management actions in both mission areas.

Response Mission Area

Effective community mitigation efforts directly reduce loss of life, property damage, and the required scale of response operations. Therefore, they can reduce the overall financial cost. Threats and hazard information and risk assessment data can trigger crucial life-saving and life-sustaining operations. Tools such as inundation mapping for flood events can be used to plan and determine appropriate life-saving actions. Most importantly, these data can be used to develop a better understanding of the situation in order to deliver information for decisionmaking, while easing transition to recovery. When incidents impede the ability to communicate effectively or develop impact assessments, risk analysis and hazard modeling can provide operational assumptions for first responders to help them understand more about the situation and better prepare to respond.

Recovery Mission Area

Mitigation and recovery share a focus on sustainable recovery and overall resilience. Cross-mission-area integration activities, such as planning, are essential to ensuring that risk avoidance and risk reduction actions are taken during the recovery process. Integrating mitigation actions into pre- and post-disaster recovery plans provides systematic risk management after the incident. During the recovery process actions can be taken to address the resilience of population's health and wellness, social systems, the economy, housing, natural and cultural resources, and critical infrastructure.

Lessons learned during the recovery process also inform future mitigation actions. Linking recovery and mitigation can help us to break the cycle of damage-repair-damage resulting from rebuilding without mitigation following disasters.

An Integrated Approach

Meeting the challenges of current and future disasters requires the concerted effort of all Federal agencies in partnership with local, state, tribal, territorial, and insular area governments; NGOs; and the private sector to integrate their efforts. The principle of integration ensures unity of effort among all levels of government and all elements of a community. Achieving integrated effort is often complicated by crisis-driven planning and divergent organizational processes and cultures. The FIOP expands upon how integration can be improved through operational coordination and establishment of joint interagency objectives. Yet, another critical element for consideration when achieving integration is the organizational structure or mechanism in which organizations and individuals operate and interact.

Integration can be approached from three different organizational perspectives: internal, horizontal and vertical.⁷ Internal integration occurs within Federal departments and agencies and within their respective programs. Communities of practice, or groups that are bound together by mutual interests, are examples of horizontal structures that can achieve integration. Integrated decisions are based on consensus and group acceptance of the governing structure. Vertical integration seeks to ensure compatibility among entities and levels by encouraging standardization within broad parameters. Vertical integration is much more hierarchical and relies on more directive methodologies. Integration among mission areas will continue to evolve as the ConOps are exercised and implemented, and the FIOPs are updated to capture lessons learned.

Oversight, Plan Development, and Maintenance

Mitigation FIOP Review Cycle

This FIOP must reflect current conditions, realities, and stakeholder perspectives. Through a standard review, monitoring, and update cycle, the FIOP will remain relevant, credible, and sound for the whole community.

Monitoring Process

The MitFLG will monitor actions taken in accordance with this FIOP. It will identify and document:

- Previously unused, new, or innovative coordination forums/groups/committees that enable the successful and coordinated delivery of Mitigation core capabilities
- Mitigation lessons learned from exercises, disaster incidents, and other events
- Any systemic and capability-level challenges and obstructions
- Gaps in coordination and missed opportunities
- Stakeholder engagement and information provided regarding mitigation.

⁷ FEMA, Emergency Management Institute, Principles, Practice, Philosophy and Doctrine of Emergency Management, Session 6, Integrated Emergency Management, April 2011.

Review and Update Process

This FIOP will be regularly reviewed to evaluate consistency with existing and new policies; evolving threats and hazards; and experience gained from use. Interagency partners will be engaged in the review and maintenance process for this FIOP. The first review of this FIOP will be completed no more than 18 months after its release, and subsequent reviews will be conducted on a quadrennial basis. The review and maintenance process may include developing incident-specific and classified annexes, which include the delivery schedule for federally coordinated assets and resources, as appropriate. The FIOP will be updated periodically, as required, to incorporate new executive guidance and statutory and procedural changes, as well as lessons learned from exercises and actual incidents.

Significant updates to the Mitigation FIOP will be vetted through a Federal senior-level interagency review process. The review process provides an opportunity to reassess the FIOP's direction and to address current conditions and realities by engaging stakeholders, revising the document, and publishing an amended version for the whole community. Information reported through the monitoring process will be integrated into the FIOP, as appropriate. Where conditions, realities, and stakeholder perspectives have changed little or not at all, the FIOP may remain unchanged. The FIOP review will accomplish the following:

- Provide an assessment and updated information on the delivery of core capabilities
- Ensure that the FIOP is consistent with other mission areas
- Incorporate lessons learned and effective practices
- Reflect progress in the Federal Government's mission activities.

FIOP Application to the Non-Federal Audience

Local governments and state, tribal, territorial, and insular area governments, NGOs, and private sector entities can adapt and reference the comprehensive operational approach to reducing loss of life and property offered in the FIOP when conducting their own planning and implementation activities. The Mitigation FIOP:

- Can serve as a resource for interrelated Federal and non-Federal efforts to build and sustain preparedness
- Provides a transparent description of the existing organization, strategy, and methodology that the Federal Government uses to deliver Mitigation core capabilities
- Merges operational information from across Federal departments and agencies into one document, streamlining endeavors to explain how the Federal Government supports accomplishment of the Mitigation mission
- Describes the scope of the MitFLG, a group that works to ensure appropriate integration of Federal mitigation efforts across the whole community.

Authorities and References

Federal departments and agencies deliver the Mitigation core capabilities as authorized by Federal law including Presidential executive orders, other Presidential directives, and Federal statutes. Authority and direction for the delivery of the core capabilities is further provided in Federal regulations and in department and agency policies, guidelines, and directives. Pursuant to the National Preparedness Goal, and as stated above, the NMF defines mitigation broadly,

encompassing, but not limited to, more specific definitions of mitigation, such as that found under the Stafford Act. This section highlights some of the key existing authorities that Federal mitigation partners rely on to execute their mitigation programs and activities. These are intended to be illustrative and not comprehensive. A more complete set of relevant Presidential directives, laws, and authorities can be developed as needed or coordinated by the MitFLG. An initial review identified more than 100 legal authorities that may be relevant to Federal mitigation operations. This document is not intended to, and does not, create any right or benefit, substantive or procedural, enforceable at law or equity, against the United States, its departments, agencies, or other entities, its officers or employees, or any other person.

Presidential Directives and Executive Orders

PPD-8 describes the Nation's approach to national preparedness. PPD-8's intent is to catalyze integrated preparedness planning across departments and agencies, the private and nonprofit sectors, and the general public to strengthen the security and resilience of the Nation. PPD-8 builds on existing authorities and directs Federal action, including that which led to the creation of the NMF and this Mitigation FIOP. This directive is not intended to interfere with or impede the current authorities in place that have already established or reformed mitigation or other preparedness operations across the Federal Government. The NMF sets the strategy and doctrine for mitigation, while this FIOP provides guidance to Federal departments and agencies for implementation of the NMF and its core capabilities.

Examples of Executive Orders relevant to PPD-8 include Executive Order 12333 and Executive Order 11988:

Executive Order 12333, United States Intelligence Activities, 1981 enables the IC to mitigate the effects of human-caused/adversarial threats. It provides direction to departments and agencies on the collection, analysis, production, and dissemination of intelligence, reducing the threat to national security through the use of current and accurate information about the activities, capabilities, plans, and intentions of foreign entities.

Executive Order 11988, Floodplain Management, 1977 requires Federal departments and agencies to take action to reduce the adverse effects of flooding, to preserve the natural benefits provided by floodplains, and to consider alternatives to floodplain development. This Order, in furtherance of the National Environmental Policy Act of 1969, the National Flood Insurance Act of 1968, and the Flood Disaster Protection Act of 1973, directs Federal departments and agencies to mitigate flood risk through risk identification, assessment, and reduction.

Other key Executive Orders relevant to this FIOP include:

- Executive Order 11990, Protection of Wetlands, 1977
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, 1994
- Executive Order 13007, Indian Sacred Sites, 1996
- Executive Order 13166, Access for Persons with Limited English Proficiency, 2000
- Executive Order 13514 Federal Leadership in Environmental, Energy, and Economic Performance, 2009

Department and Agency Directives and Congressional Acts

Federal departments and agencies are responsible for executing the laws enacted by Congress. As part of that responsibility, they promulgate regulations and issue department or agency directives that provide internal policy guidance, delegate authority, establish programs, define procedures, or assign responsibilities. These authorities can be specific to certain conditions, such as steady state or incident-driven operations, and be directed toward more than one department or agency. Examples of statutory authorities relevant to steady state operations include:

- **The Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988**, as amended, constitutes the statutory authority for most Federal disaster response activities, but it also includes certain provisions for hazard mitigation. Specifically, it authorizes steady state activities conducted by FEMA, such as support for communities to develop effective public-private natural disaster hazard mitigation partnerships, hazard vulnerability assessments, and documentation of hazard mitigation priorities and plans.
- **The Pandemic and All Hazards Preparedness Act** was enacted to prepare the Nation for public health and medical emergencies. This Act includes provisions for the development of a National Health Security Strategy, which promotes community resilience and strong and sustainable health and emergency response systems, and expanded preexisting grant programs to enhance community and hospital preparedness for health emergencies.

Departments and agencies implement steady state mitigation actions that come before incidents but also mitigate disasters, by enforcing regulations or providing incentives to support more resilient new construction, including roads, bridges, and homes. Examples of departments that take mitigating action based on incident-driven triggers are:

- **The Department of Transportation's Federal Highway Administration** has an Emergency Relief program for the repair or reconstruction of Federal-aid highways and roads on Federal lands that have suffered serious damage as a result of natural disasters and catastrophic failures from an external cause.⁸ Emergency Relief funds are available at the pro-rata cost share that would normally apply to the Federal-aid facility damaged. These actions attempt to mitigate further loss due to damaged Federal highways.
- **The Federal Mine Health and Safety Act of 1977**, which enabled the Department of Labor to work with HHS to mitigate the risk of death and disease in American miners. This interagency group was directed to establish health and safety standards in mining, and to work with the states to implement them. The purpose was to not only reduce the risk to miners' health and safety, but also to prevent the economic impacts that follow such conditions.

Additionally, Federal departments and agencies can use MOUs and MOAs to cooperatively carry out mitigation activities as allowed by law.

⁸ 23 U.S.C. § 125, as amended, Emergency Relief–Consolidated and Further Continuing Appropriations Act, 2012 (Public Law 112-55).

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Appendix A: Key Terms and List of Abbreviations

Key Terms

Access and Functional Needs: Persons who may have additional needs before, during and after an incident in functional areas, including but not limited to: maintaining independence, communication, transportation, supervision, and medical care. These may include those individuals who have disabilities; live in institutionalized settings; are seniors; are children; are from diverse cultures; have Limited English Proficiency or are non-English speaking; or are transportation disadvantaged.

Access/Accessible: Suitability or adaptability of programs, services, activities, goods, facilities, privileges, advantages or accommodations provided by a public or private (for-profit or not-for-profit) entity, or by any entity to which it contracts for all members of the population, including individuals with disabilities.

Adaptive Risk Management: Applies to both steady state and incident-driven activities, and offers opportunities for course correction within each. Operational paradigms for steady state and incident-driven operations include identifying opportunities for continuous improvement. Activities that are driven by cycles, indicators, and changes that occur outside of incidents. This includes demographic and technological changes and advancements, and evolving hazards and changing risk landscapes. For instance, advances in technology create new and more accurate ways to assess and mitigate hazards, and Federal mitigation action may change based on such advancements.

Capability Targets: Performance threshold(s) for each core capability.

Community: Unified groups that share goals, values, or purposes rather than geographic boundaries or jurisdictions. Communities bring people together in different ways for different reasons, but each provides opportunities for sharing information and promoting collective action. They have the ability to promote and implement mitigation activities without necessarily holding a formal position of authority within a jurisdiction.

Concept of Operations: A statement that clearly and concisely expresses what is intended to be accomplished and how it will be done using available resources.

Coordinating Structures: Composed of representatives from multiple departments or agencies, public and/or private sector organizations, or a combination of these. Coordinating structures are able to facilitate the preparedness and delivery of capabilities, and they provide guidance, support, and integration to aid in the preparedness of the whole community and building resilience at the local, regional, and national levels. They ensure ongoing communication and coordination between all parties involved in preparing and delivering capabilities.

Core Capabilities: Distinct critical elements necessary to achieve the National Preparedness Goal.

Critical Infrastructure: Systems and assets, whether physical or virtual, so vital that the incapacity or destruction of such may have a debilitating impact on the security, economy, public health or safety, environment, or any combination of these matters, across any state, tribal, territorial, local and Federal jurisdiction.

Cultural Resources: Aspects of a cultural system that are valued by or significantly representative of a culture or that contain significant information about a culture. Cultural resources may be tangible entities or cultural practices. Tangible cultural resources are categorized as districts, sites, buildings, structures, and objects for the National Register of Historic Places and as archeological resources,

cultural landscapes, structures, museum objects and archives, and ethnographic resources for Federal management purposes. Also includes cultural items as that term is defined in section 2(3) of the Native American Graves Protection and Repatriation Act [25 U.S.C. § 3001(3)]; and archeological resources, as that term is defined in section 3(1) of the Archaeological Resources Protection Act of 1979 [16 U.S.C. § 470bb(1)].

Functional Needs: Needs of an individual who under usual circumstances is able to function on their own or with support systems. However, during an emergency, their level of independence is challenged.

Hazard: Natural, technological, or human-caused source or cause of harm or difficulty.

- Natural: Source of harm or difficulty created by a meteorological, environmental, or geological phenomenon or combination of phenomenon.
- Technological/Accidental: Source of harm or difficulty created by accidents or failures.
- Adversarial/Human-Caused: Source of harm or difficulty created by an individual, group, organization, or government.

Incident-driven Operations: When Mitigation core capabilities are employed to support incident-driven operations, departments and agencies follow the National Incident Management System. Near real-time mitigation actions are designed to inform response, remediate impacts, reduce the cascading effects of incidents, and advise recovery efforts. Incident-driven operations also include longer term risk management actions, such as rebuilding, outreach, analysis, planning, and implementation activities—following a disaster—to produce longer term risk management gains.

Individual with Disability: Person (child or adult) who has a physical or mental impairment that substantially limits one or more major life activities; a person who has a history or record of such impairment; or a person who is perceived by others as having such impairment. The term “disability” has the same meaning as that used in the Americans with Disabilities Act Amendments Act of 2008, Public Law 110–325, as incorporated into the Americans with Disabilities Act. See <http://www.ada.gov/pubs/ada.htm> for the definition and specific changes to the text of the Americans with Disabilities Act. State laws and local ordinances may also include individuals outside the Federal definition. Children and adults may have physical, sensory, mental health, cognitive and/or intellectual disabilities resulting in access and functional needs and may require assistance to maintain independence.

Limited English Proficiency: Individual who does not speak English as his/her primary language and who has a limited ability to read, write, speak or understand English.

Mission Areas: Groups of core capabilities, including Prevention, Protection, Mitigation, Response, and Recovery.

Mitigation Framework Leadership Group: Interagency and intergovernmental body that facilitates information exchange and coordinates policy implementation and successful implementation of the National Mitigation Framework. Serves as the central coordination point for interagency mitigation activities. Coordinates and promotes National Mitigation Framework implementation, increases awareness of mitigation throughout the Federal Government, and supports the advancement of Mitigation core capabilities through whole community mechanisms.

Mitigation: Capabilities necessary to reduce loss of life and property by lessening the impact of disasters. Mitigation capabilities include, but are not limited to, community-wide risk reduction projects; efforts to improve the resilience of critical infrastructure and key resource lifelines; risk

reduction for specific vulnerabilities from natural hazards or acts of terrorism; and initiatives to reduce future risks after a disaster has occurred.

National Planning Frameworks: Address the roles and responsibilities across the whole community to deliver the core capabilities. The National Planning Frameworks are built upon scalable, flexible, and adaptable coordinating structures to align key roles and responsibilities to deliver the necessary capabilities to prevent, protect, mitigate, respond, and recover. The National Planning Frameworks provide succinct descriptions, at a high level, of the steps to be taken to prepare to deliver the necessary capabilities; the National Planning Frameworks are not intended to be traditional operational plans, concept of operations plans, or detailed plans for affirmative action.

