

# **Community Resilience System Initiative (CRSI) Steering Committee Final Report —**

a Roadmap to Increased Community Resilience

August 2011



**CRSI**

**Community Resilience  
System Initiative**



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August 2011

Developed and Convened by the



This material is based upon work supported by the U.S.  
Department of Homeland Security under U.S.  
Department of Energy Interagency Agreement  
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## ACKNOWLEDGMENTS

The Steering Committee gratefully acknowledges the contributions of the more than 150 people who participated in the Community Resilience System Initiative (CRSI). Over the past 15 months, representatives from community organizations; local, state, and federal government agencies; private sector companies; national associations; and research institutions have tirelessly collaborated on the development of the Community Resilience System (CRS) by providing guidance on what communities need to strengthen their resilience against disruptions and crises of all kinds (e.g., economic downturns, natural disasters, and human-induced events such as terrorism). Organized into three work groups, CRSI participants devoted time and provided feedback through in-person meetings, telephone interviews, webinars, and focused surveys. Their keen insights were provided to the Steering Committee and distilled into the core components of the CRS and this report.

We also acknowledge the participation of a number of organizations that contributed significantly to this endeavor by sharing their knowledge of communities and how they operate and by providing strong representatives to participate in the Steering Committee and the work groups. Organizations such as the Center for National Policy, the International City/County Management Association, The Infrastructure Security Partnership, ICLEI – Local Governments for Sustainability, the U.S. Chamber of Commerce, the United Way, and the American Red Cross have contributed greatly by bringing their particular view of community life to the discussion. We would also like to thank the leadership and advisory groups in the Charleston Tri-County Area of South Carolina, the Gulf Coast of Mississippi, and the Memphis/Shelby County region of Tennessee who partnered with the Community and Regional Resilience Institute (CARRI) starting in 2007 and graciously shared their resilience lessons via this effort.

We appreciate the leadership provided by CARRI, in particular its commitment to understand what communities truly need to become more resilient and its patience to embark upon a community-centered, collaborative approach to developing a practical solution. In the 4 years since it began working as a convener on this topic, CARRI has amassed an impressive network of knowledge and support for community resilience. It has become a tremendous resource that shows great promise to influence thought and action for community resilience. It is our hope that CARRI will continue to strengthen its knowledge base and network through broad dissemination of the CRS and additional stakeholders convening under the CRSI.

Finally, we wish to thank the Department of Homeland Security (DHS), Office of Science and Technology, for its support of CARRI and the CRSI. DHS is to be commended for its vision and approach to strengthening America's communities.

CRSI Steering Committee

August 2011



## EXECUTIVE SUMMARY

For much of its history, the United States has drawn on the strength of its citizens in times of crisis. However, as the threats have expanded and become more complex (e.g., nuclear weapons, terrorist attacks, pandemics), Americans have been gravitating to the sidelines while government professionals have stepped in to monitor threats, deploy resources, issue warnings, and respond when crisis occurs. This is a trend that must be reversed. With each crisis, we see more clearly that placing too great of a reliance upon professional “protectors” such as the U.S. Department of Homeland Security (DHS), the Federal Emergency Management Agency (FEMA), and the military is unrealistic. The threats – natural disasters, acts of terrorism, oil spills, and economic downturns – are diverse, compounding, and capable of overwhelming the limited number of professional responders and the finite public resources available at all levels of government. The good news is that there is a tremendous role that civil society can play. Indeed, American communities, neighborhoods, and average citizens are the nation’s greatest asset in building resilient communities and a resilient nation. It is time to encourage and support communities in returning to the forefront so that they can do more to ensure their own resilience and regain control over their destiny in the face of disruptive risks. We have a strong history of grassroots resilience; it has been a great American strength, and with a call to action informed by helpful tools and practical knowledge, we can rekindle it.

### Community Resilience System Initiative (CRSI) Process

This report presents the findings of the Community Resilience System Initiative (CRSI) Steering Committee, a diverse group of senior leaders who have served in the public and private sectors with expertise in banking and finance, economic development, emergency management, government (both as elected officials and city/county managers), humanitarian assistance,

#### Why Communities Need a Community Resilience System (CRS)

- **Diffuse lessons** – The lessons from previous disasters and crises are long and varied but not easily accessible to the communities who want to learn from them and take action.
- **Growing complexity within and between communities** – This increased complexity stems from interdependencies, workforce mobility, and demographic shifts such as the retirement of the baby boomers and a more diverse younger generation.
- **New spectrum of threats facing communities** – In addition to natural disasters and pandemics, communities face new threats such as terrorism, economic change, demographic shifts, and climate change impacts.
- **Increasingly constrained resources** – Demand for services and functions provided by local communities has continued to expand while the resource base has remained relatively unchanged or diminished. Communities must make informed choices between supporting current needs and addressing future challenges.
- **Diverse stakeholders** – Given the broad spectrum of individuals and groups who need to be involved in building a community’s resilience, there is a need for a systems approach that can capture the contributions of these diverse groups and help communities collaboratively develop a path forward.

hazard research, marketing, and public policy. The CRSI was a 15-month collaborative process charged with determining what American communities need in order to become more resilient to the variety of threats they face (natural disasters, economic threats and recessions, and human-induced events such as oil spills and acts of terrorism) and recommending a concrete course of action that will support communities in their resilience-building efforts. The CRSI was developed and convened by the Community and Regional Resilience Institute (CARRI), a program managed by Oak Ridge National Laboratory, with support from the U.S. Department of Homeland Security. CARRI partnered with Meridian Institute to facilitate and manage the CRSI.

The CRSI involved more than 150 practitioners and researchers from diverse sectors and disciplines who worked in groups to help inform the development of the Community Resilience System (CRS), a practical, web-enabled process that helps communities to assess, measure, and improve their resilience to threats and disruptions of all kinds, and ultimately be rewarded for their efforts. These individuals came from across the United States and brought deep experience and expertise related to building and sustaining community resilience. Similar to the Steering Committee, CRSI participants were steeped in both the substance and the process of community resilience building. In addition to helping define the problems, challenges, and opportunities communities face in strengthening their own resilience, CRSI participants rolled up their sleeves and helped the Steering Committee and CARRI devise a practical solution – the Community Resilience System. This web-enabled system **has been built** by CARRI and will be used by a number of leading communities on a pilot basis, starting in summer 2011.

### Community Resilience and the CRS

Resilience encompasses the core tenets of emergency management – mitigation, preparedness, response, and recovery – but it also works “upstream” from the crisis to consider and address chronic conditions within a community and anticipate how core community services might be disrupted. This anticipatory focus strengthens the day-to-day life of the community and lessens impacts during a crisis. Resilient communities take a “whole community” approach and ensure that all are taken care of and, just as importantly, that the entire community regains full functionality (e.g., infrastructure, employers, schools, and child care providers) after a crisis or disruption.

Evidence gained from working with communities and community leaders from across the country, reinforced by solid academic research, has demonstrated that communities consistently ask for the following four things in their efforts to take charge of their own destinies and improve their resilience:

1. an understanding of what resilience means for their community;
2. a practical way to measure their resilience and see how far they have to go;
3. simple, usable tools and processes that will help them move forward, and
4. tangible benefits that flow from their efforts.

The CRS is designed to provide the information, tools, and benefits that communities need to become more resilient. It guides communities through a simple, easy to understand, web-enabled process that provides useful steps, detailed instructions, and robust supporting resources that lead to a practical, implementable community resilience action plan. The system makes use of existing resources and concepts from organizations such as FEMA, the American Red Cross, and the International City/County Management Association, the American Planning Association, the U.S. Chamber of Commerce, and the insurance industry and directs participants to the most relevant information and examples. It captures the research and lessons that have been gained from previous crises and community disturbances into a coherent, easy-to-navigate, resilience portal. CRSI participants predict that communities will accrue a number of benefits from working through the CRS. These benefits range from strengthening social capital and mitigating risk by addressing chronic conditions within the community to improving a community's fire protection ratings and perhaps in the future securing insurance premium discounts due to participation in the CRS.

### **Observations and Next Steps for Increasing Community Resilience**

The CRSI Steering Committee's charge was to oversee the efforts of the CRSI Work Groups and CARRI staff in conceptualizing and building the Community Resilience System. With the system built and pilot communities poised to launch their resilience-building efforts, the Steering Committee's work is done. Building on this vast body of work, the members of the committee would like to share their observations and thoughts about additional activities beyond the CRS where targeted involvement of national organizations, state, and local government, and/or the federal government could foster leadership and collaboration, provide incentives, and support outreach efforts that bolster community resilience building. These actions are intended to encourage a strong supportive environment for the CRS and community resilience building in general and to elicit the active engagement of actors who share a common commitment to strengthen the resilience of American communities. For additional information, see Section IV of the report.

There are a number of ways that collaborative approaches could bolster greater understanding, problem solving, and leadership for community resilience, including the following.

1. **Establishment of a nation-wide community resilience leadership development program for local cross-sector leaders.** Community resilience requires local leaders who understand the importance of resilience and have the ability to work collaboratively across their community. There are a number of existing leadership programs into which resilience-building concepts could be integrated. Key national partners that could coordinate this effort include the Association of Leadership Professionals, International City/County Management Association, League of Cities, National Association of Counties, United Way, and the U.S. Chamber of Commerce, Business Civic Leadership Center.

2. **Convening, at the national level, a standing committee of practitioners and thought-leaders external to the federal government that can identify innovative ideas and practices that should inform national policy on resilience issues.** A nonprofit organization with deep expertise on resilience issues should be tapped as the convener.

Acknowledging the very useful platforms and programs already in place, the Steering Committee has observed a number of actions and activities that could significantly enhance the federal government, state and local government, and national and regional association and organization support of community resilience capacity building.

3. **Presidential Policy Directive / PPD-8: National Preparedness is an important step towards increasing community and national resilience. To support PPD-8, the White House National Security staff should direct the relevant federal agencies<sup>1</sup> to improve efficiencies around existing community resilience programs and redirect existing resources toward community resilience-building efforts. These agencies should review the guidelines of current federal grant and technical assistance programs and refocus the award criteria to more explicitly recognize programs that support and build community resilience.** In addition to internal reviews by the individual agencies, departments should sponsor collaborative, interagency reviews and invite external advisory input in order to strengthen and coordinate across all federal mechanisms.
4. **The White House National Security staff should convene and encourage the relevant federal agencies to create new federal grant and technical assistance programs specifically focused on developing and supporting community resilience.** Federal agencies, like those noted above, should develop programs specifically targeted at aspects of resilience consistent with their own mission and authorities.
5. **State and local governments should begin to embed community resilience support and requirements into state and local programs.** Integrating community resilience as an element that should be addressed in comprehensive planning for localities is a key step toward institutionalizing and regularizing attention to resilience requirements and will result in greater local and state awareness as well as tangible actions and progress. Other state, regional, and local programs where resilience could be introduced include plans related to state and local land use, economic development, hazard mitigation and disaster preparedness, sustainability, and coastal zone management.

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<sup>1</sup> Some of the federal agencies and offices involved include the U.S. Department of Homeland Security, Office of Grants and Technical Assistance and FEMA; U.S. Department of Housing and Urban Development, Office of Community Planning and Development; U.S. Department of Commerce, Economic Development Administration; U.S. Department of Agriculture, Rural Development; U.S. Environmental Protection Agency, Office of Sustainable Communities; U.S. Department of Transportation, Office of Intelligence, Security and Emergency Response; and U.S. Department of Energy, Office of Electricity Delivery and Energy Reliability.

6. **National and regional associations and organizations should integrate resilience into their research, training, and education/awareness activities.** The International City/County Management Association, the League of Cities, Conference of Mayors, National Governors Association, the U.S. Chamber of Commerce, United Way, American Red Cross, the Aidmatrix Foundation, and The Infrastructure Security Partnership each have activities under way that support resilience awareness and education. Similar programs and participation by the National Emergency Management Association, the State Managers Conference, National Association of Counties, the Council of State Governments, National Association of Insurance Commissioners, Transition U.S., Zero to Three, and the Council of Chief State School Officers, among others, could expedite resilience awareness and capacity throughout the country.

In addition to the externally focused observations outlined above which involve federal, state, and local governments and national nonprofit organizations and associations, there are additional activities that the Steering Committee would like to see the CRSI and its partners accomplish. These actions will help ensure that the full potential of the CRS is realized.

7. **Continue the CRSI Resilience Benefits Work Group involving government agencies, the private sector, and nongovernmental leaders to devise programs of tangible benefits that can be linked to the CRS so that communities that undertake resilience-building initiatives may receive benefits for successful efforts.** The most promising benefits include fire protection ratings, risk-based pricing of insurance premiums, linking insurance premium discounts to CRS ratings, and stronger building codes which can mitigate or prevent damage.
8. **The Steering Committee suggests the following.**
- A. **CARRI, working with appropriate partners, should facilitate the convening of national and local banks, federal agencies such as the U.S. Department of the Treasury, the Small Business Administration, and the Federal Deposit Insurance Corporation in dialogue about reforming the process and priorities for loan portfolios so that they better accommodate communities' capital needs for disaster preparedness and recovery.**
- B. **CARRI, working with appropriate partners, should also facilitate the convening of a public-private discussion among governments at all levels, the banking industry, and institutional and private investors to identify new ways to introduce pre-disaster capital for small businesses.** Such an effort could be structured like a federal coordinating body (modeled after the White House Long-Term Disaster Recovery Working Group, an interagency team assembled in 2010 to work across government on long-term recovery issues) and should include the Economic Development Administration, the Small Business Administration, FEMA,

- the U.S. Department of Housing and Urban Development (HUD), and private-sector partners.
9. **The Steering Committee encourages members of the CRSI Subject Matter Work Group to come together to continue research on community resilience, disseminate research results in scientific fora, and address specific research needs coming from the initial efforts of CRS application.**
  10. **The Steering Committee suggests that CARRI work with the Center for National Policy in partnership with the national organizations referenced in this report, as well as other for-profit and nonprofit entities that undertake social media campaigns, to develop and conduct a resilience campaign with the goal of creating greater resilience awareness in order to foster and grow a strengthened national culture of resilience.** Such a national communication and awareness campaign should be launched at the 9/11 Tenth Anniversary Summit in Washington, D.C. Its objective should be to educate the American public about its inherent resilience and promote personal and institutional responsibility for community and regional resilience. Examples include national public service announcements, social media campaigns, efforts to reach youth, and social marketing approaches, among others.

## Conclusion

As this report describes, resilience building is an imperative for American communities and requires across-the-board participation from virtually all quarters of society. The CRSI has been an important player in initiating dialogue about the practicalities of community resilience and championing what is truly needed to improve communities' resilience to all manner of threats. There is much more work to be done at the national, regional, and state levels to promote the CRS as a resource, to improve it, and to continue the dialogue with diverse stakeholders that will help to facilitate both. These important conversations and educational opportunities should continue, even after the CRS has been launched and is in use by a number of American communities. While this report represents the end of an intense period of dialogue and collaboration, in many respects, it also represents a beginning – a renewed and ongoing opportunity to collaboratively and systematically work to improve the foundation of America's communities.

## I. INTRODUCTION

This report presents the findings of the Community Resilience System Initiative (CRSI) Steering Committee, a diverse group of senior leaders who have served in the public and private sectors with expertise in banking and finance, economic development, emergency management, government (both as elected officials and city/county managers), humanitarian assistance, hazard research, marketing, and public policy (for the full list of Steering Committee members, see Section 2 of Annex 1). The CRSI was a 15-month collaborative process charged with determining what American communities need in order to become more resilient to the variety of threats they face – natural disasters, economic threats and recessions, and human-induced events such as oil spills and acts of terrorism – and recommending a concrete course of action that will support communities in their resilience-building efforts. The CRSI was developed and convened by the Community and Regional Resilience Institute (CARRI), a program managed by Oak Ridge National Laboratory, with support from the U.S. Department of Homeland Security. CARRI partnered with Meridian Institute to facilitate and manage the CRSI.

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Finally, the Steering Committee, with support from the CRSI work groups, developed recommendations for policy makers and national and regional associations and organizations about how they can support American communities' efforts to strengthen their own resilience. They also provide advice on additional activities that should be carried out by the CRSI and its partners to ensure that the full potential of the CRS is realized.

Given the complexity of the topic and the depth of understanding amassed by the Steering Committee, CRSI participants, and CARRI, this document is broad in scope and is divided into the following sections.

- I. **Introduction** – This section covers the CRSI process, including details on the Steering Committee, the three work groups, and the process through which more than 150 participants conceived of the Community Resilience System and advised CARRI and the Steering Committee about how the system should be developed. Annex 1 provides additional details on the CRSI process, and Annexes 2.1, 2.2, and 2.3 include the final reports from each work group, including the recommendations that each provided to the Steering Committee. The introduction also includes examples of community resilience in action, a message from the CRSI Steering Committee Chair, and discussion of why a CRS is needed.
- II. **Community Resilience Overview** – This section includes definitions and outlines the analytical framework that CRSI participants and CARRI co-developed to help communities assess their resilience. It also describes the benefits communities receive from improving their resilience.
- III. **Description of the CRS** – This section explains how the web-enabled Community Resilience System works and provides details (supporting resources, benefits, outcomes, etc.) for each of the six stages in the resilience-building process.
- IV. **Observations and Next Steps for Increasing Community Resilience** – This section includes observations from the CRSI Steering Committee on what national and regional associations and organizations, state and local governments, and the federal government should do to support community resilience-building efforts in general and dissemination and use of the CRS in particular. It also describes activities that the Steering Committee would like to see CARRI, the CRSI, and its partners accomplish including additional convening around the issue of securing resilience benefits for communities and efforts to foster and grow a strengthened national culture of resilience.

## Community Resilience in Action

Resilience is a fundamental American attribute. Looking back over our history – from the peoples who first settled the continent to the colonists, pioneers, and the generations of immigrants who have followed – there is a tradition of resilience. Americans have overcome great obstacles and challenges to succeed in the environment of their day. These resilient individuals have established the communities and institutions that are the backbone of American prosperity.

Technological advancements have made American life much more comfortable and secure, but history shows that no community or institution is immune to adversity. Recent events – from terrorist attacks to hurricanes, wildfires to oil spills, and blizzards to economic downturns – have tested the mettle of American communities, institutions, neighborhoods, and families and shown that we need to reexamine how we ensure our ability to survive and recover from crises. We must rely more on our own communities – our neighbors, churches, small and large

businesses, local leaders, and schools – and look to the federal government for succor only when individual and community resources are exceeded. Together we have built strong and vibrant communities, and together we must respond to crises, reenvision our future, rebuild, and recover. This is the essence of community resilience – the whole community working together to ensure that all are taken care of and, just as importantly, ensure that the entire community regains full functionality (e.g., infrastructure, employers, schools, and child care providers) after a crisis.

Below are a few examples from communities that have anticipated diverse threats and worked to reduce their impact.



**Epic Flooding Destroys Grand Forks, North Dakota, and East Grand Forks, Minnesota, but the Community Rebuilds<sup>2</sup>**

In April of 1997, the “Flood of the Century” hit Grand Forks, North Dakota, and East Grand Forks, Minnesota. Floodwaters invaded nearly the entire land mass of both cities, forcing 60,000 people to evacuate. All 385 businesses in downtown Grand Forks were damaged. Eleven historic buildings and 60 apartments burned during the flood. Local schools and the University of North Dakota cancelled classes for the remainder of the academic year.

With a commitment to build back the community for the better, including anticipating future floods, Grand Forks embarked upon a 10 year recovery process that included voluntary buy-back programs, economic redevelopment, the creation of a 2,200 acre greenway, as well as a \$408 million flood protection project. In April of 2006, Grand Forks saw its fifth highest flood on record and the first test of its nearly completed flood protection project. For the first time, with the river level that high, no sandbagging was needed and the city sustained no damage.

<sup>2</sup> City of Grand Forks, North Dakota. “Flood Timeline.”

<http://www.grandforksgov.com/Flood/Timeline.pdf>. “Flood Level Facts and Impact.”

[http://www.grandforksgov.com/Flood/Flood\\_Level.pdf](http://www.grandforksgov.com/Flood/Flood_Level.pdf). “Milestones 1997–2007.”

<http://www.grandforksgov.com/Flood/Milestones.pdf>. All accessed May 1, 2011.



### Capital Flows a Critical Lifeline on the Mississippi Gulf Coast

Gulf Coast-based Hancock Bank has a long history of storm preparedness and contingency planning. Despite the unprecedented devastation, within days of Hurricane Katrina's landfall, Hancock Bank reopens 40 bank branches even though electricity is not restored to the region. These branches allow anyone, whether they are existing Hancock customers or not, to withdraw up to \$200 in cash in exchange for simple contact information. This act of faith puts more than \$42 million in cash into Gulf Coast communities in the week following the storm. Within 5 months of the storm, the bank opens 13,000 new accounts and overall deposits grow by \$1.5 billion. Within 3 years, all but \$200,000 of the monies lent in the days following the storm are returned to the bank.<sup>3</sup>

Hancock Bank's gamble pays off and puts critical cash into the hands of Gulf Coast residents. This has a number of benefits – both financial and psychological. According to the Honorable Brent Warr, former Mayor of Gulfport, "Roughly 39 percent of Gulfport's city budget is based on sales tax. It was vital that banks, Home Depot, Wal-Mart, grocery stores, shopping centers, car dealerships, and restaurants were up and running quickly, for the citizens' sense of normalcy and for the sake of funding city services. We spent a lot of energy in those early months encouraging the return of retail." Gulfport is fortunate that its retail corridor is several miles inland and weathered the storm with minimal damage. Box stores in other communities were completely destroyed. Gulfport sees a strong uptick in sales tax revenue following Katrina as much of Gulf Coast Mississippi relies on Gulfport retail for their rebuilding needs.<sup>4</sup>



### Early Winter Storms Immobilize Colorado, but the Region Bounces Back

In late December 2006, back to back blizzards hit the Colorado front range and portions of surrounding states, dropping several feet of snow. Because the first storm hits just days before Christmas, it is especially disruptive to retailers and holiday travelers. The Denver airport closes for nearly 2 days, stranding tens of thousands of travelers. National guard troops come to the aid of stranded travelers and airlift hay to feed stranded, starving cattle. Units across the region drop feed to an estimated 345,000 cattle stranded by the storm.<sup>5</sup> Emergency shelters open around the state to feed and house stranded motorists and those who cannot stay in their homes. Although federal resources are deployed, it is largely the people of the region who have anticipated and prepared for such storms who come to the aid of their neighbors and stranded travelers. Loss of life is minimal, despite the severity and reach of the storm.

<sup>3</sup>Smith, James Pat (2009). Leadership and Mission in Resilient Organizations: Hancock Bank as a Case Study [White Paper]. Community and Regional Resilience Institute. Retrieved from [http://resilientus.org/library/GP\\_Resilience\\_Essay\\_Hancock\\_Bank\\_Final\\_8409\\_1249429792.pdf](http://resilientus.org/library/GP_Resilience_Essay_Hancock_Bank_Final_8409_1249429792.pdf).

<sup>4</sup>CARRI (2009). Viewpoints of Four Mayors Who Led Their Communities Through Disasters [White Paper]. Retrieved from [http://resilientus.org/library/Mayors\\_Panel\\_1258138040.pdf](http://resilientus.org/library/Mayors_Panel_1258138040.pdf).

<sup>5</sup>Greenhill, Jim (2007). "National Guard Rescues People, Cattle After Severe Storms." American Forces Press Service, January 5.



### Economic Disaster Averted in Charleston, South Carolina

Charleston, South Carolina, has experienced its share of disasters – the usual coastal threats of destructive winds and invading water as well as lesser known but equally deadly seismic disturbances. In September 1989, Hurricane Hugo, a Category 4 storm, came ashore in Charleston with a 5 foot storm surge, causing extensive wind damage. At the time, Hugo was the costliest hurricane in U.S. history.

Five years later, just as the region is overcoming the impact of Hugo, the Charleston area was subjected to another, albeit markedly different, disaster with the 1993 announcement that the naval base in North Charleston would close. As the region's major employer, the closure had serious economic implications. An economic disaster was expected when the federal government announced its plan to close the Charleston Naval Shipyard, Naval Station, Naval Supply Center, and Naval Hospital.

In response, local leaders from Charleston and the three surrounding counties with their Chambers of Commerce banded together and formed a Tri-County regional development organization. They re-energize their Tri-County Council of Governments as a regional mechanism for cooperation and developed a plan to deal with the impending economic disaster – the loss of 45,000 jobs to the area. Together, they implement a strategy to attract jobs and businesses and redevelop the valuable water front property historically occupied by the Navy Yard.

In the decade following the closure, Charleston's job growth is double the rate for South Carolina. Today, the Navy Yard is a redevelopment that comprises 80 different public and private entities and provides a home to diverse businesses that include government services firms, ship-focused manufacturing, and high-tech companies. The Honorable Keith Summey, Mayor of North Charleston, recalls, "We were looking at potential economic devastation. Instead of letting that happen, we came together as a Tri-County community and made a plan."<sup>6</sup>

As demonstrated through these examples, American communities face diverse threats but are able to recover and reinvent themselves, even after experiencing catastrophic losses. There is a surprising ability to withstand and rebound from crises that could be expanded if emphasis were placed on the right set of traits and activities and communities were given the right resources and incentives to undertake a resilience-building effort. Communities need a framework that helps them to envision a resilient future; anticipate threats; take stock of their assets and weaknesses; and create and implement an action plan that will bolster their resilience.

<sup>6</sup> CARRI (2009).

## Message from the Community Resilience System Initiative Steering Committee Chair

For much of its history, the United States has drawn on the strength of its citizens in times of crisis – with volunteers joining fire brigades and civilians enlisting or being drafted to fight the nation’s wars. However, as the threats have expanded and become more complex (e.g., nuclear weapons, terrorist attacks, pandemics), Americans have been gravitating to the sidelines while government professionals have stepped in to monitor threats, deploy resources, issue warnings, and respond when a crisis occurs. This is a trend that must be reversed. With each crisis, we see more clearly that placing too great of a reliance upon professional “protectors” such as the U.S. Department of Homeland Security (DHS), the Federal Emergency Management Agency (FEMA), and the military comes is unrealistic. The threats – natural disasters, acts of terrorism, oil spills, and economic downturns – are diverse and compounding and capable of overwhelming the limited number of professional responders and the finite public resources available at all levels of government. The good news is that there is a tremendous role that civil society can play. Indeed, American communities, neighborhoods, and average citizens are the nation’s greatest asset in building resilient communities and a resilient nation. It is time to encourage and support communities in returning to the forefront so that they can do more to ensure their own resilience and regain control over their destiny in the face of disruptive risks. We have a strong history of grassroots resilience; it has been a great American strength, and with a call to action informed by helpful tools and practical knowledge, we can rekindle it.

Building codes are a good example of a societal problem that was not solved by pursuing a top-down approach. In response to the great urban fires of the nineteenth century, John Damrell, a former Boston fire chief turned building inspector, mobilized and led an alliance of architects, builders, insurance underwriters, and fire chiefs to develop a model building code to make cities more fire resistant. By the early twentieth century, the code was widely adopted throughout the United States. Today, it is in use around the globe and routinely updated based on lessons learned from new fires. The code has not eliminated the risk of fires, but it has made them far less deadly and disruptive to communities when they happen. This same approach needs to be applied to helping our communities to become better prepared to mitigate and bounce back quickly from the disruptive forces of disasters of all kinds.

Strengthening resilience requires drawing on our historic roots and making use of collaborative, community-level approaches. The expertise from frontline public- and private-sector actors and grassroots-level implementers needs to inform the “how to” of improving resilience. The best practices and lessons learned need to be widely shared, and incentives for early and wide adoption must be developed. This is precisely the approach that has been taken by the Community and Regional Resilience Institute (CARRI) in advancing community resilience.

Similar to the development of building codes, CARRI’s work with a broad group of stakeholders has facilitated the creation of the Community Resilience System (CRS or the system) by drawing on the grassroots input and expertise of a diverse group of community

leaders and practitioners, private-sector leaders, and researchers. Over 150 individuals from around the United States participated in work groups that helped to design the system. The CRS has been developed from the ground up with the goal of providing practical and immediately usable resources and processes to assess, measure, improve, and reward community resilience.

A web-enabled system is complete and is ready for initial testing and refinement. Community-based, developmental pilots will begin in earnest in fall 2011. This document describes the need for a Community Resilience System, what the system contains, and more importantly, how it will help communities improve their resilience. It also describes the broader policy and cultural changes needed to promote and strengthen community resilience across the country. The annexes present background information about the process used to develop the CRS, including reports from members of each of the work groups who participated in the development process. Visit [www.resilientus.org](http://www.resilientus.org) to learn more about this powerful tool that will help America's communities become more resilient.

The CRS is an extraordinarily important initiative that is likely to have international reach. It turns out that there are no global "risk-free" zones when it comes to natural and man-made disasters. Resilience is an attribute we must all embrace and strive to make real if we are to ensure a safe and prosperous future for coming generations.

Dr. Stephen Flynn  
Steering Committee Chair & President, Center for National Policy

August 2011

## Background on the CRS and the Community Resilience System Initiative (CRSI)

### Need for a CRS

Evidence gained from working with communities and leaders from across the country, reinforced by solid academic research, has demonstrated that communities consistently ask for the following four things in their efforts to improve their resilience and take charge of their own destinies:

1. an understanding of what resilience means for their community;
2. a practical way to measure their resilience and see how far they have to go;
3. simple, usable tools and processes that will help them move forward, and
4. tangible benefits that flow from their efforts.

There is currently no comprehensive guidance that leads communities through the process of critically examining themselves, identifying gaps in their resilience, and making wise investment decisions that balance present needs against contingencies for future crises. While there have been some successes in achieving more resilient communities, there is no easily accessed source of information about how to replicate these successes. Communities need a playbook that helps them position themselves to become more resilient. CARRI's experience working with communities, national stakeholders, and those involved in resilience research clearly indicates that the time has come to develop a useful, easy-to-use, and effective Community Resilience System for communities.

