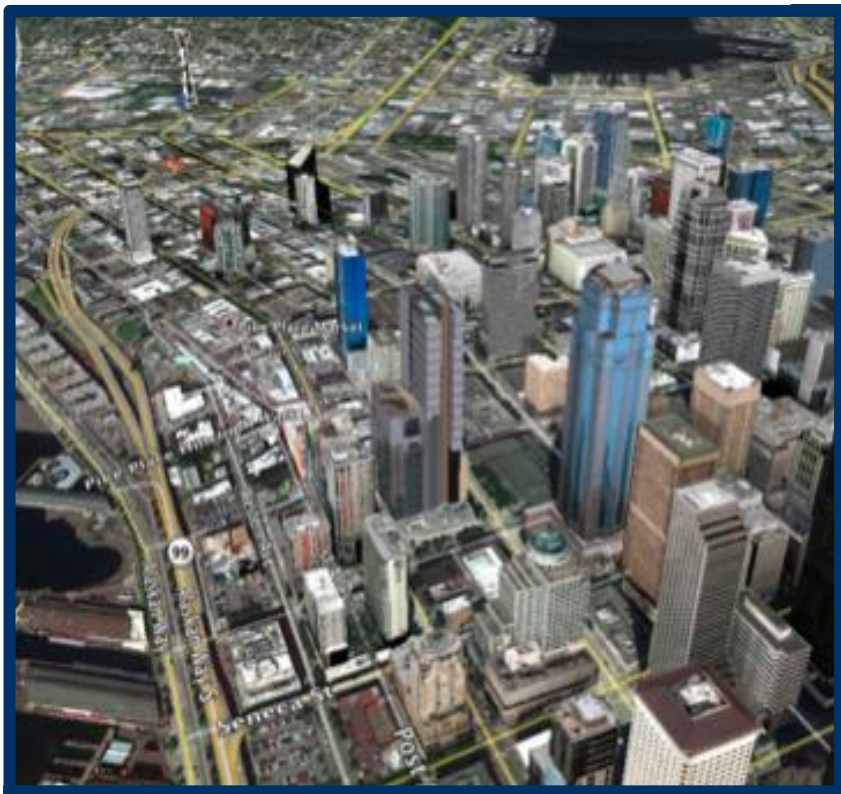

Urban Area Recovery Planning with CBR Hazards: *Lessons Learned from Seattle and Denver*

November 2012

Homeland Security

Science and Technology

FOREWORD:

The *"Urban Area Recovery Planning with CBR Hazards: Lessons Learned from Seattle and Denver"* is a document developed by Pacific Northwest National Laboratory (PNNL) under contract to the Department of Homeland Security, Science & Technology (DHS S&T) directorate as a stand-alone deliverable to the Wide Area Resiliency and Recovery Program (WARRP). This document is one of five reports for the Response and Recovery Knowledge Products (RRKP) data transition agreement established between DHS S&T and the Federal Emergency Management Agency (FEMA) in September 2011. The document is designed to provide an approach and process for developing a recovery framework for multijurisdictional urban areas with a specific emphasis on recovering from chemical, biological and radiological events.

This document is a planning aid that can serve as a guide to inform the development of recovery plans and strategies for multijurisdictional areas. The document also includes 1) the Denver Urban Area Security Initiative (UASI) All-Hazards Regional Recovery Framework as an example of a completed plan, 2) Chemical, Biological and Radiological (CBR) Incident Annexes to address CBR recovery uniqueness as compared to all-hazards, 3) a template for a regional recovery framework that can be used as a planning aid, and 4) as an attachment, stand-alone CBR Interim Clearance Strategies, which were developed by the Center for Disease Control (CDC) and the Environmental Protection Agency (EPA) and reviewed separately.

The document was first submitted to the WARRP interagency partners on May 31, 2012 for technical peer review. The review was completed by subject matter experts and did not reflect the position of their respective agency, unless the agency had indicated otherwise. Feedback was received by individuals from CDC, EPA and FEMA. Those comments were integrated into a comment resolution form with appropriate responses. In some cases follow up emails and teleconferences were conducted with the individuals to discuss and resolve comments and responses. The comment resolution form with the received comments and agreed upon responses is attached.

DHS S&T would like to thank the following individuals and groups for their support in development and review of this document. The views and opinions expressed herein do not necessarily state or reflect those of their respective organizations or the US Government.

Contributors: We would like to recognize the Seattle UASI leadership (City of Seattle, King County, City of Bellevue, Pierce County, and Joint Base Lewis-McChord) and the Denver UASI leadership (City/County of Denver, Jefferson County, Douglas County, City of Englewood, Boulder County, State of Colorado and Buckley Air Force Base) who were instrumental in the development of their own regional recovery frameworks which led to the development of this document.

Performers: We further recognize our dedicated performers from Pacific Northwest National Laboratory who had the daunting task of coordinating the various local, state, regional and federal teams, and then consolidating the efforts to begin this important discussion on recovery and resiliency.