National Preparedness: Actions taken to plan, organize, equip, train, and exercise to build and sustain the capabilities necessary to prevent, protect against, mitigate the effects of, respond to, and recover from those threats that pose the greatest risk to the security of the Nation.

National Incident Management System: Provides a systematic, proactive approach to guide departments and agencies at all levels of government, nongovernmental organizations, and the private sector to work seamlessly to prevent, protect against, respond to, recover from, and mitigate the effects of incidents, regardless of cause, size, location, or complexity, in order to reduce the loss of life and property and harm to the environment. The National Incident Management System works hand in hand with the National Response Framework. The National Incident Management System provides the template for the management of incidents, while the NRF provides the structure and mechanisms for national-level policy for incident management.

Presidential Policy Directive 8 (National Preparedness): Presidential Directive aimed at strengthening 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.

Presidential Policy Directive 21 (Critical Infrastructure Security and Resilience): Presidential Directive which establishes national policy on critical infrastructure security and resilience. Refines and clarifies the critical infrastructure-related functions, roles, and responsibilities across the Federal Government, as well as enhances overall coordination and collaboration.

Prevention: Capabilities necessary to avoid, prevent, or stop a threatened or actual act of terrorism. For the purposes of the prevention framework called for in PPD-8, the term “prevention” refers to preventing imminent threats.

Protection: Capabilities necessary to secure the homeland against acts of terrorism and manmade or natural disasters.

Recovery: Capabilities necessary to assist communities affected by an incident to recover effectively, including, but not limited to, rebuilding infrastructure systems; providing adequate interim and long-term housing for survivors; restoring health, social, and community services; promoting economic development; and restoring natural and cultural resources.

Resilience: Ability to adapt to changing conditions and withstand and rapidly recover from disruption due to emergencies.

Response: Capabilities necessary to save lives, protect property and the environment, and meet basic human needs after an incident has occurred.

Risk Assessment: Product or process that collects information and assigns a value to risks for the purpose of informing priorities, developing or comparing courses of action, and informing decisionmaking.

Strategic National Risk Assessment: Assessment identifying the threats and hazards that pose the greatest risk to the Nation and provided the basis for establishing the National Preparedness Goal and the core capability requirements for all mission areas. The Strategic National Risk Assessment was executed in accordance with Presidential Policy Directive 8 and captures the threats and hazards that pose a significant risk to the Nation, grouped into three categories.

Steady State/Continuous Operations: Mitigation efforts conducted during ongoing operations which incorporate program management structures around shared goals, principles, department and agency initiatives and coordinating structures to maximize Federal performance.

Whole Community: Includes individuals, families, and households; communities; the private and nonprofit sectors; faith-based organizations; and local, state, tribal, territorial, and Federal governments. Whole community is defined in the National Preparedness Goal as “a focus on enabling the participation in national preparedness activities of a wider range of players from the private and nonprofit sectors, including nongovernmental organizations and the general public, in conjunction with the participation of Federal, state, and local governmental partners in order to foster better coordination and working relationships.”

List of Abbreviations

APHIS	Animal Plant Health Inspection Service
C.F.R.	Code of Federal Regulations
CEQ	Council on Environmental Quality
CMMI	Capability Maturity Model Integration
ConOps	Concept of Operations
CPG	Comprehensive Preparedness Guide
DHS	Department of Homeland Security
DOC	Department of Commerce
DOI	Department of the Interior
DOT	Department of Transportation
DRG	Domestic Resilience Group
EPA	Environmental Protection Agency
FBI	Federal Bureau of Investigation
FEMA	Federal Emergency Management Agency
FIOP	Federal Interagency Operational Plan
GCC	Government Coordinating Council
GIS	Geographic Information System
HHS	Department of Health and Human Services
HMGP	Hazard Mitigation Grant Program
HUD	Department of Housing and Urban Development
IC	Intelligence Community

IPC	Interagency Policy Committee
LEP	Limited English Proficiency
MAT	Mitigation Assessment Team
MitFLG	Mitigation Framework Leadership Group
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MSA	Metropolitan Statistical Area
NDRF	National Disaster Recovery Framework
NDSP	National Dam Safety Program
NEHRP	National Earthquake Hazards Reduction Program
NFIP	National Flood Insurance Program
NGO	Nongovernmental Organization
NIMS	National Incident Management System
NMF	National Mitigation Framework
NOAA	National Oceanic and Atmospheric Administration
NOC	National Operations Center
NRCS	Natural Resources Conservation Service
NRF	National Response Framework
NSC	National Security Council
NSTC	National Science and Technology Council
OSTP	Office of Science and Technology Policy
PPD	Presidential Policy Directive
RDRA	Risk and Disaster Resilience Assessment
Risk MAP	Risk Mapping, Assessment, and Planning
SCC	Sector Coordinating Council
SNRA	Strategic National Risk Assessment
SSA	Sector-Specific Agency
THID	Threats and Hazard Identification
THIRA	Threat and Hazard Identification and Risk Assessment
U.S.C.	U.S. Code
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
USDA	U.S. Department of Agriculture
USGS	U.S. Geological Survey

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Appendix B: Delivery of Mitigation Core Capabilities⁹

Threats and Hazard Identification

Definition: Identify the threats and hazards that occur in the geographic area, determine the frequency and magnitude, and incorporate this into analysis and planning processes so as to clearly understand the needs of a community or entity.

Expanded Capability Description

The identification of threats and hazards occurs on all political, geographical, and organizational levels. Appropriate data that are collected in a standardized and well-defined format can be made publicly accessible for analysis and assessment by relevant and appropriate entities. Threat and hazard identification is an essential part of all planning processes as part of the National Preparedness System.

Federal Role

Threat and hazard identification involves determining characteristics of the source of harm or characteristics associated with impacts, such as the geographic area, frequency, and magnitude. Each threat has unique considerations; for example, certain threats and hazards may not be restricted to particular geographic locations. Threat and hazard characteristics can be determined through modeling, historical data, and other tools and methodologies relevant to the factors that influence the manifestation of the threat or hazard.

The Federal Government supports and guides the efforts of the whole community to enable accurate and timely availability of threat and hazard data to meet the needs of analysts and decision makers. Federal threats and hazard identification activities span across Federal agencies and out to whole community partners and rely on two-way data collaboration—nationally generated and locally derived data.

Target: Identify the threats and hazards within and across the states, territories, and the top 100 metropolitan statistical areas (MSAs), in collaboration with the whole community, against a national standard based on sound science.

Critical Tasks

- **Identify data requirements across stakeholders.**
 - Stakeholder(s): Individuals; academia; private sector; NGOs; local, state, tribal, territorial, and insular area governments; and Federal Government.
 - Mechanism(s): Collaboration with partners, data users, and data providers.
 - How/Example(s): Develop data requirements based on the data user needs and consistent data formats to develop standards for data and required documentation that promote data use, sharing, and further analysis and enhancement; identify appropriate level of security

⁹ Capabilities and targets as defined in the National Preparedness Goal, September 2011 and critical tasks as defined in the National Mitigation Framework.

classifications for threat and hazard data to promote the broadest sharing without compromising data security.

- **Gather required data in a timely and accurate manner in order to effectively identify threats and hazards.**
 - Stakeholder(s): Individuals; academia; private sector; NGOs; local, state, tribal, territorial, and insular area governments; and Federal Government.
 - Mechanism(s): Make grants available for data collection and analysis, standardize data, make data available and accessible, and improve real-time accessibility and usability of data.
 - How/Example(s):
 - Surveillance, including health and animal disease surveillance
 - Develop data and documentation standards
 - Units of measurements
 - Document lessons learned from exercises and incidents
 - Human factors (e.g., whether data collectors are trained, whether analysts have the proper skills and qualifications)
 - Validation, vetting, and screening of methods and results
 - Inspection and enforcement of data standards and documentation
 - Maintenance of equipment and data availability from such means as remote sensing and surveillance, stream gauges, and sensors on critical infrastructure
 - Event-driven data collection like levee monitoring and inspections as flood waters rise or forensic data that can inform short-term recovery or Mitigation Assessment Teams (MATs) that assess the damage and vulnerability of buildings after an incident
 - Data catalogues and repositories to enable ready access to available and current data.
- **Ensure that the right data are received by the right people at the right time.**
 - Stakeholder(s): Academia; private sector; NGOs; local, state, tribal, territorial, and insular area governments; and Federal Government.
 - Mechanism(s): Pre-incident planning and exercises, public awareness messaging and assessment of effectiveness, coordinating structures.
 - How/Example(s):
 - Identify threats and hazard through national, regional, state, and local level exercises by not only conducting the exercise, but also incorporating lessons learned
 - Healthcare personnel ensure public health agencies receive prompt notification upon identifying reportable diseases
 - Develop after action reports and improvement plans
 - Improve and validate threat and hazard data based upon actual incidents
 - Hurricane warnings

- Ensure partnerships are developed and information sharing and safeguarding protocols are disseminated to private sector and critical infrastructure partners.
 - Social media
 - Alert system
 - Physical communications
 - Environmental regulations
 - Operation centers
 - Consistent data format
 - Standardizing data and measurements
 - Customizing the medium of communication for audiences
 - Regional Department of Agriculture (USDA) personnel working with rural communities to assist them in floodplain identification and mitigating the impact of a flood on their farms (Natural Resources Conservation Service [NRCS], formerly the U.S. Soil Conservation Service)
- **Share appropriate data on natural and manmade hazards in a transparent and usable manner.**
- Stakeholder(s): Academia; private sector; NGOs; local, state, tribal, territorial, and insular area governments; and Federal Government.
 - Mechanism(s): Conferences, meetings, mitigation plans, national databases, Web sites, data catalogs, modeling tools, local ordinances, and public messaging.
 - How/Example(s): Develop Web sites, data repositories, data catalogs, and other means of collection and dissemination for open source data. Examples are the Federal Emergency Management Agency (FEMA's) publicly accessible Web site to view and download flood hazard maps and geographic information system (GIS) data and documentation and the U.S. Geological Survey (USGS) National Earthquake Information Center's Web site to view and download tectonic fault mapping and current and historical data and maps on earthquakes.
- **Strike a proper balance between dissemination and classification of national security and intelligence information.**
- Stakeholder(s): Academia; private sector; NGOs; local, state, tribal, territorial, and insular area governments; and Federal Government.
 - Mechanism(s): Vertical structures among organizational units; local, state, tribal, territorial, insular area governments, and Federal laws requiring notification of imminent breach of security.
 - How/Example(s): Terrorist threats or warnings, regular inspections of facilities, security protocols for data access.
- **Build cooperation between private and public sectors by protecting internal interests but sharing threats and hazard identification resources and benefits.**
- Stakeholder(s): Academia; private sector; NGOs; local, state, tribal, territorial, and insular area governments; and Federal Government.

- Mechanism(s): Shared research, patents, accessible and/or shared data banks and repositories or Web sites.
- How/Example(s):
 - Cyber security
 - Academic research
 - Condition assessments
 - Stakeholder outreach
 - Subject matter expert advisement
 - Participation on committees
 - Participation in exercises
 - Scenario building and simulation
 - Training and participation in common command structure (e.g., Incident Command System)
 - Federal Register Request for Information, open comment period
 - Safety commissions
 - Working partnerships
- **Leverage available third-party data, tools, and information; social media; and open-source technology.**
 - Stakeholder(s): Academia; private sector; NGOs; local, state, tribal, territorial, and insular area governments; and Federal Government.
 - Mechanism(s): Conferences, open access Web sites and data banks, academia.
 - How/Example(s): Use existing data that has been or can be validated through documentation review or independent review. Examples of potential third-party data include World Bank and United Nations data which are available and can be leveraged for threat and hazard identification purposes by other entities; geospatial data; and social media.
- **Translate data into meaningful and practical information through appropriate analysis and collection tools to aid in preparing the public.**
 - Stakeholder(s): Academia; private sector; NGOs; local, state, tribal, territorial, and insular area governments; and Federal Government.
 - Mechanism(s): Translate data to develop customized messaging that target audiences can understand and relate to so that their awareness of the threat or hazard is increased.
 - How/Example(s): Simplify complex scientific analyses in to a format which individuals can readily understand such as maps showing the extents of flooding or hurricane tracks predicting the path of a hurricane over multiple days.

Risk and Disaster Resilience Assessment

Definition: Assess risk and disaster resilience so that decision makers, responders, and community members can take informed action to reduce their entity's risk and increase their resilience.

Expanded Capability Description

Risk and Disaster Resilience Assessment (RDRA) is the evaluation of threats, hazards, vulnerabilities, needs, and resources through algorithms or other methods to define and prioritize risks so community members, decision makers, and responders can make informed decisions and take appropriate action. Such an assessment directly connects threat and hazard data and information in order to analyze and understand the potential effects on a community. A robust RDRA capability allows a comparison and prioritization of risks from disparate threats and hazards across a variety of communities and jurisdictions. RDRA outcomes such as analysis and data can be leveraged in planning efforts and resource allocations across the other mission areas.

Federal Role

The Federal Government has a responsibility to support and guide the efforts of the whole community through regulatory authorities, funding, incentives, expertise, and leadership. Risk and disaster resilience assessments are part of a comprehensive planning process that involves all organizational levels: local, state, tribal, territorial, insular area, Federal, nongovernmental, and private entities.

Target: Ensure that states, territories, and the top 100 MSAs complete a risk assessment that defines localized vulnerabilities and consequences associated with potential natural, technological, and human-caused threats and hazards to their natural, human, physical, cyber, and socioeconomic interests.

Critical Tasks

Data

- **Share risk assessment data, both new and existing, to establish common operations across mission areas and standardized data requirements and guidance. Secure sensitive data as appropriate.**
 - Stakeholder(s): Local, state, tribal, territorial, insular area, and Federal governments; private sector; and nonprofit organizations.
 - Mechanism(s): Legislation, policies, grants, publications, professional associations.
 - How/Example(s):
 - Flood plain mapping
 - Dam and levee safety inspections
 - Protect proprietary and sensitive information (confidential business information) provided to the Federal Government by whole community partners and provide risk assessment information to them in return
 - Federal Highway Administration maintains a National Bridge Inventory which can be used as a risk and resilience assessment dataset

- Neither industry, nor government alone can monitor all cyber threats, so continuing to expand and develop procedures for information sharing and safeguarding is imperative.
- **Establish standard data formats to enable sharing of vulnerability data and risk assessment outputs.**
 - Stakeholder(s): Federal Government, nonprofit organizations, private sector.
 - Mechanism(s): Legislation, policy, professional standards.
 - How/Example(s): Monetary value, standards for poverty levels, educational assessments.
- **Provide the right data to the right people at the right time.**
 - Stakeholder(s): Local, state, tribal, territorial, insular area, and Federal governments; private sector; and nonprofit organizations.
 - Mechanism(s): Legislation, guidance, conferences, open-source data.
 - How/Example(s):
 - Maps
 - Census data
 - Use common operating picture (e.g., software, guidebook), especially for time sensitive data
 - Timely and relevant information as plans and regulations are being developed at the local, state, regional, and Federal levels
 - Partnerships would include NGOs, the private sector, industry to ensure delivery to the right people
 - U.S. Coast Guard (USCG) invites industry stakeholders to participate in Ports and Waterway Safety Assessments.
- **Incorporate vulnerability data sets such as population, demographic, infrastructure inventory and condition assessment information; climatological, geological, and environmental factors; critical infrastructure, lifelines, and key resources; building stock; and economic data to calculate the risk from the threats and hazards identified.**
 - Stakeholder(s): Local, state, tribal, territorial, insular area, and Federal governments; private sector; and nonprofit organizations.
 - Mechanism(s): Legislation, guidance, regulations, policies, grants, open source data.
 - How/Example(s): Maps, census, financial analysis, models.
- **Incorporate data from lessons learned and statistical information to target consideration of populations (such as for individuals with disabilities or access and functional needs, limited English proficiency (LEP) populations, and racially and ethnically diverse communities).**
 - Stakeholder(s): Local, state, tribal, territorial, insular area, and Federal governments; private sector; and nonprofit organizations.
 - Mechanism(s): Policy and regulations, open-source databases, universities, census data, GIS mapping, Language Access Planning Tools, and LEP.gov technical assistance materials.
 - How/Example(s): Analysis of data, studies to identify actions.