### Why Communities Need a Community Resilience System (CRS)

- **Diffuse lessons** – The lessons from previous disasters and crises are long and varied but not easily accessible to the communities who want to learn from them and take action.
- **Growing complexity within and between communities** – This increased complexity stems from interdependencies, workforce mobility, and demographic shifts such as the retirement of the baby boomers and a more diverse younger generation.
- **New spectrum of threats facing communities** – In addition to natural disasters and pandemics, communities face new threats such as terrorism, economic change, demographic shifts, and climate change impacts.
- **Increasingly constrained resources** – Demand for services and functions provided by local communities has continued to expand while the resource base has remained relatively unchanged or diminished. Communities must make informed choices between supporting current needs and addressing future challenges.
- **Diverse stakeholders** – Given the spectrum of who needs to be involved in building a community's resilience – from individuals and families to local government to businesses to nonprofits and faith-based organizations to state and federal government agencies – there is a need for a systems approach that can capture the contributions of these diverse groups and help communities collaboratively develop a path forward.

## **CARRI and the CRSI – Incubators of the CRS**

In 2007, the Community and Regional Resilience Institute (CARRI) began working on community resilience issues. CARRI is a major effort of the Southeast Region Research Initiative supported by the U.S. Department of Homeland Security and managed by Oak Ridge National Laboratory, in conjunction with a variety of other federal, regional, state, and local partners. It is dedicated to research and practical application across the full continuum of prevention, protection, response, and recovery to enhance the resilience of communities and regions. CARRI seeks to assist the nation in developing an accepted, common framework for community and regional resilience that integrates the full suite of community resources into a coherent resilience pathway so that the community can get back on its feet following a natural or human-induced disaster as quickly as possible.

As part of its work, CARRI began having wide-ranging, exploratory dialogue with representatives from a variety of organizations across the nation who were involved with and supportive of our nation's communities – federal agencies such as the DHS, FEMA, and the U.S. Department of Transportation; private sector companies and organizations such as the U.S. Chamber of Commerce, National Retail Federation, Wal-Mart, Coca-Cola, Office Depot; state and local community organizations such as the National Governors Association, the Council of Mayors, the National Emergency Managers Association, National Association of Counties; and representatives from nonprofits such as the American Red Cross, United Way, etc. These conversations explored the idea of community resilience and sought to discover what communities could really use, what communities felt their needs were, and whether there was an “appetite” for a national effort to develop tools and resources which might help communities become more resilient. Those conversations identified a need that was recognized at all levels (national, state, and local), and CARRI began clarifying the kind of national effort that would be most helpful – one that was focused on resilience building at the community level.

In parallel to those conversations, CARRI led an effort to synthesize what was known by various research communities about resistance to hazards. CARRI coordinated with prominent hazards researchers to survey the literature and identify areas of promising research.

Later in 2007, CARRI began a partnership with three communities in the southeastern United States – the Charleston Tri-County area of South Carolina, the Memphis/Shelby County region of Tennessee, and the Gulf Coast of Mississippi – to explore what it means to be a resilient community and to collaboratively devise a means of strengthening community resilience. These communities were chosen because of their locations within the southeast region, their exposure to and experience with natural disasters, and the willingness of their leaders (in all sectors) to take part. CARRI worked with each community to organize a cross functional team to assist in fostering resilience efforts and provided staff and technical support as the communities worked through issues of concern and each developed a prioritized resilience action plan. In order to ensure that the work was grounded in sound research practices and locally relevant, CARRI provided funding to a local academic institution in each community. The researchers and their

students helped define the research questions, collect data, and conduct interviews with stakeholders.

In partnership with community leadership, CARRI staff and the local research team conducted meetings with stakeholders from diverse sectors of the community (local government, small and large businesses, educational institutions, healthcare, nonprofit organizations, faith-based organizations, etc.) and worked collaboratively to define the key community functions and services that underpin community resilience. The three communities worked at different paces and scales, but each was instructive to CARRI as it worked to understand community resilience and determine what communities need to systematically and measurably improve.

Building upon the important groundwork in the three southeastern U.S. communities, CARRI embarked on a national collaborative effort to develop a system through which communities could improve their resilience and be rewarded for their efforts. This collaborative development process was named the Community Resilience System Initiative (CRSI), and it included four groups of stakeholders steeped in both the substance (e.g., community and economic development, emergency management, finance, government, hazards research, nonprofit management, risk management,) and the process of community resilience building. The four groups were as follows.

1. **CRSI Steering Committee** – The Steering Committee guided the overall process and developed this report. See Section 2 of Annex 1 for the full membership.
2. **Community Leaders Work Group** – The Community Leaders tested and refined assumptions regarding community resilience and provided detailed advice to ensure that the CRS is relevant to and usable by diverse communities and helps improve their resilience. See Attachment A of Annex 2.1 for the full membership.
3. **Resilience Benefits Work Group** – Resilience Benefits members identified tangible benefits that communities may be able to receive for increasing their resilience and advised how to integrate these benefits into the system. For members, see Attachment A of Annex 2.2.
4. **Subject Matter Working Group** – The Subject Matter group advised CARRI and the other work groups on the best evidence available from resilience research. See Attachment A of Annex 2.3 for the full membership.

The CRS was developed under the careful guidance of the Steering Committee with detailed input from the three work groups on the core principles for the CRS, functions, stages and steps, potential benefits, etc. The more than 150 practitioners and academics who participated worked tirelessly over 15 months to provide their best counsel on how to establish a user-friendly system that will help communities measurably improve their resilience. The groups' engagement included in-person workshops, interviews, and surveys. For example, the Community Leaders Work Group met in person on three occasions in 2010. Each meeting lasted 2 days and included plenary discussions and in-depth breakout sessions. The group conducted

four virtual meetings, and members were interviewed four times to elicit their input on specific design elements of the CRS. Members also participated in seven electronic surveys about CRS design and implementation.

The groups' discussions confirmed the need for a systematic approach to improving community resilience and suggested an on-line system that communities could collaboratively work through to increase their resilience. Together, the participants outlined the components necessary to develop a practical system that will help communities measurably improve their resilience. The extensive outreach, engagement, and collaboration were carefully documented and electronically catalogued; the system development team made use of the detailed advice and input when drafting guidance and structuring the web-enabled portal. For additional details on the process, people, and groups who helped design the CRS, please see the annexes.

The CRS that emerged from the CRSI and CARRI's foundational work is designed to provide the information, tools, and benefits that communities need to become more resilient. It guides communities through a simple, easy-to-understand, web-enabled process that provides useful steps, detailed instructions, and robust supporting resources that lead to a practical, implementable community resilience action plan. The system makes use of existing resources and concepts from organizations such as FEMA, the American Red Cross, and the International City/County Management Association, the American Planning Association, the U.S. Chamber of Commerce, and the insurance industry and directs participants to the most relevant information and examples. It captures the research and lessons that have been gained from previous crises and community disturbances into a coherent, easy-to-navigate, resilience portal. It also connects community leaders through an on-line users group so that local practitioners can help one another grapple with the challenges inherent in becoming a resilient community.

## II. COMMUNITY RESILIENCE OVERVIEW

CARRI's and the CRSI's journey toward the construction of a community resilience system began with an understanding of what constitutes a community and what it means for a community to be resilient. The definitions below are a distillation from existing definitions, informed by CARRI's discussions with hundreds of stakeholders around the country about community resilience.

### Definitions

It is helpful to start with a few definitions. Common definitions of resilience pertain to the resilience of materials (metallurgy), ecosystems (ecology), and individuals (psychology). Community resilience is an emerging concept – one that is gaining attention in many quarters.

The CRSI defines community as

***a group of individuals and organizations bound together by geography and perceived self-interest to efficiently carry out common functions.***

Communities are self-defined and are not constrained by political boundaries. The common interest that holds them together is frequently economic, though it also involves sense of place and the social relations associated with that place. Examples of common functions (or services) include things such as providing adequate health care and housing, maintenance of a vibrant economy and an effective transportation system, and fostering the well-being of individuals and families.

The CRSI defines community resilience as

***the capability of a community to anticipate risk, limit impact, and recover rapidly through survival, adaptation, evolution, and growth in the face of turbulent change.***

Most definitions of resilience incorporate the idea of recovering or bouncing back and returning to “normal.” Resilient communities understand that turbulent change is a condition of modern society and that “returning to normal” following an acute disturbance will probably involve returning to a different normal. A community that incorporates resilience as an ethic into all of its core services (e.g., public safety and security, energy, economy, education, environment) is better able to adapt to change and harness it as a positive force within the community. It is aware of where its physical, social, and/or economic capacity needs to be strengthened and is working to address those gaps. Resilient communities come together as a team and develop an ability to defend against a variety of threats. They are skilled at preventing impacts and the disruption of core community services, but they are also good at “offense” – seizing opportunities that arise from turbulent change to transform their community in positive ways.

The CRSI defines a crisis as

***an acute disturbance that significantly impedes community function(s). This could include (but is not limited to) natural disasters (hurricanes, tornados, floods, earthquakes, tsunamis), human-induced events (acts of terrorism, chemical spills), and other events such as economic downturns and pandemic outbreaks.***

#### **How Does Resilience Differ from Sustainability?**

Although there are differences, resilience and sustainability are complementary concepts. Both require communities to develop a long-term vision for the future and to integrate economic, social, and environmental elements into their community improvement efforts. Both constitute more of a “journey” than an end state and involve whole community approaches.

#### **How Does Resilience Differ from Preparedness and Mitigation?**

Resilience includes both activities but also works far “upstream” from a crisis to address chronic conditions within a community that may make certain populations more vulnerable to a disaster. Resilience integrates disciplines such as economic development to help communities benefit from changing conditions and ensure enduring community vitality.

## **Community Services**

When CARRI began working in the three partner communities in the southeastern United States – the Charleston Tri-County area of South Carolina, the Memphis/Shelby County region of Tennessee, and the Gulf Coast of Mississippi – it worked with each community to map important stakeholders and “functions” (services and qualities that collectively define a community). These communities and CRSI participants helped CARRI catalogue the different functions that healthy and vibrant communities provide to their residents. More than 30 different functions were identified ranging from economic (e.g., employment opportunities, adequate wages, and adequate and affordable housing) to infrastructure based (e.g., public safety, adequate energy supplies and water services, and a healthy natural environment). Also catalogued were social functions such as community participation by citizens and groups, fostering a sense of community and place, maintaining a willing workforce, and fostering robust social networks. And finally, the communities and CRSI participants identified a number of cross-cutting functions such as strong leadership, governance, and risk mitigation capacity.

The CRS takes these diverse community functions and groups them into 19 “Community Services.” The community services included in the CRS are listed in Figure 1.

**Figure 1: CRS Community Services**

1. Local Government	7. Solid Waste Management	13. Economy
2. Public Safety and Security	8. Natural Environment	14. Financial Resources
3. Public Health	9. Food Supply and Distribution	15. Workforce
4. Energy	10. Community Records	16. Housing
5. Transportation	11. Communications	17. Arts, Entertainment, and Recreation
6. Water Services	12. Education	18. Individuals and Families

Collectively, these services help define a community’s capacity to function and meet the needs and expectations of its residents; assessing the community’s capacity across the full spectrum of community services is a key part of the CRS resilience assessment. The CRS helps communities evaluate how well their services function and interact and points to specific actions the community can take to increase resilience. In addition to looking at easily recognized community services such as public safety and security (e.g., police and fire), the CRS also includes a service called “Individuals and Families.” The social capital embodied within this service is less tangible than the response time of the fire department, but it has a major impact on how well the community responds to crises.

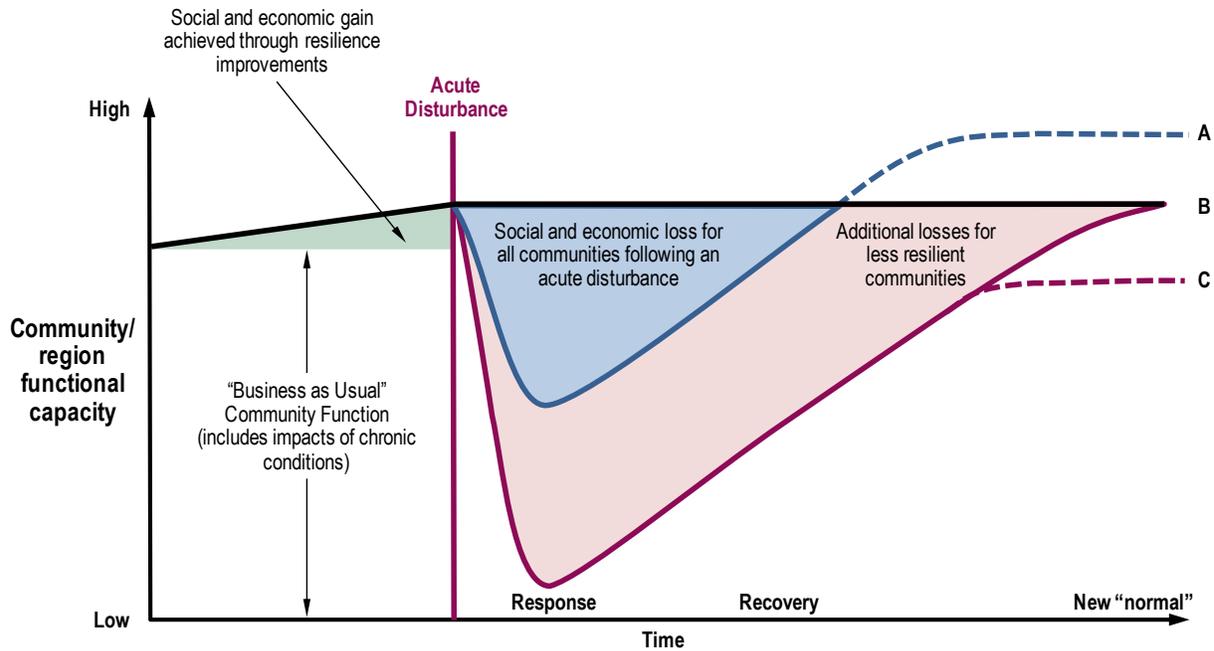
### Visualizing Community Resilience

For those who are more visually inclined, a conceptual model that depicts a community’s response to an acute disturbance may be helpful in understanding the rationale for community resilience. Figure 2, the Resilience Loss Recovery Curve, depicts how community function or capacity is affected by an “acute disturbance” – an earthquake, large employer relocating to another area, economic recession, chemical spill, terrorist attack, hurricane, etc. Community function (an aggregate of the community services described above) declines precipitously (blue and purple areas) as the community responds to the event and begins to recover.

The graph shows how a more resilient community – perhaps because it has anticipated threats (and mitigated some of them), developed a vision for where it is headed, organized the full fabric of the community to begin working on key resilience enhancing priorities, and planned for recovery – can more quickly restart key community services (e.g., energy, economy, education) and chart a path to a new “normal.” The more resilient community incurs some losses (blue area) but avoids additional losses (pink area) because it has taken measures to

become more resilient by speeding up the pace of recovery and by decreasing the impact of the disturbance (the bottom of the curve is higher) through many types of mitigation – improved land-use decisions and building code implementation, better constructed infrastructure, improved business and household planning to minimize loss, better planned and coordinated response, etc.

**Figure 2: The Resilience Loss Recovery Curve**



Model: Dr. Mary Ellen Hynes, DHS (2001); Blair Ross, ORNL; CARRI 2008 ©  
 ORNL 2011-G00804j/cn

In some cases, communities will seize new opportunities that present themselves because of the crisis and transform themselves and grow. Thus, a resilient community’s “new normal” may be a higher level of function (Line A) or it may be able to return to a similar level of function (Line B) as before the disturbance.

Communities that are not able to respond and recover effectively and efficiently may experience a series of cascading failures where one service causes another to fail until the functional capacity of the community is severely diminished. When schools could not reopen after Hurricane Katrina, families left the area, which affected employers and reduced the tax base, making it difficult for communities to have the resources necessary to operate and rebuild. Such a community may find that its new normal is at a level of function (Line C) well below its pre-disturbance level.

It is important to note that communities and regions have a routine level of function that ebbs and flows over time (see “Business as Usual” Community Function to the left of the Acute Disturbance vertical line). This function is an aggregate of all the community services –

economy, energy, education, the social networks built by individuals and families within a community, etc. Some communities have a low level of function under normal conditions, and other communities have much higher levels. All communities have certain services that operate under less-than-optimal conditions. These chronic conditions include things such as unemployment, inadequate housing, traffic congestion due to poor transportation systems, degradation of the natural environment, and social inequities within the community. The green triangle represents the social and economic gain that communities can receive for improving their resilience in some or all of their areas of weakness, regardless of whether they experience an acute disturbance.

A community's trajectory – where it is heading – can be as important as where it is at a given point in time. To paraphrase the Honorable Joseph Riley, Mayor of Charleston, South Carolina, "Disasters accelerate trends that are already in place." Mayor Riley underscores the importance of addressing routine community function as a path to greater community resilience. If there is a housing shortage pre-event, it will probably be exacerbated by the crisis, further impeding recovery. If local schools are in decline, the crisis will likely weaken them further. And if the economy is stagnant, a crisis may spawn a building boom, but the underlying conditions (e.g., overreliance on a single employer, a poorly trained workforce, aging and unreliable infrastructure, transportation constraints, etc.) will remain. Conversely, if positive things are happening within a community, such as growth and building trends, they are also likely to accelerate during the recovery.

## The Benefits of Community Resilience

While the challenges facing communities who wish to improve their resilience is significant, there is a silver lining. If a community addresses chronic conditions that are impeding optimal

**The returns from resilience building are not solely crisis dependent.** They accrue to a community on a daily basis, and should a disturbance occur, the impact will be lessened because of the work that has been done to anticipate, prepare, and address chronic community conditions.

community function, significant evidence indicates that it will be more resilient in the event of a crisis or acute disturbance and will certainly see day-to-day benefits (green shaded area in the loss recovery curve graph), regardless of whether the community ever experiences a crisis. The non-crisis benefits are diverse and in some cases intangible but include things like

improved citizen involvement, ability to attract new business, competitiveness for government grants and other financial support, and quality of life enhancements. **Thus, the returns from resilience building are not solely crisis dependent.** They accrue to a community on a daily basis, and should a disturbance occur, the impact will be lessened because of the work that has been done to anticipate, prepare, and address chronic conditions.

Resilience encompasses the core tenets of emergency management – mitigation, preparedness, response, and recovery – but it also works “upstream” from the crisis to consider and address chronic conditions within a community and anticipate how core community services might be disrupted. This anticipatory focus strengthens the day-to-day life of the community *and* lessens impacts during a crisis. Reducing the extent of a crisis is certainly critical, but there are many other important benefits that stem from resilience-building efforts. In addition to working with the partner communities to identify community services, the CRSI worked with community representatives from across the country to understand the characteristics of a community resilience system that would benefit communities. These community-focused advisors helped build upon the core elements of emergency management and broaden the aperture to include resilience. The CRS is appealing to them because it does the following.

- **Resonates with Ordinary People** – Community resilience begins with human capital, involves all members of the community, and is the result of their daily activities. The CRS provides tools to help leaders communicate with their community about resilience.
- **Catalyzes Leadership** – Resilience requires visionary, cross-sector leaders, and networks of champions who are able to implement and manage efforts before, during, and after a crisis. The CRS helps communities catalyze leadership for resilience.
- **Is Flexible and Adaptable** – The CRS is flexible and adaptable so that it can be applied in communities of different sizes with diverse forms of government, demographics, geography, and cultural identity.
- **Captures Critical Information and Informs Analysis** – The CRS helps communities understand, optimize, and leverage existing assets and interdependencies (local and regional) while simultaneously identifying and mitigating vulnerabilities. It helps them recognize what makes their community unique (sense of place, culture, etc.) and incorporate these intangible assets into their planning and implementation efforts.
- **Encourages a Long-term View** – The CRS prompts communities to develop a vision of a resilient future long before a crisis occurs. It helps them develop resilience goals and design actions to help the community meet those goals, including the development of a comprehensive recovery plan.
- **Helps Communities More Rapidly Return to a “New” Normal** – Post-crisis communities must devise and accept a path towards a “new” normal. The CRS visioning and action planning processes help communities set a trajectory for a swift recovery.
- **Provides Real Benefits** – The CRS is grounded in the premise that evaluating community resilience and providing rewards for continuous, incremental improvement will lead to greater community vitality – triple bottom-line outcomes involving human capital, the economy, and the environment. The CRS is positioned to provide a whole suite of tangible and intangible benefits to the communities who work through the system.

These characteristics, a set of core principles, and additional guidance provided by community leaders and others from around the country have been used to design and shape the CRS. For the full list of guiding principles, see Annex 2.2.

In the last 4 years, CARRI and its partners have interacted with hundreds of stakeholders and participated in dozens of conferences and meetings. Through the CRSI, it has been able to capture the wisdom and advice of an experienced cadre of community leaders from across the country. These professionals have worked in all facets of community life and recognize the importance of bottom-up approaches to resilience building. They understand the limitations of federal support in a crisis and recognize the unique opportunity that communities have to chart their own path towards a more resilient future. In an era of dwindling resources and expanding and compounding threats, the CRSI participants invested significant time and energy into developing the CRS because they believe it is the most effective approach to strengthening community resilience.

Whether or not communities choose to engage in the CRS, they should begin to incorporate resilience concepts, understanding, and behaviors into civic discourse with their residents and institutions. A number of tools, processes, and approaches have been developed as part of the CRSI process that could be beneficial to the resilience of various community services; use of any of these tools could bring some improvement to a community's resilience.

### III. DESCRIPTION OF THE CRS

#### Overview of the System

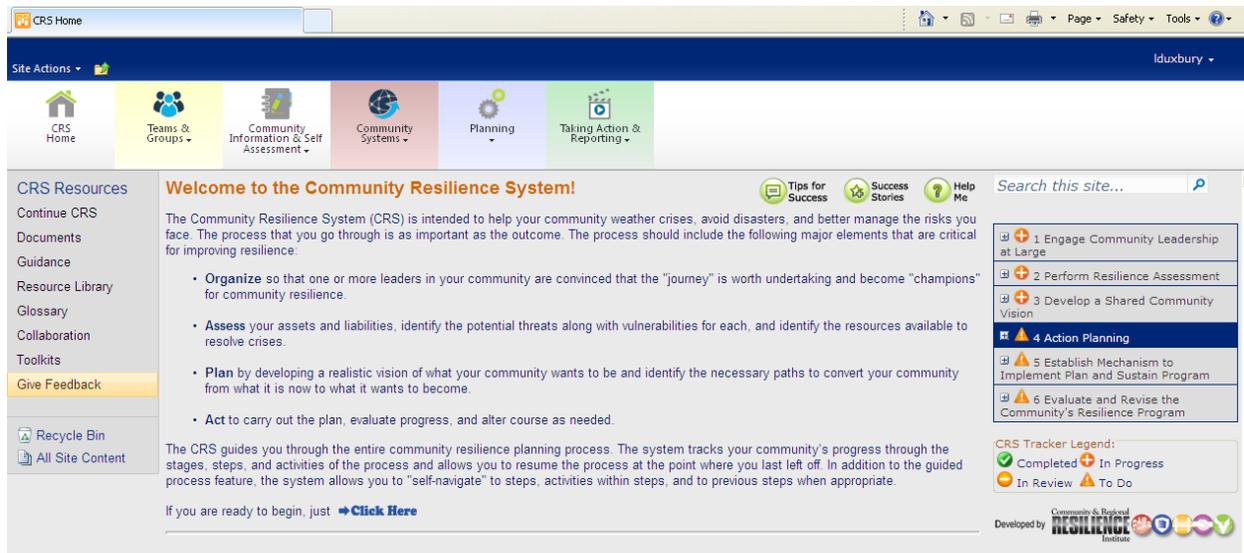
The CRS guides a community through a process that helps it understand resilience in the context of its own circumstances, identify threats and opportunities, and develop and implement an action plan to address key community priorities. It helps communities sort through issues and track data, actions, and milestones along the path toward greater resilience. Each community determines the scope of its engagement; it can decide to look at its resilience holistically or to focus only on a discrete set of issues. The CRS offers a systems approach – by integrating community visioning, threat and asset identification, and action planning with a collaborative process that brings the whole community to the resilience-building process.

The CRS is structured to guide communities through six stages that move them toward increasing their resilience. In order to progress through a stage, a community is asked to complete specific activities. The CRS provides templates, checklists, tools, examples of successful practices, and other supporting resources to aid the community in completing the activity. Users may choose to work through the system on their own or be led through each stage by a guided navigation system that prompts them for specific information and shares helpful tips and examples at each stage of the process. Information provided in one stage (e.g., threats identified in Stage 2 – Resilience Assessment) is stored and will prompt the community in a later stage (e.g., Stage 4 – Action Planning) to address the threat via a specific activity in the action plan. Community participants do not have to worry about the interconnectivity of the system or their prior answers earlier in the process; the system reminds them of what they answered, provides guidance about what to do, and provides an input mechanism to incorporate their best thinking into the resilience action plan that they are building and updating through the system.

Using guided navigation, the interface clearly identifies where the user is within the system and makes it easy to return to prior stages, steps, and activities. A navigation bar along the top of the screen places seminal documents (resilience vision, goals, actions, etc.) within easy reach and helps the user see where they are within the process. Additional navigation bars provide access to more detailed guidance, tool kits, a resource library, and a collaboration space where users can seek advice and guidance from other community users. The system provides peer community mentors and captures lessons, resources, and successful practices from the communities who use it. Because it captures these resources, the richness of the system depends on strong participation and engagement. It is hoped that over time it will become a resource *by* and *for* communities. Most importantly, the CRS provides communities with an integrated set of tools to address their resilience needs and a means of making demonstrable improvement.

Figure 3 is a screen shot of the CRS welcome screen. The image shows the resources and tools that the system provides to users.

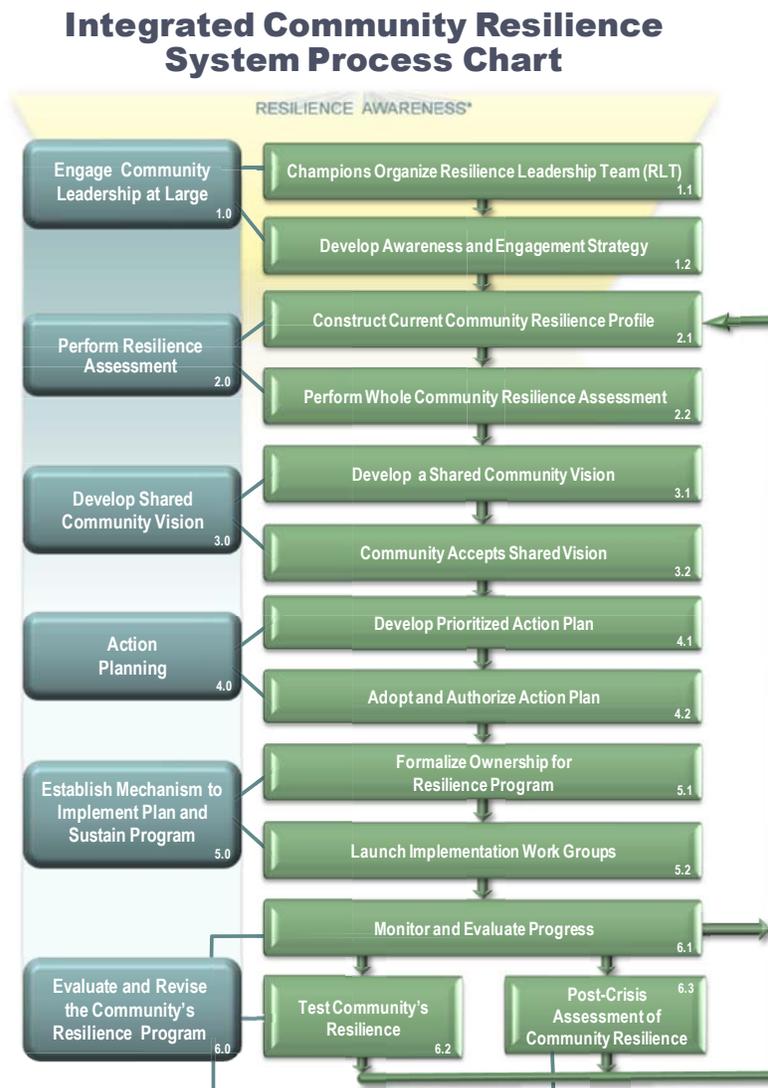
**Figure 3: CRS Welcome Screen**



## CRS Stages and Steps

Figure 4 shows the Integrated CRS Process Chart. This graphic is an overview of the stages and steps within the CRS. While the process may appear complex, the guided navigation walks the user through each stage, step, and activity. Users may view the full chart on the navigation bar, but once in the system, they will be working through one manageable piece at a time, not confronting the system in its entirety.

**Figure 4: Integrated Community Resilience System Process Chart**



\*Resilience Awareness begins early and continues throughout the process

The six system stages are described as follows, with details on the main activities communities will work through in each stage, the resources provided, and the benefits of completing the stage.

### Stage 1 – Engage Community Leadership at Large

Because leadership is critical to building community resilience, the first step is to establish a core team of community leaders to manage and drive the process. Everything flows from this stage and builds upon the relationships and norms established here, so significant emphasis is placed on it and resources are provided to help resilience champions pitch participation in the CRS to other leaders and the community at large and set the overall process up for success. The activities in Stage 1 include the following:

- *define and organize the Resilience Leadership Team (RLT);*
- *define the geographic boundaries of the community, and*
- *develop an engagement and awareness strategy.*

Resources include a communications toolkit, guidance on establishing the Resilience Leadership Team, worksheets for mapping community leaders and influencers, and detailed guidance and a planning matrix for developing a community engagement and awareness strategy. This last item is a living document housed within the system that the RLT returns to throughout the process to check in with the community and obtain feedback. It prompts the RLT to think about the community in “segments” – groups of people who have similar needs and perspectives – and guides the RLT through the analysis needed to reach diverse segments efficiently and effectively. A planning matrix helps the RLT identify awareness and engagement building activities for later stages of the process and can be revisited and refined as the process unfolds.

