Whole Community is an approach to emergency management that reinforces the fact that we must leverage all of the resources of our nation's collective emergency management team in preparing for, protecting against, responding to, recovering from and mitigating against all hazards; and that collectively we must meet the needs of the entire community in each of these areas. This larger collective emergency management team includes local, tribal, state and territorial partners; non-governmental organizations like faith-based and non-profit groups and private sector industry; individuals, families and communities, who continue to be the nation’s most important assets as first responders during a disaster; and FEMA and its partners at the federal level. Both the composition of the community and the individual needs of community members, regardless of age, economics, or accessibility requirements, must be accounted for when planning and implementing disaster strategies.1

Research Opportunities:


- How can individual and community indicators of disaster resilience help emergency managers better anticipate the needs of survivors prior to a disaster?

- Identify and evaluate models and effective strategies for:
  - building leadership capacity and public buy-in for pre-disaster recovery;
  - integrating mitigation and recovery planning before a disaster;
  - integrating decision-making and planning for post-disaster recovery;
  - engaging and utilizing/integrating the whole community at the local and state level.

Recovery GOALS 1


A key finding of the “2012 National Preparedness Report,” which analyzed data from self-assessments of core capability levels submitted by all 56 U.S. states and territories through a standardized survey, was that recovery-focused core capabilities are national areas for improvement. The Recovery mission area core capabilities center on helping disaster-affected communities rebuild infrastructure, provide

1 http://www.fema.gov/whole-community
adequate long-term housing, preserve community services, restore health and social services, promote economic development, and restore natural and cultural resources.²

Research Opportunities:

- How can social services and behavioral health be better integrated into long-term disaster recovery activities and assessed?

<table>
<thead>
<tr>
<th>Emergency Management Missions Supported:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recovery GOAL 1</td>
</tr>
</tbody>
</table>

Challenge/Area of Interest: Personal preparedness

The 2009 Citizen Corps National Survey measured the public’s knowledge, attitudes, and behaviors relative to preparing for a range of hazards to evaluate the Nation’s progress on personal preparedness. Several areas for future research to understand more fully the complexities of motivating and sustaining personal preparedness and participation were identified.³

Research Opportunities:

- To explore different perceptions of hazard types and how perception affects preparedness, to include terminology such as “disaster,” “terrorism,” “pandemic flu,” and “preparedness.”
- To understand how sociodemographic factors relate to preparedness and how outreach strategies should be tailored to achieve the greatest impact for targeted audiences.
- Involving qualitative research such as focus groups or interviews to explore more fully how individuals understand the issues of threat, self-efficacy, and response efficacy and to explore internal and external barriers and motivators to preparedness.

<table>
<thead>
<tr>
<th>Emergency Management Missions Supported:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Preparedness GOAL 1</td>
</tr>
<tr>
<td>Education, Information Studies, Letters &amp; Sciences &amp; Social Welfare</td>
</tr>
</tbody>
</table>

Challenge/Area of Interest: Risk management tools and processes

As “Crisis Response and Disaster Resilience 2030: Forging Strategic Action in an Age of Uncertainty – Progress Report Highlighting the 2010-2011 Insights of the Strategic Foresight Initiative” explains, in the years ahead, emergency managers will need advanced modeling and tools to assess and manage risks related to climate, power, transport, telecommunications, and water, among other domains.⁴

Research Opportunities:

- Aging critical infrastructure on emergency management

<table>
<thead>
<tr>
<th>Emergency Management Missions Supported:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparedness</td>
</tr>
</tbody>
</table>

² [https://www.fema.gov/library/viewRecord.do?id=5914](https://www.fema.gov/library/viewRecord.do?id=5914)
(e.g., taking the American Society of Civil Engineers’ (ASCE) Report Card for America’s Infrastructure a step further to identify what it means to emergency management based on regional/state case studies).

Weak economic growth and/or growing income inequality (e.g., from long-term unemployment, chronic underemployment, limited geographic mobility) on disaster resilience and communities’ abilities to respond and recover from disasters.

**Challenge/Area of Interest:**

**Advancing emergency management training and exercises into the 21st Century**

Leverage 21st Century technology, methods, approaches, content, and tools to enhance professional emergency management training and exercises for adult practitioners.