- **Update risk assessments to include changes to the risks and the physical environment. This includes aging infrastructure, new development, new mitigation projects and initiatives, post-event verification/validation, new technologies or improved methodologies, and better or more up-to-date data.**
 - Stakeholder(s): Local, state, tribal, territorial, insular area, and Federal governments; private sector; and nonprofit organizations.
 - Mechanism(s): Legislation, policies, grants, private sector markets.
 - How/Example(s): Records of dams, structural monitoring, sensors, weather forecasting.
- **Create and maintain redundant systems for storing information.**
 - Stakeholder(s): Local, state, tribal, territorial, insular area, and Federal governments, private sector, and nonprofit organizations.
 - Mechanism(s): Policy and regulations, open-source databases, universities.
 - How/Example(s): Multiple data storage centers, daily back-up of information technology systems.

Analysis

- **Perform credible risk assessments using scientifically valid and widely accepted risk assessment techniques.**
 - Stakeholder(s): Local, state, tribal, territorial, insular area, and Federal governments; private sector; and nonprofit organizations.
 - Mechanism(s): Legislation, policy, professional associations, research grants, market forces.
 - How/Example(s): GIS tools, structural condition assessments, remote sensing, analytical software programs.
- **Understand social and structural vulnerabilities.**
 - Stakeholder(s): Local, state, tribal, territorial, insular area, and Federal governments; private sector; and nonprofit organizations.
 - Mechanism(s): Legislation, policy, professional associations, research.
 - How/Example(s): Standards for poverty levels, educational assessments, cultural competence and language accessibility, and individuals with disabilities.
- **Incorporate knowledge gained by those who have experienced incidents to help understand all the interdependencies, cascading impacts, and vulnerabilities associated with threats and hazards.**
 - Stakeholder(s): Local, state, tribal, territorial, insular area, and Federal governments; private sector; and nonprofit organizations.
 - Mechanism(s): Legislation, policy, professional associations, conferences, research.
 - How/Example(s): Forensic studies, debriefing reports.

- **Validate, calibrate, and enhance risk assessments by relying on experience and knowledge beyond raw data or models.**
 - Stakeholder(s): Local, state, tribal, territorial, insular area, and Federal governments; private sector; and nonprofit organizations.
 - Mechanism(s): Legislation, policy, professional associations, research grants, forensic data collection.
 - How/Example(s): After-action reports, expert opinion, educational and skill assessments.
- **Develop analysis tools to provide information more quickly to those who need it, and make use of tools and technologies such as GIS.**
 - Stakeholder(s): Local, state, tribal, territorial, insular area, and Federal governments; private sector; and nonprofit organizations.
 - Mechanism(s): Legislation, policy, professional associations, research grants, market forces.
 - How/Example(s): GIS, analytical software programs, data standardization.
- **Consolidate analysis efforts to remove useless duplication and provide a more uniform picture of the risks.**
 - Stakeholder(s): Local, state, tribal, territorial, insular area, and Federal governments; private sector; and nonprofit organizations.
 - Mechanism(s): Legislation, policy, professional associations, research.
 - How/Example(s): Open access data, public research funds, and conferences.

Education and Training

- **Build the capability within communities to assess, analyze, and apply risk and resilience knowledge.**
 - Stakeholder(s): Local, state, tribal, territorial, insular area, and Federal governments; private sector; and nonprofit organizations.
 - Mechanism(s): Legislation, policy, professional associations, research.
 - How/Example(s): Training programs, higher education curriculums.
- **Ensure that data users and assessment stakeholders get the best available data and understand the assumptions and estimations made in the methodology.**
 - Stakeholder(s): Local, state, tribal, territorial, insular area, and Federal governments; private sector; and nonprofit organizations.
 - Mechanism(s): Legislation, policy, professional associations, research.
 - How/Example(s):
 - Training programs
 - Higher education
 - Public awareness
 - Conferences
 - Minimize exposure of Federal assets

- Overall continuity of government and operations as a way to minimize exposure to incidents, which applies to local, state, tribal, territorial, insular area, and Federal governments.
- **Train stakeholders to develop risk assessments and have the same accurate and comprehensive standards of assessment outputs.**
 - Stakeholder(s): Local, state, tribal, territorial, insular area, and Federal governments; private sector; and nonprofit organizations.
 - Mechanism(s): Legislation, policy, professional associations, research.
 - How/Example(s): Training programs, higher education, public awareness, and conferences.
- **Use risk assessments to design exercises for response activities and to determine the feasibility of mitigation projects and initiatives.**
 - Stakeholder(s): Local, state, tribal, territorial, insular area, and Federal governments; private sector; and nonprofit organizations.
 - Mechanism(s): Legislation, policy, professional associations, research.
 - How/Example(s): Training programs, higher education, gaming exercises, conferences.

Planning

Definition: Conduct a systematic process engaging the whole community as appropriate, in the development of executable strategic, operational, and/or community-based approaches to meet defined objectives.

Expanded Capability Description

At some level, planning is an activity performed by every Federal department and agency. Federal departments and agencies conduct strategic planning to establish or reaffirm goals and objectives of the organization, they conduct site-specific planning for Federal facilities, or they require planning as a condition of program assistance. For the purposes of the Mitigation Federal Interagency Operational Plan (FIOP), planning is related to activities and actions that influence how Federal interagency mission objectives are delivered.

Planning is an ongoing process informed by values, data, demographics, market trends, etc. Communities and regions develop plans to guide local decisionmaking regarding community development and infrastructure investments. Plans lay out community priorities regarding where, when, and how development activity should occur within a community, region, and cumulatively, a state. Community planning, including the development of hazard mitigation and land use plans, typically happens before a disaster event or incident. By articulating a community vision for where development activity can and should occur, local land use or community plans can support a development pattern that reduces community risk and vulnerability to multiple hazards.

Federal Role

The act of community planning is primarily a local, state, tribal, territorial, and insular area activity. However, Federal departments and agencies can play a supportive role that builds capacity for local planning activities, encouraging the integration of best development practices into local planning efforts. The Federal Government also requires plans (e.g., hazard mitigation plans or Department of Housing and Urban Development [HUD] consolidated plans) as a prerequisite to qualify for certain Federal funds. The Federal Government helps to coordinate and implement Federal programs, they

provide grant funding to develop program specific plans, and they facilitate the development of plans to encourage certain behaviors. One example is the HUD–Department of Transportation (DOT)–Environmental Protection Agency (EPA) Partnership for Sustainable Communities, which provides grants and assistance to support the efforts of states, communities, and tribal nations to encourage development that provides housing and transportation choices, protects the environment, and improves the economy. In addition, data and information is developed and provided by a variety of Federal departments and agencies to support mitigation planning. Through interagency working groups and coordination with agencies, the White House Council on Environmental Quality (CEQ) balances competing positions and encourages government-wide coordination, bringing Federal agencies; local, state, tribal, territorial, and insular area governments; and others together on matters relating to the environment, natural resources, and energy. The CEQ co-chairs (with the Office of Science and Technology Policy) the Interagency Climate Adaptation Task Force, which develops action plans to address climate change related issues.

Federal agencies use planning to help deliver their own projects and programs. Strategic planning across departments and agencies is critical in identifying and acting upon shared objectives. For example:

- The Strategic Plan for the National Dam Safety Program sets the national agenda for dam safety and informs and supports other dam safety programs at the state and Federal levels.
- The National Infrastructure Protection Plan provides a unifying framework that integrates a range of efforts designed to enhance the safety of the Nation's critical infrastructure. The overarching goal of the National Infrastructure Protection Plan is to build a safer, more secure, and more resilient Nation by preventing, deterring, neutralizing, or mitigating the effects of a terrorist attack or natural disaster.
- The Subcommittee on Disaster Reduction is a Federal interagency body of the National Science and Technology Council under the Committee on Environment, Natural Resources, and Sustainability. The Subcommittee on Disaster Reduction developed the Grand Challenges for Disaster Reduction, a 10-year national strategy document for prioritizing Federal investments in science and technology to reduce disaster risks and promote resilient communities.
- The National Tsunami Hazard Mitigation Program is designed to reduce the impact of tsunamis through planning hazard assessment, warning guidance, and mitigation. The National Tsunami Hazard Mitigation Program is a partnership among the Department of Commerce (DOC)/National Oceanic and Atmospheric Administration (NOAA), USGS, FEMA, National Science Foundation, and the 28 U.S. Coastal States, Territories, and Commonwealths.
- The National Health Security Strategy is developed to ensure that the Nation is prepared for, protected from, and resilient in the face of health threats or incidents with potentially negative health consequences.

Federal departments and agencies that manage Federal lands are also involved in planning activities. From military bases to national parks, planning is essential to the missions of these agencies. Federal projects that involve construction of buildings, infrastructure (e.g., dams, highways) or management of facilities all depend upon planning to ensure that program commitments are met. Integrating planning efforts across sectors, disciplines, and mission areas and sharing risk analysis and vulnerability assessments eliminates redundancy and identifies common solutions. There are many Federal programs that require or encourage local, state, tribal, territorial, and insular area planning. The Federal role is to develop a coordinated approach to planning to reduce redundant efforts, leverage resources, and encourage more comprehensive plans.

Target: Develop approved hazard mitigation plans that address all relevant threats/hazards in accordance with the results of their risk assessment within all states and territories.

Critical Tasks

The critical tasks listed below are ongoing tasks that communities are currently engaged in to support more integrated planning efforts that involve the whole community and that build resilience within a community to hazards. Tasks are interrelated.

- **Embed risk-based decisionmaking into the planning process.**
- **Incorporate findings from assessment of risk and disaster resilience into planning process.** *These tasks are the foundation of mitigation planning. Building risk information into the planning process will raise awareness of risks and vulnerabilities, leading to decisions and actions to reduce risk or accept certain levels of risk.*
 - **Stakeholder(s):** Individuals; academia; private sector; NGOs; local, state, tribal, territorial, and insular area governments; and Federal Government.
 - **Mechanism(s):** Regulations outline planning requirements (which require risk-informed mitigation strategies), agency policies promote integration of mitigation plans, and other land-use based planning and resources (e.g., training, data, and funding) support planning.
 - **How/Example(s):** The Federal role is to provide technical assistance and support to local, state, tribal, territorial, and insular area entities engaged in planning and to also foster integration of mitigation into land-use/comprehensive planning whenever possible. Federal departments and agencies responsible for Federal lands and facilities can integrate findings from risk assessments into their planning activities. FEMA and the American Planning Association have developed a document identifying strategies for integrating mitigation into ongoing community land use planning (Hazard Mitigation: Integrating Best Practices into Planning, American Planning Association Planning Advisory Service Report Number 560). The document has been widely disseminated to comprehensive land use planners across the Nation, and FEMA is continuing to look for opportunities to incentivize the integration of risk-based decisionmaking into local planning processes.
- **Collaborate, cooperate, and build consensus across other disciplines that impact plans.** *Coordination efforts help to maximize Federal investments toward common goals, promote interagency collaboration, and deliver Federal resources more efficiently and effectively. Coordination can also help to reduce the burden on communities to deliver multiple plans for similar or interdependent functional areas (e.g., transportation, housing, hazard mitigation).*
 - **Stakeholder(s):** Individuals; academia; private sector; NGOs; local, state, tribal, territorial, and insular area governments; and Federal Government.
 - **Mechanism(s):** Regulations outline planning requirements (which support cross discipline engagement), Federal department and agency policies promote integration, and resources (e.g., training, data, and funding) are provided to support planning.
 - **How/Example(s):** The Federal Government has a primary responsibility to provide leadership in this area, although local, state, tribal, territorial, and insular area government entities must support this effort. Federal actions affect local and regional development patterns and plans. Within the Federal Government, planning requirements should be aligned when appropriate to support and enhance local, state, tribal, territorial, and insular area government plans.

Federal departments and agencies are working collaboratively to reduce redundancy and support consistency. For instance, as part of the HUD–DOT–EPA Partnership for Sustainable Communities, all three agencies are collaborating to ensure that their programs, policies, and investments are aligned and in support of six livability principles that support sustainable communities and community resilience. In addition, DOC/NOAA, USGS, and the U.S. Army Corps of Engineers (USACE) make up the Integrated Water Resources Science and Services consortium—an innovative partnership of Federal agencies with complementary operational missions in water science, observation, prediction, and management. The Integrated Water Resources Science and Services consortium has developed a roadmap that identifies the human dimensions, technical components, and science needed to achieve operational goals that include integrating service and service delivery, improving river forecasts, and providing new “summit-to-sea” high resolution water resources information and forecasts.

- **Understand the demographics and systems that make up the community and their vulnerabilities and interdependencies on each other.** *Knowledge of a community, characteristics of the population, and its critical systems are essential to determining the community’s vulnerabilities and to identifying appropriate solutions that have the support of the whole community.*
 - Stakeholder(s): Individuals; academia; private sector; NGOs; local, state, tribal, territorial, and insular area governments; and Federal Government.
 - Mechanism(s): Technical assistance and training can help build capability and understanding of the need for this task.
 - How/Example(s): This is essentially a regional or local responsibility, although the Federal Government can support this task by providing technical assistance and training. FEMA’s Hazard Mitigation Planning tools and guidance assist communities in developing a planning process that includes establishing a planning team and coordination with other planning processes. DOT requires Existing Betterment Plans to facilitate rebuilding of roads and bridges to a higher standard than pre-incident standards.
- **Include disability and other access and functional needs subject matter experts, as well as the input of diverse racial and ethnic communities and LEP populations, in mitigation planning to address considerations, such as architectural accessibility through compliance with the Americans with Disabilities Act architectural standards; disability and other access and functional needs advocacy organizations, such as independent living centers; and providers of support services related to persons with disabilities and others with access and functional needs. Similarly, include the views of diverse racial and ethnic communities and LEP populations, trusted community leaders, and advocacy organizations on issues such as effective communication with these populations.**
 - Stakeholder(s): Individuals; academia; private sector; NGOs; local, state, tribal, territorial, and insular area governments; and Federal Government.
 - Mechanism(s): Technical assistance, guidance, and tools are provided to our partners to ensure that these issues are addressed in the development of plans.
 - How/Example(s): The Federal Government ensures that every Federal dollar spent complies with the appropriate civil rights law and requirements for non-discrimination, equal opportunity, and accessibility needs. HUD has several initiatives to promote disability rights in public and private housing. In addition, every FEMA Regional Office has a disability

integration specialist; numerous Federal departments and agencies have civil rights offices that promote and work to ensure compliance with Federal civil rights laws.

- **Understand the full range of animal issues in the community.** *This will ensure that the jurisdiction is equipped to comprehensively address human and animal issues and take steps to mitigate vulnerabilities in this area during or after a disaster. Understand the unique differences between animals generally and service animals, and the civil rights of their users, such as not being separated from their service animals and being able to use all parts of facilities the public uses. Integration of all appropriate issues in mitigation planning helps ensure that necessary actions are coordinated and implemented to reduce risks.*

 - **Stakeholder(s):** The Federal Government supports local and regional governments in this task.
 - **Mechanism(s):** Awareness, technical assistance, and training help build capability and understanding of the full range of animal issues. Animal disease surveillance methods or capability provide tools to accomplish surveillance and analyze results, or in some cases, such as diseases foreign to the United States, provide confirmation services.
 - **How/Example(s):** When appropriate and capable resources exist, the Animal Plant Health Inspection Service (APHIS) will work with local, state, tribal, territorial, and insular area government planners and responders to assist them in identifying local animal issues and training needs to address response gaps, and reach back capabilities that could provide technical assistance. APHIS has tools that can be used by local, state, tribal, territorial, and insular area animal health specialists to develop surveillance plans or provide laboratory services support and confirmation. APHIS also has tools or expertise to develop and run disease spread models that can be used to evaluate response strategies or mitigations as well as develop scenarios to be used in exercises.
- **Seek out and incorporate the whole community in planning efforts.** Community and comprehensive plans are expressions of a community's vision for the future. The extent that a community's plan reflects the goals and values of the public depends considerably on whether the whole community participated in its development. Involving the whole community in planning efforts also helps to build and broaden the plan implementation efforts. *Inclusion of the whole community and its values necessitates that local, state, tribal, territorial, and insular area governments provide accessible and culturally and linguistically appropriate information, disseminated through media outlets serving racially and ethnically diverse audiences.*

 - **Stakeholder(s):** The Federal Government supports this task, although it is primarily a local, state, tribal, territorial, and insular area government responsibility.
 - **Mechanism(s):** The Federal Governments can support this task through technical assistance and by regulation and guidance. Federal guidance can also support the development of coalitions or community workgroups to plan and prepare for public health emergency events.
 - **How/Example(s):** Utah has developed an innovative Web site to encourage broad participation in statewide planning processes (<http://envisionutah.org>). The Department of Health and Human Services' (HHS's) public health and healthcare capabilities guidance documents are designed to facilitate and guide public health and healthcare preparedness planning and ultimately assure safer, more resilient, and better-prepared communities. (<http://www.phe.gov/preparedness/planning/hpp/reports/documents/capabilities.pdf> and http://www.cdc.gov/phpr/capabilities/dslr_capabilities_july.pdf). These documents provide a guide that local, state, tribal, territorial, and insular area jurisdictions can use to better

organize their work, plan their priorities, and decide which capabilities they have the resources to build or sustain. The capabilities also help ensure that Federal preparedness funds are directed to priority areas within individual jurisdictions.

