

STRATEGIC FORESIGHT INITIATIVE

SUMMARY INFORMATION PACKET

FEBRUARY 2012

*Strategic
Foresight Initiative*

STRATEGIC FORESIGHT INITIATIVE

OVERVIEW

The world is changing in profound ways. These changes will significantly alter how the emergency management community will do its job in the future and will require creative and collaborative thinking and action. To consider future challenges and their impacts, FEMA is coordinating a Strategic Foresight Initiative (SFI), the objective of which is straight-forward: to seek to understand how the world around us is changing, and how those changes may affect the future of emergency management. Our goal is to engage the diverse emergency management community in a collective exploration of issues, trends, and other factors that could impact the future environment, and to support expanded strategic thinking and planning for the future.

Fundamentally, the Strategic Foresight Initiative seeks two outcomes: (1) an emergency management community prepared for whatever challenges the future holds; and (2) a shared sense of direction and urgency, to drive action toward meeting our shared future needs – starting today.

Thinking more broadly, rigorously, and over a longer timeframe will help us:

- Hedge against uncertainty;
- Avoid strategic surprises;
- Promote information sharing across disciplines and organizations;
- Understand what changes could affect emergency and disaster management; and
- Plan so as to more effectively operate in our future environment.

ENGAGEMENT

FEMA has taken steps to create space for collaboration and dialogue on key topics facing emergency management. We are utilizing various media, including workshops, online collaboration tools, and individual meetings, to facilitate engagement. In April 2010 a wide cross-section of the emergency management community, select subject matter experts in relevant academic areas, select federal agencies, and other key stakeholders participated in a “scoping workshop.” At this event participants began to identify, define, and refine key issues and drivers of change that may impact the future of emergency management.

Beginning in May 2010, participants from many disciplines and fields joined in discussion through focus groups, conference calls, and an online community collaboration tool. Dialogue focused on better understanding emerging trends and future directions in key issue areas and their potential impacts on and implications for emergency management.

Throughout 2011, the SFI community hosted and participated in workshops during which community members discussed the drivers of change and their confluences. In July 2011 nearly 60 emergency management community representatives attended the inaugural SFI Scenario Workshop to explore alternative future operating conditions, their impacts and implications on emergency management, and identify challenges, opportunities, and strategic needs. The workshop results helped provide an emergent picture of key emergency management field intersections and will help inform eventual community wide strategies.

THE WAY AHEAD

To date, the SFI has focused on understanding who or what could shape the future of emergency management and identifying our strategic needs as we face a complex and uncertain future. SFI’s way ahead will involve several key components including:

- Refreshing and expanding the research to explore new and compelling questions and ideas;
- Aligning strategies and planning selected actions to meet future needs; and
- Continuing to engage stakeholders to broaden the SFI community and build on existing collaboration.

CONTACT INFORMATION

The FEMA Office of Policy and Program Analysis (OPPA) is coordinating the Strategic Foresight Initiative. To get involved, please email FEMA-OPPA-SFI@fema.gov.

SUMMARY OF STRATEGIC FORESIGHT INITIATIVE DRIVERS

OVERVIEW

The information below represents the nine SFI Drivers, the collective exploration of issues, trends, and other factors that could impact the future emergency and disaster management environment over the next 15-20 years. A research paper outlining the topic, trends, and potential impacts has been written for each Driver and can be downloaded at:

http://www.fema.gov/about/programs/oppa/strategic_foresight_initiative.shtm

DRIVERS AND TRENDS

Changing role of the individual

- Advances in technology (e.g. smartphones, tablets) empower individuals by broadening access to information and promoting a sharing rather than hierarchical information environment.
- New technologies create new communications challenges; individuals seek confirmation of official information from non-official sources before taking action.
- Possibility of media gaps being created between “connected” and “non-connected” individuals
- Many individuals join “virtual” communities of likeminded persons, dispersed across the globe and may feel more connected to these “virtual” groups than to their national or geographic community.

Climate Change

- Per the U.S. Global Change Research Program (USGCRP) study on the implications of climate change in the United States :
 - Coastal areas will be at risk due to rising sea levels and more intense storms
 - Water resources will be stressed domestically and globally
 - New threats to human health
 - Wildland fire threat will increase and shift to previously unaffected areas
- Aging critical infrastructure and increased urban populations exacerbate climate change challenges.
- Mass migration due to climate issues, increased conflict, and shifts in disease patterns are potential international effects of climate change.