**Research Opportunities:**

- What existing or new technologies, approaches, and/or tools could be used to deliver more effective emergency simulation training to emergency managers and provide opportunities to practice response skills through multiple and varied types of exercises?

**Goal #2:**

**Challenge/Area of Interest:**

**Whole Community**

Whole Community is an approach to emergency management that reinforces the fact that we must leverage all of the resources of our nation’s collective emergency management team in preparing for, protecting against, responding to, recovering from and mitigating against all hazards; and that collectively we must meet the needs of the entire community in each of these areas. This larger collective emergency management team includes local, tribal, state and territorial partners; non-governmental organizations like faith-based and non-profit groups and private sector industry; individuals, families and communities, who continue to be the nation’s most important assets as first responders during a disaster; and FEMA and its partners at the federal level. Both the composition of the community and the individual needs of community members, regardless of age, economics, or accessibility requirements, must be accounted for when planning and implementing disaster strategies.5

**Research Opportunities:**

- Examine the application of decision science research to risk communication strategies to better understand how individuals and

---

5 [http://www.fema.gov/whole-community](http://www.fema.gov/whole-community)
Current Emergency Management Challenges and Areas of Interest

Communities perceive risks and make decisions. For example, how do individuals respond to warnings and other risk communications? How do choices (e.g., opt-in vs. opt-out programs) impact the individual decisions and behaviors related to key emergency management issues (e.g., evacuation orders)?

Challenge/Area of Interest:
Recovery

A key finding of the “2012 National Preparedness Report,” which analyzed data from self-assessments of core capability levels submitted by all 56 U.S. states and territories through a standardized survey, was that recovery-focused core capabilities are national areas for improvement. The Recovery mission area core capabilities center on helping disaster-affected communities rebuild infrastructure, provide adequate long-term housing, preserve community services, restore health and social services, promote economic development, and restore natural and cultural resources.6

Research Opportunities:

- Examine the practical models and key measurement points that signal the recovery of disaster-affected communities and individuals to provide leaders with information to improve the success of long-term recovery efforts.

Challenge/Area of Interest:
Personal preparedness

The 2009 Citizen Corps National Survey measured the public’s knowledge, attitudes, and behaviors relative to preparing for a range of hazards to evaluate the Nation’s progress on personal preparedness. Several areas for future research to understand more fully the complexities of motivating and sustaining personal preparedness and participation were identified.7

Research Opportunities:

- Conduct an analysis and pilot the use of interactive technologies, such as video games, to educate the public on what steps they can take to increase the probability of their survival following a catastrophic disaster.

- Examine technology to enable community level resource sharing and distribution during a large scale catastrophic event (e.g., Freecycle.org type model).

Emergency Management Missions Supported:

- Recovery GOAL 2

- Preparedness GOAL 2
- Information Studies, Letters & Sciences & Social Welfare

---

6 https://www.fema.gov/library/viewRecord.do?id=5914
7 http://citizencorps.gov/resources/research/2009survey.shtm
Current Emergency Management Challenges and Areas of Interest

Goal #3:

**Challenge/Area of Interest:**
**Whole Community**

*Whole Community* is an approach to emergency management that reinforces the fact that we must leverage all of the resources of our nation’s collective emergency management team in preparing for, protecting against, responding to, recovering from and mitigating against all hazards; and that collectively we must meet the needs of the entire community in each of these areas. This larger collective emergency management team includes local, tribal, state and territorial partners; non-governmental organizations like faith-based and non-profit groups and private sector industry; individuals, families and communities, who continue to be the nation’s most important assets as first responders during a disaster; and FEMA and its partners at the federal level. Both the composition of the community and the individual needs of community members, regardless of age, economics, or accessibility requirements, must be accounted for when planning and implementing disaster strategies.8

**Research Opportunities:**

<table>
<thead>
<tr>
<th>Emergency Management Missions Supported:</th>
</tr>
</thead>
</table>

- What efforts are needed to better integrate people with disabilities and other access and functional needs, children, pregnant women, older adults, and people with chronic medical conditions into disaster preparedness activities across all mission areas?