- **Build on the expertise, knowledge, and systems in place within the community.** *This is essential to promoting successful ongoing planning processes. Comprehensive planning is an ongoing task in many communities, and states often require localities to update plans at regular intervals. However, consideration of risk and vulnerability are most often addressed through the local hazard mitigation planning process. Integrating hazard mitigation planning into the typical comprehensive planning process can help build on the existing capabilities and increase consistency across community decisions regarding the built environment and development activity.*
 - Stakeholder(s): The Federal Government supports this task, but it is primarily a local, state, tribal, territorial, and insular area government responsibility.
 - Mechanism(s): The Federal Government can support local efforts to increase community capabilities in ongoing planning processes that integrate risk-based decisionmaking through a range of mechanisms. Regulations outline planning requirements. Federal department and agency policies promote actions and activities, and resources (e.g., training, data, and funding) are provided to support planning.
 - How/Example(s): FEMA has issued regulations that require local hazard mitigation plans as a condition of receiving mitigation grants, USACE has developed the Silver Jackets program to support state planning efforts, and FEMA and the EPA are helping two communities in North Carolina identify land use and development strategies that can increase community resilience and that can further coordination of local hazard mitigation and land use plans. HUD provides financial support to regions and localities through its Regional Planning Grant program and Local Challenge Grant Program.
- **Share success stories where resilience-based planning has demonstrated measureable effectiveness in creating economic vitality within communities.** *Recognition programs can be an effective way to share success stories and lessons learned and to encourage increased innovation in planning practices.*
 - Stakeholder(s): Individuals; academia; private sector; NGOs; local, state, tribal, territorial, and insular area governments; and Federal Government.
 - Mechanism(s): The Federal Government can provide leadership in defining best practices in resilience-based planning, developing recognition programs, and sharing success stories through publications and Web sites.
 - How/Example(s): The Federal Government can recognize communities nationwide for innovative solutions and best practices. Programs can be implemented to recognize a range of best practices that include but are not limited to resilient and sustainable communities. StormReady/TsunamiReady Communities (DOC/NOAA) as part of Weather Ready Nation, and National Award for Smart Growth Achievement (EPA).
- **Engage in a peer-to-peer and regional partnership (coalitions) mentoring structure that promotes best practices, particularly when the planning capability is not present in a community.** *Interactions among communities can provide a common understanding of local issues and mechanisms for problem solving and in building interest and capability.*

- Stakeholder(s): This is not primarily a Federal responsibility, but can be supported by the Federal Government in terms of providing support for various mentoring structures.
 - Mechanism(s): The Federal Government could provide technical assistance in developing mentoring structures and financial support to organizations in implementing the task.
 - How/Example(s): Hazus is a nationally applicable standardized methodology that contains models for estimating potential losses from earthquakes, floods, and hurricanes. Hazus User Groups provide a forum for users to meet and collaborate on innovative uses of Hazus, to share lessons learned, and to provide support to communities in the use of Hazus.
- **Foster public-private partnerships to promote resilience and maximize use of available resources.** *Engaging private entities in building local capacity for planning related activities can help reduce vulnerability of all community assets. Public private partnerships can also help supplement local planning efforts.*
 - Stakeholder(s): The Federal Government supports the development of public-private partnerships.
 - Mechanism(s): Federal technical assistance can be used to identify the benefits to private entities to demonstrate that mitigation makes good business sense.
 - How/Example(s): Project Impact was a Federal initiative that worked to create disaster-resistant communities through teamwork at all government levels and close partnerships with the private and nonprofit sectors. HHS promotes healthcare coalitions and partnerships among healthcare facilities (both public and private) and other healthcare assets in the community, to organize and implement the mitigation, preparedness, response and recovery actions of medical and healthcare providers in a jurisdiction's healthcare system.
 - **Promote planning initiatives through multiple media sources.** *Using media sources, including media outlets that serve racially and ethnically diverse audiences, to both raise awareness of ongoing planning efforts and also the impact that such efforts are having within a community can help to increase community buy into the planning process and get behind a community plan.*
 - Stakeholder(s): The Federal Government supports this task, although it is primarily a local and regional function.
 - Mechanism(s): Federal technical assistance could include support for town hall meetings, public service announcements, and other media outreach efforts, such as ethnic radio and television stations and newspapers.
 - How/Example(s): The HUD–DOT–EPA Partnership for Sustainable Communities has developed a robust outreach plan to identify the goals of this initiative. Utah has developed a Web site to promote statewide planning initiatives: <http://planning.utah.gov/super/>.

Community Resilience

Definition: Lead the integrated effort to recognize, understand, communicate, plan, and address risks so that the community can develop a set of actions to accomplish mitigation and improve resilience.

Expanded Capability Description

Community Resilience involves leadership, collaboration, partnership building, education, and skill building to prepare our communities, property, critical infrastructure resources, and economy to

absorb the impact of a threatening event and bounce back in a manner that sustains our way of life. A community uses these skill sets to understand and assess its risks and to plan, coordinate, and execute actions that reduce vulnerability over the long term. The Community Resilience capability supports and orchestrates all mitigation. A whole community approach to building sustainable and resilient communities requires finding ways to support and strengthen the culture, institutions, assets, and networks that already work well in communities and are working on a daily basis to address issues important to community members.

Federal Role

Federal agencies have a unique opportunity to promote community resilience. Mitigation can protect both people and property from disasters by taking action to prevent consequences before a disaster strikes. Through coordination, cooperation, and collaboration, Federal agencies can work together to more effectively address complex large-scale issues that cut across multiple department and agency missions, supporting resilience initiatives and enabling informed, risk-based decisionmaking at the local level, where the effects of disasters are felt. The Federal role in developing and maintaining community resilience is in building and sustaining capacity and capability in communities and organizations across the Nation through grants, technical assistance, products, services, training, and other support mechanisms. In order to address the full range of risk and vulnerability issues across the Nation, Federal agencies must provide coordinated messages and delivery of a variety of programs. Federal activities, regulations, and funding should allow communities to better understand the complexities of risk and vulnerability and to begin to consider not only the high probability issues, but the low probability/high risk scenarios. Support in executing critical tasks to improve community resilience comes from a wide range of Federal partners. See examples below.

Target: Maximize the coverage of the U.S population that has a localized, risk-informed mitigation plan developed through partnerships across the entire community.

To meet the target, the plans must be up-to-date and include social science aspects such as risk communication, and education aspects such as regular training and exercises. The entire community must include representation across broad sectors, including private, public, academic, and community-based sectors and levels of government, employers, schools, religious groups, professional organizations, advocates and organizations serving individuals with access and functional needs, etc. The plans must also consider the impacts of cascading or multiple concurrent events.

To date, all states, territories, and the District of Columbia have engaged in the mitigation planning process as defined in 44 C.F.R. Part 201 in developing and maintaining state level mitigation plans. Thousands of communities, including local and tribal governments, have also engaged in the planning process and developed local or tribal mitigation plans in compliance with 44 C.F.R. Part 201.

Critical Tasks

The critical tasks are grouped under the following broad categories:

- Community planning process
- Hazard identification and risk assessment
- Mitigation strategy development and implementation
- Education and outreach

Community planning process: *Provide support to local planning teams who can, in turn, engage a broad range of stakeholders to ensure that as many viewpoints as possible are considered during the planning process, including those from religious, racial and ethnically diverse backgrounds; and people with LEP. In addition, support communications across levels of government and organizations, where interdependency is recognized as an essential component of proactive planning.*

- **Know the community’s systems and how to build constructive partnerships.**
- **Foster sustained communication, civic engagement, and the development and implementation of proactive planning, response, and long-term risk reduction actions in the whole community.**
- **Acknowledge and seek out naturally occurring relationships within communities, and build partnerships and coalitions before disasters or incidents occur.**
- **Inspire transparency in risk management decisionmaking so that individuals, communities, private organizations, and all levels of government demonstrate how resilience is considered.**
- **Know the community’s permanent and transient population demographics and use that information to plan ahead to address resilience for the whole community, including individuals with disabilities and others with access and functional needs. *This includes those from religious, racial and ethnically diverse backgrounds; and people with LEP.***
 - **Stakeholder(s):** The Federal Government supports these tasks, although they are primarily local and regional functions.
 - **Mechanism(s):** Examples may include memorandums of agreement (MOAs), interagency agreements, grants, technical assistance, or products and services.
 - **How/Example(s):**
 - Human Dimensions.gov (<http://www.hd.gov>) is a community of practice and an interactive Web portal with featured links related to the human dimensions of natural resource management
 - HHS: Provides targeted technical assistance to jurisdictions on both disease prevention and community-specific emergency preparedness planning
 - DOC/NOAA: Coastal Resilience provides a framework that supports decisions to reduce the ecological and socioeconomic risks of coastal hazards: <http://www.coastalresilience.org>; the Coastal Storms Program is a nationwide effort led by DOC/NOAA to make communities safer by reducing the loss of life and negative impacts caused by coastal storms
 - USACE Silver Jackets initiative: <http://www.nfrmp.us/state/>
 - HUD–DOT–EPA Partnership for Sustainable Communities: <http://www.sustainablecommunities.gov/>
 - Environmental Justice: <http://www.epa.gov/environmentaljustice>

Hazard identification and risk assessment: *Identifying and assessing risks, including physical, social, economic, and environmental vulnerabilities to threats and hazards is critical to building resilient communities. Research regarding risks and vulnerabilities, along with communication and education, is necessary to ensure appropriate human responses to incidents and events.*

- **Understand the risks facing a community, including physical, social, economic, and environmental vulnerabilities to all threats and hazards.**
 - Stakeholder(s): Coordinate and collaborate with other Federal agencies and state, tribal, territorial, and insular area governments to provide support, as task is local.
 - Mechanism(s): Regulations outline planning requirements (which require risk-informed mitigation strategies), and Federal agencies provide risk and vulnerability data.
 - How/Example(s):
 - FEMA Mitigation planning: <http://www.fema.gov/plan/mitplanning/index.shtm>
 - Hazus: <http://www.fema.gov/plan/prevent/hazus/>
 - Building science: <http://www.fema.gov/rebuild/buildingscience/>
 - DOC/NOAA Digital Coast: <http://www.scs.noaa.gov/digitalcoast/>
 - DOC/NOAA Storm Prediction Center Convective Outlook Web site: <http://www.spc.noaa.gov/products/outlook/>
 - USGS Natural Hazards: http://www.usgs.gov/natural_hazards/
 - EPA and USCG facilitate Regional and Area Contingency Planning for potential releases of hazardous substances and oil with other Federal agencies; local, state, tribal, territorial, and insular area governments; and industry, as outlined by the National Contingency Plan
 - HHS: National Disease Surveillance and laboratory testing through the Laboratory Response Network

Mitigation strategy development and implementation: *Understanding the range of options for increasing the Nation’s resilience is critical. It is important for the Federal Government to support a coordinated approach to decreasing our vulnerabilities in the existing and future built and natural environments. Many Federal departments and agencies implement and manage a range of programs that affect the environment, and others implement programs to reduce the risks from natural hazards.*

- **Identify and promote sound choices and discourage choices that increase vulnerabilities and risks.**
- **Recognize and communicate the reinforcing relationships between environmental stewardship and natural hazard risk reduction (e.g., enhancement of flood storage through wetland protection/restoration and holistic floodplain management).**
- **Recognize the interdependent nature of the economy, health and social services, housing infrastructure, and natural and cultural resources within a community.**
 - Stakeholder(s): The Federal Government coordinates and collaborates with other Federal agencies and programs to develop clear messages on the shared goals and values of these programs. Coordination with appropriate local, state, tribal, territorial, and insular area government agencies is also essential to provide support to communities, and promote risk-based decisionmaking where direct Federal investments are being made.
 - Mechanism(s): Federal grant programs, regulatory enforcement of storm water management, permitting authorities, and technical assistance.

- How/Example(s):
 - FEMA Floodplain Management: <http://www.fema.gov/national-flood-insurance-program-1>
 - EPA Office of Sustainable Communities: <http://www.epa.gov/smartgrowth>
 - HUD Office of Sustainable Housing and Communities; HUD Community Development Block Grants: <http://portal.hud.gov/>
 - DOC/NOAA Coastal Zone Management: <http://www.coastalmanagement.noaa.gov/>; Coastal Resilience Index: <http://www.masgc.org/pdf/masgp/08-014.pdf>
 - USDA Rural Development: <http://www.rurdev.usda.gov/home.html>
 - Federal Interagency Floodplain Management Task Force: <http://www.fema.gov/national-flood-insurance-program-1/federal-interagency-floodplain-management-task-force>

Education, training and outreach: *Develop and implement education and outreach materials to communicate risk and vulnerability information but also to encourage local responsibility to support and implement mitigation strategies and actions to reduce long-term vulnerability.*

- **Educate the next generation of community leaders and resilience professionals. Learn from the past and from what is working in the present.**
- **Convince community members of the value of mitigation for reducing the impact of disasters and the scale of response and recovery efforts.**
 - Stakeholder(s): The Federal Government coordinates and collaborates with other Federal agencies and local, state, tribal, territorial, and insular area governments, as well as the private sector, to provide support to communities.
 - Mechanism(s): Examples may include MOAs, interagency agreements, grants, technical assistance, or products and services.
 - How/Example(s): Many Federal departments and agencies have education and outreach components. See examples in the critical tasks above. Developers are one target audience, since initial development decisions are key to building safety.

Public Information and Warning

Definition: Deliver coordinated, prompt, reliable, and actionable information to the whole community through the use of clear, consistent, accessible, and culturally and linguistically appropriate methods to effectively relay information regarding any threat or hazard and, as appropriate, the actions being taken and the assistance being made available.

Expanded Capability Description

Public Information and Warning incorporates pre- and post-event threat and natural disaster educational information, warnings, and reports. Information sharing is multidirectional and Federal agencies share information through a variety of means before, during, and in response to a threat or incident in order to guide and inform the public.

Federal Role

Public Information and Warning includes all information targeted toward creating resilient communities. For Federal stakeholders this capability encompasses all the ways that the Federal Government presents risk management information. The government collects hazard data, analyzes and communicates risks, provides action steps, delivers forecast information, and manages information and outreach efforts following disasters. Federal agencies also develop and disseminate risk management guidance.

This FIOP provides an opportunity to identify and apply shared platforms and techniques to maximize the impact of information and warning efforts, eliminate potential overlaps, and enhance the credibility and impact of Federal information and warning activity in support of mitigation.

Federal departments and agencies operate under existing authorities and target their communications to specific audiences. Threats and hazards often require different communication methods and restrictions on the use of information that is communicated, but in general Federal departments and agencies conduct Public Information and Warning activities for mitigation under shared assumptions.

Target: Communicate appropriate information, in an accessible manner, on the risks faced within a community after the conduct of a risk assessment.