A communications toolkit is another resource that the RLT uses throughout the process. It includes a CRS “elevator speech” (for pitching the CRS to other leaders and key community institutions); CRS presentation templates; success stories; and sample press releases, newsletters, social media posts, listserv announcements, brochures, etc. In addition, pilot communities will be connected with community mentors who are skilled resilience builders and are available through the system to answer questions and provide advice.

Community leaders who helped design the CRS assert that if a community only completed Stage 1 of the process, it would be inherently more resilient just from the social capital that is built and strengthened at the outset of the process.

## **Stage 2 – Perform a Resilience Assessment**

In this stage, the CRS leads the RLT through a community assessment process. It answers five key questions.

1. What are the characteristics of the community?
2. What are the community’s strengths and weaknesses?
3. What are the significant threats facing the community?
4. What are the community’s critical assets, and which are at risk?
5. What resources does the community have to recover, if it is disrupted or threatened?

Once the community has defined itself, the CRS generates a “Community Snapshot” of publicly available data (e.g., U.S. Census) that compares key attributes against national norms. These data can be used by the RLT to make better-informed choices amongst possible actions. The CRS database integrates the snapshot data and self-assessment information provided by the community and provides the RLT with a *Whole Community Resilience Analysis* to be used as a resource for subsequent stages such as visioning and action planning. For example, weaknesses or resource shortfalls are flagged and through the system’s guided navigation these gaps “pop up” as potential topics for action planning in Stage 4. Activities in this stage include the following:

- *generate Community Snapshot;*
- *identify community characteristics;*
- *assimilate snapshot and self-assessment;*
- *identify threats;*
- *perform asset risk assessment;*
- *identify recovery resources and shortfalls, and*
- *develop a Whole Community Resilience Analysis Report.*

The information that the RLT provides about the community is input directly into the community's workspace within the CRS, a secure area where only the community and CARRI have access. Input screens have been carefully designed with prompts and help windows to assist the RLT as it amasses the needed information. The system provides tips for success and stories about how other communities have used assessment to strengthen their resilience.

The output from this stage – the Whole Community Resilience Analysis Report that captures assets, threats, gaps, and opportunities – is used by the RLT to create a community resilience vision (Stages 3) and to develop actions to achieve the vision (Stage 4).

### **Stage 3 – Develop a Shared Community Vision**

If it has not already done so, the community needs to collectively articulate a vision of a resilient future. Many communities have existing vision statements, but they may have been developed by a small subset of the community, or they do not include resilience, or both. A vision that incorporates resilience recognizes the inevitability of change and the need to be poised to respond and adapt to changing conditions.

Because visioning is a cornerstone of good planning and governance, the process prompts the community to revisit its vision in the context of resilience and provides tools and guidance so that it can involve the full fabric of the community in that discussion. The activities in this stage include the following:

- *revise community resilience vision (or create a new vision if one does not exist);*
- *identify resilience goals;*
- *communicate the vision to the community, and*
- *obtain community feedback and revise the vision as needed.*

Resources include guidance on how to incorporate resilience into an existing vision or create a new vision for a resilient community. The system provides examples of existing community visions, tips for success, and stories about how other communities have used their vision to plan for recovery and respond to crises of various kinds. It provides guidance on how to involve the community in the visioning process and communication tools to support community participation.

Communities that have a vision are more nimble and adept at seizing opportunities – be it from a natural disaster, economic opportunity, or other trend that causes change within the community. Examples from recent crises show that a vision speeds up the recovery process by allowing the community to more quickly start the rebuilding process. Communities that lack a shared vision and experience a crisis are forced to regroup and develop a collective vision for where they should head while simultaneously trying to field response and recovery operations.

#### Stage 4 – Action Planning

In Stage 4, the RLT develops an action plan that lays out a practical path between the community’s current state (output from Stage 2) and its vision of what it wants to become (output from Stage 3). Communities that are already implementing a strategic plan may simply incorporate resilience goals into their existing efforts.

Stage 4 takes the resilience goals developed or sharpened during Stage 3 and prompts the RLT to develop actions to meet them. It reminds the community of the gaps identified during Stage 2 and asks the RLT to develop corresponding actions and sort them into priorities of low, medium, and high importance. The system walks the RLT through the action planning process, prompting them with a series of questions (e.g., what are the specific actions that will meet this resilience goal?) and helping them drill down into greater levels of specificity about what is required to complete each action. As members of the RLT answer the questions, they are simultaneously building the action plan. The activities in this stage include the following:

- *identify actions to address resilience goals;*
- *identify resources to complete actions;*
- *evaluate the factors that will affect the community’s ability to execute the actions;*
- *develop a prioritized action plan, including a Disaster Recovery Plan that identifies responsibilities for recovery;*
- *share action plan with the community;*
- *adjust action plan as necessary to incorporate community feedback and most recent resource estimates;*
- *identify success metrics that will guide monitoring and evaluation, and*
- *name the people and groups who will take responsibility for each action and work to ensure their ownership.*

The system provides extensive resources to help the RLT develop the action plan. It provides guidance on action planning, success tips, links to helpful resources, sample action plans, and examples of how other communities have used action planning to strengthen their resilience. It provides information about funding sources for community resilience, including links to FEMA’s grants database and the Catalogue of Federal Domestic Assistance. The Communications Toolbox has resources to help the RLT share the action plan with the community, and the system prompts the RLT to carry out the activities identified in its community engagement strategy.

The benefits include a central access point for grants and training opportunities and the delivery of a detailed action plan upon completion of the stage.

### **Stage 5 – Establish a Mechanism to Implement the Plan and Sustain the Program**

This stage is focused on transitioning the action plan and overall resilience program to an entity that will serve as the “organizational home” for resilience building in the community. This stage recognizes that the RLT may not be the group that will have long-term responsibility for implementing the plan and overseeing the community’s long-term resilience programs. In some cases they may be, but Stage 5 seeks to institutionalize the process so that it can live beyond the tenure of the founding members of the RLT and become embedded in the day-to-day functions of the community. Activities in this stage include the following:

- *identify an organizational home for the resilience program;*
- *develop a governance structure and associated documentation (e.g., by-laws, charter, etc.);*
- *identify a Governance Team;*
- *develop a process for reporting progress to the Governance Team, and*
- *launch work groups to tackle actions within the action plan.*

Resources for this stage include guidance on identifying an organizational home and managing the transition, sample governance documents and templates, and a project reporting matrix. As with earlier stages, there are also tips for success and examples of how other communities have established mechanisms to implement and sustain their resilience program. The Communications Toolkit includes resources to help the RLT and Governance Team communicate with the community about the transition to the organizational home and Governance Team and stay apprised of action plan implementation.

Benefits include a framework for monitoring progress and the ability to roll up individual work group progress reports into a single annual report for the Governance Team. As actions are completed or priorities change, the Governance Team and individual work groups can return to the draft list of actions generated in Stage 4 and select additional items for implementation. The system captures and includes these actions in a revised action plan. Thus, the CRS serves as the community’s resilience “memory” and as a data and planning repository. It also functions as a shared work space for the Governance Team and implementation work groups.

### **Stage 6 – Evaluate and Revise the Community’s Resilience Program**

Stage 6 is the phase of resilience building that is ongoing for the duration of its resilience program. On an annual basis, as well as when individual projects are completed, the Governance Team evaluates progress toward achieving the community’s shared vision and reports that progress to the community. If needed, the Governance Team may recommend returning to an earlier stage in the CRS process such as assessment (Stage 2), visioning (Stage 3), or planning (Stage 4) and revising the action plan. This stage also includes tests and exercises to help the community monitor its resilience improvement progress and resources for conducting a post-crisis assessment if the community experiences a crisis or other disturbance.

Activities in this stage include the following:

- *monitor progress of individual actions and the overall resilience program;*
- *return to an earlier stage for refinement (if needed);*
- *request third-party monitoring and evaluation (optional activity);*
- *identify how to test the community's resilience against threat(s);*
- *test resilience and recovery against threat(s) and evaluate the results (or if appropriate, conduct a post-crisis assessment of community performance), and*
- *revisit and revise goals as necessary.*

Resources include guidance, tips for success, examples from other communities, and the Communications Toolbox to help the Governance Team communicate progress and celebrate success. A Testing Toolkit provides guidance on how to conduct a tabletop exercise that checks on resilience (and not just preparedness and response, for example) and templates to help communities capture and evaluate results. The system helps the community compile a Corrective Action Report as an outcome from an exercise, tabletop, or simulation.

Benefits include the ability to incorporate resilience considerations into existing tabletops or exercises and the capability to roll the outcomes from the tabletops and exercises directly into a revised action plan. As with Stage 5, the Governance Team and work groups have a dynamic tool to help them track progress and make mid-course corrections.

The system will continue to be refined as a number of pilot communities begin to work through the CRS in summer and fall 2011. Additional features and functionality will be added as time and budgets permit.

## Evolution of the CRS and Measuring Resilience

The CRS will serve as an integrator – between professional disciplines, sectors of society, and levels of government. It will help community leaders connect the dots and bring together the disparate information, lessons, and resources that can be used to strengthen community resilience. Starting in summer 2011, the system will be piloted by a diverse group of “leading communities” committed to undertaking the resilience-building process. These communities will explore the system, make use of its existing tools and resources, and provide feedback and suggestions for how it can be enhanced and made even more useful to American communities.

The leading communities will provide important feedback regarding measurement and evaluation. During the pilots, measurement and assessment will primarily be carried out under a self-monitoring regime. The CRS will offer suggested metrics as a reference and prompt communities to develop measures for each resilience plan action. The metrics will be shared with CARRI, and the CRSI Subject Matter Working Group will continue to explore the issue. Over time, as measurements are standardized and more tangible benefits for communities are realized, the CRSI may explore certification approaches. As feedback and guidance are received, they will be incorporated into the system as appropriate.

#### **IV. OBSERVATIONS AND NEXT STEPS FOR INCREASING COMMUNITY RESILIENCE**

The CRSI Steering Committee's charge was to oversee the efforts of the CRSI Work Groups and CARRI staff in conceptualizing and building the Community Resilience System. With the system built and pilot communities poised to launch their resilience-building efforts, the Steering Committee's work is done. Building on this vast body of work, the committee would like to share their observations and thoughts about additional activities beyond the CRS where targeted involvement of national organizations, state and local government, and/or the federal government could foster leadership and collaboration, provide incentives, and support outreach efforts that bolster community resilience building. These actions are intended to encourage a strong supportive environment for the CRS and community resilience building in general and to elicit the active engagement of actors who share a common commitment to strengthen the resilience of American communities.

The motivation for communities to become more resilient extends beyond recovering from a crisis. It is also derived from a desire to strengthen the social fabric of a community and support its economic vitality, thereby improving quality of life. Ideally, there can be tangible financial benefits as well, such as more favorable insurance premiums and bond ratings (if risk reduction can be demonstrated). But important questions remain as to whether these benefits can truly be realized. The Steering Committee hopes that these questions can be resolved in the affirmative by establishing a model for dialogue where interested public, private, and nongovernmental stakeholders can come together to identify and overcome the hurdles that communities face and to support the crafting of innovative solutions.

Communities become more resilient when their members, their leaders, and the full range of public and private organizations are engaged to take practical steps to assess where they are and commit themselves to collaborate on getting to where they want to be. The CRS is a systems-based approach that will support the efforts of individual communities to build resilience. The system includes not only a knowledge base to help inform communities on their resilience path but also a process guide that provides a systematic approach to moving from interest and analysis to visioning and action planning. It also provides a collaborative mechanism for other interested stakeholders to support community efforts. The following observations and suggested next steps are intended to spur action among the diverse interests who care about the long-term well-being of American communities so that they can participate and contribute in meaningful ways to community resilience-building efforts.

## Foster Cross-Sector Collaboration for Resilience

Building resilience is fundamentally a local activity, but there is significant community-level support that regional, state, and national institutions can provide in the form of information, policy, training, and resources and to facilitate collaboration among communities who are committed to playing a leadership role. Because resilience challenges span jurisdictions and sectors, collaborative approaches are needed to fully understand the complex problems that communities are grappling with and to begin to devise solutions. Greater collaboration is needed at all levels – from the cross sector leaders who promote resilience building at the community level, to national actors who make and influence policy, to state-level leaders who fund community programs and regulate insurance markets. There are a number of ways that collaborative approaches could bolster greater understanding, problem-solving, and leadership for community resilience, including the following:

1. **Establishment of a nation-wide community resilience leadership development program for local cross-sector leaders.** Community resilience requires local leaders who understand the importance of resilience and have the ability to work collaboratively across their community. There are a number of existing leadership programs into which resilience-building concepts could be integrated. Key national partners that could coordinate this effort include the Association of Leadership Professionals, International City/County Management Association, League of Cities, National Association of Counties, United Way, and the U.S. Chamber of Commerce, Business Civic Leadership Center.
2. **Convening, at the national level, a standing committee of practitioners and thought-leaders external to the federal government that can identify innovative ideas and practices that should inform national policy on resilience issues.** A nonprofit organization with deep expertise on resilience issues should be tapped as the convener.

## Strengthen Local Capacity for Greater Resilience

There are a number of existing federal grant and technical assistance programs originally developed for other purposes that directly and indirectly contribute to strengthening local community resilience capacity. Some of the federal agencies and offices involved include the U.S. Department of Homeland Security, Office of Grants and Technical Assistance and FEMA; U.S. Department of Housing and Urban Development, Office of Community Planning and Development; U.S. Department of Commerce, Economic Development Administration; U.S. Department of Agriculture, Rural Development; U.S. Environmental Protection Agency, Office of Sustainable Communities; U.S. Department of Transportation, Office of Intelligence, Security and Emergency Response; and U.S. Department of Energy, Office of Electricity Delivery and Energy Reliability. While oriented towards these agencies' authorities and mandates, as a whole, these programs contain many essential building blocks for improving community and regional resilience. However, there are likely to be important gaps in critical areas of emphasis

that need to be addressed where an appropriate role for the federal government may be to cultivate and support local capacity building.

Acknowledging the very useful platforms and programs already in place, the Steering Committee has observed a number of actions and activities that could significantly enhance the federal government's support of community resilience capacity building.

3. **Presidential Policy Directive / PPD-8: National Preparedness is an important step towards increasing community and national resilience. To support PPD-8, the White House National Security staff should direct the relevant federal agencies to improve efficiencies around existing community resilience programs and redirect existing resources toward community resilience-building efforts. These agencies should review the guidelines of current federal grant and technical assistance programs and refocus the award criteria to more explicitly recognize programs that support and build community resilience.** In addition to internal reviews by the individual agencies, departments should sponsor collaborative interagency reviews and invite external advisory input in order to strengthen and coordinate across all federal mechanisms.
4. **The White House National Security staff should convene and encourage the relevant federal agencies to create new federal grant and technical assistance programs specifically focused on developing and supporting community resilience.** Federal agencies, like those noted above, should develop programs specifically targeted at aspects of resilience consistent with their own mission and authorities.
5. **State and local governments should begin to embed community resilience support and requirements into state and local programs.** Integrating community resilience as an element that should be addressed in comprehensive planning for localities is a key step toward institutionalizing and regularizing attention to resilience requirements and will result in greater local and state awareness as well as tangible actions and progress. Other state, regional, and local programs where resilience could be introduced include plans related to state and local land use, economic development, hazard mitigation and disaster preparedness, sustainability, and coastal zone management.
6. **National and regional associations and organizations should integrate resilience into their research, training, and education/awareness activities.** The International City/County Management Association, the League of Cities, Conference of Mayors, National Governors Association, the U.S. Chamber of Commerce, United Way, American Red Cross, the Aidmatrix Foundation, and The Infrastructure Security Partnership each have activities under way that support resilience awareness and education. Similar programs and participation by the National Emergency Management Association, the State Managers Conference, National Association of Counties, the Council of State Governments, National Association of Insurance Commissioners,

Transition U.S., Zero to Three, and the Council of Chief State School Officers among others could expedite resilience awareness and capacity throughout the country.

In addition to the externally focused observations outlined previously which involve federal, state, and local governments and national nonprofit organizations and associations, there are additional activities that the Steering Committee would like to see the CRSI and its partners accomplish. These actions will help ensure that the full potential of the CRS is realized.

## **Make the Business Case for Resilience**

CRSI participants underscored the importance of rewarding communities for their resilience-building efforts. These diverse stakeholders indicated that over the years there have been a number of ways to link communities' efforts to reduce their risk exposure to tangible benefits (e.g., fire suppression ratings, insurance premiums, access to capital), but there are also a number of hurdles and disincentives that will make progress challenging and which could benefit from a continuation of the dialogue that has been initiated under the CRSI. To meet this need (given the appropriate resources), the Steering Committee would like to see CARRI continue and expand the CRSI process to accomplish this important priority.

7. **Continue the CRSI Resilience Benefits Work Group involving government agencies, the private sector, and nongovernmental leaders to devise programs of tangible benefits that can be linked to the CRS so that communities that undertake resilience-building initiatives may receive benefits for successful efforts.** The most promising benefits include fire protection ratings, risk-based pricing of insurance premiums, linking insurance premium discounts to CRS ratings, and stronger building codes which can mitigate or prevent damage.
8. Access to capital is essential to building strong and resilient local economies. Financial industry stakeholders convened as part of the CRSI process have confirmed that there is enormous potential to incentivize communities to improve their resilience through the provision of non-disaster-related benefits. CARRI, working with appropriate partners, should do the following.
  - A. **Facilitate the convening of national and local banks, federal agencies such as the U.S. Department of the Treasury, the Small Business Administration, and the Federal Deposit Insurance Corporation in dialogue about reforming the process and priorities for loan portfolios so that they better accommodate communities' capital needs for disaster preparedness and recovery.**
  - B. **Facilitate the convening of a public-private discussion among governments at all levels, the banking industry, and institutional and private investors to identify new ways to introduce pre-disaster capital for small businesses.** Such an effort could be structured like a federal coordinating body (modeled after the White House

Long-Term Disaster Recovery Working Group, an interagency team assembled in 2010 to work across government on long-term recovery issues) and should include the Economic Development Administration, the Small Business Administration, FEMA, HUD, and private-sector partners.

## Continue Resilience Research Efforts

The Steering Committee believes that continued progress in increasing resilience depends, in part, on continued efforts to understand resilience, build the body of scientific knowledge and data surrounding it, and further develop the evidence base for effective metrics. To that end, the Steering Committee encourages federal agencies, national laboratories, and organizations focused on resilience (e.g., CARRI and others) to continue their support of resilience research. Specifically

- 9. The Steering Committee encourages members of the CRSI Subject Matter Work Group to come together to continue research on community resilience, disseminate research results in scientific fora, and address specific research needs coming from the initial efforts of CRS application.**

## Promote Resilience Awareness and Education

Resilience is an emerging area of interest, but lack of awareness and understanding could impede the concept from gaining traction across the country. The best way for these efforts to take root is if they are done against a national backdrop that embraces the need to reenergize a culture of resilience in America and to broadly engage individuals and families, neighborhoods and communities, employers, and schools. A national culture of resilience built from more resilient communities can only be attained through widespread efforts to enlighten awareness, deepen understanding, and motivate action.

- 10. CARRI should work with the Center for National Policy in partnership with the national organizations referenced in this report, as well as other for-profit and nonprofit entities that undertake social media campaigns, to develop and conduct a resilience campaign with the goal of creating greater resilience awareness in order to foster and grow a strengthened national culture of resilience.** Such a national communication and awareness campaign should be launched at the 9/11 Tenth Anniversary Summit in Washington, D.C. Its objective should be to educate the American public about its inherent resilience and promote personal and institutional responsibility for community and regional resilience. Examples include national public service announcements, social media campaigns, efforts to reach youth, and social marketing approaches, among others.

## Conclusion

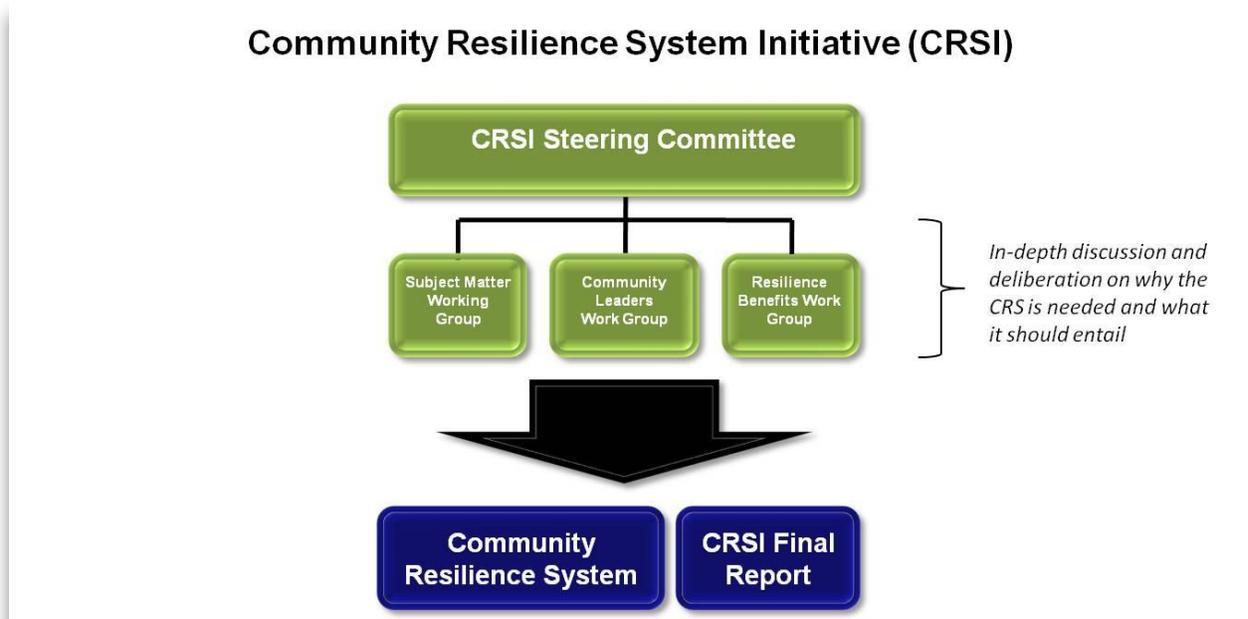
As this report describes, resilience building is an imperative for American communities and requires across-the-board participation from virtually all quarters of society. The CRSI has been an important player in initiating dialogue about the practicalities of community resilience and championing what is truly needed to improve communities' resilience to all manner of threats. There is much more work to be done at the national, regional, and state levels to promote the CRS as a resource, to improve it, and to continue the dialogue with diverse stakeholders that will help to facilitate both. These important conversations and educational opportunities should continue, even after the CRS has been launched and is in use by a number of American communities. While this report represents the end of an intense period of dialogue and collaboration, in many respects, it also represents a beginning – a renewed and ongoing opportunity to collaboratively and systematically work to improve the foundation of America's communities.

# ANNEX 1. Community Resilience System Initiative (CRSI) Process Overview

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## 1. The CRSI

The Community Resilience System Initiative (CRSI) is the nation-wide, collaborative development effort undertaken to build a knowledge base, tools, and systematic process to aid communities in increasing their resilience. The CRSI was sponsored and supported by the Community and Regional Resilience Institute (CARRI). The CRSI was overseen by a Steering Committee and carried out by Work Groups who reviewed the available data and information regarding community resilience; collaboratively developed the characteristics and requirements for the knowledge base, tools, and resulting process; and worked with government and industry to understand and include the benefits and rewards of greater community resilience. In total, more than 150 experts and practitioners from across the country participated in the CRSI’s year-long development effort. The diagram below depicts the structure of the CRSI.



## 2. Steering Committee Description and Membership

The Community Resilience System Initiative (CRSI) Steering Committee is a diverse group of senior leaders who have served in the public and private sectors in a variety of industries and sectors. Steering Committee members bring expertise in banking and finance, economic development, emergency management, government (both as elected officials and city/county

managers), humanitarian assistance, hazard research, marketing, and public policy. The list below presents the individuals who served on the Steering Committee during the CRSI process.

**Current Members**

- |   |   |
|---|---|
| <p>Bruce Baughman<br/>Senior Consultant, Emergency Management and Homeland Security<br/>Innovative Emergency Management, Inc.</p>                     | <p>Scott McCallum<br/>Wisconsin Governor 2001-2003 and President and Chief Executive Officer<br/>The Aidmatrix Foundation, Inc.</p>                             |
| <p>Randy Beardsworth<br/>Principal<br/>Catalyst Partners</p>  | <p>Russ Paulsen<br/>Executive Director, Hurricane Recovery Program<br/>American Red Cross</p>   |
| <p>Ron Carlee<br/>Executive in Residence / Chief Operating Officer<br/>International City/County Management Association (ICMA)</p>                    | <p>Paula Scalingi<br/>President, The Scalingi Group, LLC<br/>Director, Pacific Northwest Center for Regional Disaster Resilience</p>                            |
| <p>Darrell Darnell<br/>Senior Associate Vice President, Safety &amp; Security<br/>George Washington University,<br/>Office of Safety and Security</p> | <p>Tara Scarlett<br/>Senior Manager, CRM and Precision Marketing<br/>The Coca-Cola Company</p>  |
| <p>Stephen Flynn<br/>President<br/>Center for National Policy</p>   | <p>Debbie Van Opstal<br/>Former Senior Advisor<br/>Center for the Study of the Presidency and Congress</p>  |
| <p>Peter Hitt<br/>Principal<br/>Viable Technology Integration, LLC</p>  | <p><b><u>Former Members</u></b><br/><br/>Glenn McCullough<br/>Fmr. Chairman, Tennessee Valley Authority and Chief Executive Officer<br/>GLM Associates, LLC</p> |
| <p>Robert Kates<br/>Professor Emeritus<br/>Brown University</p>   | <p>Ron Reams<br/>Former Director Global Asset Protection<br/>The Coca-Cola Company</p>  |
| <p>Lynne Kidder<br/>Senior Advisor<br/>Center for Excellence in Disaster Management and Humanitarian Assistance</p>                                   | <p>Frank Rijsberman<br/>Former Director Program<br/>Google.org</p>  |
| <p>Al Martinez-Fonts<br/>Special Advisor to the President<br/>U.S. Chamber of Commerce</p>  | <p>Mary Wong<br/>President<br/>Office Depot Foundation</p>  |

These individuals graciously lent their time and expertise to the important role of overseeing the CRSI process, which involved helping initially to conceptualize the process, receiving periodic updates from the three Work Groups, deliberating on the function and form of the eventual Community Resilience System, and drafting recommendations on steps that can be taken to strengthen the resilience of the nation's communities. In addition to guiding the overall CRSI process, the Committee helped the CARRI team aggregate the advice and diverse work products from the three Work Groups and coalesce it into the CRS process and this final report.

The Steering Committee met in-person four times for day-long meetings and monthly via conference calls and virtual meetings. A number of members attended meetings of the three Work Groups and thus served as liaisons between the groups and the Steering Committee.

### 3. The CRSI Work Groups

Following the formation of the Steering Committee in early 2010, members provided advice on Work Group structure, membership, and overall process design. Prospects for Work Group membership were extensively researched to ensure that the groups were representatively populated from all areas of the country, all sectors of the community, and with the requisite expertise and interest in all aspects of community resilience. Three Work Groups were established to develop the CRS (see the diagram above) with specific charters of inquiry from the Steering Committee:

- The **Subject Matter Working Group (SMWG)** was comprised of more than 40 leading researchers and scientists interested in the resilience of communities and other aspects of community recovery. The SMWG reviewed the evidence base for community resilience and helped to shape the process characteristics, metrics for measuring resilience improvement, and other aspects of information and data regarding community resilience.
- The **Community Leaders Work Group (CLWG)** was comprised of more than 50 representatives from all regions of the country, all sectors of community life, and from key state and national organizations interested in building more resilient communities. The CLWG worked tirelessly to frame the core principles that the CRS should meet in order to address the needs of communities. They were instrumental in devising a simple but effective process which enables communities to systematically improve their resilience and were extremely helpful in identifying and collecting tools and resources that would be beneficial to communities.
- The **Resilience Benefits Work Group (RBWG)** was comprised of more than 40 representatives from insurance and reinsurance industries, financial and banking industry, nonprofits interested in economic and infrastructure resilience, and government agencies that provide grants, loans, and other assistance to communities. The RBWG deliberated on the role that incentives and benefits can play in encouraging

communities to work towards greater resilience, identified current tangible and intangible benefits of resilience that communities should be helped to take advantage of, and worked to identify areas for future development of additional resilience benefits.

The reports from each Work Group as well as participant lists are included in Annexes 2.1, 2.2, and 2.3.

#### **4. The CRSI Development Process**

The heart of the CRSI development was the activity of the three Work Groups. The Work Groups' engagement included multiple rounds of one-on-one interviews, a variety of information-gathering surveys, virtual meetings, review of materials, and in-person workshops.

For example, the Community Leaders Work Group members participated in four rounds of one-on-one, in-depth interviews to elicit their input on specific design elements of the CRS. Members also participated in seven electronic surveys about CRS design and implementation, and the group conducted four virtual meetings for additional review and discussion. Members met in person on three occasions, in different regions of the country, during the year; each meeting lasted 2 days and included plenary discussions and in-depth breakout sessions.

The other Work Groups had similar levels of engagement and involvement. The SMWG members provided detailed written input on a series of questions regarding the science and evidence behind the concept of community resilience and met to deliberate and provide input on the "technical" basis of the system. In addition to three meetings of the full RBWG membership, the RBWG members also participated in two rounds of meetings of "Task Teams" that were organized around specific benefits associated with economic development, insurance and reinsurance, and government grants and assistance. These task teams worked to understand the range of benefits and resources currently available to communities who work to increase their resilience as well as identify a program of future benefits that should be pursued. Like the CLWG, the RBWG members also took part in multiple rounds of one-on-one interviews and individual work assignments.

The Steering Committee met monthly by phone and quarterly in person to receive updates on Work Group progress and provide input to questions received from the Work Groups.