Critical infrastructure

- Much infrastructure in the United States is nearing the end of its structural life cycle and due to age (e.g. bridge collapse, dam burst) can itself pose a threat.
- Transportation, communication, and energy infrastructure are aging and in danger of failing.
- Aged infrastructure can hamper disaster response and recovery efforts by delaying first responders' ability to reach an affected area or the delivery of supplies.

Evolving terrorist threat

- Dispersion of technological and scientific knowledge will increase terrorists' access to high consequence weapons such as biotechnology, nanotechnology, and nuclear weapons.
- Terrorist organizations are adaptive and are constantly learning and improving their tactics and techniques.
- There is an increase in self-radicalization of individuals and small groups.
- Communications technology continues to support recruitment and terrorist messaging.

Global Interdependencies/Globalization

- A shift in economic power from the West to East is a potential challenge to fiscal stability in domestic government budgets and resource availability.
- Possible disruptions in global supply chains could have significant domestic consequences
- Increasing global interdependencies will lead to the United States having a greater role in emergency and disaster management internationally.
- A more global role for American emergency and disaster managers could have major resource and capability implications.

Government Budgets

- Current State, local, tribal, and Federal budget forecasts are constrained and could lead to challenges sustaining emergency and disaster management resources and capabilities.
- Federalism and the role of State, local, tribal, and Federal governments in emergency and disaster management is a key point of discussion. Many have raised the possibility of an increase in partnerships with the private sector, perhaps including privatizing some emergency and disaster management activities.

Technological innovation and dependency

- Important technological innovations that could dramatically influence emergency and disaster management include:
 - Increasing adoption of mobile technology
 - Medical breakthroughs
 - Improvements in how we model and warn about disasters
 - Implications of biotechnology and nanotechnology on the security environment
- Dependency on technology in our communications, energy, and transportation infrastructure creates a significant vulnerability to cyber attack.

Universal access to and use of information

- The explosion of social media and personal communications technology will continue to increase real-time access and delivery of information.
- The information environment now allows everyone to be both a producer and consumer of information often resulting in “spontaneous reporting” by individuals at incident sites posting video, images and text messages from their smartphones.
- This new information environment, combined with the 24/7 news cycle and the growth of non-traditional news sources such as social media, has created an environment of constant information flow that presents both great opportunities (e.g., crisis mapping of the Haiti Earthquake) and challenges (information overload) for emergency and disaster management.

U.S. Demographic Shifts

- Over the next 15-20 years, the U.S. Census Bureau expects:
 - The overall population will grow by 18%
 - The population will become more culturally and ethnically diverse, with dramatic increases projected in both the Hispanic and Asian populations
 - The percentage of the population over the age of 65 will increase to 18.2 percent by 2025
- Many Americans continue to move to relatively densely populated metropolitan and coastal areas.

OUR FUTURE LANDSCAPE

The following insights represent a set of recurring themes or conditions that we should consider as we build actions to meet our future needs. They are not intended as predictions of how the future will unfold; rather, they are intended to serve as a lens through which to view our future landscape and the actions we as a community will need to take to be successful.

- **The emergency management community will face increasing risk, elevated uncertainty, decreasing predictability, and tremendous complexity** in the form of more incidents, new and unfamiliar threats, more information to analyze (possibly with less time to process), new players and participants, sophisticated technologies, and exceedingly high public expectations. This combination will create a vastly different landscape for risk assessment and operational planning. Pressure to perform in this environment will be extraordinary.
- **Future resource constraints are seemingly unavoidable.** Whether induced by an increased need for services, a reduced capability or capacity to deliver services, or both, we will be faced with limited funding for emergency management. These constraints will push service providers to find creative ways to deal with shortfalls. This underlies the need for innovative new surge models, new partnerships, and sustained community efforts to ensure interoperability of personnel, equipment, systems, and functions. Although we have made gains in recent years, more progress must be achieved.
- **Individuals, families, neighborhoods, communities, and the private sector will likely play an increasingly active role in meeting emergency management needs.** The public's ability and desire to self-organize will grow, as the role of the individual, access to information, and technology all evolve. Concurrently, the government will face fiscal pressures and other resource constraints. This confluence will challenge traditional emergency and disaster management roles, present prospects for structural reform, and offer opportunities to engage and empower and communities as active partners in the emergency and disaster management process.
- **Across the nation, disparities in fiscal resources and in access to advanced technology, to know-how, to skilled personnel, etc. will have to be anticipated and effectively managed.** Wealthier states with stronger infrastructure and better-educated populations will be in a more advantageous position to deal with disasters and emergencies than poorer ones. How can regions or communities with fewer resources be supported?
- Beyond U.S. experience, **there is a large and growing body of global best practices from which we can learn and benefit.** As the world becomes more globally connected and as we rely on global supply chains that can create hidden vulnerabilities that affect U.S. emergency operations, learning and implementing global best practices will be essential.
- **The importance of trust – between the public and government – cannot be overstated,** especially since belief in large institutions, including government, has been shifting to social networks and alternative sources of loyalty. This shift poses real challenges to emergency management, especially in the face of changing political expectations and greater public awareness of government limitations. Since trust is so essential to successful outcomes in disasters and emergencies, we must look for opportunities to build and strengthen public trust. Frequently the best pathway for doing so lies in ever wider and deeper channels of public participation.