Critical Tasks

Federal partners perform critical tasks as identified in the National Mitigation Framework (NMF) to deliver Public Information and Warning capabilities through a wide range of appropriate mechanisms. This ensures that required stakeholders are reached with the appropriate information at the appropriate time.

Steady State Operations

- **Public Information and Warning activities are conducted outside of disaster activity.** Activities conducted as a part of ongoing risk management by Federal departments and agencies include:
 - Calendared events—scheduled hazard awareness weeks, National Preparedness Month
 - Planning and implementation activities for public information, outreach, and education
 - Audience-specific messaging targeted toward appropriate populations and groups
 - Conducting studies—risk perception, social science analysis, tornado assessments
 - Informing legislative processes
 - Policy making (public level, rule changes)
 - Working with public and private partners (e.g., International Code Council)
- **Persuade the public that it is worthwhile to build a resilient community. Encourage private and public sector partners to work together to communicate the benefits of mitigation action and arrive at solutions.** *The Federal role is to consistently communicate Federal capabilities and encourage adoption of mitigation actions through effective communication. By reframing the national dialogue about community resilience so that the messaging focuses not just on a line of business, but on how Federal mitigation capabilities help communities get where they want to go, the Federal Government can better align with non-Federal efforts. This includes recognizing the importance of messaging in reaching the whole community about how mitigation fits into the large contexts of community resilience.*

- Stakeholder(s): Individuals; academia; private sector; NGOs; local, state, tribal, territorial, and insular area governments; and Federal Government.
 - Mechanism(s): The Federal Government promotes the benefits of mitigation and working towards achieving a resilient community through Federal administrative structures (defined in the Concept of Operations section), by providing resources to both Federal and non-Federal partners, and by enabling capacity building.
 - How/Example(s): Federal departments and agencies manage and support calendared events such as National Hurricane Preparedness Week (DOC/NOAA) to raise awareness and foster partnerships. Ongoing, year-round efforts include, public health education (HHS), and the following programs: Storm Ready/Tsunami Ready (DOC/NOAA), Firewise Communities (U.S. Forest Service), Floodsmart (FEMA), Quakesmart (FEMA, National Institute of Standards and Technology, USGS), and the leadership activities of the National Institute for Occupational Safety and Health (Centers for Disease Control and Prevention).
- **Warn people of the risk in their community and the action they can take to mitigate those risks.** *Both in regulatory programs and in actions to support the public interest, Federal departments and agencies create incentives for risk reduction activity, and pursue risk communications strategies suited to driving behavior change and reducing risk nationwide.*
- Stakeholder(s): Individuals; academia; private sector; NGOs; local, state, tribal, territorial, and insular area governments; and Federal Government.
 - Mechanism(s): The Federal Government warns people of risk and offers options for risk management through Federal administrative structures, by providing resources to both Federal and non-Federal partners, and by enabling capacity building.
 - How/Example(s): MAT Reports (FEMA), storm assessments (DOC/NOAA), and after-action reports (HHS) are examples of how the Federal Government warns people of risk, or changes in risk, following a disaster or exercise by communicating findings with Federal and non-Federal partners. FEMA's Risk Mapping, Assessment, and Planning (Risk MAP) program communicates changes in flood risk not only after an event but during steady state. The Risk MAP program is a comprehensive approach to flood risk reduction that aims to raise a community's risk-consciousness over time while simultaneously offering flood risk management options. Additionally, Emergency Planning and Community Right-to-Know Act helps communities prepare for and respond to potential hazardous substance releases (EPA). HHS provides funding to local and state jurisdictions via the Public Health Emergency Preparedness and Hospital Preparedness Program Cooperative Agreements to support risk reduction activities and capability building, including public information and warning.
- **Communicate priorities and actions identified through risk analysis and plans to stakeholders and those expected to take action to reduce risk.** *Both in regulatory programs and in actions to support the public interest, Federal departments and agencies create incentives for risk reduction activity, and pursue risk communications strategies suited to driving behavior change and reducing risk nationwide.*
- Stakeholder(s): Individuals; academia; private sector; NGOs; local, state, tribal, territorial, and insular area governments; and Federal Government.
 - Mechanism(s): The Federal Government communicates incentives for risk reduction actions through Federal administrative structures, by providing resources to both Federal and non-Federal partners, and by enabling capacity building.

- How/Example(s): MAT Reports (FEMA), storm assessments (DOC/NOAA), and after-action reports (HHS) are examples of activities the Federal Government uses to support the risk management activities of stakeholders and those expected to take action to reduce risk.
- **Refine and consider options to publicly release potentially sensitive risk information.** *Federal departments and agencies determine the suitability of information for the appropriate audience and make any required security determinations.*
 - Stakeholder(s): Private sector; NGOs; local, state, tribal, territorial, and insular area governments; and Federal Government.
 - Mechanism(s): The Federal Government uses Federal Administrative Structures to determine which risk information is appropriate to publicly release.
 - How/Example(s): The Federal Government communicates potentially sensitive risk information through means such as the National Terrorism Advisory System (Department of Homeland Security [DHS]) and by releasing incident-specific information (e.g., Federal Bureau of Investigation [FBI], HHS, DOC/NOAA, FEMA) or epidemiological-specific information (HHS) through existing methods such as the Joint Information Center.
- **Use social media, Web sites (e.g., Ready.gov), and smartphone applications, as well as more traditional mechanisms such as community meetings or ethnic media outlets, to inform the public of actions to take to connect preparedness to resilience. Information and messaging should ensure effective communication with individuals with disabilities or others with access and functional needs, including those who are deaf, hard of hearing, blind, or have low vision, through the use of appropriate auxiliary aids and services, such as sign language and other interpreters and captioning of audio and video materials.** *Information and messaging should also be provided in multiple languages and formats in order to ensure effective communication with LEP individuals. The Federal Government aims to leverage all available and appropriate technology to effectively deliver risk information to the whole community.*
 - Stakeholder(s): Individuals; academia; private sector; NGOs; local, state, tribal, territorial, and insular area governments; and Federal Government.
 - Mechanism(s): The Federal Government uses Federal Administrative Structures, including mechanisms such as information technology systems, publications, brochures, social media, Web sites, and Webinars to inform the public to risk management activities that promote community resilience.
 - How/Example(s): Examples of Federal Government communication mechanisms include Ready.gov (DHS), DOC/NOAA Weather Forecast Office social media pages, and department and agency Web sites (all).
- **Promote mitigation and resilience to the public through a national preparedness campaign to increase public awareness and motivate individuals to build societal resilience prior to an event.** *The Federal Government promotes mitigation and resilience to the public through a national preparedness campaign to increase public awareness and motivate individuals to build societal resilience prior to an event.*
 - Stakeholder(s): Individuals; academia; private sector; NGOs; local, state, tribal, territorial, and insular area governments; and Federal Government.

- **Mechanism(s):** The Federal Government aims to increase public awareness and motivate individuals to build societal resilience through Federal administrative structures, by providing resources to both Federal and non-Federal partners, and by enabling capacity building.
 - **How/Example(s):** Examples of national preparedness and resilience campaigns include “Turn Around, Don’t Drown” (DOC/NOAA) and “Be a Force of Nature” (HHS, FEMA, DOC/NOAA). HHS promotes individual health readiness and resilience through its Healthy People 2020 campaign.
- **Target messages to reach organizations representing children, individuals with disabilities and others with access and functional needs, diverse communities, and people with LEP.** *The success of mitigation activity is measured by the extent to which all populations in a given community have access to mitigation related programs and activities. Public Information and Warning efforts in support of mitigation must respect the civil rights and civil liberties of all populations and do not result in discrimination on account of race, color, national origin (including LEP), religion, sex, or any form of disability.*
- **Stakeholder(s):** Individuals; academia; private sector; NGOs; local, state, tribal, territorial, and insular area governments; and Federal Government.
 - **Mechanism(s):** The Federal Government prepares appropriate messaging to reach all populations through public outreach and the media.
 - **How/Example(s):** FEMA’s Office of Disability Integration and Coordination provides guidance on planning for integrating all populations in planning activities and communications.
- **Support and increase the number of communities that develop and share risk reduction products (e.g., building codes, design standards, floodplain management principles and practices, architectural accessibility standards).** *Federal departments and agencies conduct training and education activities targeted to professionals as well as the general public. Departments and agencies fund and conduct training to maximize the ability of stakeholders to exhibit and practice mitigation and risk management activities.*
- **Stakeholder(s):** Individuals; academia; private sector; NGOs; local, state, tribal, territorial, and insular area governments; and Federal Government.
 - **Mechanism(s):** The Federal Government aims to support and increases the development and sharing of risk reduction products through Federal Administrative Structures such as creating platforms for information sharing and safeguarding; supporting public and private partners who develop and deliver information; and pursuing memorandums of understanding (MOUs) and opportunities for joint deployment of information resources.
 - **How/Example(s):** Examples of Federal support for developing and sharing risk reduction products are the MOU between FEMA and the International Code Council.

Incident-Driven Operations

- **Natural hazard incidents create unique opportunities and requirements for Federal departments and agencies to communicate risks, deliver actionable information, and activate funding sources for Public Information and Warning activities.** *Actions undertaken following incidents include:*
- Warnings/Alerts

- Time sensitive messaging (e.g., actions, deadlines)
 - Incident-driven outreach/training
 - Injury prevention
 - Carbon monoxide toxicity/chainsaw safety/generator usage
 - Scam warning
 - Federal advisories for disaster recovery
 - Water safety/sanitation/mold mitigation
 - Situational awareness information
- **Provide the tools necessary to make decisions quickly, such as a synchronization matrix that allows multiple leaders to make independent decisions.** *Federal departments and agencies possess subject matter expertise and technical resources that they can share with other agencies and stakeholders and deploy to support partners in delivering Public Information and Warning actions. Federal departments and agencies develop decision support tools for Federal situational awareness and action that clearly communicate risks to Federal partners in support of incident operations.*
- Stakeholder(s): Individuals; academia; private sector; NGOs; local, state, tribal, territorial, and insular area governments; and Federal Government.
 - Mechanism(s): The Federal Government uses Federal Administrative Structures to provide the necessary tools for quick decisionmaking.
 - How/Example(s): Examples of how the Federal Government supports rapid decisionmaking are: the Risk Analyst Position at National Response Coordination Center (FEMA), National Digital Forecast database (DOC/NOAA), Mine Emergency Operations Mapping tool (Mine Safety and Health Administration), and Occupational health warnings (Occupational Safety and Health Administration).
- **Share information obtained through coordinating activities to inform response and recovery decisionmaking by effectively communicating threat and hazard risk analysis.** *The Federal Government shares information obtained through coordinating activities to inform response and recovery decisionmaking by effectively communicating threat and hazard risk analysis.*
- Stakeholder(s): Individuals; academia; private sector; NGOs; local, state, tribal, territorial, and insular area governments; and Federal Government.
 - Mechanism(s): The Federal Government uses Federal Administrative Structures to share information to inform response and recovery activities.
 - How/Example(s): Examples of how the Federal Government supports response and recovery activities are: the Risk Analyst Position at National Response Coordination Center (FEMA), National Digital Forecast database (DOC/NOAA), Mine Emergency Operations Mapping tool (Mine Safety and Health Administration), Occupational health warnings (Occupational Safety and Health Administration), and Aviation Winter Weather Dashboard (DOC/NOAA).
- **Conduct outreach with atypical partners. Coordinate common messaging and verified source communications through local community leaders.** *The Federal Government*

maintains shared situational awareness and responds to incident-level information from public and private sector partners that identify new or previously unidentified stakeholders.

- Stakeholder(s): Individuals; academia; private sector; NGOs; local, state, tribal, territorial, and insular area governments; and Federal Government.
 - Mechanism(s): The Federal Government uses Federal Administrative Structures to conduct outreach with atypical partners.
 - How/Example(s): One example of how the Federal Government shares information with atypical partners is the sharing Safe Room guidance with national security partners (FEMA).
- **Capitalize on the critical post-disaster window of opportunity and the media information cycle to influence public opinion to take steps toward future mitigation.** *The Federal Government plans for and delivers messaging, outreach, training and technical support targeted to incident-specific realities.*
- Stakeholder(s): Individuals; academia; private sector; NGOs; local, state, tribal, territorial, and insular area governments; and Federal Government.
 - Mechanism(s): The Federal Government uses Federal Administrative Structures and enables capacity building to capitalize on post-disaster opportunities.
 - How/Example(s): Examples of Federal Government post-disaster outreach activities include issuing Recovery Advisories (FEMA/Federal Insurance and Mitigation Administration), issuing health advisories (HHS), and agricultural insurance marketing (USDA).

Adaptive Risk Management

- **Address evolving risk perception and risk communication within a community.** *The Federal Government adapts Federal risk communication tools, methods and procedures to meet adaptive risk management requirements. These changes can include demographic and technological changes.*
- Stakeholder(s): Individuals; academia; private sector; NGOs; local, state, tribal, territorial, and insular area governments; and Federal Government.
 - Mechanism(s): The Federal Government addresses evolving risk perception and risk communication through Federal administrative structures, by providing resources to both Federal and non-Federal partners, and by enabling capacity building.
 - How/Example(s): Examples of Federal Government activities to address changing risk within a community include: seasonal/calendar events, Federal law and policy changes, social science research, MAT Reports (FEMA), storm assessments (DOC/NOAA), and elevated threat levels.
- **Practice science-based methods such as community-based social marketing to create behavior change.** *The Federal Government adapts Federal risk communication tools, methods, and procedures to align with the findings of the behavior change research base.*
- Stakeholder(s): Individuals; academia; national laboratories; private sector; NGOs; local, state, tribal, territorial, and insular area governments; and Federal Government.
 - Mechanism(s): The Federal Government addresses incorporating science-based behavior change methods through Federal administrative structures, by providing resources to both Federal and non-Federal partners, and by enabling capacity building.

- **How/Example(s):** Examples of the Federal Government employing science-based methods include Federal law and policy changes, supporting social science research, MAT Reports (FEMA), storm assessments (DOC/NOAA), after-action reports (all agencies), threat level communication, and technological changes.

Long-term Vulnerability Reduction

Definition: Build and sustain resilient systems, communities, and critical infrastructure and key resources lifelines so as to reduce their vulnerability to natural, technological, and human-caused incidents by lessening the likelihood, severity, and duration of the adverse consequences related to the incident.

Expanded Capability Description

Long-term Vulnerability Reduction is an outcome based capability that encompasses a variety of actions that reduce risk. A resilient community has taken stock of the threats and hazards it faces; assessed its current risk and ability to recover from disaster; developed a plan that addresses vulnerabilities; analyzed its available resources, processes, programs, and funding opportunities; and adopted successful practices as it promotes individual and community safety and resilience. The result is informed action that leads to lasting reductions in vulnerability.

Strengthening this capability enhances resilience and vitality across economic, housing, health and social, natural and cultural resources, and infrastructure domains. Further, it lessens the effects of natural, accidental, or adversarial incidents. Long-term Vulnerability Reduction includes initiatives and investments that reduce response and recovery resource requirements in the wake of a disaster or incident. Individuals and organizations active across all mission areas can help identify opportunities to reduce risk and build resilience through this capability.

Federal Role

Federal departments and agencies, within the scope of their authorities and funding, provide funding opportunities, technical assistance, and resources to stakeholders to help reduce risk and facilitate more lasting reductions in vulnerability across the whole community. Agencies and departments provide funding for actions that result in a higher level of protection due to upgrades of existing infrastructure that meet or exceed current codes and standards. The Federal Government provides technical assistance to stakeholders through a variety of mechanisms including technical guidance and after incident performance reports. Resources are also provided by Federal agencies to assist local, state, territorial, tribal, and insular area government to promote lasting risk reduction before and after disasters.

Target: Achieve a measurable decrease in the long-term vulnerability of the Nation against current baselines amid a growing population base and expanding infrastructure base.

Critical Tasks

Mitigation actions are successfully implemented with commitment from the community. Engaging the whole community stake in vulnerability reduction ensures that public and private entities, as well as individuals, are invested, fully active partners.