In the end, the CRSI yearlong effort collectively involved more than 1,500 hours of in-person meeting time and more than 150 hours of virtual meeting time, 200 interviews, nearly 300 survey responses, and countless other hours of outside preparation and review.

#### **5. Next Steps**

The CRS will be rolled out in the fall of 2011 with a group of leading communities across the country, most likely six to ten diverse communities that are willing to participate in these developmental pilots to test and strengthen the CRS process and content. The pilot phase will be an important opportunity to refine the system based on community feedback as well as gain

additional advice received from the broader community of CRSI participants whose input has informed system content and behavior. In the coming months, it is anticipated that additional communities will begin to work through the system and participate in the collaborative process to strengthen the system (through the sharing of lessons, success stories, and key resources).

Going forward, CARRI will serve as the implementer of the CRS – working to improve the system through developmental community pilots and continuing the dialogue with important stakeholders and constituencies who are committed to strengthening the resources and benefits available to communities that agree to participate in the CRS.

Once the developmental pilots are under way, CARRI will begin to explore whether additional benefits can accrue to communities that undertake resilience-building efforts in a systematic and measurable way. This includes continuing discussions begun by the Resilience Benefits Work Group about promising benefits such as fire protection ratings, risk-based pricing of insurance premiums, linking insurance premium discounts to CRS ratings, and stronger building codes which can mitigate or prevent damage. Further, CARRI will begin to explore whether there is a certification process that might facilitate the provision of benefits to communities.

In parallel, with available resources, CARRI will continue to support resilience research that helps to answer important questions about community resilience building including measurement and evaluation protocols. CARRI intends to support research that informs and strengthens the form and implementation of the CRS.

Finally, CARRI will partner with others (the Center for National Policy, the Rockefeller Foundation, Voices of September 11) to launch a campaign that fosters a national culture of resilience. This campaign is intended to create greater individual and community awareness and action towards resilience building. In addition to the campaign, as additional resources are available, it is envisioned that the communications and outreach components of the system will be expanded.





# ANNEX 2.1. Community Resilience System Initiative (CRSI): Community Leaders Work Group (CLWG) Report

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*Final Report to CRSI Steering Committee*

## **Prologue**

The past year saw the development of an exciting, multi-faceted, and sometimes complex nationwide collaborative process to develop a national system for assessing, promoting, and enhancing community resilience.

Circumstances across the nation call for such a system, and decision makers – from local council members to the President of the United States – are engaged and interested in seeing its development. The Administration has expressed great interest in increasing national resilience and has included it in the national security strategy for 2010. Community-level resilience is increasingly seen as an integral part of pursuing greater national security, and there is general sentiment that the nation needs to return to its resilient roots where individuals, families, employers, government, and communities are able to regain responsibility for their resilience. As one community leader aptly put it “resilience starts with individuals and families and encompasses the full fabric of the community.”

This process, the Community Resilience System Initiative (CRSI), is funded by the Community and Regional Resilience Institute (CARRI). CARRI was initiated in 2007 to understand what makes communities resilient to the impacts of disasters, determine if such resilient qualities could be evaluated and objectively measured, and develop tools to help communities assess their resilience and implement actions to improve it. For the past four years, CARRI sponsored research at a network of national laboratories and universities, worked with three partner communities in the Southeastern United States to gain practical understanding of community resilience, and supported community activities to capture and apply lessons learned. In 2010, CARRI shifted its focus to the CRSI. This national, collaborative process is designed to develop the CRS to help communities become more resilient by providing: 1) clear, practical tools to assess, monitor, and improve their resilience; and 2) a roadmap for implementation so that these tools can be fielded as effectively and efficiently as possible. The tools will be coupled with guidance on how communities can benefit from their resilience improvement as effectively and efficiently as possible. The goal of the CRSI is to produce a system with a usable set of tools that starting in fall 2011 communities can pilot and implement immediately.

The CRSI is guided by a senior-level Steering Committee comprised of key participants from across the nation representing all aspects of community. The Steering Committee is responsible for producing a final report, or roadmap, which will provide the nation with a practical system for assessing, improving, and rewarding community and regional resilience and which will recommend a strategy that will address key policies and incentives needed to implement the Community Resilience System (CRS).

One of the most important steps in developing the CRS was convening the broad-based discussion and development process, largely achieved through the activities of the work groups. The ongoing, active, and devoted engagement of the CLWG represents a large and essential part of this effort. In this first year of activity the forty-seven member Community Leaders Work Group (CLWG) developed the framework for the CRS with sufficient depth and detail to begin to test the system. However, practical implementation questions remain for further deliberation and testing. The ensuing report represents the culmination of countless hours of work done by members of the CLWG to provide input and guidance to the Steering Committee to develop the CRS.

## Introduction

This report to the Community Resilience System Initiative (CRSI) Steering Committee presents the recommendations of the CRSI Community Leaders Work Group (CLWG). In the period that the group met, CLWG participants enthusiastically engaged in thoughtful and robust conversations about the aspects that affect a community's ability to be and become resilient. Their work spearheaded the CRS process and served as a sounding board for the other work groups. The CLWG also provided guidance regarding what works for communities, offered ideas for motivating them to improve their resilience, and provided specific guidance on the components of the CRS. Overall, expectations about the CLWG's engagement in the process were exceeded as participants enthusiastically took advantage of the numerous engagement opportunities to provide thoughtful and experience-based suggestions for the CRS.

This report begins with an overview of the purpose of the CLWG and the process employed to develop the group's recommendations. It then reviews key themes that emerged during the process, outlines the CLWG foundational constructs, including the guiding principles of their work together, and the CLWG's thoughts on the role community functions should play in assessing, improving, and evaluating community resilience. It presents the CRS Process Chart and the group's key recommendations for each stage and step. Finally, it presents other key considerations, outlines the group's recommendations for supports, aids, and other resources, covers the group's key recommendations regarding resilience benefits, and outlines additional key questions.

The input and recommendations presented throughout the report generally fall into three categories: (1) recommendations regarding principles which should underlie the development and use of the CRS, (2) recommendations regarding the components and construction of the system itself, and (3) recommendations which address issues and activities outside of the CRS.

Recommendations in the first two categories are generally being addressed in the development of the CRS (or will be addressed in future evolutions of the system). Recommendations in the third category represent actions that are necessary to the creation of a national culture of community resilience – an environment in which use of the CRS would be most effective. These recommendations are presented for consideration and inclusion in the overarching Steering Committee report. Recommendations in this category are specifically enumerated at the close of the report immediately preceding the conclusion.

## Overview of Work Group Purpose and Process

The CLWG is one of three work groups convened by the CRSI. Their primary purpose was to develop and validate a system for increasing resilience that is practical, usable, and helpful for communities looking become more resilient. Their charge was to test and refine CRSI assumptions regarding community resilience and to provide valuable input regarding the applications of the CRS in diverse communities.

Participants in the CLWG included representatives from government (local, state, federal), other resilience efforts, the private sector, and from non-governmental and faith-based organizations. The complete list of CLWG participants is available in Attachment A.

CLWG engagement began in February 2010, and over the course of the year, CLWG members participated in:

- Three in-person meetings (May 5-6, August 31-September 1, November 17-18);
- Four virtual meetings (April 12, June 24, July 29);
- Four one-on-one conversations with CRSI staff and facilitators (April, July, August, and October for a total of 150+ interviews);
- Seven electronic survey inquiries (May, June, August, November), and
- Provided written feedback on various written products (e.g., meeting summaries, etc.)

The CLWG's final in-person meeting in November 2010 marked the end of the formal process for Work Group engagement; however, many CLWG members agreed to continue working in a less structured way with volunteers from the Subject Matter Work Group (SMWG), Resilience Benefits Work Group (RBWG), and the facilitation team to help develop the CRS through April 1, 2011.

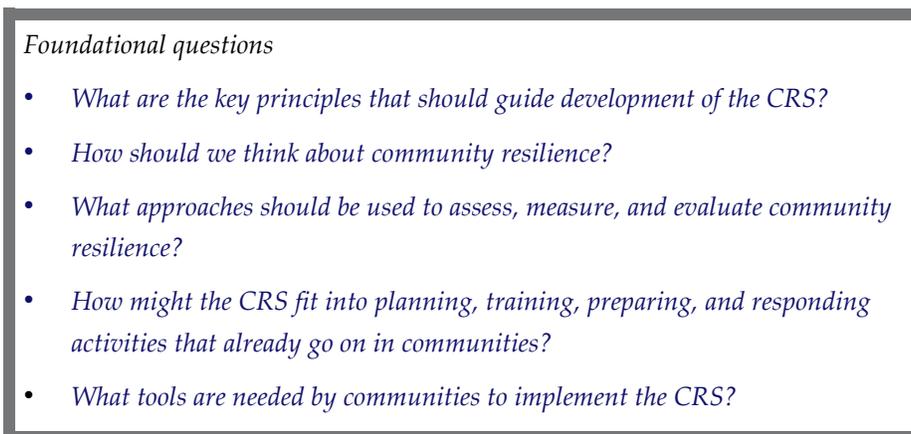
## Deliberation Process

In their time together, the CLWG worked vigorously to:

- Provide the community perspective;
- Describe the CRS characteristics and attributes;
- Review and refine the community functions approach;

- Refine guidance for measurement, assessment, and evaluation;
- Develop the CRS implementation process (how the CRS will actually be used and work in a community), including the:
  - Process for applying the system and measurement tools, and
  - Description of how CRS will work with existing community planning and measuring obligations/requirements;
- Provide the community perspective on accuracy, comparability, and feasibility of measurement, assessment, and evaluation used to devise benefits and rewards, and
- Identify and propose solutions to challenges and barriers to implementing the CRS and its components.

The guiding questions used by the CLWG to scope their deliberation process are presented below in Figure 1. Their deliberations were stimulated initially by a document produced by the CARRI team entitled, *Toward a Common Framework (TCF)*. TCF was considered a first step toward developing the tools needed by communities, and it contains both a proposed lens of community functions as well an initial set of accompanying tools to evaluate and measure a community’s resilience. From these initial discussions, the CLWG identified the elements of a CRS process which the facilitation team used to develop a “straw man”<sup>1</sup> CRS Process Chart. The process chart provided a structure for the CLWG discussions and was used to test and refine their recommendations and assumptions about the elements, steps, and stages necessary to implement the system. The CRS Process will be used as the framework for the development of the first version of the CRS.



**Figure 1**

<sup>1</sup> A more comprehensive account of the CLWG’s deliberations regarding the process chart is provided later in the report.

The RBWG provided the CLWG with a list of Elements and Characteristics for Resilience Benefits<sup>2</sup> to help CLWG participants further refine their recommendations regarding benefits that communities who use the process to improve their resilience should be able to achieve or earn.

## Key Themes

CLWG participants took advantage of a variety of opportunities to develop, discuss, and refine their recommendations for the development of the CRS. The following key themes emerged from that process.

### 1) *Leadership*

Leadership is a critical aspect of community resilience. In particular, the long-term engagement of collaborative, broad-based (across all sectors), fair and decisive leadership will contribute to the successful evolution of a community's resilience-building efforts. Leaders should be the catalysts of resilience activities in their communities. Because elected officials are not the sole source of leadership in a community, other community champions (non-traditional/unofficial leaders) are also integral to the success of any community-wide effort. Therefore, the CRS must help communities identify and engage other community champions and their networks. CLWG participants insisted that the guiding principles, community functions, and the CRS as a whole account for and reflect the importance of leadership – traditional/official and non-traditional/unofficial.

### 2) *Community Resilience Vision*

In order to understand their current realities, communities must be able to articulate a resilient end state to guide their plans and other activities geared toward increased resilience. A shared vision, developed and supported by the community, will help the community articulate that end state so that they are able to assess their current situation and plan for a more resilient future. This resilience vision should build from and leverage all available community visions – including those developed for strategic plans, community development, etc.

As a foundation of this visioning process, the CRS must guide communities through the development of a baseline understanding of who they are and what they do to enable them to more aptly measure progress towards becoming more resilient prior to crises taking place. The baseline should include systems, assets, threats, vulnerabilities, interdependencies, regional issues, and other aspects of a community's normal operations that will affect the community's ability to rapidly recover following a crisis. The baseline knowledge will help record a community's pre-crisis "old normal" and would help communities establish a resilience vision for a post-crisis "new normal."

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<sup>2</sup> A detailed account of the CLWG's reactions and feedback regarding this document is provided later in the report.

### ***3) Robust Engagement, Education, and Outreach***

Overcoming apathy and instilling a sense of urgency – prior to a crisis – and having communities buy-in to the need for improving their resilience utilizing the CRS, are significant challenges. Increasing buy-in will hinge on an effective outreach and education program highlighting the importance of improving community resilience. It will also be important to package and market the benefits (tangible and intangible) associated with improved resilience and participation in the CRS in a way that is palatable to communities facing different challenges.

### ***4) Outcome-driven***

The CRS must provide communities with practical guidance on actions to address a diversity of community needs in ways that will achieve more resilient outcomes. To this end, the CRS should have a strategy for embedding the concept of resilience in community policies, planning, performance, and practice.

### ***5) Community Fabric***

The fabric of a community is comprised of a unique mix of human capital, cultural identity, different social and political groups, etc. In addition, each community is faced with different and diverse threats and hazards; thus, no two communities are alike. To be effective, the CRS must provide guidance and tools that are to be used by the full fabric of a community, recognizing that diversity is a fundamental and important element of most of the communities across America. The resources provided by the CRS must be adaptable, flexible, and understandable to all.

### ***6) Acute and Chronic Crises***

To be successful, the CRS should address how communities respond to, recover from, and become more resilient to acute events, while also helping them to address and alleviate longer-term chronic challenges (e.g., social inequities, economic down-turns, etc.)

### ***7) Integrating the CRS and Other Requirements***

The CRS should not be about adding another layer of requirements or making a community do something totally new. The CRS should build on and utilize the programs and requirements communities are already fulfilling (master and regional planning, community development, Firewise programs, emergency preparedness programs, etc.). Some cities and towns already have well-developed sustainability campaigns, which could be linked to resilience, thereby broadening the reach of the CRS.

## 8) Resilience Paradigm

The ultimate contribution of the CRS will be to help American communities shift to a new paradigm. The ideal outcome of the CRS would be that the next generation doesn't need to think about resilience because it is already a way of life (e.g., living green or practicing sustainability). Effective marketing, public relations, outreach, and education could cultivate grassroots knowledge, develop appetites, and fuel a community resilience movement to start the shift.

### CLWG Foundational Constructs

#### 1) Guiding Principles

The initial set of guiding principles outlined in TCF was amended by the CLWG to represent the holistic approach considered necessary to encourage communities to use the CRS. The guiding principles, which strongly shaped the CLWG's recommendations for the development of the CRS, are presented below in Figure 2.

1. *Community resilience begins with human capital (all community members, both public and private) and is the result of their daily activities.*
2. *The CRS will aid the community in understanding the tangibles (resources and assets) as well as the intangibles (e.g., sense of place, cohesion, culture, etc.).*
3. *The CRS will help communities develop a pre-crisis vision, outline a path to achieve a "new normal" (future baseline), address the deficiencies of the "old normal" (pre-crisis baseline), and ultimately create a more resilient community.*
4. *The CRS will lead to "triple bottom line" outcomes involving the environment, human capital, and the economy.*
5. *The CRS will capture and reflect the needs and capabilities of the whole community. It will encourage and support community- and region-wide, cross-sector partnerships, and it will reflect the full fabric of the community.*
6. *The CRS will help communities understand, optimize, and leverage existing assets and interdependencies (local and regional) while simultaneously identifying and mitigating vulnerabilities in the aftermath of a crisis.*
7. *The CRS will help communities identify their cross-sector core leaders and networks of champions who are able to implement and manage efforts before, during, and after crises.*
8. *The CRS will be understandable to and usable by everyone in the community, whether experts or the general public.*
9. *The CRS will be flexible and agile enough to be adapted and applied in communities of different sizes with diverse forms of government, demographics, geography, and cultural identity.*
10. *Evaluating community resilience and providing rewards for continuous, incremental improvement will lead to greater community vitality.*

Figure 2

## 2) *Community Functions*

In TCF, CARRI proposed that communities are made up of a range of functions (transportation, leadership, health, sense of place, etc.) that express the community's ability to exist as an entity and provide services for its residents. TCF divided the functions into 3 groups: infrastructural, economic, and social. Further, TCF proposed that resilience can be measured and evaluated by looking at the impact of crises on the functions, providing a basis for data-driven measurement of resilience. Members of the CLWG group felt that while the functions as proposed are a good starting point for assessing and evaluating resilience, they do not adequately represent all that encompasses community resilience.

The community functions should help communities know who they are, what they have, and what they do. Use of the functions in the CRS needs to be more purpose-driven to yield actionable outcomes. The functions included in the CRS need to better reflect the diversity of communities and allow for the characterization of chronic crises such as economic challenges, sea level rise, climate change, deteriorated social conditions, etc. The functions also need to be expanded to include cross-cutting functions (e.g., leadership, risk mitigation and management, interconnectivity and interdependency, and education) and other aspects of community (e.g., planning, safeguarding facilities, willing work force, social services, networks, parks and recreation, public health, wastewater, and storm water). Attachment B includes a final list of the community functions proposed by the CLWG.

The CRS must provide assessment guidance that includes a list critical or core functions that every community must assess coupled with the option for communities to self-select from a larger buffet that could be tailored to individual communities' needs and preferences.

## 3) *Approaches to Measurement*

The loss-recovery model, which is outlined in TCF, could be useful for explaining the concept of resilience to some audiences but is not practical or understandable as a realistic measurement mechanism for communities. Instead, a self-assessment approach would be more effective in helping communities understand and improve their resilience. Communities would respond more positively to using a measurement tool that allows them to self-assess rather than a scoring or ranking tool used by outsiders (the federal government, government contractors, etc.).

### *a) Resilience Rating*

The type of measurement system should not be mandated by the federal government or seen as a function of the government. CLWG participants strongly opposed a ranking system (placing 116th out of 175, for example). Instead, the CRS should aim for a rating system tied to

community functions. Some systems that could be modeled to develop the CRS rating system included the red-yellow-green and Star-Index<sup>3</sup> type rating.

*b) Characteristics of the Assessment and Measurement Process*

The desired characteristics of the measurement system for the CRS include: simple to understand and use, credible approach, achievable goals, hybrid use of hard and soft metrics, and sustainability over time. A measurement approach with these characteristics would make it easier to attract communities keen on gaining tangible benefits for resilience improvements.

The CRS should include online capabilities which facilitate a community's ability to input information, create reports, and share the information with their residents and other communities.

The CRS should enable communities to assess both the tangible<sup>4</sup> and intangible (e.g., vitality, social factors, leadership, visioning, etc.) aspects of community resilience, especially if numbers (metrics) might be required in order to gain incentives. Because some of the most essential elements of community resilience are intangible, a hybrid approach that includes a combination of hard metrics with a robust social process for self-assessment will be an ideal component of the assessment process.

There is no model for sharing data across regions or the nation or for looking at disaggregated data to expose larger implications; therefore, the measurement system must also help communities monitor trends and patterns. Finally, the assessment and measurement process should not focus solely on disasters because limiting the focus in this way would exclude economic and other types of crises affecting communities.

*c) Development and Evolution of Measurement*

Since there is no comprehensive model to effectively measure and assess progress towards achieving resilience, the CRS must incorporate relevant existing systems, frameworks, indicators, etc. as building blocks or models. The measurement system will evolve over time as the CRS matures and is more broadly used.

Once a system is in place, the CLWG recommends the development of a certification component comprised of a standardized curriculum, specific courses, and training opportunities so that improving community resilience could be embedded in the professional education and development of a number disciplines and professions (public safety, emergency management, and leadership development were some of the examples offered by CLWG

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<sup>3</sup> The STAR Community Index is a national, consensus-based framework for gauging the sustainability and livability of U.S. communities. See <http://www.icleiusa.org/star>.

<sup>4</sup> Issues related to infrastructure and economics are areas where there are more "tangible" characteristics which might better lend themselves to "hard" data or metrics.

members). Development of such a program would also increase all communities' access to techniques, tools, and training that increase community resilience.

## Key Recommendations by Stage

### *Design of the Community Resilience System Process*

Input and data collected throughout the series of CLWG engagement opportunities were used to develop an Integrated Community Resilience System Process Chart, the most recent version of which is presented below in Figure 3. The process includes six stages of activity each of which has two steps to further describe work to be accomplished within the stage. Additional details about each stage and step are included in the tabulation of the CRS Process Detail in Attachment C. CLWG participants had several opportunities to review and provide input on the process chart, and many of their recommendations are incorporated in the current version below. Other CLWG comments will be incorporated in the guidance for system implementation, checklists, or other resource aids in the CRS. Additional key recommendations, some of which are reinforced in the design of the Process Chart, are presented in Section b. below.

#### 1) *Engage Leadership at Large*

##### *a) Create the circumstances to spark the interest of local leadership*

Design the CRS to work through education and marketing to create opportunities for communities at large to become aware of community resilience and its potential benefits. Through these efforts, the CRS will increase the likelihood that local leaders or champions will experience a moment of awareness, or a “resilience big bang”, about the importance of community resilience. Thus inspired, this core group of champions will become the local catalysts who then engage the broader public.

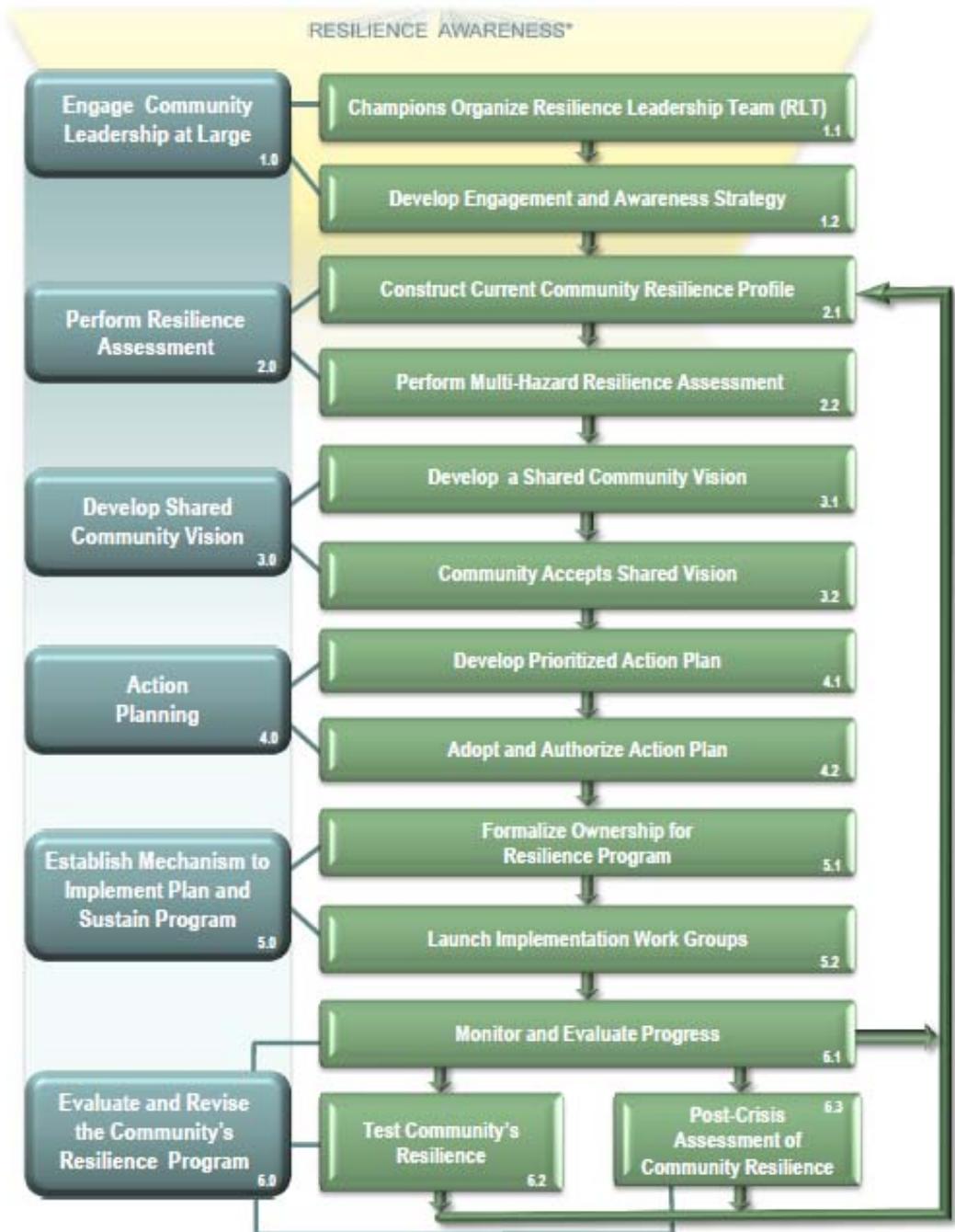
##### *b) Organize to cultivate broad public awareness to help increase understanding about resilience and motivate community members to contribute to building the resilience of their community*

Refine the CRS to include guidance for:

- Champions to initiate the resilience-building process by organizing a Resilience Leadership Team (RLT), a small group comprised of leadership and other stakeholders representing the full fabric of the community. The RLT will be responsible for working with community leaders to guide the resilience-building process and motivate community participation.
- The RLT to engage the community more broadly once it completes the Resilience Self-Assessment to test the assumptions used in the assessment and gather input to finalize

the assessment. This engagement will help to insure: (1) the community's accurate understanding of its current state of resilience, and (2) community member buy-in. The RLT to develop a well-thought-out public awareness plan to educate community members about why engaging in resilience-building efforts is important, why it matters to them and others, and to increase public buy-in to building-resilience. In addition to engaging the broader public, the awareness plan should target the private sector to cultivate effective partnerships, as well as individuals and families, where resilience, ultimately, begins.

## Integrated Community Resilience System Process Chart



\*Resilience Awareness begins early and continues throughout the process



Figure 3

*c) Plan around apathy*

Include in the CRS tools to help instill in communities a sense of urgency to plan and prepare in advance of an event. Tools need to show what's in it for individuals and what's in it for kids. They must be structured in ways that will make apparent the benefits for those who increase their resilience and thus energize community leaders and members to participate. One way to do this would be to package or market resilience building as means to increase community vitality.

*d) Develop simple structure, language, and implementation tools*

Include tools in the CRS designed to educate the public (to help motivate communities) and market the benefits of building resilience to community leaders and other stakeholders. Tools should include vivid stories and messages that invoke and appeal to individual realities. Other tools might include best management practices, tips for success, and data.

*e) Strengthen community efforts to build resilience*

Through the CRS, connect and support communities with a larger, external effort that will develop and implement outreach and education activities reinforcing resilience awareness. A well thought-out national campaign of community resilience education, implemented with allies and partners such as the International City/County Management Association (ICMA), National Governors' Association (NGA), National League of Cities, Conference of Mayors, the national Chamber of Commerce, and others, would help reinforce individual community programs.

## **2) Perform Resilience Assessment**

*a) Establish baseline conditions*

Using the community snapshot, self-assessment, and multi-hazard resilience assessment tools provided in the CRS, help communities increase their baseline understanding of who they are and what they do to enable them to measure progress towards becoming more resilient. In addition to establishing an understanding of the breadth of assets available across the community, the baseline should help communities understand the interdependencies among their assets, resources, systems, and processes – where they are relative to the balance and interplay between environmental assets, net human capital, and economic assets (the “triple bottom line”). It should also help them understand the regional implications that would help them define their shared resources and the availability of those resources. Finally, the baseline should address intangible elements (e.g., social factors, leadership, community engagement processes, and visioning) as well as the tangible aspects of a community. The process for establishing baseline conditions should be flexible and intrinsically coupled with the process for assessing baseline conditions.

*b) Characterize the community broadly in the assessment process*

As above, the CRS should guide communities to assess both acute events and chronic crises influencing community well-being. To do so, the assessment should look at communities broadly, including: vulnerable populations needing assistance; health and vibrancy of the economy; human and social capital functions; the role of partners; leadership and governance; cooperative and collaborative organizations and mechanisms; existing community plans; interdependencies of infrastructure; and shared and interoperable data systems.

*c) Approach measurement with the whole system in mind*

The CRS should establish clearly that the fundamental approach to measurement and evaluation needs to be grounded in the baseline and assessment process, the basis of monitoring and evaluation, and supportive in some way with a future potential accreditation process. The approach to measurement needs to be simple to understand, credible, easy to apply, and sustainable over time. The measurement system should also:

- Generally align with the community functions described in the CLWG Foundational Construct outlined earlier in this report. The approach to measurement should address the suggested enhancements of the functions (purpose driven, reflect the diversity of communities, allow for characterization of chronic crises, include cross-cutting functions, etc.);
- Enable communities to assess the intangible aspects of community resilience;
- Combine essential measures (minimum number of success factors or core functions) that all communities will be asked to assess, evaluate and report on, with a robust social process for self-assessment;
- Be coupled with a rating system which utilizes the community functions as areas of assessment and evaluation;
- Not be overly complicated or highly metric-driven as this approach may present a barrier to entry, thus dampening the desire of communities to use the CRS, and
- Be further defined based on who the intended audience is, who performs the assessment, and who evaluates the results of the assessment. This clarification will drive the balance between reliance on hard metrics, more qualitative indicator approaches, and reliance on process in the overall CRS measurement approach. Greater reliance on hard metrics may be necessary if the evaluation is intended to result in awarding of tangible benefits or accreditation. Use of the measurement system should not be mandated by the federal government or seen as a function of the government.

### 3) *Develop Shared Community Vision*

#### a) *Have a shared concept of a future state to guide the development and prioritization of actions*

Communities must be able to describe an end state to guide the development and prioritization of actions.

#### b) *Begin with and leverage all available related information*

This information should include strategic plans, visions for community development, etc. (local and regional). Related and complementary aspects of each vision should be assessed based on the following considerations:

- Resilience Outcomes: How does the vision align with the resilience-building process and desired outcomes;
- Integration: How might the multiple visioning processes be integrated, and
- Regional Synergy: How can the community's vision improve collaboration and synergy within the region?