- How can social relationships in neighborhoods, the workplace, schools, and faith-based communities be better leveraged to institutionalize disaster preparedness information, training, and exercises/drills? How can civic leaders from these sectors be encouraged to become more fully engaged in community disaster resilience efforts?

- How do various aspects of community capacity and resilience relate to a community’s ability to rapidly recover from a disaster (e.g., differences between rural and urban communities)?

**Challenge/Area of Interest:**
**Recovery**

A key finding of the “2012 National Preparedness Report,” which analyzed data from self-assessments of core capability levels submitted by all 56 U.S. states and territories through a standardized survey, was that recovery-focused core capabilities are national areas for improvement. The Recovery mission area core capabilities center on helping disaster-affected communities rebuild infrastructure, provide adequate long-term housing, preserve community services, restore health and social services, promote economic development, and restore natural and cultural resources.9

**Research Opportunities:**

---

8 [http://www.fema.gov/whole-community](http://www.fema.gov/whole-community)
9 [https://www.fema.gov/library/viewRecord.do?id=5914](https://www.fema.gov/library/viewRecord.do?id=5914)
### Current Emergency Management Challenges and Areas of Interest

<table>
<thead>
<tr>
<th>Missions Supported:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recovery GOAL 3</td>
</tr>
</tbody>
</table>

#### Missions Supported:
- Examine the types of information that are needed or available (at different levels of society) for recovery decision-making. Who has what information, how can it be coordinated or leveraged? What post-disaster assessments and analysis are useful to help shape recovery outcomes?

### Challenge/Area of Interest:
#### Personal preparedness

*The 2009 Citizen Corps National Survey measured the public’s knowledge, attitudes, and behaviors relative to preparing for a range of hazards to evaluate the Nation’s progress on personal preparedness. Several areas for future research to understand more fully the complexities of motivating and sustaining personal preparedness and participation were identified.*

#### Research Opportunities:
- Testing specific messages, spokespersons, and social marketing strategies that will have greater impact on individuals’ understanding of their role in preparedness and willingness to engage in preparedness activities, to include targeted audiences from sociodemographics segments and from the Stages of Change model.

### Challenge/Area of Interest:
#### Omni-directional knowledge sharing

*Omni-directional knowledge sharing is an essential capability identified in the recent publication, “Crisis Response and Disaster Resilience 2030: Forging Strategic Action in an Age of Uncertainty – Progress Report Highlighting the 2010-2011 Insights of the Strategic Foresight Initiative.” Omni-directional knowledge sharing means employing all relevant forums, networks (including sensitive and classified), and technologies so that information created and distributed by government remains relevant to the public in complex information and media environments. And it will mean staying abreast of the rapidly evolving world of social networks and knowing how to leverage their power and influence.*

#### Research Opportunities:
- Other needs identified beyond the “Personal Preparedness in America: Findings from the 2009 Citizen Corps National Survey” report.

### Emergency Management Missions Supported:
- Preparedness GOAL 3
- Information Studies, Letters & Sciences & Social Welfare

---

Current Emergency Management Challenges and Areas of Interest

- How can social networks be integrated effectively into creating a common operating picture (COP) to support decision-making by emergency managers (e.g., to identify where resources are most needed in an emergency)?
  - What are the potential advantages and disadvantages of integrating social networks into a COP?
  - What measures should state, local and federal emergency managers take to successfully integrate social networks into a COP?
  - How do we get communities to use pre-existing technology to create a common operating picture?

- What mobile and open-source technologies can be used to both gather and disseminate data after a disaster?

- How can social networking platforms be better leveraged to inform and engage the public in disaster preparedness activities through their “virtual” communities?

- How can emergency managers more effectively use social networks to deliver services?
  - What have been some successful models or examples from communities around the nation?