Individual and Local Community

- **Broaden the use of natural hazards and catastrophic insurance.** *Individuals, households, and businesses that insure against risks recover more quickly than those who do not and require less from the Federal Government for disaster aid. By broadening the use of natural hazards and catastrophic insurance communities become more resilient. Increasing access to health care for individuals and increasing access to health insurance through the Affordable Care Act can reduce the impact on health care institutions during disasters.*

 - Stakeholder(s): Local, state, tribal, territorial, insular area, and Federal governments; private sector; and nonprofit organizations.
 - Mechanism(s): Federal Government provides: insurance; technical assistance through training, outreach, and education; regulations; capacity building for local communities.
 - How/Example(s): Federal agencies and departments provide limited insurance opportunities to manage risk when opportunities to purchase insurance are not reasonably available from other sources. The Federal Government provides training, education, and outreach to local communities and individuals to inform those in affected areas about their risk. The Federal Government also helps develop local laws/ordinances to ensure compliance with Federal laws. The Federal Government provides flood insurance through the National Flood Insurance Program (NFIP). Property owners with federally-backed mortgages are required to maintain flood insurance if they are sited in a Special Flood Hazard Area. State Flood Insurance Coordinators can provide advice and assistance to local community floodplain managers regarding coverage and compliance. The USDA provides Risk Management Crop Insurance to limit losses due to damaged crops, and the USCG manages an Oil Spill Liability Trust Fund.
- **Develop plans, and recognize that a prepared individual or family is the foundation of a resilient community.** *Community planning includes long term development, mitigation and other plans. FEMA's Risk MAP identifies mitigation actions for long-term vulnerability reduction as part of the Risk MAP community engagement process. The local mitigation plan developments incorporate a public process to ensure opportunities for partners and stakeholder involvement.*
- **Promote neighborhood activities and encourage volunteerism that advances preparedness awareness campaigns.** *Resilience starts at the individual level, with each person in the community, and is locally grown through the contributions of those individuals. Resilience builds through connections that are fostered within neighborhoods; job markets; social, faith-based, and professional organizations; neighboring communities; localities, states; tribes; territories; insular areas; regions; and the Federal Government until this body of influence has the ability to impact the social and economic vitality of the community by taking into account, planning for, and mitigating against disaster events.*

 - Stakeholder(s): The Federal Government supports this task, although this is primarily a local, regional, and private sector function.
 - Mechanism(s): Federal Government provides resources through training, outreach and education to states, tribes, territories, insular areas, local communities, and individuals; Federal Government has published and produced products and services to assist with public outreach.

- How/Example(s):
 - Ready.gov is a national public service advertising campaign designed to educate and empower Americans to prepare for and respond to emergencies. The goal of the campaign is to get the public involved and ultimately to increase the level of basic preparedness across the Nation—<http://www.ready.gov>.
 - The Firewise program administered by the National Fire Protection Association and sponsored by U.S. Forest Service, the U.S. Department of the Interior (DOI) and state forestry organizations. The Firewise program provides information for communities and individuals seeking to reduce their risk of fire damage. Their program information is available at <http://www.firewise.org>.
 - DHS sponsors the “If You See Something, Say Something™” campaign. These efforts serve to heighten individual and community situational awareness to threat, hazard, and risk.
- **Adopt and enforce a suitable building code to ensure resilient construction.** *Building code adoption and enforcement is a primary method of pre-disaster mitigation. Adopting and enforcing strong building codes consistently in a community will significantly reduce damage caused by disaster and reduces losses to critical infrastructure, transportation systems, businesses, and households.*
 - Stakeholder(s): The Federal Government supports this task, although this is primarily a local and regional function.
 - Mechanism(s): Federal Government publishes regulations; provides resources to local communities and states, tribes, territories, and insular area governments; and builds capacity through partnership, collaboration, and leadership.
 - How/Example(s): National, state, and local building codes, including local floodplain ordinances strengthen community resilience by improving the built environment as individuals and communities repair, construct, and develop by providing minimum standards for these activities. FEMA’s Building Science section develops and maintains a library of technical bulletins for construction that incorporates risk reduction and sound construction principles.
- **Capitalize on opportunities during the recovery building process to further reduce vulnerability.** *Mitigation actions taken after a disaster will break the cycle of disaster damage, reconstruction, and repeated damage. In order to make most efficient use of the time immediately after a disaster a community will need to take action shortly after the disaster.*
 - Stakeholder(s): The Federal Government is heavily involved in the recovery building process after many disasters by supporting local communities; state, tribal, territorial, and insular area governments; the private sector; and individuals through the recovery process. Federal agencies and departments coordinate to reduce vulnerability during the rebuilding process.
 - Mechanism(s): The Federal Government publishes regulations and guidelines; provides resources including subject matter expertise, education, outreach, training, and products and services; provides funding through grants and loans; and builds capacity through partnership, collaboration, leadership and research and development.
 - How/Example(s): Funding—State, tribal, territorial, insular area, and Federal governments and local resources may provide post-recovery assistance. HUD, DOT, and FEMA disaster

assistance grants may be available. Property, crop, and flood insurance claim payments provide funds for recovery and rebuilding. Small Business Administration property damage disaster loans can pay for repairs and some mitigation actions. USDA NRCS and the USGS, along with building code offices, FEMA Building Science and other groups provide technical assistance to communities and property owners. Technical bulletins and training and outreach materials are available to support local efforts. FEMA's Building Sciences group assesses damage and evaluates construction performance, which contributes to good practices and case studies.

Contributions from other sources may provide non-Federal cost matches for FEMA's Hazard Mitigation Grant Program (HMGP). These grants focus on long-term risk reduction. Identifying potential funds to cover the required non-Federal cost share is essential to project viability. Examples of potential match funding sources are HUD Community Development Block Grants, certain flood insurance claim payments, DOI Bureau of Indian Affairs funding, Appalachian Regional Commission, HHS Indian Health Services, and funds derived from Title III of the Secure Rural Schools and Community Self-Determination Act of 2000.

Private Sector

- **Determine the level of appropriate risk reduction to incorporate in operational and capital improvement projects.**
- **Advance projects and activities that are beneficial to the community and which avoid the potential for residual risk in nearby neighborhoods and communities.** *Private sector partners, much like local governments, should continue to incorporate mitigation in operational and capital improvement projects to ensure disaster impacts are minimized when they occur. Businesses that remain viable after a disaster enable individuals to recover more quickly and provide stability to the community. Communities rely on their private sector partners to be active participants and members of the communities in which they conduct business.*
 - **Stakeholder(s):** The Federal Government supports this task, although this is primarily a private sector function in coordination with local, state, tribal, territorial, and insular area governments.
 - **Mechanism(s):** The Federal Government publishes regulations and guidelines and, where applicable, provides resources including subject matter expertise, education, outreach, training, and products and services; provides funding through grants and loans; and builds capacity through partnership, collaboration, leadership, and research and development.
 - **How/Example(s):**
 - Hazard Mitigation Assistance (FEMA)
 - Community Development Block Grants (HUD)
 - Natural Resources Conservation Service (USDA)
 - Technical Assistance Bulletins (FEMA).
 - Disaster Loans (Small Business Administration)
- **Coordinate with government and community organizations to reduce duplication of effort and encourage complementary efforts.** *Private sector partners, government, and community organizations may all perform actions to reduce long-term vulnerability. These entities should work together during the local hazard mitigation planning process to identify risks and*

determine what steps can be taken to reduce those risks. All stakeholders can benefit by identifying available resources and mitigation actions that have been taken, and working together to further reduce risk.

- **Stakeholder(s):** The Federal Government supports this task, although this is primarily a local and regional function.
- **Mechanism(s):** The Federal Government published regulations and guidelines and, where applicable, provides resources including subject matter expertise, training, outreach, education, and products and services; provides funding through grants and loans; and builds capacity through partnership, collaboration, leadership, and research and development.
- **How/Example(s):**
 - Hazard mitigation planning process
 - FBI InfraGard is an information sharing and analysis effort serving the interests and combining the knowledge base of a wide range of members. InfraGard, a partnership between the FBI and the private sector, is an association of businesses, academic institutions; local, state, tribal, territorial, and insular area law enforcement agencies; and other participants dedicated to sharing information and intelligence to prevent hostile acts against the United States.

Government

- **Put community plans to work.**
- **Execute identified risk management actions and projects resulting from analysis and planning processes in the community.** *Mitigation Plans form the foundation for a community's long-term strategy to reduce disaster losses and break the cycle of disaster damage, reconstruction, and repeated damage.*
 - **Stakeholder(s):** The Federal Government supports these tasks, although they are primarily local and regional functions.
 - **Mechanism(s):** The Federal Government publishes regulations and guidelines and, where applicable, provides resources including subject matter expertise, training, outreach, education, and products and services; provides funding through grants and loans; and builds capacity through partnership, collaboration, leadership, and research and development.
 - **How/Example(s):** FEMA's Risk MAP program identifies mitigation actions for long-term vulnerability reduction as part of the Risk MAP community engagement process.
- **Make risk reduction a priority in capital improvements for public projects.** *Communities that incorporate mitigation in comprehensive or capital improvement plans can make current and future development less susceptible to damage from disaster. As infrastructure is updated or replaced by new materials using new technology, mitigation may result. Communities should leverage opportunities to improve public infrastructure as those opportunities are presented.*
 - **Stakeholder(s):** The Federal Government supports this task, although this is primarily a local and regional function.
 - **Mechanism(s):** Federal Government provides resources including subject matter expertise, education, outreach, training, and products and services; provides funding through grants; and builds capacity through partnership, collaboration and leadership.

- How/Example(s): Funding (Grants)—Hazard Mitigation Assistance (FEMA), Technical Assistance Bulletins (FEMA).
- **Employ a variety of incentives, statutory and regulatory requirements, and voluntary initiatives to implement successful practices throughout communities.** *The Federal Government has published and made available a number of tools to assist communities with resilience efforts. Incentives are often tied to higher standards enforced by local communities to ensure that risk reduction measures are being implemented properly.*
 - Stakeholder(s): Local, state, tribal, territorial, insular area, and Federal governments; private sector; and nonprofit organizations.
 - Mechanism(s): The Federal Government publishes regulations and guidelines; provides resources including subject matter expertise, training, outreach, education, and products and services; provides funding through grants; and builds capacity through partnership, collaboration and leadership.
 - How/Example(s):
 - DOC/NOAA’s Community Resilience Index is a tool communities can use to examine their preparedness for storms and recovery.
 - FEMA’s Community Rating System provides discounts to NFIP policyholders in communities that exceed minimum NFIP requirements. FEMA’s HMGP allows additional funding for states that have an approved Enhanced State Hazard Mitigation Plan.
- **Be transparent and explicit about mitigation efforts in order to increase and sustain whole community investment, reduce duplication of effort, and encourage complementary efforts by partners.** *Government entities can support transparency by developing and maintaining partnerships, participating task forces and in regional planning meetings. Technical support can be obtained through MOAs/MOUs. These actions allow for open collaboration across Federal partners. The Federal Government supports mitigation efforts through a variety of mechanisms including grant funding, technical assistance, and outreach.*
 - Stakeholder(s): Mitigation efforts are primarily local with support from the Federal Government.
 - Mechanism(s): The Federal Government publishes regulations and guidelines; collaborates and partners with other Federal agencies through MOAs and MOUs; provides resources including training, outreach, education, and products and services; provides funding through grants; and builds capacity through partnership, collaboration and leadership.
 - How/Example(s): Interagency MOAs/MOUs, Federal task forces, regional meetings.
- **Establish standards and practices to reduce long-term vulnerability.** *Communities establish standards and practices for reducing risk as part of the local hazard mitigation planning process. When communities implement plans and involve their citizens in the plan’s goals long-term, they can reduce vulnerability.*
 - Stakeholder(s): The Federal Government supports this task, although this is primarily a local and regional function.

- Mechanism(s): The Federal Government publishes regulations and guidelines; provides resources including training, outreach, education, and products and services; and builds capacity through partnership, collaboration, and leadership.
- How/Example(s): Although states and local communities establish standards and practices to reduce long-term vulnerability, the Federal Government publishes regulations, provides technical resources and performs assessments to determine how buildings perform during events which may encourage the adoption of higher building codes at the local, state, tribal, territorial, and insular area levels.
 - FEMA publishes Technical Bulletins regarding the NFIP. Technical Bulletins provide guidance concerning the building performance standards of the NFIP. The bulletins are intended for use primarily by local, state, tribal, territorial, and insular area officials responsible for interpreting and enforcing NFIP regulations and by members of the development community, such as design professionals and builders.
 - FEMA’s MAT conducts field inspections and technical evaluations of the performance of buildings subjected to forces generated by the event with the objective of identifying design practices, construction methods, and building materials that either failed under the forces generated by the event or were successful in resisting such forces. The MAT’s findings and recommendations are aimed primarily at construction contractors, architects, engineers, planners and those local building officials who are involved in permitting, inspection, and development of building codes, as well floodplain and land use management provisions.
 - Local governments can incorporate higher building codes and standards for all repair and new construction. State and local building code officials, community planning offices and floodplain managers can provide resources, training, and technical assistance.
- **Capitalize on opportunities during the recovery building process to further reduce vulnerability.** *Mitigation actions taken after a disaster will break the cycle of disaster damage, reconstruction, and repeated damage. In order to make most efficient use of the time immediately after a disaster a community will need to take action shortly after the disaster.*
 - Stakeholder(s): The Federal Government is heavily involved in the recovery building process after a Presidentially declared disaster by supporting local communities, as well as state, tribal, territorial, and insular areas through the recovery process. Federal agencies and departments coordinate to reduce vulnerability during the rebuilding process.
 - Mechanism(s): The Federal Government publishes regulations and guidelines; provides resources including subject matter expertise, education, outreach, training, and products and services; provides funding through grants and loans; and builds capacity through partnership, collaboration, leadership, and research and development.
 - How/Example(s): Funding (Grants)—Local communities can use information from plans to make decisions for developing grant applications. Post-disaster, local jurisdictions can identify opportunities to use FEMA’s Public Assistance Mitigation program (Section 406 of the Stafford Act) funds to mitigate damaged public facilities. State governments tasked with administering post disaster programs can provide advice as communities make decisions about rebuilding, and FEMA’s Building Science and Mitigation branches offer technical assistance, training, and technical bulletins. Public information and outreach services are also available from FEMA after a disaster. FEMA also provides grants through the National Flood Insurance Fund to mitigate insured structures and property that represent a high risk and

vulnerability to flood damage. Grants and program funds from HUD Community Development Block Grants and USDA NRCS are potential funding sources to assist rebuilding efforts.

Operational Coordination

Definition: Establish and maintain a unified and coordinated operational structure and process that appropriately integrates all critical stakeholders and supports the execution of core capabilities.

Expanded Capability Description

Mitigation serves the interests of National Preparedness before, during and after an incident, but has greatest effect if done well in advance of disaster. Through a unity of effort among the whole community, common objectives should be built with group consensus. Objectives should be transparent, based on an all-inclusive planning process and have clear metrics to measure progress. Agencies and departments that operate within the NMF understand the Concept of Operations detailed in this FIOP, integrate their activities, and conduct interagency operational coordination across a range of operations during steady state, adaptive risk management and incident-driven timelines, with each type of operation involving different communities of interests and structures. Operational coordination aids in this by enabling participants to do one or more of the following:

- **Facilitate Unity of Effort.** Achieving national objectives to prevent, protect against, respond to, recover from, and mitigate all hazards through effective and efficient use of mitigation programs requires unity of effort with the whole community and among departments and agencies. This requires a holistic approach based on agreed upon values and supported by operational coordination.
- **Achieve Common Objectives.** Successful operational coordination enables the Federal Government to build domestic and, if necessary, international support, conserve resources, and conduct coherent operations that more effectively and efficiently achieve common objectives. Solutions to a problem seldom reside within the capability of one agency. Operational coordination allows mitigation practitioners to recognize and leverage the core competencies and capabilities of other agencies while providing support, as appropriate, to the whole community.
- **Provide Common Understanding.** Operational coordination is critical to understanding the roles and relationships of participating Federal agencies and relevant stakeholders as well as their interests, equities, and insight into the challenges faced by threats/hazards. Such common understandings will be essential to enable stakeholders to operate effectively in the same space, identifying opportunities for cooperation and avoiding unnecessary conflict. For example, during incident-driven operations, the National Incident Management System (NIMS) provides a systematic, proactive approach to guide departments and agencies at all levels of government to work together to prevent, protect against, respond to, recover from, and mitigate the effects of incidents. Recommended activities for the private sector and NGOs have also been established that support NIMS implementation and closely parallel the implementation activities that have been required of local, state, tribal, territorial, and insular area governments. NIMS is applicable regardless of the cause, size, location, or complexity of a given event.