#### c) *Engage the full fabric of the community*

Guided by the RLT, vision development should be collaborative, engaging the full-fabric of the community.

#### d) *Complement and build from a community's understanding of their baseline conditions*

The visioning process should help the community both assess where they are (tying directly to the community's baseline condition), and plan for a more resilient future – building from the old normal to the new normal in which state the community would address present gaps and vulnerabilities. The visioning step will allow communities to aspire to greater vitality and help them prioritize and select improvement actions.

#### e) *Be interest- and outcomes-based*

Rather than position-based, the vision should be interest- and outcomes-based so that the resulting description of the future resilience is not bound by the constraints of particular groups or individuals. The CRS guidance and process aids should help communities craft resilience visions that are:

- Shared: Representing and giving voice to the full fabric of the community and bringing together the diverse views represented in the community, regardless of any discomfort that governmental leadership or majority groups might find with these differences;
- Strengthened by inclusion of equity, economy, environment, culturally-specific values, etc.;

- Compelling so there is increasing buy-in from advocates within and outside the community;
- A call to action that enables community members to see their roles in helping their community become resilient;
- Attainable but also adaptable so that it both stretches the community's reach and can adjust to changing conditions, and
- Opportunistic and forward-thinking to help the community with post-crisis priorities and to help take best advantage of the conditions and circumstances for improvement that often follow crises.

*f) The shared vision should communicate in meaningful and understandable ways*

- Addressing "What's in it for me?": The value and personal benefit of engaging in something like the CRS for individual community members, and
- Conveying community priorities and the timing of their implementation.

#### **4) Action Planning**

The CRS should include guidance on the following elements and best practices of action planning to help communities develop successful action plans:

*a) Research and identify existing action plans*

Action plans need to be relevant to the vision and could be integrated into the resilience action plan or into which resilience actions could be incorporated. The results of the research will minimize the potential for duplicating efforts, potentially streamline the process for developing the Action Plan and reinforce the concepts of resilience in other ongoing, complementary efforts.

*b) Identify key goals and targets for community resilience*

Goals and targets must be purpose-driven, measurable (success rate), and supportive of improving day-to-day community function as well as post-crisis recovery.

*c) Develop prioritized Action Plans*

Action Plans should be based on the community self-assessment, vision, and goals and targets. The CRS should provide resources (guidance, models, and perhaps technical support, etc.) to help develop plans that contain sufficient detail to provide a roadmap for implementation.

*d) Identify barriers, challenges and critical success factors*

Plan contingencies for key barriers and challenges that would enhance the community's ability to effectively implement the Action Plan.

*e) Communicate to the public and obtain feedback*

Help the RLT to test the components of the plan against both the self-assessment and the community vision. This will provide a valuable reality check from the community at-large on their buy-in and support for the proposed actions.

*f) Adopt Action Plans*

The community needs to establish a process for adopting and monitoring the Action Plans.

*g) Monitor and adapt plans*

To effectively implement the action plan the community needs to establish and implement a means to monitor progress and adapt the plan as necessary. As the CRS process is a continuous improvement process, thoughtful development and application of monitoring protocols are essential to the community's ability to improve its resilience.

Further, the CRS should provide the following tools and resources to aid communities in their development of action plans:

- Tips for success;
- Examples and models to go by, and
- Mentor Networks.

## ***5) Establish Mechanism to Implement Plan and Sustain Program***

*a) Become a sustainable collaboration*

The process, its products, and its participants must have an organizational/institutional home, and they must have some established mechanism of authority to implement and sustain the Resilience Action Plan over the long haul. The CRS should provide the following resources to help communities implement this stage of the process:

- Best practices/success tips;
- Templates;
- Database and technology to collect data, and
- Template for chartering the Resilience Group.

*b) Action Plan implementation should be a shared responsibility*

Implementation should not automatically belong to local Emergency Managers, as resilience is broader than conventional preparedness, emergency response and recovery.

*c) Provide options for functional, organizational structures*

CRS Governance Teams should not be comprised solely of local government. The CRS should provide various models of permanent, organizational homes for the process as useful resources for communities using the CRS (e.g., a 501(c) 3).

Additional steps that will help communities successfully implement resilience improvement activities are:

- **Monitor & Evaluate Progress:** Part of the detailed planning for each action should include specific milestones that the Ownership Team can monitor progress against – these milestones are important elements of the community’s ability to demonstrate not only its specific actions to improve resilience but also its overall progress in improving community resilience writ large;
- **Report Progress to Community at Large:** The broader public should be kept apprised of progress on individual actions during the implementation phase, and
- **Solicit and Integrate Community Feedback:** It is critical to not only report progress to the community but to also create the space within this process to check-in with the community at large to make certain that their valuable input is incorporated into the action plans and other CRS activities. The Ownership Team should solicit feedback as appropriate from the community.

**6) Evaluate and Revise the Community’s Resilience Program**

*a) Periodically evaluate and revise the resilience program*

Evaluation and revision should be part of a community’s continuous improvement process. In contrast to the previous stage which emphasized the implementation, monitoring and evaluation of the specific actions of resilience improvement plans, this stage is focused on the community’s efforts to continuously evaluate, adapt, and improve its overall resilience improvement process. Critical to this stage is evaluation of the community’s overall progress in increasing its resilience through testing – either through exercises and training evaluations or through post-crisis performance assessments.

*b) Self-monitor*

Provide a template that includes a core set of common critical functions that every community would monitor along with a menu of other functions from which communities can choose, tailoring the monitored parameters to reflect their own unique realities. The template should help communities: 1) measure progress against the outcomes and goals identified in the action plan, 2) provide reference points to national data or accepted standards, and 3) measure progress along a resilience rating scale. A third-party evaluation should be optional and available for communities that choose to go through it.

*c) Provide Success Tips*

Include tips for success that are applicable to the selection of parameters to be monitored and evaluated for progress, including tips on dealing with data gathered on a national scale as well as help with effective monitoring and evaluation practices at the local level.

*d) Provide guidance on resilience program testing alternatives*

Use exercises/scenarios, tabletops, and other practices that could help communities test the full spectrum of their resilience plans – recovery and renewal, not just response. In addition, for communities facing chronic crises or for crises that might be centered in certain economic or social crises, the CRS should accommodate these different crises and should also explore means of helping these communities practice and test their plans.

*e) Assess the state of resilience directly following a crisis*

Assessments can be used to recalibrate resilience plans and goals for continued resilience improvement. This step should include a mechanism that allows communities to weigh themselves against historic crisis performance in order to understand whether necessary improvements are occurring.

*f) Report on the state of resilience*

The state of resilience should include economic health and improvements on action plans and overall resilience improvement programs. Reporting should include:

- Reporting that documents in the CRS the status and improvements of the community's resilience program, and
- Reporting to the community members (or stakeholders) on progress of their specific plans and overall program.

At a minimum, communities should receive an annual progress report that highlights stories of success (the jewels of their accomplishments). Community members should have the opportunity to provide input and feedback on the reports.

## Other Key Recommendations

An important characteristic of the CRS will be to provide communities with guidance and the means to appraise and organize the resources necessary to develop collaborative structures before crises occur. Communities aspiring to improve their state of resilience will benefit greatly from assessing and analyzing interdependencies within the community, the region, and between and among other communities facing similar challenges.

## 1) *Regional Impacts*

In one way or another, communities operate with and depend on each other (neighboring or distant) in order to carry out daily activities (e.g., as public services, transportation, etc.). The relationship between communities and their regions is symbiotic and interdependent, and in order to understand and assess regional impacts in this context, strong consideration must be given to how regions are defined. By and large, regions tend to self-define; however, one of the challenges for the CRS would be to help communities lacking a self-defined regional identity.

Resilience in the context of regionalism must be approached on a case-by-case basis. In some cases, it may be best to start with the community (micro-level) and once communities implement and maintain the system individually then address the region (macro-level). Many communities already participate in some form of regional collaborative process or system in areas like planning, banking and finance, conservation, etc. Thus, there will be an opportunity for the CRS to help communities leverage and integrate their resilience work into existing regional-level collaborations. There may be some existing regional models that could be useful for this purpose. The CRS needs to be thoroughly incorporated as part of regional systems.

## 2) *Interdependencies*

Increasing a community's understanding of its interdependencies and interconnectedness helps poise the community to address crises in a holistic way, thus increasing the vitality and resilience of the community.

By helping communities understand how they are interdependent and contribute to each other's well-being within their region, the CRS will ultimately help them understand their interdependencies. Partnerships between the public and private sectors, collaboration, and communication are essential components of a community's process to identify their dependencies and interdependencies.

CLWG participants provided significant feedback regarding the tools, resources, and steps that could help communities to assess, understand, and address interdependencies. That feedback will be incorporated into the first iteration of the CRS. Some of the categories for resources and tools include:

- Mapping: access to tools and technologies to help map processes, networks, assets, geographic data, etc.;
- Inventories: access to tools and technologies to help catalog functions, assets & liabilities, critical infrastructure, etc., and
- Groups: committees, small work groups, focus groups, and town hall meetings to help collect important anecdotal information and grassroots knowledge.

### 3) *Other Systems, Programs and Resources*

Communities seeking to implement and maintain the CRS will require significant resources and support. The CLWG provided a lot of input on existing supports, aids, and resources that could be leveraged and used with and for the development of the CRS. The CRSI team should evaluate this information for use in the system.

Examples of existing systems and programs that are particularly relevant [but not exclusive] to CRS process stages: Develop Community Vision, Action Planning, and Evaluate and Revise the Community's Resiliency Plan are categorized and listed below.

- **Planning:** Local, regional, and national planning in the areas of emergency management, recovery, urban development, economic development and finance, etc.;
- **Social Services:** Law enforcement, fire and safety, health, education, community development, emergency operations centers, volunteer organizations, etc.;
- **Collaboratives/Committees/Commissions:** Local, regional, national in areas of: emergency management, recovery, urban development, economic development and finance, etc.;
- **Federal Programs:** Agencies like the Department of Homeland Security, Department of Housing and Urban Development, Department of Transportation, etc., and
- **Resilience-focused Research Projects:** The Southeast Regional Resilience Institute, Community Resilience & Vulnerability Assessment (NOAA), etc.

Recommendations for the resources that communities could leverage or require to effectively implement and maintain resilience-focused activities included:

- ***Financial:*** Financial resources are critical to a community's successful implementation of the CRS. Potential sources of funding include: grants from federal, state, private sector, and other funding institutions; private/public matching funds programs; and local and State monies (appropriated and taxes), particularly those allocated to sustainability and other resilience-related activities and programs.
- ***Infrastructure:*** In order to institutionalize resilience, there is a need for a dedicated body [a physical presence] to house the people responsible for the implementation of the system in their community. This "resilience office" could be embedded within existing offices (e.g., land use planning, economic development, human services, environmental).
- ***People and Facilitation:*** In addition to strong committed leadership, there is a need for people to help facilitate the activities embedded within the stages and steps of the CRS. In particular, there may be a role for facilitators to help communities with developing community visions, action planning, and navigating the grant application processes.
- ***Education and Training:*** The CRS must help communities educate and train citizens engaged in the resilience-building process. Community members need to understand why their community should improve its resilience. Training could also be a valuable resource for communities that are in the initial steps of implementing the CRS,

particularly in the stages and steps that require the use of assessment and evaluation tools.

## Supports, Aids, Resources

The approach to developing and identifying supports, aids, and resources for the CRS will be outcome-driven and focused on improving resilience, leveraging existing information, and borrowing and adapting whenever possible. Specific suggestions on supports, aids and resources made by the CLWG are listed below by category. These ideas will be assessed, matched with stages and steps of the CRS process, and made available to CRS users.

- Guidance documents: Clear and simple guidance on implementing the resilience-gear activities tied to the CRS stages and steps;
- Tips for success: Helpful hints to aid communities in gaining early success, avoiding paralysis, and creating momentum, including suggestions for easy improvements taking advantage of tried and proven methods;
- Examples: Models that demonstrate how other communities were successful and that will provide specific examples of how communities have maximized their effectiveness;
- Templates: Easy to use fill in the blank templates that will help communities streamline and coordinate resilience-building activities with other related ongoing efforts;
- Tools: Relevant software tools to assist communities with the implementation of the CRS stages and steps, and
- Collaborative resources: Mentors and networks to partner communities with limited experience with knowledgeable individuals and communities willing and able to provide advice and guidance.

Finally, as communities move through the CRS, they are likely to need different sets of tools and resources. Because communities will address different circumstances and have different needs as their resilience system matures, the CRS must include an evolving set of tools and resources.

## Benefits

The CRS should focus on outcomes and benefits as well as community actions towards becoming more resilient. It should stress to communities the importance of being outcome-driven and encourage a culture of continuous improvement so that movement toward greater resilience is an on-going part of daily operations. To achieve that kind of outcome and in a continual improvement culture, the CRS should be constructed to recognize and reward incremental progress – not just rewards based on achieving some ultimate level of resilience. This culture will help communities understand the consequences of inaction and, when combined with the multiple benefits of the CRS, stimulate their willingness to implement the system. It will also help communities increase their sustainability.

### 1) *Access to benefits*

To have access to benefits, communities need to be able to measure and demonstrate progress toward increased resilience. They need clear and specific guidance about what to measure in order to achieve which benefits (a quantifiable correlation between progress and impact). Potential assessment categories and elements for resilience benefits proposed by the RBWG as a starting point include: pre-disaster planning, economic development and business sector support, community-wide risk mitigation, community cost-of-loss analysis and strategy, and property owner risk mitigation. The CLWG proposed additional categories which are included above the Additional Key Recommendations section above.

### 2) *Motivating Factors*

The CRS should be designed to encourage different communities under different situations to work towards states of greater resilience. While a crisis can be a good community motivator, the CRS should also motivate communities in the absence of crisis. The CRS should be designed to inspire communities to become more resilient to chronic conditions (e.g., economic) and other potential threats such as a pandemic outbreak and/or terrorism. Motivation can come from:

- Personal drive and will to do so;
- A carrot of accruing benefits as a result of active efforts to achieve greater resilience;
- Desire to avoid the cost of inaction;
- An effective marketing, public relations, and education campaign to cultivate grassroots knowledge, develop appetites, and fuel community understanding and support of resilience and the benefits of improved resilience – a powerful picture or story of inaction can be one of the components of a great marketing campaign;
- Individual desire to know “What’s in it for me?” or a more community or generational centered message of “What’s in it for our kids?” or “What’s in it for us?”, and
- Private/public partnerships like, the Disaster Business Recovery Alliance, which can motivate communities in their resilience-building efforts.

Finally, the CRS should encourage communities to take advantage of the similarities between resilience-building and other related processes in their communities, such as a community’s ability to defend and protect itself, respond to crisis, and recover. Cultivating this approach, communities are more likely to view resilience as building on work that is already being done and making resilience more accessible for traditional emergency managers.

### 3) *Types of benefits*

Benefits included in the CRS should be direct and tangible (e.g., increased safety, improved infrastructure, etc.), and indirect and less tangible (e.g., improved quality of life, increased cohesiveness and pride, etc.). Some of the benefits should be economic. Examples of specific types of rewards for proven, increased resilience include:

- Insurance: Lower premiums (based on proved increased resilience and reduced risk) and comprehensive reinsurance (reclassified risks due to increased resilience);
- Grants (government, public, private): Capacity building (e.g., improving public works, etc.), collaborative assessments, visioning, planning, and implementation (grant funding based on a reliable rating system);
- Seed funding: Seed funding has to be enough to allow communities to implement the CRS without the traditional re-application process;
- Revolving loans;
- Increased property/land value in areas that adopt risk reduction measures;
- Tax rebates: Provided to individuals and businesses that take measures to reduce their risk and increase their resilience;
- Public/Private matching funds;
- Technical assistance: Knowledgeable individuals to help navigate grant processes, etc.;
- Access to facilitators;
- People and volunteers to aid and mentor: Both public and private sector;
- Excellence award: Such as blue ribbon, good housekeeping, JD Powers, etc.;
- Public and private partnerships to help fund and reinforce improvements, and
- A national community resilience day to celebrate community.

Implementation of the CRS also provides a community with an integrated picture of itself with the combination of the Community Snapshot and assessment picture. In addition, the CRS can help community leaders create and refine expectations for what a healthy and vibrant community looks like and result in better integrated community planning.

## Other Key Questions

In the course of their deliberations, the CLWG raised a number of tough questions to be addressed in the CRS in the near- and longer-term. Some of the key, recurrent questions are described below.

### *1) How effectively will the CRS address chronic as well as acute crises?*

While acute events take their toll on communities, chronic, long-term disturbances can be equally debilitating. Will the CRS be flexible enough to address both acute and chronic conditions, recognizing that resilience to acute crises is the preponderant focus?

### *2) How will the CRS address the need to measure the intangible aspects of the Resilience Assessment?*

A true picture of community resilience is shown by a combination of factors that are both tangible and intangible. Infrastructure and economics have more tangible characteristics which

might better lend themselves to hard data or metrics. However, other important qualities leading to resilience, such as vitality, sense of place, leadership, and strong cultural identity are intangible and are much more difficult to measure. Will the design of the CRS be flexible and adept enough to provide communities with guidance on how to develop credible measures on the intangibles through the self-assessment process?

### ***3) What options do communities have for funding their resilience-building efforts?***

Concerns about the amount of time and resources it will take to support resilience-building efforts were raised at different points in CLWG discussions, particularly at the outset of the process. Allocating resources for competing needs is difficult. Assurances that the CRS will provide guidance that will help communities minimize duplicative efforts and encourage communities to draw extensively from other related work within the community helped to address concerns about the potential cost. However, concerns about the resources necessary to implement the CRS remain.

### ***4) Will the CRS equip communities with guidance to build resilience to natural disasters versus all hazards?***

The question of “resilience to what” was repeatedly raised. Is it resilience to natural disasters (e.g., floods, hurricanes, tornadoes, winter storms, earthquakes, tsunamis, volcanoes, landslides, sinkholes, etc.), human induced hazards (technological hazards and terrorism), or both? Over time, the CRS will address all hazards, including incidents caused by terrorism, natural disasters, or any chemical, biological, radiological, nuclear, or explosive accident, requiring a multi-jurisdictional and multi-functional response and recovery effort.

## **Recommendations to the CRSI Steering Committee**

Many of the recommendations presented above are being included in the CRS – both in the philosophy and assumptions underlying the system as well as the specific guidance and actions outlined in the system. This section enumerates the “Category 3” subset of recommendations that are outside of the CRS and are presented specifically for the Steering Committee’s consideration and adoption in the overarching report (see discussion in “Introduction” above). These recommendations point to larger activities that contribute nationally to the cause of greater resilience. These recommendations are aimed at increasing access to tangible benefits for increasing resilience across the nation, and, if implemented, could help achieve an overall goal of increased community resilience nationwide.

### ***1) Leadership Development***

In order to build capacity for increasing community resilience, a collaborative effort with key national partners could be developed to provide leadership development programs based on the principles of community resilience. These programs should address leaders at all levels, but should focus specifically on cross-sector and local leadership.

## *2) Develop Direct and Tangible Benefits*

On-going efforts with government, private sector, and nonprofit leaders across the nation should focus on devising a program of direct and tangible benefits for communities who undertake resilience improvement. Over time, these programs and benefits can be tied directly to the CRS.

## *3) Communication and Awareness*

A national communication and awareness campaign is an essential element of a broad strategy to improve community resilience across the country. Such a campaign would be multi-faceted, including marketing and education components. This campaign should be built upon a collaborative effort with key national partners.

## *4) Collaboration with States*

States, state governments and state organizations play an important role supporting communities and serving as a liaison between local governments and the federal government. Increasing community resilience around the country will require engagement and cooperation with states. Efforts to collaborate with states and state organizations should seek to embed community resilience support and requirements into state-level programs.

## *5) Embed Community Resilience in Government Programs*

Over time, resilience should be integrated with various government programs. Collaboration through the CRS and outside the CRS should focus on increasing awareness of community resilience with government program administrators in order to embed community resilience into key government programs.

These recommendations are aimed at increasing support for community leaders working on resilience activities, and, if implemented, could help achieve an overall goal of increased community resilience nationwide.

## **Conclusion**

Developing and implementing a comprehensive and yet nimble CRS that will help all communities improve their state of resilience is an evolutionary process. This past year, the CLWG worked fervently to help the CRSI prepare for the second stage of the CRS development process – the 2011 pilot launch. In their short time together, the CLWG engaged fully in the process, shared their views on what works for communities, offered ideas for motivating them to improve their resilience, and provided specific guidance on the components of the CRS. The Work Group also identified longer-term opportunities to increase the CRS robustness as it matures over time.

The CLWG endorsed the recommendations outlined in this report as their collective wisdom and guidance for the development and implementation of the CRS. The CLWG process illuminated the following key points to keep in mind as design and implementation of the CRS progresses:

- Communities need to be inspired to engage in resilience; therefore, having vivid stories that communities can relate to will be critical.
- The details of what will be evaluated and how the evaluations will be performed are still unknown to the CLWG, but their structure and content will have great impact on the acceptability and success of the CRS.
- The CRS templates, the tools, and the tips provided will be of great value to communities.
- The CRS's encouragement of organized collaboration among all elements of a community is one of its most important values.
- Increased resilience requires change, which can be difficult, so the CRS must encourage communities to establish partnerships with various groups that will help motivate and sell the benefits of increased resilience to help support the necessary changes.
- The CRS will have to build and instill a common language for resilience.
- The CRS must convey a sense of constant progress and development, with intrinsic benefits that yield extrinsic rewards.
- A shared vision is paramount and individuals, families, and businesses need to see themselves in it.
- Communicating the “why” for improving resilience should be highest priority for an engagement strategy.
- The CRS needs to be adaptable to changing community needs in order to ensure the sustainability of the process.

These recommendations, combined with the recommendations from the other CRSI groups – the Subject Matter Working Group (SMWG) and the Resilience Benefits Work Group (RBWG) – should help outline a broad, multi-faceted CRS. At the end of the process, CLWG representatives from all sectors were enthusiastic about the prospect of a Community Resilience System and many expressed interest in supporting further development of the CRS in the future.



## Attachment A. Community Resilience System Initiative – Community Leaders Work Group

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*Note: The views expressed by participants of the Community Resilience System Initiative (CRSI) Community Leaders Work Group represent their individual perspectives and do not necessarily reflect the views of their respective organizations.*

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## Attachment B. Community Functions Recommended for Assessment

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<p><b>Infrastructural functions</b></p>	<ol style="list-style-type: none"> <li>1. The community ensures the safety of its citizens.</li> <li>2. The community protects and promotes the health care of the community.</li> <li>3. The community ensures its citizens have access to adequate energy supplies.</li> <li>4. The community maintains effective transportation systems.</li> <li>5. The community safeguards its community records.</li> <li>6. The community ensures its citizens have access to ample water services.</li> <li>7. The community safely disposes of its solid waste.</li> <li>8. The community maintains a healthy natural environment.</li> <li>9. The community maintains the ability to communicate with its citizens.</li> <li>10. The community ensures an adequate food supply and distribution system.</li> <li>11. <i>The community provides public health services.</i></li> <li>12. <i>The community utilizes and maintains information technology and GIS systems.</i></li> <li>13. <i>The community ensures the effective disposal of waste water and storm water.</i></li> <li>14. <i>The community maintains parks and recreation facilities.</i></li> <li>15. <i>The community maintains planning capacity.</i></li> <li>16. <i>The community safeguards facilities, public and private.</i></li> </ol>
<p><b>Economic functions</b></p>	<ol style="list-style-type: none"> <li>17. The community maintains a robust economy.</li> <li>18. The community provides employment for all who seek work.</li> <li>19. The community ensures adequate wages.</li> <li>20. The community ensures there is adequate and affordable housing.</li> <li>21. The community works to maximize the value of those with special challenges.</li> <li>22. <i>The community provides and maintains effective social services.</i></li> </ol>
<p><b>Social functions</b></p>	<ol style="list-style-type: none"> <li>23. The community provides opportunities for its citizens to develop nonacademic skills.</li> <li>24. Citizens and citizens' groups take ownership of their community.</li> <li>25. The community fosters a sense of community and place.</li> <li>26. <i>The community maintains a willing workforce.</i></li> <li>27. <i>The community fosters robust social networks.</i></li> </ol>
<p><b>Cross-Cutting functions</b></p>	<ol style="list-style-type: none"> <li>28. <i>The community has strong leadership (governance).</i></li> <li>29. <i>The community takes steps to mitigate risk.</i></li> <li>30. <i>There is strong interconnectivity and interdependency across the community.</i></li> <li>31. <i>The community provides effective educational and training systems for its citizens.</i></li> </ol>

*\*Functions in red were added by Community Leaders Work Group.*

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## Attachment C. Integrated CRS Process Chart (Salt Lake City Meeting)



## Assess Community Assets and Vulnerabilities

### Steps

**Construct Current Community Profile**

### Comments

Data gathering; "Who we are/What we do"  
(Snapshot Data)

Gather and look at historical best practices and lessons learned from past crises

Collect risk and vulnerability information from existing plans (UASI, disaster plans, flood management plans)

Begin to define shared resources and availability of resources

**Perform a Multi-hazard Resiliency Assessment**

Use provocative questions to shape resilience assessment

- What are my strengths, weaknesses, opportunities, and threats?
- Who do I depend on ?; who depends on me?
- What are the consequences of doing nothing?
- What is remaining?

## Engage Community At Large

### Steps

### Comments

**Broaden Community Engagement**

Based on community engagement protocols developed by the Task Force

Multiple layers:

- Full Fabric
- Awareness
- Connection
  - Buy in
  - Involvement
- Outcome (Accountability-continual feedback to community on progress)

**Share Community Profile and Resiliency Assessment**

Community Engagement tool kit (CRS provides Community Engagement Took Kit)

**Test the assumptions and results of Community Profile and Resiliency Assessment**

## Develop Community Vision

### Steps

### Comments

**Research to identify existing visions**

Continue Broadened community engagement– ensuring visioning includes diversity and fully representational participants

Does my existing community vision reflect resilience?

- Integrate other community visioning processes (for example regional visions);
- Recognizes and builds regional synergy

**Developing a shared community vision**

- Ensure Vision Process Produces an Effective Vision**
- Shared
  - Compelling, builds and grows advocacy
  - Has call to action -- Build a vision do the vision
  - Attainable but is a stretch
  - Addresses What's in it for ME?
  - Communicated in a meaningful and understandable way
  - Has a sense of tiers, timing, phases
  - Enables taking advantage of opportunities created following a crisis
  - Interest/outcomes based not position-based
  - Equity, economy, environment, and culturally-specific values, etc

**Communicate to and obtain feedback from the community**

## Action Planning

### Steps

### Comments

**Identify goals and targets**

- Needs to be purpose driven – where do you want to go?
- Must be applicable to day-to-day life of the community

**Develop Prioritized Action Plans**

Research to identify and integrate existing action plans relevant to the vision

**Identify barriers, challenges and critical success factors**

**Communicate to and obtain feedback from the community**

Test against vision, necessary scenarios, specific community cultural issues, WIIFM

**Adopt Action Plans**

Assign accountability and responsibility

**Monitoring and Adaptation of Plans**

- CRS provides
- examples, models, and successful go-bys
  - Mentors, sister cities, user networks
  - Tips for success
    - Don't get hung up or paralyzed; start where you can get agreement then move to improvements you can address
    - Get early success and build momentum
    - Balance priorities with opportunities

## Establish Mechanism to Implement and Sustain Plan

### Steps

### Comments

**Designate Accountability Agent**

- Identify (self select) Potential Lead Organizations to implement each prioritized action
- **RG has to have a sustaining entity (any of the willing member organizations)**
  - ✓ Local government (emergency management should NOT be the lead)
  - ✓ Community organizations
  - ✓ Stand alone 501C3
- ✓ CRS should provide the best practices/success tips
  - ❖ Ability to have database
  - ❖ Project management skills and abilities
  - ❖ Ability implement change (organization and person)
  - ❖ Obtain senior management buy-in (know that members have means to regularly update their senior management chain)
- **CRS should provide a template for chartering the Resilience Group (RG)**

**Authorize Action Plans for Implementation**

- Devise measures that encourage
- Determine Lead Responsibility for each action
- Action Plans should prioritize actions by analyzing:
  - ✓ High probability low impact
  - ✓ Low probability high impact
  - ✓ Consider cost (how will we resource), probability issues and low-hanging fruit
- ✓ CRS Success Tips on how and where group can look for funds to implement actions

## Establish Mechanism to Implement and Sustain Plan

### Steps

Set up Implementation Work Groups

Monitor and Evaluate Progress

Report Progress to community at large

Solicit Community feedback

### Comments

- Develops Detailed Plans to Implement the Actions
  - Considering redundancy, robustness, and flexibility
- Responsible agent institutes project management measures

- Implementation plan should identify tracking and reporting frequency
- Include stakeholders
- Transparent reporting to the broader public
- The last 3 steps should be concurrent

**Evaluate and Revise the Community’s Resiliency Program**

**Steps**

**Monitor and Evaluate Progress**

**Comments**

- Every Community should Self Monitor
  - CRS provides self-monitoring template
- Monitors against
  - Progress against the outcomes identified in Action Plan
  - CRS provided reference pts to national data or accepted standards
  - Progress along a resilience rating scale
- Some communities may also choose to have an outside, neutral 3<sup>rd</sup> party perform an evaluation, or be involved in an independent “certification” program
- CRS Success Tip – key to effective monitoring and evaluation is the degree of attention put into the Action Plan
  - ✓ Clear expectations
  - ✓ Clear outcomes
  - ✓ Clear timeline
- CRS Success Tip – gathering data on national scale will help improve the CRIS

## Evaluate and Revise the Community's Resiliency Program

### Steps

### Comments

**Test the Plan**

1. Where appropriate, test through exercises and scenarios (Does this work?)
  2. Evaluate and test post-crisis (Did this work?)
  3. For some crises( like chronic economic) may not be appropriate
- Identify deficiencies in the action plan
- This is a cyclical loop with previous stage
4. Revise the action plan to address deficiencies
    - Resilience is more than recovery, is the ability to adapt to stressors

**Post-Crisis Assessment of Community Resilience**

- Make sure the post-crisis assessment checks against historic crisis performance
- Critical function is to evaluate communication
- Tweaking/modifying goals in the plan
- Done annually (ideally timed with budget cycles)

## Evaluate and Revise the Community's Resiliency Program

Steps

Comments

**Reporting**

### Regular Progress Report

At minimum annual reports to the public and key stakeholders  
Periodic reports  
Opt-in highlight that the public has access to

### Annual Report to the Public

Formal report that goes out to everyone in the community  
Highlight of Jewels

## ANNEX 2.2. Community Resilience System Initiative (CRSI): Resilience Benefits Work Group (RBWG) Report

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*Final Report to CRSI Steering Committee*

### Prologue

The past year saw the development of an exciting, multi-faceted, and sometimes complex nationwide collaborative process to develop a national system for assessing, promoting, and enhancing community resilience.