STRATEGIC FORESIGHT INITIATIVE STRATEGIC NEEDS

The following strategic needs statements are the result of a 4-day workshop during which participants explored five separate alternative futures. The statements and context below represent what the emergency management community would need to be successful in all five alternative futures. They are divided into three categories: (1) *Essential Capabilities*; (2) *Innovative Models and Tools*; and (3) *Dynamic Partnerships*.

ESSENTIAL CAPABILITIES

Strategic Need: Develop emergency management capabilities to address dynamic and unprecedented shifts in local and regional population characteristics and migratory flows.

Context: Emergency managers will be faced with complex demographics shifts as the United States' population increases, ages, and becomes more culturally and linguistically diverse. New challenges will arise from migrations within the U.S., possibly because of environmental issues and changes in regional climates. There will also be changes in the size and nature of traditionally underrepresented and elusive populations, including the extremely poor; the homeless; those volunteering to live "off the grid"; refugees from disasters; and victims of pandemics.

Strategic Need: Practice omni-directional knowledge sharing.

Context: The proliferation of information from all sources (including private sector and social media) intensifies the need to make emergency management information and knowledge useful and accessible. Advanced tools to collect, analyze and disseminate information represent potentially valuable new tools for emergency managers. As information flows become more widely distributed, the connectivity of networks will be significantly more important than any single hierarchical solution. And the public's role as an information source will be vital.

Strategic Need: Infuse emergency management principles and life skills across the entire educational experience to empower individuals to assume more responsibility.

Context: Future operating environments may well be characterized by significant decline in governmental resources for emergency management. Such fiscal constraints could tempt emergency managers to pull back from community engagement, which would widen the gap that already exists. Instead, it will be important to use the fiscal environment as an opportunity to reinvent and innovate. Schools and youth programs will be critically important channels, especially in creating awareness of new and unfamiliar threats such as pandemics or cyber attacks.

Strategic Need: Build a shared vision for the emergency management community of the future and a culture that embraces forward thinking to anticipate emerging challenges and develops appropriate plans and contingencies.

Context: The SFI scenarios depict increasingly complex, rapidly changing worlds – even for economically troubled and less technologically vibrant scenarios. Since current operational strategies and plans may not be applicable in the future, the emergency management community will have to deliberately explore future issues as it prepares for the challenges that face our community.

Strategic Need: Leverage volunteer capabilities across all emergency management phases.

Context: Emergency management resources, especially personnel, are apt to be stretched in future operating environments marked by tight budgets and/or more frequent national emergencies. In some cases, skill gaps may become more pronounced, and alternative staffing models will become important. How might we further incorporate volunteers into our operating models? What limitations must we understand to mitigate undue risk exposure? Further, even though it is already used to mobilize communities, how can we better use technology to inform and organize volunteers?

INNOVATIVE MODELS AND TOOLS

Strategic Need: Adopt new risk management tools and processes in order to manage cascading consequences of interactions among infrastructure and all hazards.

Context: Current risk management tools and processes already are outdated. For example, our risk management models are

typically retrospective and do not account for climate change impacts we are experiencing today. If climate change is exacerbated, we will be even further behind the curve, our mitigation efforts will prove insufficient, and our response and recovery operations will suffer. The risks of aging infrastructure due to budget pressures, political and jurisdictional conflicts, and potential failures to initiate or sustain the long-term investments required also will challenge us in the future. Aging infrastructure also represents a highly interconnected form of risk, with many secondary and tertiary risks to populations during and following emergency situations.

Strategic Need: Employ alternative surge models to meet the challenging confluences of social, technological, environmental, economic, and political factors and conditions.

Context: Acute and possibly chronic fiscal pressure could create highly challenging deficits in emergency management resources relative to needs, and public safety and emergency management practitioners could see reduced funding at all levels. Possible offsetting factors, such as technology, could be an important force multiplier in some situations. However, all of this suggests the need for new approaches and models for marshaling resources to deal with the possibility of more frequent and more complex emergency situations.