Operational Coordination Actions

At the Federal level, mitigation efforts are intended to support local, state, tribal, territorial, and insular area communities that are informed, supported, and funded through a variety of Federal

outreach and grant programs. To be successful, interagency coordination should bring together the interests of all stakeholders, creating a holistic approach to mitigation efforts either as a whole or to address hazard-specific requirements.

The NMF forms the basis for the implementation of a mitigation strategy at the local, state, tribal, territorial, insular area, and Federal level. This framework highlights the interoperability and compatibility that is necessary to be effective outside of a disaster or during incident response. It speaks to how mitigation capabilities support Protection and Prevention mission areas during steady state operations and in efforts to reduce exposure. The NMF fosters a number of actions that assist in operational coordination during steady state operations and in applying adaptive risk management. These actions include:

- **Coordination.** Each organization brings its own culture, philosophy, goals, practices, and skills to the interagency table. This diversity is the strength of the interagency process, providing a cross-section of expertise, skills, and abilities. Interagency coordination should strive to break down barriers and enhance information sharing and safeguarding. Even in the routine of day-to-day business, cooperation is best achieved through active interagency involvement, building upon both the differences in agency cultures and the core competencies and successful experiences that each brings. Coordination conducted and solidified at the Federal level flows downward to local, state, tribal, territorial, and insular area governments and outward to the nongovernmental offices and private sector.
- **Collaboration.** The most common technique for promoting this collaboration is the identification or formation of centers, groups, cells, offices, elements, and planning teams and other enduring or temporary cross-functional staff organizations that manage specific processes and accomplish tasks in support of mission accomplishment. They facilitate planning by the staff, decisionmaking by agency leads, and execution by the staff and assets available to them. Examples of these include: Tsunami Warning Center, DOC/NOAA Weather Forecast Offices, National Centers, and River Forecast Centers, USGS Streamgage, USACE Risk Management Centers, and USGS Earthquake Notification Service. Basic steps in building collaboration and gaining consensus are to:
 - Identify all agencies and organizations that are or should be involved in the mitigation effort
 - Establish an interagency structure and define the objectives of the effort
 - Define courses of action for agency activities
 - Solicit from each agency, department, or organization a clear understanding of the role that each plays
 - Identify potential obstacles to the collective effort arising from conflicting departmental or agency priorities
 - Identify the resources of each participant in order to reduce duplication and increase coherence in the collective effort
 - Define the desired end state
 - Maximize assets to support the longer term goals and unity of effort
 - Establish interagency assessment teams to conduct risk and resilience assessment based on quantifiable measures of effectiveness and performance.

- **Interpersonal communication.** Skills that emphasize consultation, persuasion, compromise, and consensus contribute to obtaining agreement in response to natural threats that face the Nation before they occur. Successful directors and their staffs build personal relationships to inspire trust and confidence within the Federal Government and amongst the whole community. Various formal and informal coordinating structures assist in gaining consensus and creating synergy among the engaged Federal and whole community partners. By developing personal relationships, using liaison elements, and making conscious decisions on the degree of reliance on those stakeholders for critical tasks require trust and confidence is gained.
- **Liaison.** In response to an incident, direct, early liaison is a valuable source of accurate, timely information on many aspects of a crisis area. An additional benefit is the opportunity to build working relationships based upon trust and open communications among all organizations. For that reason, ongoing liaison and exchange of liaison personnel with engaged organizations is equally important. During an incident, mitigation advisors deployed to support response and recovery activities begin research, modeling, and outlining a plan that will contribute to recovery efforts and change management reducing the likelihood and repeat incidents. Key agencies within the Mitigation mission area continue to provide weather and geological information in order to maintain situational awareness and warn the public of secondary dangers and enhance situational awareness. To enhance recovery efforts, mitigation staff members deploy to support Best Practices Field Teams jointly with the Public Affairs Office and state counterparts. They establish working relationships with the Federal Coordinating Officer, State Coordinating Officer and Chief of Staff and become knowledgeable with the Federal and state operating priorities to begin planning and outlining objectives in support of those priorities.
- **Integrated communication.** Incident communications are facilitated through the development and use of a common communications plan and interoperable communications processes and architectures. This integrated approach links the operational and support units of the various agencies involved and the necessity to maintain communication connectivity and discipline enabling common situational awareness and interaction. Active communication during an incident builds upon the interpersonal relationships, trust, and confidence developed during steady state.

Scalability, Flexibility, and Adaptability

A vital tenet of the Nation's system of emergency management is the development and execution of capabilities in a scalable, flexible, and adaptable manner. Processes and structures must be developed in order to rapidly and effectively meet unforeseen, unmet, evolving, and continuous needs of varying geographic scope, size, complexity, and intensity, regardless of the threat or incident. As incidents change in size, scope, and complexity, operations must adapt to meet evolving requirements. The number, type, and sources of resources must be able to expand rapidly to meet the needs associated with a given threat or incident and an incident's cascading effects. Participants throughout the whole community must remain flexible to adapt to these changing circumstances. Therefore, each framework describes structures at the national, local, and, where applicable, the sector-specific and cross-sector levels to coordinate planning, operations, and resource augmentation. They also describe the decision escalation and resource activation processes if events are or become wider in scope, resource intensity, or geography.

Federal Role

An operation that supports and performs mitigation at the Federal level spans the full breadth of risk management activity. Whether Federal agencies are responding to incidents, delivering steady state

risk analysis and reduction efforts, or responding to changing conditions or requirements—operational coordination describes the way that they will conduct their responsibilities and coordinate with their stakeholders. In particular, for this Federal Interagency Operations Plan (FIOP), operational coordination is the mechanism by which Federal agencies work with each other in support of the mitigation goals and the shared vision through strategic planning. In assuring that Federal operational coordination meets the needs of individual agency and department responsibilities, this FIOP outlines how Federal operational coordination occurs across critical tasks identified in the framework.

Target: Establish protocols to integrate mitigation data elements in support of operations within all states and territories and in coordination with Federal agencies.

Critical Tasks

Mitigation actions are successfully implemented with commitment from the community. Engaging the whole community with a stake in vulnerability reduction ensures that public and private entities and individuals are invested and fully active partners.

Steady State

- **Establish procedures and build relationships that support mitigation capabilities across the whole community and emphasize a coordinated delivery of mitigation capabilities.** *Establish joint objectives and foster delivery of mitigation capabilities across all Federal partners through coordinating structures and the coordination role of the Mitigation Framework Leadership Group (MitFLG).*
- **Stakeholder(s):** local, state, tribal, territorial, and insular area governments; and Federal Government.
- **Mechanism(s):** Despite increasing vulnerability to natural disasters, many communities resist adopting mitigation programs due to cost and political influences. Progress toward adoption of mitigation practices will require support from Federal Government in the form of grants and programs and community commitment. Through guidance and support communities overcome barriers and develop innovative solutions.
- **How/Example(s):** Web sites such as <http://www.data.gov> increase public access to high value, machine readable datasets generated by the Federal Government. This site promotes use of architectural standards and technology, increases access to geospatial data, and promotes government-to-citizen communication, accountability, and transparency.
- **Identify mitigation roles and responsibilities and engage stakeholders across the whole community to support the information sharing and safeguarding process.** *Operating under the NMF, Federal departments and agencies coordinate the delivery of resources and capacity building efforts to provide a unified pursuit of risk management principles for the Nation, supporting whole community stakeholders in a consistent and dynamic way.*
 - **Stakeholder(s):** Individuals; academia; private sector; NGOs; local, state, tribal, territorial, and insular area governments; and Federal Government.
 - **Mechanism(s):** The NMF outlines the roles and responsibilities of all levels of government and the whole community. This coupled with the Mitigation FIOP and follow on local, state, territorial, tribal, and insular area plans will provide concepts to enhance vertical coordination in the implementation of mitigation activities.

- How/Example(s): Through the use of general or hazard specific coordinating structures stakeholders create a forum to share ideas and receive guidance. Coordinating structures are able to facilitate the preparedness and delivery of capabilities, programs, grants, and provide guidance and support to the whole community. These structures and forums enhance ongoing communication and coordination among all parties involved.
- **Recognize the complexity of various interest groups and integrate organizations across communities, including public-private partnerships.** *Federal partners support local mitigation efforts and deliver discrete mitigation capabilities with the recognition that stakeholders from multiple disciplines will operate under varying organizational structures and produce mitigation products (data, actions, products) to standards they define. The Federal Government seeks to maximize the use of mitigation outputs by identifying shared objectives, ensuring interoperability, reducing redundancy, and protecting Federal investments.*
 - Stakeholder(s): Individuals; academia; private sector; NGOs; local, state, tribal, territorial, and insular area governments; and Federal Government.
 - Mechanism(s): Through coordination and collaboration the government works to develop a shared understanding of community needs and capabilities, empower and integrate resources from across the community, create stronger social infrastructure, establish relationships that facilitate more effective mitigation activities, increase individual and collective preparedness, and create greater resilience at both the community and national levels.
 - How/Example(s): One example is the Volpe National Transportation Systems Center. As part of the DOT Research and Innovative Technology Administration, the Volpe Center is a critical resource for innovation in transportation. Their mission is to improve the Nation's transportation system by anticipating emerging transportation issues and to serve as a center of excellence for informed decisionmaking. This organization engages with the whole community and provides information that work to mitigate disasters as they pertain to transportation.

Incident-Driven

- **Emphasize mitigation technique integration into Incident Command System planning cycles by command and general staff representatives, and educate whole community partners.** *The Federal Government will leverage all available data, and focus the post-incident responsibility of mitigation components on informing operations through risk analysis, and implementing long term mitigation into the delivery of Federal support.*
 - Stakeholder(s): private sector; NGOs; local, state, tribal, territorial, and insular area governments; and Federal Government.
 - Mechanism(s): The provision of Mitigation experts from Federal departments and agencies that serve as technical experts and advisors inform response activities while preparing to enhance and strengthen recovery efforts.
 - How/Example(s): Section 406 of the Stafford Act's mitigation program (FEMA) presents an opportunity for applicants to fortify their infrastructure against future catastrophic events. FEMA and most states provide hazard mitigation officers—at the request of the applicant—to aid in formulating Section 406 of the Stafford Act mitigation proposals. However, it is the applicant's responsibility to identify and document the mitigation opportunities during public assistance project formulation.

- **Use and leverage mitigation products and capabilities, such as the identification of threats and the assessment of risk, to support incident operations.** *The delivery of mitigation capabilities at the Federal level generates a large amount of risk analysis information and a broad suite of risk analysis expertise and tools. Federal partners will bring the value of these tools to bear to provide risk analysis in support of incident operations.*
 - Stakeholder(s): private sector; NGOs; local, state, tribal, territorial, and insular area governments; and Federal Government.
 - Mechanism(s): The Comprehensive Preparedness Guide (CPG) 201: Threat and Hazard Identification and Risk Assessment (THIRA) Guide and the CPG 201 Toolkit provide resources and information, data sources, and templates to support the conduct of a THIRA.
 - How/Example(s): One site that serves as the tool to practitioners is Hazards-United States (Hazus). Hazus is a nationally applicable standardized methodology that contains models for estimating potential losses from earthquakes, floods, and hurricanes. Hazus uses GIS technology to estimate physical, economic, and social impacts of disasters. It graphically illustrates the limits of identified high-risk locations due to earthquake, hurricane, and floods. DOC/NOAA's Incident Meteorologists provide live briefings at wildfires and other incidents.

- **Contribute to the situational awareness and a common operating picture for the entire Federal Government and for local, state, tribal, territorial, and insular area governments, as appropriate, in the event of a natural disaster, act of terrorism, or other manmade disaster.** *Through contributions to the DHS National Operations Center (NOC), mitigation practitioners help provide real-time situational awareness and monitoring of the homeland, coordinate mitigation support to incidents and response activities, and, in conjunction with the DHS Office of Intelligence and Analysis, issue advisories and bulletins concerning threats to homeland security and the means to help mitigate them through the Public Information and Warning core capability.¹⁰*
 - Stakeholder(s): Individuals; academia; private sector; NGOs; local, state, tribal, territorial, and insular area governments; and Federal Government.
 - Mechanism(s): Mitigation professionals through coordination, collaboration, and open communication leverage all sources to gain, maintain, and relay important information that contributes to the situational awareness of leadership at all levels, and decision makers using appropriate methods and products.
 - How/Example(s): The National Incident Support Manual outlines the composition of a Situational Awareness Section that can be used to enhance the collection and analysis of information associated with the operations at the DHS NOC, DHS Office of Intelligence and Analysis, and National and Regional Response Coordination Centers.

¹⁰ Pursuant to the Homeland Security Act of 2002, as amended, the NOC is the principal operations center for DHS and shall (1) provide situational awareness and a common operating picture for the entire Federal Government, and for local, state, tribal, territorial, and insular area governments as appropriate, in the event of a natural disaster, act of terrorism, or other man-made disaster; and (2) ensure that critical terrorism and disaster-related information reaches government decision-makers. Pursuant to these authorities, the NOC provides situational awareness, collecting and synthesizing all-source information, including information from the state and major urban area fusion centers, for all threats and all hazards covering the homeland security enterprise across the spectrum of prevent, protect, mitigate, respond, and recover.

- **Ensure that critical terrorism and disaster-related information reaches government decision makers.** *Through various programs and the vigilance of mitigation practitioners, information is shared and fused on a daily basis. For instance, the DHS NOC fuses together two pieces, the Intelligence Side and the Law Enforcement Side, to create a real-time snapshot of the Nation's threat environment at any moment. The FBI also conducts information sharing to its local, state, tribal, territorial, insular area, and private industry partners through its FBI field divisions. In addition, the State and Local Program Office of the DHS Office of Intelligence and Analysis shares both terrorism and disaster-related intelligence and information through intelligence officers deployed at fusion centers across the Nation.*

 - **Stakeholder(s):** Individuals; academia; private sector; NGOs; local, state, tribal, territorial, and insular area governments; and Federal Government.
 - **Mechanism(s):** Programs primarily managed under the National Protection Framework and National Prevention Framework and enhanced through mitigation efforts look to engage the whole community in a means to gather information through a variety of means such as “If You See Something, Say Something™” campaign, social media, technology, and open communication.
 - **How/Example(s):** The FBI Joint Terrorism Task Force coordinates law enforcement and intelligence collection activities to deter, detect, prevent, interdict and disrupt terrorist acts through its coordination with local, state, tribal, territorial, insular area, private sector, and academia partners, which includes information sharing with state and major urban area fusion centers. The DHS Office of Operations Coordination and Planning is responsible for monitoring the security of the United States on a daily basis and coordinating activities within the department and with governors, homeland security advisors, law enforcement partners, and critical infrastructure operators in all 50 States and more than 50 major urban areas nationwide. Through the DHS NOC, the Office provides real-time situational awareness and monitoring of the homeland and, in conjunction with the DHS Office of Intelligence and Analysis and coordination with the FBI, as appropriate, issues advisories and bulletins concerning threats to homeland security, as well as specific protective measures.
- **Capitalize on opportunities for mitigation actions following disasters and incidents.** *Incidents often present unique opportunities to take mitigation actions. When Federal partners support rebuilding efforts and deliver response and recovery support, they will ensure that mitigation resources are deployed and delivered to define a resilient response and recovery and long-term vulnerability reductions.*

 - **Stakeholder(s):** Individuals; academia; private sector; NGOs; local, state, tribal, territorial, and insular area governments; and Federal Government.
 - **Mechanism(s):** Activation of a Federal Disaster Recovery Coordinator following a disaster triggers the appointment of a Mitigation Advisor. This special advisor, who reports to the Federal Disaster Recovery Coordinator, supports recovery operations by providing a critical linkage to content, process, and internal and external networks.
 - **How/Example(s):** The HMGP provides grants to states and local governments to implement long-term hazard mitigation measures after a major disaster declaration. The purpose of the HMGP is to reduce the loss of life and property due to natural disasters and to enable mitigation measures to be implemented during the immediate recovery from a disaster. The HMGP is authorized under Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988, as amended. A key consideration during post-disaster

rebuilding is planning for future risk to ensure that mitigation efforts anticipate the threats posed by future conditions such as sea level rise due to climate changes.