Circumstances across the nation call for such a system, and decision makers – from local council members to the President of the United States – are engaged and interested in seeing its development. The Administration has expressed great interest in increasing national resilience and has included it in the national security strategy for 2010. Community-level resilience is increasingly seen as an integral part of pursuing greater national security, and there is general sentiment that the nation needs to return to its resilient roots where individuals, families, employers, governments, and communities are able to regain responsibility for their resilience. As one community leader aptly put it “resilience starts with individuals and families and encompasses the full fabric of the community.”

This process, the Community Resilience System Initiative (CRSI), is funded by the Community and Regional Resilience Institute (CARRI). CARRI was initiated in 2007 to understand what makes communities resilient to the impacts of disasters, determine if such resilient qualities could be evaluated and objectively measured, and develop tools to help communities assess their resilience and implement actions to improve it. For the past four years, CARRI sponsored research at a network of national laboratories and universities, worked with three partner communities in the Southeastern United States to gain practical understanding of community resilience, and supported community activities to capture and apply lessons learned.

In 2010, CARRI shifted its focus to the CRSI. This national, collaborative process is designed to develop the CRS to help communities become more resilient by providing: 1) clear, practical tools to assess, monitor, and improve their resilience; and 2) a roadmap for implementation so that these tools can be fielded as effectively and efficiently as possible. The tools will be coupled with guidance on how communities can benefit from their resilience improvement as effectively and efficiently as possible. The goal of the CRSI is to produce a system with a usable set of tools that starting in fall 2011 communities can pilot and implement immediately.

The CRSI is guided by a senior-level Steering Committee comprised of key participants from across the nation representing all aspects of community. The Steering Committee is responsible

for producing a final report, or roadmap, which will provide the nation with a practical system for assessing, improving, and rewarding community and regional resilience and which will recommend a strategy that will address key policies and incentives needed to implement the Community Resilience System (CRS or the system).

One of the most important steps in developing the CRS was convening the broad-based discussion and development process, largely achieved through the activities of the work groups. The ongoing, active and devoted engagement of the RBWG represents a large and essential part of this effort. In this first year of activity, the forty-member Resilience Benefits Work Group (RBWG) identified tangible benefits that communities may be able to receive for increasing their resilience and how the CRS can effectively integrate these tangible benefits into the system. The ensuing report represents the culmination of countless hours of work done by members of the RBWG to provide input, guidance, and recommendations to the Steering Committee regarding tangible benefits and the development of the system.

## Introduction

This report to the Community Resilience System Initiative (CRSI) Steering Committee presents the recommendations of the CRSI Resilience Benefits Work Group (RBWG). This report begins with an overview of the purpose of the RBWG and the process employed to develop the group's recommendations. It then reviews key themes that emerged during the process, outlines a set of working principles that guided the work of the RBWG, and provides the detailed recommendations developed for three focus areas – federal programs, economic development, and risk management (e.g., insurance). Finally, the report discusses the ways in which benefits in each area can be mutually reinforcing, presents categories and elements to be considered in the design of the community resilience self-assessment, provides additional advice about CRS design considerations, and recaps important highlights from the input and insights provided by the RBWG.

The input and recommendations presented throughout the report generally fall into three categories: (1) recommendations regarding principles which should underlie the development and use of the CRS; (2) recommendations regarding the components and construction of the system itself; and (3) recommendations which address issues and activities *outside* of the CRS. Recommendations in the first 2 categories are generally being addressed in the development of the CRS (or will be addressed in future evolutions of the system). Recommendations in the third category represent actions that are necessary to the creation of a national culture of community resilience – an environment in which use of the CRS would be most effective. These recommendations are presented for consideration and inclusion in the overarching Steering Committee report. Recommendations in this category are specifically enumerated at the close of the report immediately preceding the conclusion.

## Overview of Work Group Purpose and Process

The stated purpose of the Resilience Benefits Work Group was to identify tangible benefits communities may be able to receive for increasing their resilience. The CRSI employed the following working definition of community resilience:

Community resilience encompasses an entire community (*physical infrastructure, economic and social capital, natural environment, and systems/essential services*) and its ability to resist and/or rapidly recover from extreme events.

RBWG membership included representatives from major insurance and reinsurance companies, insurance industry trade associations and independent insurers, as well as government agencies that provide community funding, technical assistance, and community economic development experts. The complete list of RBWG participants is available in Attachment A.

The RBWG process consisted of a combination of individual phone interviews, one web-based virtual meeting, an electronic survey, three large in-person Work Group meetings, three small in-person Task Team meetings, between-meeting email communications, and informal conversations with Work Group participants. The CRSI Team also conducted background research on an ongoing basis to develop working knowledge of the insurance industry, relevant federal funding and technical assistance programs and key economic development concepts and strategies.

Between April and June 2010, the CRSI Team worked to identify and secure participation from an experienced set of experts from the aforementioned types of organization who were interested in contributing to the development of the Community Resilience System (CRS). Once participants were identified, the CRSI Team began conducting an initial round of convening interviews to explain the structure and objectives of the CRSI. These interviews also served to identify key issues and scope potential foci for the work group discussions. On June 30, 2010, Work Group members were formally introduced to the structure, anticipated process, goals and conceptual framework for the CRSI and the “Incentives and Rewards Work Group,” as this group’s efforts were originally titled.

Following the June 30 virtual meeting, the CRSI Team continued conducting convening interviews and designed the agenda for the first in-person Work Group meeting held on July 22, 2010 in Washington, DC. Two key outcomes from the first meeting were the changing of the group’s name to the “Resilience Benefits Work Group,” and the decision to hold a set of smaller Task Team meetings to do focused work in each of the key focus areas identified at the first meeting – insurance/risk management, federal programs, and economic development. Task Team meetings were held on each of the respective focus area topics during the week of September 6, 2010 in Washington, DC.

The draft focus area proposals that emerged from the Task Team meetings served as the focal point for discussion for the second in-person RBWG meeting. The draft task team proposals were structured according to near-term (April 1, 2011, CRS pilots), mid-term (1 to 2 years), and

longer-term (2 to 5 years) opportunities to pursue relative to CRS design and implementation. These proposals formed the basis for the recommendations to the CRSI Steering Committee presented in this report. The draft proposals and recommendations were refined and expanded based on input at the second Work Group meeting on September 30, 2010 in Washington, DC. The final in-person meeting on November 4, 2010, also held in Washington, DC, centered on finalizing the focus area proposals and gathering feedback on a proposed set of community self-assessment categories and elements. The balance of this report details the recommendations and advice produced by the collective expertise and insight of RBWG participants during the approximately seven-month process.

## Key Themes

The following key themes regarding how the CRS can best lead to resilience benefits for participating communities emerged during the course of the RBWG process.

### *Connect the Dots*

A range of insurance industry incentives aimed at encouraging risk mitigation and management, as well as a variety of federal programs that could support resilience building activities, already exist. However, information about such incentives and programs is not readily accessible to the public or to community leaders seeking to address resilience needs in their communities. Therefore, the real challenge for the CRS is not to create new incentives or programs, but to “connect the dots” by cataloging existing incentives and programs and providing guidance to community leaders and constituents about how to tap them.

#### **A. Education and Outreach**

Education and outreach will play a key role in the successful implementation of the CRS, both in building community leaders’ awareness about the prospective benefits of improving community resilience – inherent everyday benefits and tangible, long-term economic benefits. It will also be crucial to promoting the benefits of resilience and the CRS among constituents.

#### **B. Make the Business Case**

Making the “business case” for community resilience to government, insurance and banking representatives will be critical to the success of the CRS. The insurance industry and other investors will need to have confidence that enhanced community resilience will reduce risk and generate a sufficient return on investment, as will constituents whose support and participation will be required to truly build resilient communities.

#### **C. Mitigate Community Risk**

The CRS must stimulate community leaders and other community members to think strategically about risk mitigation, and to examine and plan for the resilience of the community as a whole, instead of at the level of individual properties.

#### ***D. Strive to Thrive***

The CRS should help communities thrive by teaching them how to function better and thrive on a daily basis rather than focusing strictly on how to avoid losses and survive. The economic development concept of creative destruction – opportunities for growth and development emerge from destruction – is a potentially useful platform for motivating communities to prepare to seize opportunities to do things better in the wake of disaster.

#### ***E. Motivate Action***

Perhaps the most important and recurring theme throughout the process was that the CRS must motivate community leaders and constituents to “do the right thing” to anticipate, mitigate, and plan for recovery from the impacts of a disaster. The system design should pay careful attention to the needs and motivations of community stakeholders, and be evaluated according to what catalyzes people to take action. Leadership is critical both in terms of gaining the support of constituents to make resilience a priority, as well as ensuring that there are people designated to implement resilience plans in a community.

The CRS must include mechanisms and resources that will catalyze a community to take certain actions to enhance its eligibility to receive different types of resilience benefits. Weaving particular questions and/or resources into the assessment, community visioning, and/or action planning steps of the emergent CRS process is a practical strategy to accomplish this.

### **RBWG Working Principles**

It became clear early in the RBWG process that it would be extremely difficult, if not impossible, in the near-term to devise linear pathways by which communities could directly garner tangible benefits by carrying out specific resilience building actions as part of the CRS. Instead, the RBWG focused its work on identifying existing incentives and potential benefits that the CRS can highlight and help communities attain. The working principles outlined in Figure 1 below were developed based on input from early convening interviews and the first in-person RBWG meeting, and served as the foundation of the group’s work for the balance of the process.

With these working principles as a platform, the RBWG developed its recommendations to the Steering Committee. The recommendations span three focus key areas – federal programs, economic development, and risk management (e.g., insurance) – and are presented in the following three sections of the report. Though the three areas are interrelated (i.e., the “mutual business case”), treating each area separately was the most practical approach to developing and presenting the recommendations.

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business case”), treating each area separately was the most practical approach to developing and presenting the recommendations.

*The Community Resilience System should increase communities’ eligibility for and access to tangible resilience benefits by:*

- *Educating community leaders and constituents about existing resilience-oriented insurance incentives, federal programs, certification systems, decision support tools, and disaster mitigation best practices.*
- *Motivating communities to “do the right thing” to anticipate, mitigate, and plan for recovery from the impacts of a natural or man-made disaster.*
- *Enhancing communities’ attractiveness to insurers, investors, and funders.*
- *Facilitating the integration of resilience factors into ongoing community planning activities, sustainability initiatives, and residential and commercial construction.*
- *Illuminating the “mutual business case” among the private sector, investors, and government funders for encouraging and rewarding resilience-building activities.*
- *Capturing community-based resilience success stories that can be leveraged by community leaders to catalyze resilience building activities in their communities, and by policymakers to influence policy changes at the state and federal level.*

**Figure 1**

## **Federal Programs and Resilience Benefits in the CRS: Opportunities and Recommendations**

The Community Resilience System (CRS) should provide a roadmap for communities to navigate the many different federal funding and technical assistance programs that relate to resilience building activities. To that end, the CRS would help communities:

- **Obtain Federal Funding and Technical Assistance:** The CRS could help communities identify and increase their eligibility for available federal funds and assistance. Each program has different requirements. The CRS could help identify the requirements of desired grants and help communities integrate those requirements in their resilience planning.
- **Build Capacity and Community Network:** The CRS could provide resources that help communities identify critical capacity building needs as well as connect and coordinate ongoing resilience-oriented groups and activities in the community.
- **Work with States:** The CRS could provide resources that help communities identify relevant state players in the arena of disaster planning and recovery and connect with them in ways that take advantage of the intended role of states as intermediaries between the federal government and local agencies and organizations.

### 1) *Near-Term Opportunities: Link CRS to an Initial Set of Federal Programs*

The CRS would increase communities' access to and eligibility for federal grant funding and/or technical assistance. In the near-term, the CRS would identify an initial set of three to five programs that it would highlight as opportunities for pilot communities. The goal would be to: 1) determine how well the CRS enables communities to obtain different types of assistance – ideally providing the pilot communities with the benefit of desired funding and/or technical assistance; and 2) shape program criteria to reflect resilience factors in the future. The initial set of programs should reside in a few different agencies and include a mix of new and established grant programs, as well as technical assistance.

#### a) *New Grant Program*

Recently established grant programs may offer opportunities for the CRS to shape or influence the criteria used to select recipients as they grow into the future. CRS should collaborate with the administrators of a nascent program to integrate resilience into the award criteria. A near-term opportunity identified by the RBWG is:

- **HUD Sustainable Communities Regional Planning Grant Program:** This program is new and relatively small, but likely to be continued and grow in the future. The program is part of the [HUD-DOT-EPA Interagency Partnership for Sustainable Communities](#) and is designed to create stronger, more sustainable communities by connecting housing to jobs, fostering local innovation and building a clean energy economy. The Regional Planning grants will be awarded competitively to multi-jurisdictional and multi-sector partnerships as well as regional consortia consisting of state and local governments, metropolitan planning organizations, educational institutions, non-profit organizations and philanthropic organizations.

#### b) *Established Grant Program*

Established programs typically have significant funding available, but also have more rigid guidelines and set award criteria. In the near term, the CRS can provide guidance to help communities increase eligibility within existing parameters. There may also be opportunities to build relationships with the administrators of certain programs during the CRS pilot phase and potentially influence program adjustments over the longer term. A near-term opportunity identified by the RBWG is:

- [HUD Community Block Development Grant \(CDBG\):](#) The largest grant making program within HUD, the CDBG Program is a flexible program that provides communities with resources to address a wide range of unique community development needs. Beginning in 1974, the CDBG program is one of the longest continuously run programs at HUD. The CDBG program provides annual grants on a formula basis to 1209 general units of local government and States.

### c) *Technical Assistance Program*

Community capacity is as critical to resilience as funding. The CRS has an opportunity to connect communities to federal technical assistance programs that can provide and help build resilience-oriented capacity in communities. A near-term opportunity identified by the RBWG is:

- The [USDA Rural Development Office of Community and Economic Development \(CED\)](#) administers rural community and regional development programs through technical assistance within USDA Rural Development. The programs demonstrate how every rural community or region can achieve self-sufficiency through innovative and comprehensive strategic plans developed and implemented at a grassroots level. The programs stress continued local involvement and decision making, which is supported by partnerships among private, public and nonprofit entities.
- [NOAA-EPA Coastal Community Development \(CCD\) Partnership](#): In January of 2005, NOAA and EPA signed a MOA to formally establish the CCD Partnership to better support state and local development innovations. The EPA-NOAA Partnership addresses community needs for training, information, policy advice, best practices, and technical assistance by providing: publications to guide state and local agency decision-making; outreach to smart growth stakeholders on coastal community planning and development issues; and access to technical assistance by developing specialty teams to work on locally identified issues.

The programs listed above are illustrative of the types of programs the RBWG suggested including the initial portfolio of the CRS and do not represent a comprehensive list of the programs to which the CRS could potentially link over time.

## 2) *Mid-Term Opportunities*

The CRS should develop a comprehensive catalog of the government grants and programs available to communities pursuing resilience building activities and make it available in an easily accessible and searchable database. The RBWG began to develop a list of key resilience-oriented programs and map them onto the “loss-recovery curve” to indicate at what point assistance is available (i.e., pre- or post-disaster). The RBWG Team has compiled a database of existing federal programs and will coordinate with the FEMA Long Term Community Recovery Branch (LTCRB) to catalogue government funding and technical assistance programs relevant to the design of the CRS. The LTCRB is directly involved in FEMA’s development of the National Disaster Recovery Framework (NDRF) annexes so there may be opportunities to align and/or link the CRS and the NDRF so that they mutually reinforce one another over time. The CRS could potentially influence the shape of programs highlighted in the NDRF, while helping position communities to leverage benefits offered by those programs.

### 3) *Longer-Term Opportunities: Influence Federal Programs, Legislation and Policy*

The CRS should recommend changes and actions that will advance the institutionalization of resilience and pre-disaster planning and mitigation activities within federal programs, laws and policies. Opportunities to influence such changes include:

- Encourage the revision of guidelines and award criteria within existing federal grant and technical assistance programs to more explicitly recognize resilience factors and activities. For example, such revisions could include guidance about and recognition of measures to account for future hazards in pre- and post-disaster hazard mitigation planning.
- Encourage the development of new federal grant and technical assistance programs that focus specifically on building resilience.
- Advocate for legislation that shifts the focus more toward pre-disaster preparedness and resilience building activities, such as the Disaster Response, Recovery and Mitigation Enhancement Act of 2009 (H.R. 3377), which proposes amending the Stafford Act to include more pre-disaster measures.
- Highlight and endorse proposed programs, bills, policies or plans designed to enhance the resilience of the nation's communities to natural or man-made disasters, such as the National Broadband Plan, which recommends the creation of a nationwide interoperable public safety broadband wireless network.
- Advocate for enhanced inter-agency coordination and collaboration on resilience activities within the federal government and across scales of governance. One potential recommendation could be for the formation of a "National Disaster Recovery Board" that would conduct post-disaster resilience assessments in a similar fashion to how the National Transportation Safety Board assesses the causes of major transportation accidents.

### **Economic Development and Resilience Benefits in the CRS: Opportunities and Recommendations**

Resilient economic development centers on the robustness of local economies and the ability of a community to stimulate entrepreneurship, optimize investments, and foster a culture of economic possibility and confidence. Local economies can be impacted by both acute disruptions, as in the case of a natural disaster, but can also be affected by chronic disruptions or failures. Some common ways in which communities are vulnerable to economic disruption are when they are:

- Dependent upon a single business or industry that fails or relocates;
- Dependent on a single sector that undergoes significant change, or
- In a national economic downturn that affects all businesses.

The CRS should be designed to help assess and address the vulnerability of local economies to natural and man-made disasters. It should also motivate communities to proactively develop a vision and establish mechanisms that strengthen the local economy on a day-to-day basis, which in turn will make it more resilient in the face of disruption. The CRS should provide resources that foster the following characteristics of entrepreneurial, resilient local economies:

- Shared community vision and leadership;
- Capacity for planning and business support services;
- An economic base with a complementary, resilient portfolio of sectors;
- Access to capital for small, medium and large businesses, and
- Incentives and mechanisms to motivate action.

In the case of the first three characteristics, the CRS should benefit communities by providing them with the tools, templates, models, and guidance that will help them in achieving these characteristics – key elements in communities’ improved resilience. The last two elements are more tangible benefits that communities can achieve as a result of taking steps to improve their resilience.

### ***1) Shared Community Vision and Leadership***

The CRS should stimulate community leaders from all sectors to collaborate on the creation of a shared vision for resilient economic growth so that the community collectively understands the local economic development strategy. Communities must identify their competitive advantage in the regional economy and identify ways to build on it. Leaders must plan for the next increment of growth on a continuous basis so that the community is able to target investment at pivotal nodes in the local economy, and adapt to changing economic circumstances as they arise. Developing a vision for the local economy will enable communities to adapt more nimbly in the event of disruption, and see opportunities for improvement as a result of the disruption. For example, the vision may include options for catalytic development projects that will stimulate additional economic growth and help create a sense of place. Such projects may be developed pre-disaster, or could be a component of recovery planning and in the queue for development if an opportunity arises in the wake of disaster. The CRS should provide models, guidance, and links to other resources that will aid communities in developing and articulating the economic elements of their shared community vision. Key components of a community’s vision should then be translated into operational terms in the action planning phase of the CRS.

### ***2) Capacity for Planning and Business Support Services***

In addition to developing a community vision for economic growth, the CRS should provide resources to help communities build capacity for economic development planning and the provision of business support services. CRS assessment tools should help communities analyze and understand their capacities to provide free or low-cost business counseling and training to entrepreneurs and small businesses. For example, whether a community has a [U.S. Small Business Administration \(SBA\) Resource Partner](#) center, or a similar entity, could be one

indicator of economic development capacity. In addition, the CRS should stimulate community leaders to develop strong relationships with state and federal agencies that support economic development activities. The National Disaster Recovery Framework currently under development includes recommendations along these lines. These linkages to appropriate state and federal economic development programs may offer additional resources that will benefit communities' capacities for economic planning and business support.

### **3) Resilient Portfolio of Economic Sectors**

The CRS should highlight the importance of a developing an economic base comprised of resilient economic sectors that generates and sustains cash flow from multiple business sectors or clusters<sup>1</sup>. Resilient economies have businesses in stable and resilient sectors that complement each other, not simply many businesses in one sector<sup>2</sup>. Regional economic development planning is a common strategy employed by communities to leverage local economic strengths against those of other neighboring communities. The CRS could include guidance about the incorporation of regional planning into resilience action plans. There may be opportunities for the CRS to link with the hundreds of regional development organizations that receive funding from the U.S. Economic Development Administration (EDA).

### **4) Access to Capital**

The CRS should stress the importance of understanding the capital needs in the life cycle of the different types and sizes of businesses in a community and whether the community possesses "capital pipelines" or conduits to meet those needs. The CRS should provide tools to help communities conduct this analysis and identify gaps. In addition to traditional sources of capital such as banks or federal grant programs, communities must create mechanisms to attract private investment in the resilience of the local economy. The CRS should encourage communities to explore the creation of alternative avenues for businesses to access capital. For example, communities can establish locally-based economic development funds or micro-loan institutions through the pooling of public and private capital. This type of organization can help

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<sup>1</sup> Siegel, Paul B., Thomas G. Johnson, and Jeffrey Alwang. 1995. "Regional Economic Diversity and Diversification: Seeking a Framework for Analysis." *Growth and Change* 26(2): 261–284. Clusters as a development strategy often increase the risk of economic instability since a group of interrelated firms will magnify external economic shocks experienced by any of the component firms. On the other hand, clusters based on common factors of production but with limited supply-chain linkages may reduce susceptibility of a local economy to external economic shocks, and factors of production with alternative employment during economic downturns.

<sup>2</sup> Siegel, Paul B., Jeffrey Alwang, and Thomas G. Johnson. 1995. "A Structural Decomposition of Regional Economic Instability: A Conceptual Framework." *Journal of Regional Science* 35 (August): 457. Empirical research shows that the most stable economies are not necessarily the most diverse economies. Stability comes from dependence on stable sectors, especially a mix of sectors which are not vulnerable to similar external shocks. Stability is only one aspect of resilience, but does contribute to resiliency. It follows that a resilient economy is comprised of resilient sectors especially those that, when susceptible to shocks, are susceptible to different shocks than other sectors in the economy.

new businesses get started as well as provide small loans and reinvestment capital to help local businesses rebound during the response phase of a disaster.

The CRS providing resources to help communities establish this type of institution would reduce dependence on federal loan programs for capital. All loan programs are limited by the debt burden of the applicant and economic factors affecting repayment ability, and they often only assist a fraction of those impacted by disaster. The CRS can help communities establish a local source of investment capital so that they will be in better position to leverage federal programs as stimulus partners to help initiate recovery and “prime the pump” of the private sector. Access to community sources of capital can facilitate more rapid reinvestment, rebuilding and reactivation of community resources left idle in the wake of a disaster (i.e., human resources, facilities, and funding previously dedicated to businesses that failed due to the disruption). Northeast Ohio’s [JumpStart](#) program offers a successful model for community investment.

### **5) Mechanisms to Motivate Action**

A central challenge of the CRS is how to help motivate lenders and investors to make capital available to communities seeking to build up their economic resilience in the absence of a recent disaster or impending threat. The CRS needs to help demonstrate the business case for lenders to invest in pre-disaster mitigation measures, as well as rebuilding stronger in post-disaster recovery. The CRS could potentially develop the following resources in the near- to mid-term to support communities in meeting this challenge:

- Roadmap to assist communities in identifying and navigating sources of government funding for economic development;
- Menu of replicable public-private partnership models that create alternative capital pipelines into the community;
- Illustrate the business case for mitigation and resilience to catalyze community leadership and motivate lenders;
- Resources for the development of a community business recovery plan (i.e., sustaining cash flow and access to capital);
- Package of information about business resilience that trusted financial institutions can provide to small businesses;
- “Cost of loss” scenarios and data, as well as illustrations of the long-term savings that can be accrued through mitigation investments that prevent losses (i.e. commoditization of cost savings in similar manner as energy efficiency improvements), and/or
- Business resilience auditing resources linked to tangible benefits.

### **6) Longer-Term Opportunities**

The CRS should also explore the following longer-term opportunities to create incentives and mechanisms to support resilient economic development in communities:

- Collaborate with government, banking, institutional and private investors, possibly through the White House Long-Term Disaster Recovery Working Group, to identify new ways to introduce pre-disaster capital for small businesses, and
- Recommend adjustments to certain federal programs that need more flexibility, or better integration with other programs, so that they can adapt to the unique pre- and post-disaster economic development needs of specific communities.

## **Risk Management and Resilience Benefits: Opportunities and Recommendations**

Insurance is all about identifying, mitigating and transferring risk. Insurance is critical for helping communities recover from disaster, but pre-disaster risk management and mitigation are of utmost importance to a community's resilience and help minimize the ultimate cost of insurance for communities and insurers. The CRS should provide resources to community leaders and constituents to assist them in how best to interact with the insurance industry in assessing, mitigating and financing their community's risk.

Effective management and reduction of the community risk profile can increase community and/or individual eligibility for benefits (e.g. improved scores in community rating systems used for insurance pricing, information and advice about risk provided by insurers, and the ability of insurers to promptly pay claims). The following risk management measures enhance resilience and relate to insurance for any type of peril, and should be key foci of the CRS:

- The extent to which the public and private sectors in the community are insured;
- The community's planning and implementation with regard to reducing and managing future risk of loss, and
- The community's ability to engage in effective response and recovery.

The CRS design should make accessible and/or provide resources to highlight and help communities build resilience in the following five areas relevant to insurance for all types of perils:

- Take measures to manage or reduce repetitive losses: For example, adoption and enforcement of uniform national or state building codes and/or implementation of zoning and land use regulations and policies that reduce development in high-risk areas.
- Provide adequate funding for emergency services and disaster response and recovery planning: One way to gauge this might be to compare a given community's budget for emergency services to that of other comparable communities with similar degrees of risk.
- Emphasize the importance of the government, nonprofits, families and businesses carrying optimal insurance: Also help ensure that the regulatory and legal environment for insurance in a given state encourages competition and the availability of risk priced

insurance. This will maximize the contribution insurers can make to loss prevention, mitigation, and payment after the fact for losses.

- Ensure that insurers have prompt access to disaster scenes: This will enable insurers to begin paying claims rapidly and otherwise assist the community in the response and/or recovery process.
- Maximize access to and use of the expertise and information available from insurance companies, insurance-supported groups, agents, and brokers: These sources can provide useful information about the premise of property and casualty insurance, community rating systems and loss mitigation and prevention.

### **1) Peril-Specific Opportunities**

In the near-term, CRS should seek to identify specific insurance incentives and rating systems associated with specific perils, from which communities may be able to benefit through proactive mitigation measures and increased resilience. Flood, wind, and fire/wildfire may offer the most feasible opportunities in the near term for the CRS to link to existing incentives and systems. Other major perils the CRS should eventually consider include earthquake and terrorism.

The CRS should also seek to maximize communication before and after an event between communities and their insurers, agents and brokers regarding the community's risks and the best strategy to mitigate them; how to encourage the public and private sectors to be optimally insured; and how to assist insurers in being able to promptly pay claims.

#### *a) Flood*

The [National Flood Insurance Program's \(NFIP\) Community Rating System](#) administered by Insurance Services Office (ISO), and the NFIP itself were highlighted as near-term opportunities for linkage to the CRS. The ISO flood management rating system is a well-established, voluntary incentive program that assesses a community's ability to mitigate flood damage, and encourages community floodplain-management activities that exceed the minimum NFIP requirements. The system recommends rate discounts to insurers on a tiered basis depending on the assessment score, which insurers then apply and communicate to policyholders. Insurers have discretion and make the final decision about what to offer with regard to flood coverage that is over and above what is covered by the NFIP. The NFIP is administered by the federal government and therefore is not subject to the same regulations as products offered by private insurance companies. It has its own rules about how rates are set and therefore may offer opportunities for CRS influence. See Attachment B for more information about relevant ISO programs.

Other resources the CRS should consider developing or leveraging to support community flood exposure assessments and mitigation efforts and increase eligibility for resilience benefits include:

- Information about FEMA’s floodplain re-mapping effort and the effect of new floodplain boundaries on NFIP premiums and coverage;
- Strategies to identify and conserve “green zones” that provide natural flood or storm surge protection and/or related opportunities to utilize available land for flood mitigation (e.g., land trusts, public open space, etc), and
- Flood risk assessment through the ratio of impervious to pervious surface area and/or combined sewer overflow events as indicators rainfall or runoff overwhelming infrastructure.

*b) Wind*

The CRS can facilitate access to resources that will help educate communities about the costs and associated risk management and insurance benefits of strong building codes and application of resilient building technologies that increase the ability of residential and commercial buildings to withstand high winds. Examples include hurricane straps, bolting walls to foundations, single garage doors, proper hurricane shutters and garage door anchoring mechanisms. The CRS could encourage the adoption of uniform building codes that incorporate these types of technologies.