Strategic Need: Establish flexible frameworks that optimize emergency management inter-operability across all boundaries, because of increasing jurisdictional and technological complexities.

Context: The future operating environment will challenge individual emergency management entities to accomplish more with fewer of their own resources. This underlines the importance of resource-sharing arrangements across jurisdictions, especially during emergency situations. In 2011, doctors and nurses cannot cross state lines to help in emergencies unless a governor declares a state of emergency. Obstacles to many other forms of interoperability, including security, law enforcement, and technology, to include our hemispheric partners, will be magnified unless there is reform in this area.

Strategic Need: Plan and coordinate around shared interests and interdependencies to exercise the entire range of emergency management capabilities.

Context: The future may challenge our community with chronic resource constraints at times of rising demands for emergency management services. Current regional approaches are limited. Planners need to be motivated and empowered to look beyond short-term concerns and narrow stovepipes and recognize opportunities for collaboration around shared interests.

Strategic Need: Remediate hidden vulnerabilities in critical supplies – from water to energy to medical products – to offset threats to the full scope of emergency management activities.

Context: Future availability of important emergency supplies cannot be assured. Global and national supply chains, some of which have limited capacity to begin with, may be vulnerable to infrastructure degradation, interruptions in foreign trade, and cyber attacks, and they are undergoing radical structural changes in warehousing demand signaling and logistics. Water, especially in drought-stricken areas of the country, may not be available in sufficient amounts to fully support emergency management missions. Climate change may negatively affect access to power and energy; so may man-made problems, such as foreign conflicts and trade embargoes.

Strategic Need: Influence the development of emerging technologies that advance emergency management capabilities.

Context: Technology will become a more important element in future emergency management mission execution, from information management to communications, to sensing, to transportation and logistics, and much more. In fact, there is a case to be made that technology will be even more important in tight budget environments. This argues not just for proactive technology adoption, but actually getting out ahead and influencing the development of products that have emergency management applications.

DYNAMIC PARTNERSHIPS

Strategic Need: Empower individuals, neighborhoods, and communities to play a greater role throughout all phases of disasters.

Context: There are real shifts underway in how people are processing information and how and where they will produce and consume it in the future. Additionally, there are corresponding shifts in the nature of trust, with public trust placed less in large organizations and increasingly in social networks. Along with these changes, the SFI scenarios depict a range of U.S. economic futures with spending constraints – especially over the next decade – as a repeated theme. Inevitably this will mean changes in

how government services are delivered before, during, and after an emergency or disaster event. Understanding how to empower communities and individuals in new and different ways holds a critical key to enhancing our ability to achieve successful emergency management outcomes in the future; it also challenges our current public engagement approaches and expectations.

Strategic Need: Proactively engage business in all emergency management phases and solicit its contribution to policy development, in light of the critical nature of private sector capabilities.

Context: The private sector meets the public's needs every day. With close to 90% of the labor force and tremendous specialized capabilities, the private sector is a key partner before, during, and after disasters. This partnership will become increasingly important in the future. Working in concert with the private sector, rather than competing with it, the public sector has an opportunity to further enable private sector resources and capabilities to assist in recovery efforts and resilience-building throughout communities. Engaging the private sector in policy development is also important so that the private sector has the appropriate frameworks in place to work effectively and cooperatively with the public sector to address issues of mutual concern.

Strategic Need: Intensify disaster-response collaboration and planning with Canada and Mexico, recognizing scope for both national and local actions.

Context: Emergencies and disasters do not respect national boundaries. A number of the SFI scenarios anticipated the need for significantly closer U.S. collaboration with Canada and Mexico around several shared emergency management interest areas, including immigration, border security, drought and water management, disease surveillance, trade and commerce, and critical infrastructure. The scenarios made a strong case for anticipatory action to ensure the highest levels of cooperation are in place before actual emergencies or disasters occur.

Strategic Need: Foster increased collaboration to ensure appropriate use of the military to provide specialized capabilities or to augment capacity in complex, overwhelming disaster incidents.

Context: The SFI scenario discussions covered a range of complex emergency situations including weapons of mass destruction (WMDs), cyber attacks, and the potential need for quarantining pandemic victims showing up on U.S. shores. Responding to such threats will require scale, as well as specialized skills, some of which are within the purview of U.S. armed forces. If the U.S. reduces its global military footprint, the armed forces may be more available for domestic missions, including emergency management.