Private Sector and Government

- **Adapt to evolving risks and changing conditions.** *Changes in demographics, evolving risks, and advancements in risk analysis technology and practice drive the level and kind of mitigation activity in the same way the incidents do. Federal partners are encouraged to operate under shared interagency goals to deliver mitigation capabilities in a mutually supportive way.*
 - Stakeholder(s): Individuals; academia; private sector; NGOs; local, state, tribal, territorial, and insular area governments; and Federal Government.
 - Mechanism(s): The study of the vulnerability to evolving change and variability, and their ability to adapt to changes in hazards, is a relatively new field of research that brings together experts from a wide range of fields. Federal departments and agencies coordinate through the study and implementation of Adaptive Risk Management the best ways to counter evolving threats and hazards to the Nation.
 - How/Example(s): Interagency Climate Change Adaptation Task Force identified a set of guiding principles that public and private decision makers should consider in designing and implementing adaptation strategies. They include (but are not limited to) the following:
 - Adopt integrated approaches
 - Prioritize the most vulnerable
 - Use best-available science
 - Apply risk-management methods and tools
 - Apply ecosystem-based approaches.
- **Look for ways to include new stakeholders in mitigation capabilities.** *As risk management concepts evolve and change, Federal delivery of mitigation needs to identify and include atypical partners to maximize the impact of mitigation. This includes partners in emerging scientific fields such as social vulnerability, and providing decision support tools to operational partners who have not historically made use of mitigation tools.*
 - Stakeholder(s): Individuals; academia; private sector; NGOs; local, state, tribal, territorial, and insular area governments; and Federal Government.
 - Mechanism(s): Through coordination and collaboration, the government works to develop a shared understanding of community needs and capabilities, empower and integrate resources from across the community, create stronger social infrastructure, establish relationships that facilitate more effective mitigation activities, increased individual and collective preparedness, and create greater resilience among stakeholders.
 - How/Example(s): By making actual and potential damages more tangible and understandable, mitigation tools and data, such as Hazus and USGS Streamgage data, help motivate decision makers, private sector parties, and other stakeholders to come together during response, in developing public information campaigns, and in planning and preparing for disasters.

Appendix C: Conceptual Model for Risk Analysis

Introduction

Presidential Policy Directive 8 describes the Nation’s approach to preparing for the threats and hazards that pose the greatest risk to the security of the United States. While risk analysis supports all mission areas and identifying and assessing risk is a component of the National Preparedness System, a thorough awareness and understanding of risk is essential for the Mitigation mission area with its basis being a risk-conscious culture. Understanding risks from threats or hazards requires the tools and skills to identify threats and hazards and assess risks and resilience. The core capabilities to conduct this risk analysis, Threats and Hazard Identification (THID) and Risk and Disaster Resilience Assessment (RDRA), are found in the Mitigation mission area. Risk analysis, for the purposes of this report, encompasses the data, tools, skills, and abilities needed to deliver these capabilities. THID is the capability to analyze and understand the threat or hazard’s probability, or likelihood of occurring, and potential magnitude. RDRA is the capability to conduct risk and resilience assessments to quantify the consequences of threats and hazards based on the results from a threat or hazard identification analysis. Both of these capabilities are necessary to be able to perform risk and resilience assessments. Threats and hazard identification analysis results are the foundation for a risk and/or disaster resilience assessment.

Working together across mission areas to share data and assessments can create a common understanding of vulnerable community populations, assets, and systems from threats and hazards, as well as the level of preparedness capabilities.

The broad components of the THID and RDRA capabilities are Data, Analysis, and Education and Training. Building and maintaining these two capabilities requires the ability to produce and safeguard data, conduct analyses, and educate and train.

- **Data**—The data that are needed to identify and quantify the magnitude and probabilities of threats and hazards, as well as to assess risk and resilience can vary greatly in terms of characteristics like accuracy, precision, completeness, uncertainty, and currency.
- **Analysis**—The analyses that are performed are not only dependent upon the accuracy, precision, and completeness of the data and inputs but also on the analytical complexity, number of variables, and interrelationship between variables and expert input.
- **Education and Training**—The expertise and skills of the individuals performing threat and hazard identification and risk and resilience assessments drive the results and reliability of the analysis. Their expertise varies greatly based upon on their training, experience, and aptitude for interrelating the components.

Risk Analysis from the User Perspective

Federal agencies and departments that play a role in threat and hazard identification can work with partners from the whole community to develop methodologies to help understand the level of threat and hazard identification analysis that needs to be performed based on the purpose or use and the level of risk. The level of analysis needed is based on the purpose or use for the results and the level of risk associated with the threat and hazard. Thus, the scalability of these capabilities ranges from very low complexity to very high. Figure C-1 provides a range of potential uses for THID and RDRA products and analysis. The users may range from those that are assessing their risks to identify their eligibility and best application for grants to those that need complex and specific types of data and models to design critical infrastructure.



Figure C-1: Potential Uses of Risk Analysis

The reliability of the results depends on many factors. Factors like accuracy, precision, uncertainty, validity, currency, complexity, and level of expertise can all play in to how reliable the results are for a given purpose or use. Depending on the type of analysis and/or assessment that is performed, these factors describe the characteristics of the results based on either or both quantitative or qualitative tools, methodologies, data, inputs, etc.

Introducing a Conceptual Maturity Model

Risk analysis can be conducted at varying levels of complexity depending on the needs and perspective of the user. The ability to understand the need for a full range of purposes and risk levels is necessary to help standardize the threat and hazard identification and risk and disaster resilience assessment inputs, analyses, and results for the whole community. This standardization would support both the Threat and Hazard Identification Capability and the Risk and Disaster Resilience Capability and how those capabilities support or interrelate with capabilities across all five mission areas.

Starting with a basic analysis to help communities understand risk, guidance can be found in the Federal Emergency Management Agency’s Comprehensive Preparedness Guide 201: Threat and Hazard Identification and Risk Assessment (THIRA) Guide. This guidance is adaptable to the needs and resources of local, state, tribal, territorial, and insular area homeland security and emergency management partners. It describes the process in five steps:

- **Identify the threats and hazards of concern**—What could happen in my community?
- **Give the threats and hazards context**—Describe how a threat or hazard could happen in my community, and when and where it could happen.

- **Examine the core capabilities using the threats and hazards**—How would each threat or hazard affect the core capabilities identified in the National Preparedness Goal?
- **Set capability targets**—Using the information above, set the level of capability a community needs to prevent, protect against, mitigate, respond to, and recover from its risks.
- **Apply the results**—Use the capability targets to decide how to use resources from the whole community.

Based on the premise above, risk analysis should be viewed through a maturity model under the National Preparedness Goal. The use of maturity models began in the software development field, and they were introduced by Carnegie Mellon University in the late 1990s.¹¹ The concept of maturity establishes increasing detail or formality of processes over a set of prescribed levels. The premise has been adopted in many fields, including project management and government processes. In the adaptation of the concept to other uses, typically four to five maturity levels established that range from a basic awareness at the first level to a more detailed and optimized process or analysis to comport with certain outcomes at the highest level.

Maturity levels could be adopted to help users understand their risks and provide supportive guidance on the level of data and analysis needed to conduct their THID and RDRA. Figure C-2 depicts the increasing complexities on the continuum of analysis in the THIRA maturity process. In situations where risk and the purpose do not require a high level of maturity in the results, a lower level of risk and disaster resilience assessment would be warranted. An example of this situation is a low population area where the population is not located near the flooding sources in the area. In instances where you have a high risk from a threat or hazard along with a purpose that drives a high level of maturity, a more refined analysis would be warranted. Examples of where a high level of maturity of results would be needed could be an earthquake risk and disaster resilience assessment for the Los Angeles Metro Area, or a hurricane wind and flood risk and disaster resilience assessment for New York City. For both of these areas, the consequences of the hazards with certain magnitudes could be high and the purpose of the assessment likely to require detailed information to inform preparedness decisions.

¹¹ Capability Maturity Model Integration (CMMI) Product Team, U.S. Department of Defense. Carnegie Mellon University. CMMI® for Services, Version 1.3. Pittsburgh: Carnegie Mellon, 2010 (<http://www.sei.cmu.edu/reports/10tr034.pdf>).

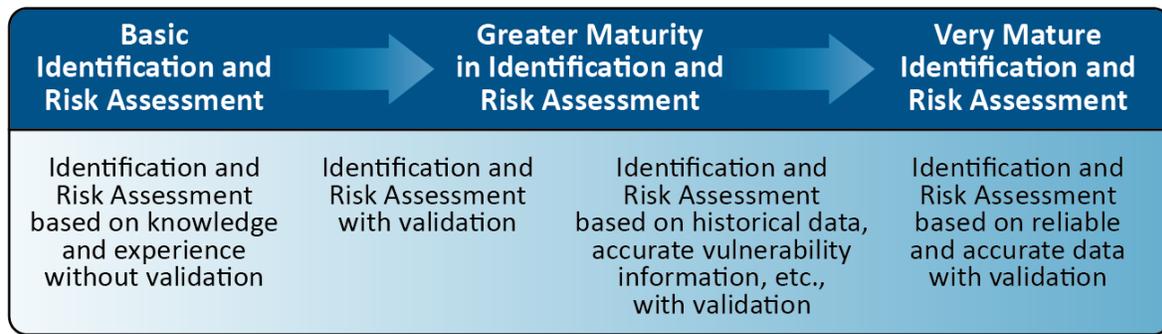


Figure C-2: THIRA Maturity Process

The Federal departments and agencies should undertake an effort to work with partners from the whole community to define levels of maturity and create guidelines as to what level of risk and disaster resilience assessment is desired based on factors such as risk and purpose. This would further enhance the RDRA capability by defining the level of risk and disaster resilience assessment that should be performed and justifying higher levels of assessment when necessary.

Building and Maintaining Risk Analysis Capabilities

Building and maintaining the THID and RDRA capabilities through resource allocation and investment across the whole community should be targeted to address the highest risks and to reduce uncertainty.

The risk associated with each threat or hazard and the uncertainty around the threat or hazard identification and assessments should guide the allocation and investment of resources in each of the categories, with the goal of reducing the risk or reducing the uncertainty. Figure C-3 shows a simple four quadrant matrix with Risk and Uncertainty making up the Y and X axes, respectively. This decision support tool helps illustrate when investments should be considered to reduce risk based on high risk, high uncertainty, or both.

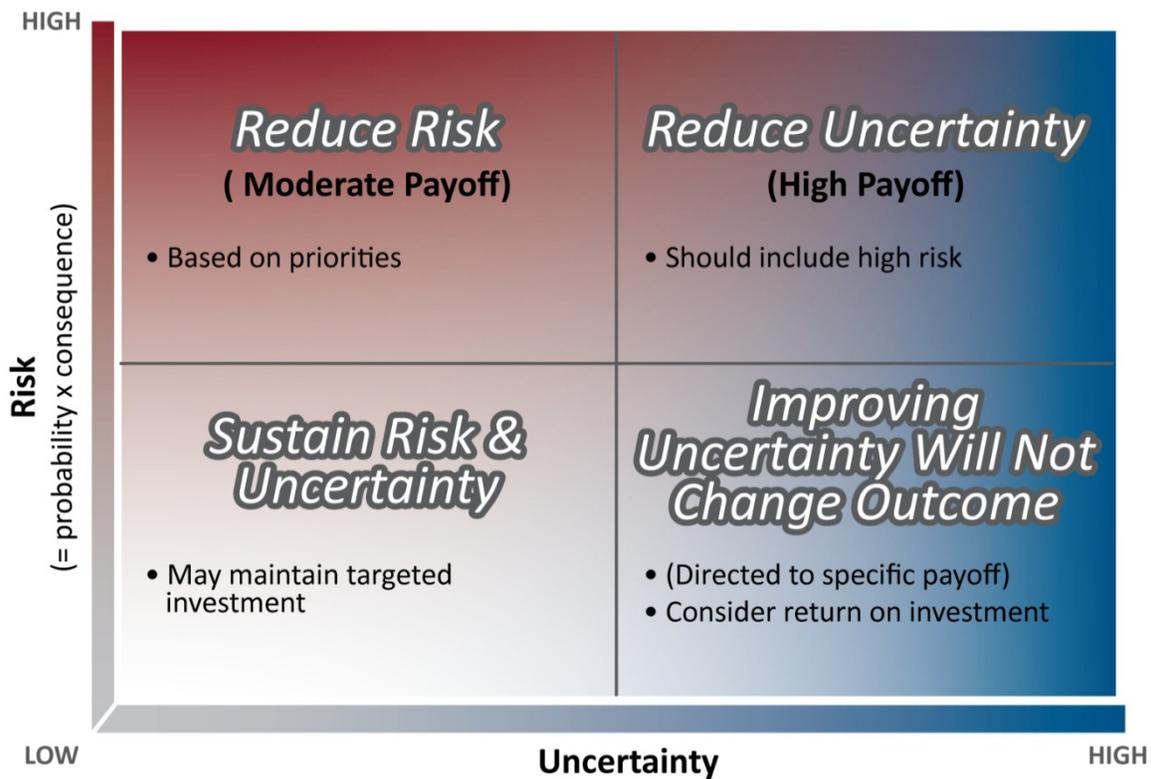


Figure C-3: Resource Investment in Capabilities Based on Risk and Uncertainty¹²

Investments could be made in the three capability components to reduce risk and/or uncertainty. For instance when looking at a specific threat or hazard, if the risk or probability and consequence are high compared to the other threats and hazards, investment would be warranted in all three categories. This would enable the risk to be reduced by more reliably identifying the threat or hazard and assessing the risk and resilience from that threat and hazard. If the uncertainty around the threat or hazard is high compared to the other threats and hazards that exist, investments would be warranted again in all three of the capability components to enable the uncertainty of the threat or hazard to be reduced.

This type of resource and investment allocation guidance allows the core capabilities of THID and RDRA to be enhanced and maintained with priority assigned based on the risk and uncertainty of the threats and hazards that are being identified and assessed against vulnerabilities.

Some capability components, those not specific to a single threat or hazard, can be applied across multiple threats and/or hazards and risk assessments. Investment and allocation in these general capabilities like common risk assessment techniques or datasets to enhance the core capabilities can be justified since the investments would raise the capability levels across multiple threats and/or hazards. Developing more accurate population and demographic data is an example of an investment that would allow the Data component of RDRA to be enhanced for all threats and hazards where a risk and/or resilience assessment would be performed.

¹² Graphics and concepts adapted from Dr. Richard W. Spinrad, Risk-Informed Investments in Oceanic and Atmospheric Research, The Royal Academy of Engineering, Lloyd's Register Educational Trust, April 2008.

Prioritizing resource investments and allocations is a reality in a limited resource environment. The prioritization of resources for these two capabilities is essential to enabling the whole community to know what threats and hazards they face and the risk associated with those threats and/or hazards.

Working together across mission areas to share data and assessments can create a common understanding of vulnerable community populations, assets, and systems from threats and hazards, as well as the level of preparedness capabilities.

Summary

The THID and RDRA capabilities are similar to one another in terms of being dependent on the same components of data, analysis, and education and training. This requires that these components be further defined in a way that the whole community can understand to know when a capability is adequate and only needs to be maintained or needs to be built further to provide more reliable results. National consistency of these maturity levels will enable the whole community, regardless of the mission area or areas the capability is being applied to, to use the results and products of these capabilities in an informed and responsible manner through delivery of the other core capabilities dependent on THID and RDRA. Defining what levels of maturity should be met for the data and results of analysis for both capabilities will also assist the whole community with understanding what should be expected and where deficiencies are present to justify further resource allocations and investments in the three components for each of the capabilities to support the five mission areas.