ISO’s [Building Code Effectiveness Grading Schedule \(BCEGS®\)](#) is a well-established rating program in this arena (though it covers more than just wind) that has already provided ratings covering approximately 20, 000 communities. Other programs that the CRS may be able to leverage include the [Federal Alliance for Safe Homes \(FLASH\)](#), Institute for Business and Home Safety’s (IBHS) [“Fortified for Safer Living”](#) program, and the [Resilient Home Program’s Resilience Scoring Utility \(ReScU\)](#); currently under development). The CRS could also encourage communities to develop street sign and billboard restrictions, and install below-ground utilities. There may be opportunities to create partnerships in which specific insurance companies underwrite properties meeting the standards set forth by these types of programs.

*c) Fire and Wildfire*

ISO also administers a rating system for community fire protection services. The system applies the Fire Suppression Rating Schedule (FSRS) to review a community’s fire-suppression capability (i.e., emergency communications system, fire department, and water-supply system) and develops a numerical grading called a [Public Protection Classification \(PPC™\)](#). The CRS should explore opportunities to advise community leaders to contact ISO regarding the community’s PPC analysis. See Attachment B for more information about all three of the ISO rating systems mentioned above.

The CRS may also be able to link with or leverage the work of the National Fire Protection Association’s [Firewise Communities/USA® Recognition Program](#) to help communities develop holistic plans to address wildfire. As with flood and wind, the CRS could encourage the adoption of land use policies and building codes that incorporate enhanced fire and wildfire risk mitigation measures. For example, the CRS multi-hazard assessment could include a

measure of the urban-wild interface in communities that are experiencing high growth. See Attachment C for more information about the Firewise Communities Program.

## 2) *General Opportunities for the CRS*

- The CRS could provide guidance on how to access information about risk mitigation and insurance coverage from the insurance industry locally and nationally, including from the ISO, IBHS, the Insurance Information Institute, insurers writing coverage in the community and local agents' groups.
- The CRS could explore a collaboration with the NFIP and/or catastrophe modeling companies to develop tools and data that provide a snapshot of insurance in a given community (insured vs. not insured, types and value of policies). The three leading CAT modeling companies are AIR Worldwide, EQECAT, and Risk Management Solutions.
- The CRS should urge communities to encourage all sectors to be optimally insured and fully utilize and make available to the public their insurance risk ratings and related actions that could improve them, as well as other relevant insurance information.
- CRSI could make several recommendations aimed at influencing longer-term insurance-related improvements, such as:
  - Supporting statewide promulgation of the latest International Code Council building codes;
  - Suggesting regulatory adjustments at the state level that will foster insurance companies' ability to establish risk-based pricing and more quickly develop innovative products that are responsive to customers' needs, and
  - Outlining why it is important for insurance companies to be regulated so as to encourage the maximum degree of competitive activity.

## Planning to the Left: Articulating the “Mutual Business Case”

It is critical that community leaders are able demonstrate the economic benefits of engaging and investing in resilience-building activities that in the absence of disaster, may seem tangential to the core responsibilities of municipal government. For that reason, understanding how resilience-building actions can be mutually reinforcing in generating benefits across the three focus areas – risk management, federal programs and economic development – was an ongoing focus throughout the RBWG process and something the group recommends the CRS highlight. In terms of the design of the CRS, participants across the three focus areas strongly endorsed educating community leaders and the public about the fundamental concepts of risk management in ways that will stimulate buy-in to sharing the costs and benefits of risk. Work group members recommended that the CRS provide specific resources aimed at motivating community leaders to “plan to the left” of a disaster. In addition to motivating leaders, the CRS must help those leaders demonstrate the benefits of advance planning and action to insurers, investors, bankers and constituents so that they can garner financial and political support for preventive, anticipatory action. Community resilience success stories, cost-benefits analyses,

scenario planning, and best practices were all noted as motivational resources to consider in the CRS.

Articulated clearly and with concrete examples, the “mutual business case” for community resilience can serve as an important component of the rationale and messaging needed to motivate community leaders and constituents to engage in the CRS process. The “mutual business case” consists of the ways in which building community resilience can generate tangible economic benefits from different sectors, with benefits from one sector often begetting benefits from another. For example, if communities pro-actively manage and reduce their risk profiles, with which government grants and technical assistance programs can help, insurance will become a more economically feasible tool to manage the remaining risk in the community. In turn, when insurance becomes more available and affordable, the community will be better able to attract and retain businesses, thereby spurring economic development.

## **Assessment Categories and Elements for Resilience Benefits**

The input and insights gathered through the RBWG process, particularly the heavy emphasis on planning to the left of disasters, indicated that the resilience assessment stage of the CRS will be critical to helping set communities on a path that will ultimately lead them to tangible resilience benefits. From the full suite of participant input, the CRSI Team distilled a set of assessment categories and elements for potential incorporation into the CRS community self-assessment. At the final in-person meeting, RBWG members provided feedback on the categories and elements proposed for incorporation into the CRS. The RBWG recommends including questions and associated guidance or resources in the CRS community self-assessment that cover the following resilience benefits assessment categories and elements.

### **1) *Pre-Disaster Community & Regional Planning***

- Adequate budget for emergency services, disaster preparedness, response, and recovery
- Community disaster preparedness and recovery planning processes and systems, including economic recovery
- Regional disaster preparedness and recovery partnerships
- Local government executives trained or experienced in preparedness, response, and recovery
- Early warning and strong communication systems and plan
- Available cash reserves and mechanisms to ensure essential cash flow in event of disaster
- Mechanisms in place to facilitate rapid post-disaster damage assessment (e.g., insurance adjusters)

## 2) *Economic Development & Business Sector Resilience*

- Community economic development vision and growth plan established in the absence of disaster that factors in potential impacts of and opportunities presented by disaster
- Diverse portfolio of economic sectors
- Resilient businesses within different economic sectors
- Community "capital pipelines" analysis
  - Traditional sources of capital (large, national banks)
  - Local or regional alternative sources of capital (community banks, public-private micro-lending institutions, economic development organizations)
- Regional economic development planning mechanisms
- Established relationship with state economic development agencies
- Outreach and education on Business Continuity Planning best practices
- SBA Resource Partner Center (or equivalent)

## 3) *Community Risk Management*

- Evaluation of cost of direct losses
  - Financial plan to cover direct losses from disaster
  - Financial strategy for post-disaster repair, replacement, and renewal of direct losses
  - Direct loss mitigation actions
- Evaluation of cost of indirect losses
  - Financial plan to cover indirect losses from disaster
  - Financial strategy for post-disaster repair, replacement and renewal of indirect losses
  - Indirect loss mitigation actions
- ISO Fire Suppression Rating Schedule score (or equivalent)
- ISO National Flood Insurance Program Community Rating System score (or equivalent)
- ISO Building Code Effectiveness Schedule score (or equivalent)
- Other peril-specific community programs (such as Firewise Communities)
- Zoning ordinances and comprehensive land use plan
- Structural mitigation to public buildings and infrastructure
- Mitigation plans and/or efforts align with State plans and priorities
- Repetitive loss mitigation actions
- Low-cost, low-effort mitigation actions

## 4) *Risk Communication and Outreach Strategy*

- Outreach and education on local and regional hazards / risks
- Outreach and education on preparedness and hazard / risk mitigation options

- Outreach and education about property and casualty insurance and related incentives
- Top property and casualty insurers identified
- Proportion of homes insured for disaster
- Proportion of businesses insured for disaster
- Survey data about household disaster plans and insurance coverage

## Advice about CRS Design and Implementation

At the final in-person meeting, RBWG members provided input on the overall design and implementation of the CRS. Key suggestions from that discussion included:

- Consider calling the initial assessment a “multi-dimensional” assessment instead of a “multi-hazard” assessment since it will cover more than just hazards and vulnerabilities;
- Clarify the distinction and/or relationship between assets and assets-at-risk;
- Prioritize which parts of the assessment are core or essential so that communities with less capacity to execute a comprehensive resilience assessment can still do something valuable to improve resilience;
- Indicate which parts of the assessment communities can complete as part of normal operations and community processes without special effort;
- Acknowledge the intrinsic value of going through CRS process in terms of education and building awareness;
- Account for the diversity of communities that will attempt to utilize the CRS, recognizing the possibility that a community may not be a municipality *per se*;
- Emphasize the demonstration of increased resilience in the short-term since the development of metrics and a clear rating scale will take longer to achieve;
- Attempt to leverage other programs to which actions taken in different steps of the CRS can be linked (i.e., All-America City award program), such that they serve as incentives to utilize the CRS;
- Be clear that the system is geared toward gauging a community’s capacity and potential for resilience, and
- Ensure that entry into the system is achievable.

RBWG members also suggested the following strategies and complementary resources for implementation of the assessment categories and elements outlined above.

- Align the CRS assessment categories with those in the National Disaster Recovery Framework;
- Be explicit that the community self-assessment is not a linear process and that the various categories and elements are interrelated;
- Emphasize the importance of coordination among local, state and federal agencies;

- Provide guidance to help communities align new and existing plans and planning processes that contribute to resilience (i.e., comprehensive plan, hazard mitigation plan, economic recovery plan) to potentially create an integrated community resilience master plan;
- Provide recovery planning guidance that outlines strategies for handling key insurance, economic and business factors that communities ought to consider;
- Recommend that resilience leadership teams include an insurance agent or broker that can champion risk mitigation in the community and serve as an insurance information resource;
- Provide tools to help community leaders conduct a “capital pipelines analysis” to identify gaps in sources of capital in the community, identify options to ensure a full suite of capital-generation mechanisms for all types of businesses and scenarios;
- Target community leaders with educational information about the ISO rating systems, and
- Encourage pre-emptive mitigation actions to avoid repetitive losses.

## Recommendations to the CRSI Steering Committee

Many of the recommendations presented above are included in the CRS – both in the philosophy and assumptions underlying the system as well as the specific guidance and actions outlined in the system. This section enumerates the “Category 3” subset of recommendations that are outside of the CRS and are presented specifically for the Steering Committee’s consideration and adoption in the overarching report (see discussion in “Introduction” above). These recommendations point to larger activities that contribute nationally to the cause of greater resilience. These recommendations are aimed at increasing access to tangible benefits for increasing resilience across the nation, and, if implemented, could help achieve an overall goal of increased community resilience nationwide.

### *1) Federal Grant and Technical Assistance Programs*

Revision of existing federal grant and technical assistance programs should be encouraged so that the program guidelines and award criteria recognize resilience factors and activities more explicitly. For example, such revisions could include guidance about and recognition of measures to account for future hazards in pre- and post-disaster hazard mitigation planning.

The development of new federal grant and technical assistance programs that focus specifically on building resilience could also help build out the suite of federal programs supporting resilience.

### *2) Legislation for Pre-Disaster Preparedness*

There is a need for more legislation that focuses on pre-disaster preparedness and resilience activities, such as the Disaster Response, Recovery and Mitigation Enhancement Act of 2009

(H.R. 3377), which proposes amending the Stafford Act to include more pre-disaster measures. New legislation and revisions to existing legislation that shifts this focus should be advocated.

### ***3) Highlight Programs Designed to Enhance Resilience***

Proposed programs, bills, policies or plans designed to enhance the resilience of the nation's communities to natural or man-made disasters, such as the National Broadband Plan, which recommends the creation of a nationwide interoperable public safety broadband wireless network should be highlighted and supported in the CRS, by the CRSI Steering Committee and through resilience activities and campaigns.

### ***4) "National Disaster Recovery Board"***

Enhanced inter-agency coordination and collaboration on resilience activities within the federal government and across scales of governance will be an essential piece of building resilience nationally. The formation of a "National Disaster Recovery Board" that would conduct post-disaster resilience assessments in a similar fashion to how the National Transportation Safety Board assesses the causes of major transportation accidents could be a way to support resilience at the national level.

### ***5) Pre-Disaster Capital***

Businesses need capital to operate, start-up, and expand. Access to capital, especially prior to a disaster is important for building a strong local economy. More public-private collaboration with government, banking, institutional and private investors, possibly through the White House Long-Term Disaster Recovery Working Group, that could help identify new ways to introduce pre-disaster capital for small businesses should be encouraged.

### ***6) Insurance-Related Improvements***

Insurance plays an important role in helping communities prepare for and respond to crises and disasters. A number of improvements to insurance markets and regulatory structures could help insurance companies be more effective. For instance, adjustments to regulatory structures at the state level will foster insurance companies' ability to establish risk-based pricing and more quickly develop innovative products that are responsive to customers' needs. In conjunction with regulatory adjustments, it will be important to clearly articulate the importance and value of appropriate insurance regulation to ensure the maximum degree of competitive activity.

Other adjustments, such as the statewide promulgation of the last International Code Council building codes will help communities and insurers promote better and safer property building and maintenance practices.

## Conclusion

Devising and implementing mechanisms that will produce direct, tangible benefits for communities that go through the CRS process is a long-term proposition. Given the goal of launching a pilot CRS in 2011, the RBWG focused its energy on identifying existing resilience benefit opportunities in the form of incentives, rating systems, grant and technical assistance programs and economic development strategies that the CRS can help communities recognize, understand and seize in the near-term. The Work Group also identified longer-term opportunities to increase the robustness of the CRS and to potentially offer direct tangible benefits.

The RBWG endorsed the recommendations outlined in this report as collectively amounting to a practical set of benefits the CRS can indirectly help communities attain by providing well-designed resources and guidance. The RBWG process illuminated the following key points to keep in mind as design and implementation of the CRS progresses:

- Many incentives and potential benefits for building individual and community resilience already exist – the challenge is connecting the dots for leaders and constituents;
- Education and outreach about the importance and potential benefits of creating a resilient community will be critical to success;
- Community leaders, constituents, business owners, insurance companies, program officers, and investors must be able to see the potential net economic benefit of resilience building strategies and activities;
- Communities need to break down internal barriers – jurisdictional, geographic, or otherwise – and find ways to approach resilience at a community scale;
- Thriving communities are generally resilient communities so the CRS should teach communities to thrive, not just survive, and
- The CRS must utilize and provide a variety of strategies and resources to motivate leadership and concerted action.

These recommendations, combined with the recommendations from the other CRSI groups – the Subject Matter Work Group (SMWG) and the Community Leaders Work Group (CLWG) – should help outline a broad, multi-faceted CRS. At the end of the process, RBWG representatives from all sectors were enthusiastic about the prospect of a Community Resilience System and many expressed interest in supporting further development of the CRS and its benefit structure going forward.

## Attachment A. Community Resilience System Initiative – Resilience Benefits Work Group

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***Note:** The views expressed by participants of the Community Resilience System Initiative (CRSI) Resilience Benefits Work Group represent their individual perspectives and do not necessarily reflect the views of their respective organizations.*

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## Attachment B. Relationship between Insurance & ISO Community Hazard Loss Mitigation Advisory Programs

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### Relationship between Insurance & ISO Community Hazard Loss Mitigation Advisory Programs

The Information Services Office (ISO) Community Hazard Loss Mitigation advisory programs lead to improved insurance industry financial performance. They do so by relating reduced risk to reduced insured losses. In turn, lower rates from insurers encourage and enable communities to take steps that could reduce property loss. Reducing property loss can reduce injury and save lives.

The Department of Homeland Security's Federal Emergency Management Agency (FEMA) administers the National Flood Insurance Program's (NFIP) Community Rating System (CRS). Under an arrangement with FEMA, ISO develops, implements, and evaluates the CRS through the review of Community Rating System applications, verification of credit points earned by communities, and development of program-improvement tasks. ISO developed the Public Protection Classification (PPC™) and Building Code Effectiveness Grading Schedule (BCEGS®) programs — applicable nationally — through consultations with insurers, trade and professional associations, community officials, and ISO representatives. The programs analyze and measure local efforts and provide benchmarks that community leaders can continually use to improve their hazard mitigation capabilities.

All three programs — CRS, BCEGS and PPC — are applied objectively, emphasizing qualitative analysis and verification, despite operating in high-profile and often politically sensitive environments.

The three programs furnish guidelines and provide financial incentives for communities to anticipate and prepare for potential loss caused by fire, windstorm, earth movement, and flood. Such efforts, when communities implement them in advance, demonstrably reduce the effect of catastrophes of all sizes when they occur. In turn, each program delivers unique value to insurers in the form of measurable differences in reduction of loss potential through individual community classifications.

The programs motivate behavior and decision making at the community level that benefit insurers. CRS, BCEGS, and PPC are acknowledged and accepted insurance rating programs. Implemented in 1991, the CRS program adjusts flood insurance premiums as an incentive to

recognize and encourage community floodplain-management activities that exceed minimum NFIP standards. Following the devastating aftermath of Hurricane Andrew in 1992, the BCEGS program added its support to efforts aimed at adopting and enforcing better building codes. The PPC program promotes and encourages the efforts of individual communities to improve their fire protection services. For almost a century, property insurance companies in the United States have funded key initiatives aimed at fire prevention and fire mitigation.

Taken together, CRS, BCEGS, and PPC produce meaningful financial savings for insurers by providing incentives to communities to improve the quality of their fire protection, building codes, and floodplain management. Whenever a community takes proactive steps to mitigate the effects of potential catastrophic loss, the benefits are passed on to many — insurers, loss control and risk management specialists, business owners, public health and safety officials, and citizens.

## Attachment C. Firewise Communities/USA® Recognition Program Overview

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### **Firewise Communities/USA® Recognition Program Overview**

The National Fire Protection Association's ([NFPA](#)) Firewise Communities program encourages local solutions for wildfire safety by involving homeowners, community leaders, planners, developers, firefighters, and others in the effort to protect people and property from the risk of wildfire. The program is co-sponsored by the [USDA Forest Service](#), the [US Department of the Interior](#), and the [National Association of State Foresters](#). The Firewise Communities goal is to promote community-wide participation in the use of technology, policy and practices that minimize the loss of life and property to wildfire, independent of firefighting efforts.

To qualify as a Firewise/USA Recognition site, a community must have met the following five standards:

- 1) Complete a community assessment and create an action plan;
- 2) Form a Firewise Board that spearheads ongoing activities in the community to mitigate wildfire risk;
- 3) Hold a Firewise Day event focused on executing mitigation activities and raising awareness in the community;
- 4) Invest a minimum of \$2/capita in local wildfire mitigation projects (volunteer hours, equipment use, time contributed by agency fire staff, and grant funding can be included), and
- 5) Submit an application.

[A User Reference Guide to the Firewise Communities/USA Recognition Program](#) provides all of the information necessary for a community to apply for recognition. Re-certification occurs annually.



## ANNEX 2.3. Community Resilience System Initiative (CRSI): Subject Matter Working Group (SMWG) Report

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*Final Report to CRSI Steering Committee*

### **Introduction**

The Subject Matter Working Group (SMWG) of the Community Resilience System Initiative (CRSI) was established to anchor the Community Resilience System (CRS) in the available base of knowledge. It brings together more than 50 experts from different backgrounds in resilience research and practice as sources of advice about useful and appropriate knowledge and experience. These experts are helping to answer questions about what we know about community resilience, especially what the evidence is that particular approaches are likely to work, and to advise CARRI/CRSI about how to learn as much as possible from pilot applications of the system. The complete list of SMWG participants is available in Attachment A.

### **Activities to Date**

Over the past year, the SMWG has provided substantive input on both the design of the CRS and on approaches for evaluating resilience in communities. Initially, the group provided detailed comments on CARRI's draft of a starting point for CRS, "Toward a Common Framework for Community Resilience." In general, the SMWG concluded that, although parts of the Common Framework (CF) are worth using, the document is not the place to start in developing a number of key aspects of a practical approach for communities to use to enhance their resilience. In the view of many members of the SMWG, the parts of the CF regarding evaluation and applying the tools were especially problematic, highly unlikely (if applied as described in the draft) to make communities more resilient. The main concerns of the SMWG were a need for simplicity, seeing the heart of community resilience not in functions and indicators but in a bottom-up community process of social engagement, and an oversimplified approach to evaluation. These perspectives contributed to a decision to use the Common Framework as background information for CARRI/CRSI on thinking about community resilience rather than as a blueprint for the system.

In March 2010, at the request of CARRI/CRSI leadership, the SMWG organized a workshop in Atlanta to advise regarding the challenge of evaluating a community's level of resilience and its success in improving it. Other topics of interest and discussion included the design of the pilot phase of CRS, the nature and structure of CRS, and information and tools that should be

provided to communities in supporting their efforts. The workshop reviewed possible approaches to evaluation, a challenge which lies at the frontiers of resilience research. Among the resulting insights were that assessment/evaluation should be viewed as a catalyst for community engagement (including awareness-raising and training), not as a separate exercise in data access and display; that it should be simple and inexpensive enough to be done in a lot of places, sensitive to variations among communities; and that it should seek resilience for multiple hazards, not just natural disasters alone. The workshop supported the idea of constructing a baseline community profile to permit comparisons with other communities and with changes in the community through time, including indicators based on readily available information and summaries or capacities with respect to community stress management.

In July and August 2010, the SMWG was asked to answer several questions from the Community Leaders Work Group about the resilience knowledge base. Examples included core systems for promoting community resilience, assessing how effectively a community's social fabric functions in a context of resilience, and roles of non-local-government partners in community resilience. The CLWG indicated that the answers were not only useful but, in fact, reinforced lessons learned from their own experience.

The SMWG continues to review elements of the emerging CRS, to assure that its approaches are consistent with evidence from both research and practice; it has established liaison with the Community Leaders Work Group and is monitoring progress in the Resilience Benefits Work Group, hoping for insights about indicators of community resilience that would be considered tangible evidence of community risk reduction successes; it is following up its Atlanta workshop in working with the CRS core team to flesh out CRS's description of evaluation/assessment approaches, especially social capital aspects of the community profile; and it is developing thoughts about the design of the pilot phase of CRS, especially the objective of using these pilot experiences to refine CRS for much broader deployment.

Messages from SMWG members have been especially valuable in considering what questions to ask about the pilot experiences, what aspects of the experiences to monitor and record, and how CRSI should deploy it in order to assure that this unique learning experience provides maximum value for refining the CRS approach. Some university-based SMWG members may be able to assist CRSI in the monitoring process, through the availability of qualified graduate students as monitors.

## Next Steps

Looking to the future, the SMWG will continue to serve as a connecting link between CRS and the community resilience expert community by:

1. Providing information about newly emerging evidence about resilience, how to evaluate resilience, and how to achieve resilience;
2. Serving as a catalyst for national discussions about research needs and priorities for community resilience, and

3. Assuring that what CRS learns is utilized by community resilience experts in designing and advising community resilience efforts more broadly, both in the United States and globally.

It seems likely that the composition of the group will be re-evaluated based on the first year of experience, including two possible changes. First, the current membership will be reconsidered, possibly leading to an advisory framework with two levels: a core group of experts who are actively involved in CRS and a larger group of experts who are kept informed about CRS and invited to provide comments and advice as they wish. Individuals might move from one level to the other as knowledge-base issues for CRS change through time. Second, the composition of the group will be reconsidered, and some apparent gaps will be addressed by adding experts to the group. As an example, the current SMWG membership is heavily weighted toward academic research expertise in the engineering, policy, and socioeconomic sciences; representation of expertise in the fields of business and management needs to be increased.

In addition, the SMWG will continue to consider alternative approaches for connecting CRS as effectively as possible with the expert community, which is diverse, dispersed, and busy. Large-group meetings are likely to be rare, but smaller groups will be convened from time to time to consider particular focused questions, to provide expert advice, and in some cases to suggest strategies for CRS. One goal will be to develop more effective mechanisms for linking expert knowledge with community resilience policymaking and decision-making, which is a classic challenge in linking knowledge with practice.



## Attachment A: Community Resilience System Initiative – Subject Matter Working Group

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*Note: The views expressed by participants of the Community Resilience System Initiative (CRSI) Subject Matter Working Group represent their individual perspectives and do not necessarily reflect the views of their respective organizations.*

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## ANNEX 3. Partner Community Engagement Efforts and Outcomes

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In 2007, CARRI initiated partnerships with three communities in the southeastern United States – the Charleston Tri-County area of South Carolina, the Memphis/Shelby County region of Tennessee, and the Gulf Coast of Mississippi – to explore what it means to be a resilient community and to collaborate in identifying means to strengthen community resilience. These communities were chosen because of their locations within the southeastern region, their exposure to and experience with natural disasters, and the willingness of their leaders (in all sectors) to take part. CARRI worked with each community to organize a cross-functional team to assist in fostering resilience efforts and provided staff and technical support as the communities worked through issues of concern and developed a prioritized resilience action plan. In order to ensure that the work was grounded in sound research practices and locally relevant, CARRI provided funding to a local academic institution in each community. The researchers and their students helped define the research questions, collect data, and conduct interviews with stakeholders.

In partnership with community leadership, CARRI staff and the local research team conducted meetings with stakeholders from diverse sectors of the community (local government, small and large businesses, educational institutions, healthcare, nonprofit organizations, faith-based organizations, etc.) and worked collaboratively to define the key community functions and systems that underpin community resilience. The three communities worked at different paces and scales, but each was instructive to CARRI as it worked to understand community resilience and determine what communities need to systematically and measurably improve.

(Unless otherwise noted, all photographs in this annex are credited to CARRI.)

### 1. Charleston Tri-County Area, South Carolina

In fall 2007, the mayors of Charleston, North Charleston, and Mount Pleasant, SC, along with county officials from Charleston County, Berkeley County, and Dorchester County agreed to work with CARRI to engage the entire three-county region as a partner community. Resilience researchers with the College of Charleston and Savannah River National Laboratory also joined as partners in the Charleston Tri-County CARRI Team (CARRI Team), which included CARRI staff and facilitation support from Meridian



Institute. This section summarizes the work of the CARRI Team and the CARRI Charleston Tri-County Advisory Group (Advisory Group or the group) from 2007 to 2011. It describes the initial engagement and assessment process, development of resilience roadmaps, and implementation actions, as well as additional efforts to develop and share resilience lessons and knowledge.

## Initial Engagement and Assessment



The CARRI Team met with leaders, decision-makers, and opinion shapers of the Charleston, SC, Tri-County region (Berkeley, Charleston, and Dorchester counties) starting in October 2007. The team began by interviewing local government officials and representatives from the nonprofit, faith-based, and business sectors to assess the interests and concerns of key stakeholders throughout the community. During this initial engagement phase, CARRI team members met with 70 individuals and organizations to discuss the concept of community resilience and how that resilience was embodied in the region.

Based on the initial engagement, representatives from agencies, organizations, and companies that play critical roles in the community were invited to serve on the CARRI Charleston Tri-County Advisory Group in early 2008. In addition to helping guide the overall process in Charleston, the Advisory Group identified individuals from all community sectors across the Tri-County area to participate with Advisory Group members in assessing the Tri-County region’s resilience.



In May and July 2008, these community members met in two resilience assessment workshops to identify and prioritize areas for initial focus in improving resilience. The first workshop was designed to gather information and perceptions directly from participants. They evaluated the critical community functions for resilience in meeting basic human needs, maintaining the community’s cultural and social capital, and maintaining and recovering its economic capacity. Breakout groups organized around each set of functions reported their assessments for broader discussion by the entire group in a plenary session, yielding 12 major areas or “themes” of emphasis for further assessment and prioritization:

- Housing, structures, shelter
- Health care and mental health impacts
- Transportation and mobility

- Coordination, integration, mapping of assets
- “Supply Chain” networks/interdependencies
- Region-wide communication and information
- Leadership
- Insurance
- Business and economy
- Post-event finance, equity, and capital
- Sense of place
- Role of churches, schools, and neighborhoods

The second workshop brought together a similar group of community members to identify four to six priority resilience focus areas. CARRI Team members provided workshop participants with available supporting information and data about each of the 12 themes. Working in breakout groups and plenary sessions, the community members identified the following five priority resilience focus areas:

- Transportation and Mobility
- Region-wide Communication and Information Sharing
- Recovery Development Plan and Interdependencies
- Role of Faith-based Organizations, Schools, and Neighborhoods
- Structures and Infrastructure

These five focus areas were then referred to the Advisory Group for their concurrence and guidance on which aspects of the focus issues should be explored for resilience improvement actions. The Advisory Group determined that resilience issues related to Transportation and Mobility and those related to Communication and Information Sharing should be addressed first. In addition, the group also supported a CARRI recommendation that a special work group be convened to look at health system resilience in the Tri-County area as part of a larger Department of Homeland Security “health security” initiative.

## Resilience Roadmaps

The Advisory Group worked with the CARRI team to identify key regional participants who could help devise a path toward greater resilience in each of the two chosen areas. The Advisory Group also developed the “charges” that defined and scoped the specific resilience problems that the two “focus groups” were to address. They asked the Communications and Information Sharing group to focus specifically on the “hard” or formal communication networks that makeup the emergency communication systems.

The Advisory Group directed the Transportation and Mobility focus group to develop measures to



address regional transportation congestion and system vulnerabilities relative to disaster response and recovery for hurricane, earthquake, and pandemic scenarios and a plan (i.e., key players, logistics, etc) to restore key supply chains to the region (i.e., movement of workers and goods). Further, the Advisory Group felt that the results from the Transportation and Mobility focus group’s work should be considered as potential input to Berkeley-Charleston-Dorchester Council of Governments’ regional transportation and land use planning initiative and that, if possible, the focus group should recommend how this collaboration might occur.

Each of the focus groups met to develop means to address the resilience deficiencies identified in the Advisory Group’s charges. The results of the focus groups’ deliberations were fashioned into “roadmaps” toward a more resilient future. In each case, the group first worked to describe the specific characteristics of the current state which adversely impact Tri-County resilience. Then the focus group developed descriptions of a desired future state where the deficiencies have been addressed. Finally, the group determined a select number of actions that would move the community from the current state toward the desired future state of greater resilience.

The focus groups were advised to select resilience improvement initiatives and actions in light of the following criteria.

- ***Feasibility of Implementation:*** The proposed improvement activity is
  - practical and doable;
  - builds on an existing community effort OR addresses an important matter on which no one is focused currently, and
  - adds value to the community today regardless of a future disaster.
- ***Enhancement to Tri-County Resilience:*** The proposed improvement activity
  - involves multiple sectors of the community;
  - impacts social and economic well-being of the community;
  - is likely to speed/accelerate response and recovery;
  - reduces vulnerabilities, and
  - increases community awareness and preparedness.