Our Sincere Thanks,

-Doug Hardy, SPAWAR, WARRP XM

-Lori Miller, DHS S&T, WARRP PM

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Separate Attachments

Attachment 1 – Denver UASI All-Hazards Regional Recovery Framework

Attachment 2 – All-Hazards Regional Recovery Framework Template

Executive Summary

Our nation has experienced catastrophic earthquakes, tornados, hurricanes, and floods, in addition to terrorist-related incidents. Such incidents wreak havoc on communities and regions and have lasting long-term implications for economic viability. Recovery is the process of returning a community to a state of normality after a disastrous incident. No community is immune to disaster, which makes recovery planning paramount. Having a regional recovery framework that outlines the activities and functions necessary for long-term recovery will help expedite the recovery process.

The goal of this document is to provide guidance on an approach and process for multijurisdictional urban areas to develop an all-hazards recovery framework before any major incident. By developing a comprehensive framework, many critical recovery decisions can be made at a regional level that can enable local jurisdictions to develop their own recovery plan.

Developing a framework will help reduce the time and resources required to restore communities and critical infrastructure following a catastrophic incident. It will also assist policymakers and emergency managers to minimize the economic and public health impacts.

The suggested process for developing a regional recovery framework is comprised of five steps:

1. Agree and commit to developing a regional recovery framework
2. Form a team to guide development
3. Assessing hazards, vulnerabilities and capabilities
4. Develop the draft and get input from a wide variety of stakeholders
5. Adopt and sustain the framework.

Appendices provide the following information:

- Frequently asked questions
- Suggested recovery working meetings and workshops
- Developing chemical, biological and radiological annexes
- Additional resources

Also included in this guidance is a template for a regional disaster recovery framework as well as an example of a regional all-hazards framework, developed through a collaborative effort by the Denver Urban Area, State of Colorado, U.S. Department of Homeland Security, and other federal agencies.

Introduction/Background

Following the September 11, 2001 terrorist attacks and Hurricane Katrina in 2005, our country invested in improving catastrophic response and recovery efforts. Such incidents underscore the need and urgency for discussions that address a community's ability to absorb, adapt to, and recover from the devastating effects of a major disaster. Prior disasters have shown that the longer it takes to recover, the more significant the economic impacts on the community and the less likely people will remain in the community or return to the impacted area. Thus, planning for recovery is key and must start well before a disaster occurs.

Background

Several regional recovery activities contributed to the development of this guidance. First, the Seattle Urban Area partnered with the U.S. Department of Homeland Security and the Department of Defense in the Interagency Biological Restoration Demonstration program. The focus of the program was long-term recovery from a wide-area biological attack using an agent such as *Bacillus anthracis*; the work resulted in the *Regional Recovery Framework for a Biological Attack in the Seattle Urban Area*. Just as that program partnered with stakeholders in the Seattle Urban Area, the Wide-Area Recovery and Resilience Program was implemented by the Denver Urban Area and State of Colorado, in partnership with federal agencies and stakeholders including the military, the private sector, and non-governmental organizations. That program developed solutions to reduce the time and resources required to recover a wide urban area, including a recovery framework, modeled on the general outline of the Seattle recovery framework, but expanded to include an all-hazards approach, with annexes addressing chemical, biological, and radiological incidents.

In 2011, the Federal Emergency Management Agency released the *National Disaster Recovery Framework*[1] to enable recovery support to disaster-impacted states, tribes, territories, and local jurisdictions. The document provides a flexible structure that encourages disaster recovery managers to operate in a unified and collaborative manner. It also focuses on how best to restore, redevelop, and revitalize the health, social, and economic aspects of a community. The National Disaster Recovery Framework is consistent with the vision set forth in Presidential Policy Directive-8, *National Preparedness*, which directs the Federal Emergency Management Agency to work with interagency partners to publish a recovery framework.

[1] Federal Emergency Management Agency. 2011. *National Disaster Recovery Framework*. Available at http://www.fema.gov/pdf/recoveryframework/ndrf.pdf.

The purpose of this document is to provide guidance on an approach and process for multijurisdictional urban areas to develop a recovery framework. Such a framework identifies key information that will assist policymakers and emergency managers in shortening the timeline for recovery and minimizing the economic and public health impacts of any catastrophic incident. The appendices provide the following information:

- Frequently Asked Questions
- Suggested Recovery Working Meetings and Workshops
- Developing Chemical, Biological and Radiological Annexes
- Additional Resources

Also included in this guidance is a template for a regional disaster recovery framework as well as an example of a regional all-hazards framework, developed through a collaborative effort by the Denver Urban Area, State of Colorado, U.S. Department of Homeland Security, and other federal agencies.