Response
GOAL 3
Information Studies & Letters & Sciences

Response/Recovery
Information Studies, Letters & Sciences & Social Welfare

Preparedness
SEE ? GOAL 3
Information Studies, Letters & Sciences & Social Welfare

All
SEE? GOAL
Information Studies, Letters & Sciences & Social Welfare

Challenge/Area of Interest:
Risk management tools and processes

As “Crisis Response and Disaster Resilience 2030: Forging Strategic Action in an Age of Uncertainty – Progress Report Highlighting the 2010-2011 Insights of the Strategic Foresight Initiative” explains, in the years ahead, emergency managers will need advanced modeling and tools to assess and manage risks related to climate, power, transport, telecommunications, and water, among other domains.12

Research Opportunities:

- Studies on the potential impacts of:
  - Climate change on emergency management capabilities and services, such as:
    - increased requirements for emergency services and response and recovery capacity (e.g., leveraging volunteers, community capacity-building, scalability);
    - resiliency of critical infrastructure (e.g., energy, whose plants require large amounts of water for cooling) and emergency assets for continuity of operations, delivery of services, and emergency response efforts;

Emergency Management Missions Supported:

Preparedness and Mitigation

GOAL 3 (boots on the ground, so not just research)

12 http://www.fema.gov/library/viewRecord.do?id=4995
### Current Emergency Management Challenges and Areas of Interest

- Indirect impacts that increase mission risks such as population displacement, migration (e.g., “climate migrants”), and public health risks (e.g., spread of disease);
- Sustained loss of electrical power following a catastrophic disaster which could have significant effects on response and recovery activities.

- Identification of existing, or development of risk assessment tools, models, and processes that can identify, and help assess and manage:
  - The “cascading effect” of disasters (e.g., where one primary effect causes a secondary problem such as a gas main rupturing due to ground movement which then causes a fire). GOAL 3
  - Infrastructure interdependencies and potential points of catastrophic failure.
  - Changing or future risk so that the needs of tomorrow’s disasters can be anticipated, rather than relying on past historical data that may not accurately portray a changing environment.

- Examine ways to strengthen benefit/cost analysis through:
  - New methodologies to account for future risk (e.g., climate change),
  - Improved access to reliable and accessible information to evaluate vulnerabilities to climate change and to understand the costs and benefits of taking action to reduce local risks,
  - Analytical approaches and tools that provide greater balance between the benefits of an individual project and the benefits to the whole community (e.g., saving lives, protecting property).

### Goal #4:

**Challenge/Area of Interest:**

**Advancing emergency management training and exercises into the 21st Century**

Leverage 21st Century technology, methods, approaches, content, and tools to enhance professional emergency management training and exercises for adult practitioners.

### Research Opportunities:

- What are the most effective methods, content, and tools for teaching crisis decision analysis and how to take effective actions to diverse audiences (e.g., audiences that vary in age, education, culture, and hazard vulnerability)?

### Emergency Management Missions Supported:

- Preparedness
- GOAL 4 Continuing Education, Education, Information Studies
Current Emergency Management Challenges and Areas of Interest

Other resources that identify research opportunities:

- **Project Responder 3: Toward the First Responder of the Future**,\(^{13}\) March 2012 identifies gaps between current emergency response capabilities and those required to respond to a catastrophic event, and subsequently prioritizes areas of investment to address or reduce those gaps. Among 40 capabilities, responders identified a subset of 12 capabilities of highest importance. These priorities can help guide research and development by the federal government, state, local, territorial, and tribal authorities, and the private sector.

- **Disaster Resilience: A National Imperative**,\(^{14}\) available from The National Academies Press, identifies a variety of knowledge, data, and research needs to support disaster resilience.

- **Grand Challenges for Disaster Reduction**,\(^{15}\) a Report of the Subcommittee on Disaster Reduction, identifies a suite of six Grand Challenges for disaster reduction and provides a framework for prioritizing the related Federal investments in science and technology. Accompanying implementation plans address: coastal inundation, drought, earthquake, flood, heat wave, human and ecosystem health, hurricane, landslide and debris flows, space weather, technological disasters, tornado, tsunami, volcano, wildland fire, and winter storm.

**Pursuant to the Federal Advisory Committee Act, FEMA is not soliciting and will not accept any consensus advice or recommendations on federal policies or regulations through this partnership.**

---

\(^{13}\) [http://www.firstresponder.gov/Miscellaneous%20PDFs/ProjectResponder3Report.pdf](http://www.firstresponder.gov/Miscellaneous%20PDFs/ProjectResponder3Report.pdf)


\(^{15}\) [http://www.sdr.gov/grandchallenges.html](http://www.sdr.gov/grandchallenges.html)