## Local Ownership

While the focus groups developed their recommendations, other leaders began to explore local community “ownership” of the resilience effort and the CARRI process in the region, that is, how these activities would be coordinated and governed in the long term (in the CRS, this issues is addressed in Stage 5, the “Governance Team”). Early in 2009, Charleston/Tri-County city and county administrators agreed to take ownership of the process, and the Berkeley-Charleston-Dorchester Council of Governments (BCDCOG) was tapped to lead the resilience effort in the Tri-County area as their agent.

## Focus Group Recommendations

The two focus groups presented their findings and recommendations to the Advisory Group early in 2009. Based on recommendations of the Communications and Information Sharing Focus Group, the Advisory Group agreed to use a two-pronged approach to strengthen the region's communication system, looking at both hard and soft communications issues. The hard communications effort would work to improve the integration and interoperability of the physical communications systems across the three counties. The soft communications prong, also referred to as the "more human dimension," would be aimed at getting the right people together, using the right messages, with the right communications tools, to have mechanisms and deliberate plans in place to feed information from "official" communication systems into mass media and all the information networks that exist in the community.

The Transportation and Mobility focus group recommended the community undertake three key sets of actions to focus on specific measures aimed to reduce congestion in the existing transportation system; work within the Tri-County region to ensure linkage of land use and transportation planning; and use informal mechanisms and commitment of community and jurisdiction leaders to develop a culture of diversified, efficient transportation in the Tri-County region. Given BCDCOG's role in transportation planning for the region and the need for these recommendations to be addressed by that body, the Advisory Group agreed that it would be important that implementation of these recommendations be managed through a committee of the COG. The group selected two of its member to present the recommendations to the COG for action. While the Advisory Group agreed that work on the Communications and Information Sharing work would proceed, they also made plans to present those recommendations to the COG for review and any additional input.

## Implementation

From 2009–2011, the CARRI Team continued to support the Advisory Group, focusing on implementation of priority recommendations and increased understanding of community resilience.

## Recovery/Resilience Communications Network



In implementing the primary recommendation of the Communications and Information Sharing work group, a Recovery Communications Network (RCN) Focus Group was formed in August 2009 with participants from diverse circles of influence and three co-chairs from key community sectors. The purpose of this group was to implement the work group's recommendation that deliberate plans and mechanisms be put in place to ensure that effective recovery and resilience messages were effectively delivered to the

regions' various communities and demographic groups. In particular, the work group recommended that the activity focus on deliberate ways that the region's "informal" communication networks (through churches, civic groups, businesses, etc.) could help communicate necessary information and messages to and from "official" communication sources.

In fulfilling this purpose, the group designed a framework to integrate, expand, and support communication pathways and messaging across key community sectors. They were committed from the start to integrate social media in the focus group's work and the resulting network configuration. In February 2010, they presented their vision, findings, and recommendations to the Advisory Group and the BCDCOG. Both groups supported the recommendations to continue this focus on communications and messaging across all sectors from a home within the COG and guided by a small steering committee.

Members of the new RCN Steering Committee (RCNSC) convened in the fall of 2010 and quickly agreed that their scope would expand to "resilience communications," to be consistent with the initial RCN focus group's assessment that networks targeted for use in recovery must be well exercised in advance of any community disaster or other disturbance. RCNSC is well networked to utilize young professionals engaged in various educational and professional development programs to further its work.<sup>1</sup>

### **Communication Task Force**

In addition to the RCN working on recommendations for the "soft" side of communications, a Communication Task Force was established to help address issues regarding the interoperability of communications hardware in the region. This team focused on region-wide testing of emergency communications systems' interoperability across the three counties and developing a process to ensure that critical networks within the three counties are properly identified to receive priority restoration, establishing protocols for a minimum technology base across the three counties, and conducting a feasibility study for a centralized emergency communications center for the Tri-County region.

### **Transportation System Improvement**

In 2009, BCDCOG engaged in a number of initiatives that addressed goals identified in the Transportation Roadmap. Establishing mixed modes of transportation was one key objective in that roadmap. The Charleston Area Regional Transportation Authority developed plans for an intermodal center that would include bus, rail, taxis, and other types of transportation in one location, serving as a regional transportation hub. In addition the BCDCOG updated its traffic

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<sup>1</sup> For example, a team of participants in the Leadership Charleston program chose to work on emergency communications within the business community for RCN in a "Community Leadership Project," and a group of students in College of Charleston's Master of Public Administration capstone course undertook a project to examine resilience communications for some other key sectors.

control plan to better predict future traffic load. Commuter rail and high-occupancy vehicle lanes both gained traction as means of reducing traffic congestion. Commuter routes to Tricounty LINK were expanded and showed a 38% increase in ridership. Finally, public meetings were held in November 2009 to begin the development of a long-range transportation plan for the Charleston Area Transportation System.

### Other Resilience Actions

In addition to the major actions arising from the Resilience Assessment and work group recommendations, the Charleston Tri-County region undertook a number of other resilience improving actions. As part of improving their anticipation of crisis impacts in the region, CARRI provided coordination and planning support to establish a regional coordination and integration of the three counties’ Local Emergency Planning Committees (LEPCs) and develop a tri-county hazard assessment. Further, the CARRI Team also worked with the BCDCOG on the update of the Berkeley-Dorchester Hazard Mitigation Plan, including a review of social and biophysical vulnerabilities, risk assessment, and plan goals and objectives. Finally, the CARRI Team worked with the regional public health officials and the U.S. Department of Homeland Security, Office of Health Assessment to develop H1N1 baseline benchmarks for the Charleston area, helping them assess their preparedness in dealing with a pandemic.

The TRI-County community resilience initiatives have also worked to understand and share important information regarding community resilience. In early 2009, the CARRI Team completed a comprehensive community resilience case study focused on the Charleston Tri-County area.<sup>2</sup> The case study is intended to distill from the region’s long history of resilience important lessons that could be useful to other communities. Later that same year, the first annual CARRI Community Forum was held in Charleston and brought the three CARRI partner communities together to share resilience lessons and to engage in dynamic discussions. The Community Forum featured a mayors’ panel and series of topical panels with presentations by participants focused on resilience lessons from each community.<sup>3</sup>



<sup>2</sup> The case study is summarized in CARRI Research Report 9: Colton, Craig, *Building Community Resilience: A Summary of Case Studies from Charleston, Gulfport, and Memphis*, [http://www.resilientus.org/library/CARRi\\_Research\\_Report\\_9\\_Craig\\_Colton\\_1276602180.pdf](http://www.resilientus.org/library/CARRi_Research_Report_9_Craig_Colton_1276602180.pdf).

<sup>3</sup> See [http://www.resilientus.org/publications/white\\_papers.html](http://www.resilientus.org/publications/white_papers.html) for the Community Forum presentations and white papers developed from the presentations and the thoughts and experiences shared that day.

## 2. Gulf Coast of Mississippi

In summer 2007, the Mayor of the City of Gulfport, Mississippi, agreed that Gulfport would work with CARRI as a partner community to help develop and share the essential tools, approaches, and benchmarks that any community could utilize to enhance its resilience. CARRI engaged resilience researchers with The University of Southern Mississippi Gulf Coast as partners in CARRI's Gulfport Team, which also included CARRI staff and facilitation support from Meridian Institute. This section summarizes the work of the Gulfport Team and the CARRI Gulfport Advisory Group (Advisory Group or the group) during 2007–2011, describing the initial engagement and assessment process, development of resilience roadmaps, implementation actions, and additional efforts to develop and share resilience lessons and knowledge.

### Initial Engagement and Assessment

The Gulfport Team met individually with local and state government officials and representatives from the nonprofit, faith-based, and business sectors and held larger group discussion sessions to assess the interests and concerns of key stakeholders throughout the community. Based on this initial assessment, representatives from the local government and key organizations that play critical roles in the community were invited to serve on the Advisory Group, which met for the first time in April 2008 to begin scoping the CARRI effort in Gulfport. Based on knowledge of the issues facing the community and experience preparing for, responding to, and recovering from Hurricane Katrina, the group identified approximately 35 candidate focus areas that, if addressed effectively, could enhance community resilience.



The following criteria guided the group in prioritizing the candidate focus areas for developing action plans or “resilience roadmaps”:

- *Resilience Enhancement Criteria*
  - Involves multiple sectors of the community
  - Impacts social and economic well-being of the community
  - Likely to speed/accelerate response and recovery
  - Reduces vulnerabilities
  - Increases community awareness and preparedness
- *Feasibility Criteria*
  - Practical and doable
  - Builds on an existing community effort OR addresses an important matter on which no one is focused currently
  - Adds value to the community today regardless of a future disaster



## Resilience Roadmaps

The Advisory Group selected the following six areas as priority candidates for developing action plans or “resilience roadmaps” to outline paths toward greater resilience. They agreed that stakeholder teams would be assembled to develop roadmaps for each of the first three.

1. Communication and collaboration across sectors
2. Individual and family resilience and preparedness
3. Availability of housing that is affordable
4. Expedient return of businesses
5. Preservation of the fabric, culture, history, and environmental quality of the community
6. Mental health



Roadmap development kicked off with a 1-day workshop in September 2008. Breakout sessions at the workshop served as the first meeting for stakeholder teams convened around each of the three initial focus areas – communication and collaboration across sectors; individual and family resilience and preparedness; and availability of housing that is affordable. Each of the stakeholder teams included Advisory Group members and additional representatives of local agencies, organizations, and companies. At the workshop, the three teams each agreed to the scope of their respective focus areas, identified key issues affecting the focus area in the Gulfport community, and identified key characteristics of the current state of the focus area. The teams also envisioned elements of a desired future state of enhanced resilience in the focus area, relative to the current state characteristics.



After the workshop, each team held two additional meetings to complete its resilience roadmap.<sup>4</sup> Each team outlined a small set of initiatives, with suggested actions for each initiative that would move the community toward desired resilience destinations. The prioritization criteria adopted by the Advisory Group guided their selection of initiatives and actions to enhance resilience. The teams also identified key stakeholders to involve in implementation of the actions, as well as resources and

<sup>4</sup> Roadmaps:

Communication and Collaboration Across Sectors: [http://www.resilientus.org/library/Communication-Collaboration Across Sectors Gulfport Roadmap Final 090302 1255530162.pdf](http://www.resilientus.org/library/Communication-Collaboration%20Across%20Sectors%20Gulfport%20Roadmap%20Final%20090302%201255530162.pdf)

Individual and Family Resilience and Preparedness: [http://www.resilientus.org/library/Individual-Family Resilience-Preparedness Gulfport Roadmap Final 090304 1255530214.pdf](http://www.resilientus.org/library/Individual-Family-Resilience-Preparedness%20Gulfport%20Roadmap%20Final%20090304%201255530214.pdf)

Availability of Housing that is Affordable:

[http://www.resilientus.org/library/Housing Affordability Gulfport Roadmap Final 090302 1255530727.pdf](http://www.resilientus.org/library/Housing-Affordability%20Gulfport%20Roadmap%20Final%20090302%201255530727.pdf)

other key factors to consider in constructing a timeline for implementation. The Advisory Group provided feedback on the direction and content of the roadmaps during the development process.

In late 2008, Advisory Group members shared their thoughts about which initiatives proposed in the three roadmaps would have a significant impact on community resilience in the near term if implemented effectively. The following four roadmap initiatives emerged as priorities.

1. Developing a comprehensive communication strategy to support improved individual and family disaster preparedness, response, and recovery for multiple hazards.
2. Gaining broader participation by external organization representatives in National Incident Management System (NIMS) training and exercises.
3. Sharing experience and lessons from ongoing resilient home construction efforts in Gulfport and learning about and applying state-of-the-art materials and techniques.
4. Establishing a cross-sector coordinating council to promote full implementation of selected initiatives and maintain community focus on resilience.

## Implementation

From 2009–2011, the CARRI Gulfport Team continued to support the Advisory Group, focusing on implementation of priority recommendations and increased understanding of community resilience.

### Resilient Home Building Conference

Based on the Housing Affordability Team’s recommendation, the Advisory Group established the planning team for the Gulf Coast Resilient Home Building Conference (RHBC),<sup>5</sup> which was held in conjunction with the Home Builders Association of the Mississippi Coast (HBAMC) Annual Home & Garden Show in March 2010. The Resilient Home Program and



Gulf Coast Community Design Studio collaborated with others on the RHBC planning team to offer a day of continuing

education for building professionals of all kinds, including builders, architects, real estate agents, general contractors, code inspectors, materials vendors, as well as teachers and students in related fields. Members of the RHBC planning team staffed a Resilient Home exhibit at the Home and Garden Show; CARRI and HBAMC held an opening VIP/Sponsors reception for the Home & Garden Show.



<sup>5</sup> For additional information, see: <http://www.resilientus.org/rhbc.html>.

## Gulf Oil Spill

In the spring of 2010, the Mississippi Gulf Coast faced a new major disaster, the Gulf Oil Spill.

In June, CARRI and the Advisory Group supported USM Gulf Coast's Center for Policy and



Resilience (CPR) and South Mississippi Voluntary Organizations Active in Disaster (SMVOAD) in hosting the Gulf Oil Spill Disaster Recovery Summit<sup>6</sup> at USM's Gulf Park Campus. This summit, born out of SMVOAD members' experiences with Hurricane Katrina recovery, was designed to identify the range of possible impacts of the disaster on Mississippi Gulf Coast residents, businesses, and the coastal environment; begin to develop community wide strategies to respond to and recover from this unique disaster; develop strategic partnerships to address needs resulting from the expected impacts; and provide input for a joint policy statement on the necessary resources to address primary needs associated with recovery.



## Coast Resilience Council



In 2010, the Advisory Group agreed that the Center for Policy and Resilience would be a suitable home for the cross-sector coordinating council that it had identified as a priority to promote full implementation of selected roadmap initiatives and maintain community focus on resilience. Group members have repeatedly emphasized the value added in bringing a diverse cross-sector group of community leaders to the table. The Coast Resilience Council seeks to expand the initial Advisory Group focus from Gulfport to the

broader Mississippi Gulf Coast, reflecting the understanding that even in a region with highly competitive municipalities, these coastal communities are invested in each other's resilience. In addition, many of the individuals active in the prior group represent organizations that work across entire counties and/or multiple coastal counties.

The Council's initial charter outlines the following goals: promote all aspects of resilience in all sectors of Mississippi Gulf Coast communities; promote collaboration among all sectors of all communities in identifying and applying successful practices for resilience in the community; partner with CARRI and related groups to promote local implementation of emerging systems for resilience assessment and improvement; support participation of Mississippi Gulf Coast

<sup>6</sup> For additional information, see: <http://www.smvoad.com/Gulf-Coast-Oil-Spill-Recovery-Summit.html>.

communities in local, state, and national efforts to improve community resilience; promote dissemination of information to the public about adopted plans and implemented programs related to community resilience; promote the Center for Policy and Resilience at the local level, serving as stakeholders in CPR; support development of research and educational initiatives on topics related to community resilience and provide community-based guidance and input to research and educational initiatives of the Center for Policy and Resilience and other organizations; and partner with other community, regional, and national organizations to promote these goals.

### Sharing Resilience Lessons and Knowledge

The Advisory Group has always been eager to share with other communities the resilience lessons from Hurricane Katrina and other disasters. During 2009–2010, the Gulfport Team worked with group members and others in the community to write and publish a series of resilience essays.<sup>7</sup> The Mayor of Gulfport and four other area community leaders participated in the CARRI Community Forum held in Charleston in April 2009, which resulted in the publication of four white papers focused on Gulfport area resilience lessons.<sup>8</sup> Many of these lessons have been tapped for the success stories and tips embedded in the new Community Resilience System. The Gulfport Team also organized meetings with key government, nonprofit, and business community leaders for a Center for National Policy delegation in August 2010<sup>9</sup> and The National Academies Committee on Increasing National Resilience to Hazards and Disasters in January 2011.



During 2008–2010, CARRI funded USM Gulf Coast faculty research and development of Mississippi coast resilience case study material, leading to publication of *Fostering Community Resilience: Homeland Security and Hurricane Katrina*<sup>10</sup> and other materials and reports.<sup>11</sup> CARRI also supported USM CPR in hosting three national research conferences in 2009 and 2010,

<sup>7</sup> Gulfport Resilience Essays: [http://www.resilientus.org/publications/gulfport\\_essays.html](http://www.resilientus.org/publications/gulfport_essays.html).

<sup>8</sup> CARRI Community Forum Papers: [http://www.resilientus.org/publications/white\\_papers.ccfpapers.html](http://www.resilientus.org/publications/white_papers.ccfpapers.html).

<sup>9</sup> Resulting in Center for National Policy publication of *Before the Next Katrina: Urgent Recommendations for the President & Congress on Gulf Coast Resilience*, August 27, 2010: <http://www.centerforinternationalpolicy.org/ht/display/ContentDetails/i/19781>.

<sup>10</sup> Lansford, Tom, et al., *Fostering Community Resilience: Homeland Security and Hurricane Katrina*, Ashgate (2010).

<sup>11</sup> See especially CARRI Research Report 9: Colton, Craig, *Building Community Resilience: A Summary of Case Studies from Charleston, Gulfport, and Memphis*, [http://www.resilientus.org/library/CARRi\\_Research\\_Report\\_9\\_Craig\\_Colten\\_1276602180.pdf](http://www.resilientus.org/library/CARRi_Research_Report_9_Craig_Colten_1276602180.pdf).

which brought together resilience scholars, students, and practitioners to share their research and knowledge about community resilience.<sup>12</sup>

### 3. Memphis/Shelby County, Tennessee

In June of 2007, Shelby County Mayor AC Wharton, Jr., invited CARRI to begin its work in the Memphis area. Resilience researchers from the University of Memphis, CARRI staff, and facilitators from Meridian Institute worked with a group of public agency and private sector representatives and leaders (the Advisory Group) who defined the resilience study area to align with the U.S. Department of Homeland Security’s Urban Area Security Initiative (UASI). The UASI area includes counties immediately adjacent and socially and economically linked to the city of Memphis, including Shelby, Lauderdale, Tipton, and Fayette Counties in Tennessee; Crittenden County in Arkansas; and DeSoto County in Mississippi.



Photo Credit: Exothermic

The Memphis area is dominated by a highly urbanized metropolitan core. It is situated at the northern end of the Mississippi Delta in the Lower Mississippi River basin. The Mississippi River is the foundation of the transportation industry in the region, which is now considered to be a transcontinental transportation network hub. Historically dominated by river and rail, Memphis is now home to the second largest inland port

in the United States and the location of the world’s busiest cargo airport. It is also the confluence of five class-1 railroads, north–south interstates from Canada to Mexico , and east–west routes crossing the Mississippi River that connect the East and West coasts of the United States.

A variety of man-made and naturally occurring threats have occurred in the region. The Yellow Fever epidemic of the mid-1800s was viewed as the most catastrophic event of its time. Lower-probability but high-consequence strong ground motion associated with the New Madrid Seismic Zone presents the most catastrophic natural hazard. At least five large earthquakes have occurred over the last 1500 years. Severe weather events such as tornadoes, straight-line winds, ice storms, and flooding occur regularly and have moderate-to-low consequences.



Photo Credit: Memphisweather1

<sup>12</sup> For additional information, see: <http://www.usm.edu/gulfcoast/cpr/summit.php>; <http://www.usm.edu/gulfcoast/cpr/ghosts.php> ; <http://www.usm.edu/gulfcoast/cpr/preparing.php>.

This section summarizes the work of the CARRI Team and the Advisory Group from 2007 to 2010. It describes the initial community engagement and assessment process, identification of resilience-building focus areas, identification of the group responsible for ongoing resilience-building efforts, and additional efforts to develop and share resilience lessons and knowledge.

## Community Engagement and Assessment



The CARRI Team initiated its work with the Memphis area community by forming a stakeholder advisory group to help guide CARRI efforts and identify additional members to more fully represent community interests in the Memphis area. The County Mayor, the Director of the Emergency Management Agency, and the Director of the Office of Preparedness encouraged maximizing the connection with existing efforts and partnerships fostered through the Memphis UASI. The Mid-South Association of Contingency Planners (MSACP) and the local InfraGard, each represented on the Advisory Group, helped to expand CARRI's reach within the Memphis area by allowing the CARRI Team to use scheduled meetings of their organizations to connect with their membership. Other organizations participating in the Advisory Group included Shelby County Office of Preparedness & UASI; Memphis Light, Gas and Water; Memphis/Shelby County Emergency Management Agency; Hope House Day Care; Shelby County Public Works; West Tennessee Seismic Safety Commission; Nike Corporation; First Horizon National Corporation; AmeriCorps\*VISTA; Volunteer Memphis/Hands On Memphis; MemphisFirst; Bartlett Chamber of Commerce; and the Shelby County Health Department. The public safety sector elected to participate on a limited basis through its involvement with the Advisory Group, holding that traditional preparedness programs satisfied their contribution to the resilience of the area. Given this limitation, the Advisory Group and the CARRI Team focused their efforts on the business and private sector, and representation from other areas of the public sector. The Advisory Group met frequently, in person, and by teleconference, throughout CARRI's work with the Memphis area.

Between June 2007 and January 2009, the CARRI Team worked with the Advisory Group to engage all interests within the Memphis area to learn about characteristics of community resilience and resilience-building priorities. They did so by

- interviewing individuals from the private sector, government, and nonprofit, volunteer, health, and education organizations;
- hosting focus group meetings with communities of interest (health care, volunteer, Bartlett area businesses, etc.);
- participating and presenting at meetings with relevant associations and agencies, and
- hosting three community-wide meetings.

Through these efforts, the CARRI Team and Advisory Group learned a great deal about the characteristics that make a community resilient. As part of the process, they compiled the

following list of focus areas identified by community members as critical to improving the resilience of the Memphis area.

1. Mentor small businesses in business continuity and disaster recovery practices
2. Formalize and expand coordination with community stakeholders
3. Increase resident preparedness
4. Improve coordination, specifically with the faith-based community
5. Reduce vulnerabilities in mass sheltering and care
6. Increase involvement of the transportation sector in community-wide planning and exercise efforts
7. Reestablish Volunteers Active in Disasters (VOAD) in the Memphis area
8. Formalize planning for at risk and special needs populations
9. Structurally mitigate school buildings
10. Structurally mitigate health care facilities
11. Encourage private-sector /nonprofit organization participation in exercises and planning
12. Utilize private practice medical professionals during disruptions and crises
13. Develop staff and family care plans

These areas of focus were confirmed by community members at the third and final community-wide meeting, the Capstone Event, and the following two focus areas were added to the list.

14. Prepare for communication between disaster responders/officials and the public when conventional communications methods have been damaged
15. Sustain an adequate blood supply

## Resilience Roadmaps

The first steps toward outlining the next steps for each of these focus areas were taken at the Capstone Event where participants began to prioritize areas of focus and identify required resources. In their assessment, community members were asked to consider existing opportunities that could be leveraged, long-term versus short-term investments and results, and the potential to maximize the resilience benefits of actions. Additional information necessary to address each focus area will be the future work of community partners engaged in the resilience-building process.

## Local Ownership

In January 2009, following and based on the Capstone Event, the CARRI Team presented a report on *Opportunities for Resilience Focus and Improvement* to Mayor AC Wharton, Jr. Mayor Wharton identified the Joint Economic and Community Development Board (JECDB) to take ownership of the resilience-building process for the Memphis area. The JECDB would guide the implementation of community efforts on the 15 focus areas identified by Memphis area community members



Photo Credit: Thomas Hawk

## Implementation

The group first addressed small business continuity and disaster recovery. The Bartlett Chamber of Commerce and the Mid-South Association of Contingency Planners (MSACP) worked with the JECDB to begin to address issues surrounding the small business owner, in particular small, disadvantaged, and woman-owned businesses.

### Building Resilience in Community Health: a Template for Memphis

In September 2009, Saliant, Inc., in conjunction with CARRI, completed a focused review and assessment of community health security, a critical aspect of community resilience, for the Memphis area. The objective of the study was to define actionable steps that local public health, medical, and community stakeholders can take to facilitate effective integration of local and regional health capabilities and assets to support and enhance community resilience in the face of major disruptions, whether natural or man-made. A copy of the report is available at [http://www.resilientus.com/library/Building\\_Resilience\\_in\\_Community\\_Health\\_Memphis\\_1257218448.pdf](http://www.resilientus.com/library/Building_Resilience_in_Community_Health_Memphis_1257218448.pdf).

### Emergency Preparedness and Incident Conference (EPIC) 2010

In February 2010, CARRI joined the Center for Earthquake Research and Information (CERI), MSACP, Ready Shelby, and State Farm Insurance to host a meeting on state-of-the-art business continuity planning resources for the Memphis area. The meeting featured speakers and information from the Institute for Business and Home Safety, the Small Business Administration (national and local offices), Memphis Light Gas and Water, CERI, MSACP, and the American Red Cross and was attended by 200 individuals. Also at the meeting, in coordination with MSACP and the Bartlett Area Chamber of Commerce, the CARRI Team offered a business preparedness survey to gauge the level of small business awareness and preparedness; 134 surveys were completed.

### Pilot Study for Business Continuity Planning (BCP) Best Practices for Small Businesses

Collaborative research performed for this study was coordinated by Small Plant Works and completed in February 2010. The study, funded by the Southeast Region Research Initiative, was designed to develop mitigation strategies and best practices for business continuity planning for small, disadvantaged, and women-owned businesses. It is anticipated that the resulting BCP best practices will be transferable and customized for use in other communities and, when applied, will contribute to overall community resilience. A copy of the report is available at <http://www.serri.org/publications/Documents/SPW%20Project%2089970%20-%20Final%20Report%20-%20BCP%20Best%20Practices.pdf>.

# ANNEX 4. The Community and Regional Resilience Institute & the Community Resilience System Initiative

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## Background

In 2007, the Community and Regional Resilience Institute (CARRI) began working to understand and improve the resilience of America’s communities. CARRI is a major effort of the Southeast Region Research Initiative supported by the U.S. Department of Homeland Security and managed by Oak Ridge National Laboratory, in conjunction with a variety of other federal, regional, state, and local partners. CARRI is dedicated to research and practical application of findings across the full continuum of prevention, protection, response, and recovery to enhance the resilience of communities and regions to natural and human-induced disasters and disruptions. CARRI seeks to assist the nation in developing an accepted, common framework for community and regional resilience that integrates the full suite of community resources into a coherent resilience pathway so that communities are able to get back on their feet as quickly as possible.

## Vision

The vision of the Community and Regional Resilience Institute (CARRI) is a more resilient nation anchored by resilient communities that are better able to anticipate threats, limit the impacts of crises, and recover more rapidly and completely through adaptation and growth in the face of turbulent change.

## Community Resilience System Initiative

CARRI has fostered and convened national collaboration on resilience through the Community Resilience System Initiative (CRSI). The CRSI’s purpose is to develop and articulate a common understanding of community resilience and build a national “system” that will help the nation’s communities meet their four critical needs of understanding, measurement, improvement, and benefits.

The CRSI is based on the following core principles.

- Community resilience is a reflection of and depends on the entire community, not just government.
- Community resilience is ultimately about achieving an acceptable “new normal” level of functionality.
- A Community Resilience System must allow the community to self-assess its resilience and move forward without the aid of external experts.

- A Community Resilience System must help the community define and prioritize actions to improve its resilience.
- A Community Resilience System must be flexible enough to work in communities of varying size and location.

Through initial convenings and targeted collaboration under the CRSI, CARRI has worked for 4 years to understand how all aspects of resilience interact to affect the resilience of communities. By combining the results from a cadre of distinguished researchers, observations of other resilience efforts, and insights from communities, CARRI has captured a robust and comprehensive view of what it means for communities to be resilient.

## Community Resilience System

The CRSI's focus is to develop a practical, usable, Community Resilience System (CRS) that will empower communities by

- providing the processes, tools, and standards needed by communities to become measurably more resilient;
- working with all levels of government to develop policy that supports and encourages communities to become more resilient, and
- working with the private business sector and all levels of government to develop tangible economic and social benefits for communities that become more resilient.

The Community Resilience System will

- increase the ability of communities to maintain normal functions with little disruption or, when disrupted, to recover an acceptable level of normal functions rapidly and with little loss of economic and social value;
- help communities be less dependent on limited federal, state, and private business resources following a disruption, and
- help communities accrue tangible and intangible benefits for their efforts.

Participants in the CRSI include representatives from academia, government (local, state, federal), other resilience efforts, the private sector, and nongovernmental and faith-based organizations. Collectively, these contributors have identified the following essential elements that they think communities need in order to improve their resilience:

- an understanding of what community resilience means in a way that can be readily understood by non-experts;
- a way to measure where the community stands on a scale of resilience;
- tools and processes that help the community reach a more resilient state, and
- tangible rewards for their efforts.

The CRS captures these elements and guides communities through a web-enabled process that provides useful steps, detailed instructions, and robust supporting resources that lead to a practical, implementable community resilience action plan. The system makes use of existing resources and concepts from organizations such as FEMA, the American Red Cross, the International City/County Management Association, the American Planning Association, and the U.S. Chamber of Commerce, and from industries such as insurance and finance and directs participants to the most relevant information and examples. It captures the research and lessons that have been gained from previous crises and community disturbances into a coherent, easy to navigate, resilience portal. It also connects community leaders through an on-line users' group so that local practitioners can help one another grapple with the challenges inherent in becoming a resilient community.

### Next Steps

The first deliverable for CARRI and the CRSI is the Community Resilience System, which will be piloted in a number of communities across the nation in fall 2011. CARRI will be responsible for updating the system based on the community pilots and feedback from the diverse community resilience network that it has established. CARRI will also continue to foster national dialogue about how to bolster community resilience, including discussions about how to reward communities for their efforts, through certification schemes and other tangible benefits such as insurance ratings and premiums.

### More Information

For additional information on CARRI and its programs, including the CRSI and CRS, please visit [www.resilientUS.org](http://www.resilientUS.org). While on the site, subscribe to the CARRI monthly newsletter, read recent blog posts from resilience practitioners, and review the latest CARRI-sponsored research on community resilience.





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