Purpose of a Regional Disaster Recovery Framework

Imagine that you are an emergency manager of a major metropolitan area that has just been devastated by this catastrophic incident…

> *Thirty tornadoes ranging from Category 2 to Category 4 blast through the metropolitan area over a 4-hour period, resulting in more than 50 fatalities and several hundred injuries. The health care and mortuary care systems are overstressed. Critical infrastructure has been destroyed or seriously damaged. Several major businesses and factories are destroyed. Volunteers are arriving, requiring housing, food, medical care, and other necessities. A high volume of debris and hazardous materials will require treatment or disposal.*
>
> *In the weeks to months that follow, survivors are reestablishing their lives in their new locations; however, the limited number of jobs is a major factor in the ability to truly rebuild the community. Teams and work groups continue to repair residential sites and infrastructure. Agencies continue to understand the impacts and long-term effects of the hazardous debris in the community. Public and private leaders are talking about rezoning and possibly repurposing facilities and areas. The decision to reopen sites is slow and hampered by litigation and legal issues. Promotion of new business opportunities is increasing. Mental health needs of the survivors and responders/workers continue to require attention.*
>
> *A year after the storm, many structures remain in disrepair because of economic and social issues. There are continued reports of health effects on former residents and emergency workers who were exposed to contaminated debris and water. Litigation and legal battles continue. Bringing new business and residents to the area moves slowly.*

A catastrophic incident is any natural or intentional incident, including terrorism that results in a high level of mass causality, a significant amount of damage, and/or severe disruptions to the society, infrastructure, environment, economy, and/or government. Such incidents as the one highlighted above, wreak havoc on communities and regions and have lasting long-term implications for economic viability. Despite the level of complexity of cleanup and recovery, those impacted recognize that true revitalization centers on economic recovery.

No community is immune to disaster, which makes community-based recovery planning paramount. A catastrophic incident will require multi-jurisdictional cooperation that will enable a community to return to a state of normality following a disastrous event. Having a regional recovery framework that outlines the activities and functions necessary for long-term recovery will help expedite the overall recovery process.

Recommended Approach to Recovery Planning

The approach used to develop a regional recovery framework can range from the engagement of a wide variety of public and private sector stakeholders and subject matter experts to a more modest process of development by a small core group of community representatives. Soliciting a wide variety of perspectives is recommended because it enhances coordination and collaboration across agencies and organizations. It also provides an opportunity to proactively gain a better understanding of the specific policy questions requiring resolution for effective long-term recovery.

The following five-step process is a suggested approach for use by local and regional emergency managers to develop a recovery framework before a disaster strikes. The process described is not unlike any other collaborative processes where a variety of stakeholders are engaged. It is designed to be flexible and adaptable so it can be used by urban areas. The process includes suggestions on the breadth of organizations and institutions to engage and options for how information can be both presented to and solicited from stakeholder groups.

Step One – Agree and Commit

The first step to the development of any regional recovery document is an agreement and commitment from the regional leadership that a recovery framework needs to be developed, the scope it will cover, and how it will be used. This agreement will likely be initiated by the director(s) of the local emergency management office and developed in consultation with political leadership, such as mayors, county executives, other emergency managers in the region, and state emergency management. The agreement should also include a commitment by the regional jurisdictions to make available the necessary resources for the development of the framework. In addition, the agreement should specify reporting lines and establish either an Executive Steering Committee or other group to whom those working on the framework can report.

Step Two – Form a Team to Guide Development

It's helpful to establish a small, dedicated group of emergency managers and others to guide the development of the framework. Members of this team should have knowledge and expertise on local and regional disasters that have required, or could require, a major recovery effort. It may be beneficial to include a federal representative (e.g., FEMA, EPA, CDC, military) if those agencies play a role in the community or region. It is important for the continuity of the

framework document and the ease of the process that team members commit to stay with the effort until the framework is completed.

The team may have one representative from each of the jurisdictions partnering in the development of the recovery framework. If there is a military installation in the area, its leadership should be considered for inclusion on the team. In addition, having someone who can represent the interests of the private sector and the volunteer community is also beneficial. The size of the team will vary depending on the region; however, effort should be made to keep the size to a manageable and dedicated core team (twelve or less), if possible. This small dedicated group will guide the drafting of the document. Some of the activities for which the team may be responsible, including the following (described in more detail below):

- Developing the focus and goals of the recovery framework
- Deciding on the final format and content of the framework
- Identifying and promoting coordination and communication with the selected groups and organizations (private, public, military, and volunteer) that will be providing input
- Ensuring programmatic support to draft the recovery framework and determining the resources and assets that can be utilized to develop the recovery framework
- Developing a schedule from the beginning of development to completion of the framework
- Soliciting input from key stakeholders via one-on-one interviews, workshops, and informational and small group meetings
- Reporting to an Executive Steering Committee or local political leaders on progress
- Exercising the framework.

Step Three – Assessing Hazards, Vulnerabilities and Capabilities

Prior to drafting, the region's hazards, vulnerabilities and capabilities should be assessed. This will allow for the framework to be adapted to the needs and strengths of the region.
For assessing regional risks and vulnerabilities, information from recent mitigation or response and emergency operational planning efforts can be used to estimate potential impacts such as long term and permanent housing needs. As a starting point for determining what concepts need to be developed or what constructs need to be adapted regions should answer such questions as: *do jurisdictions have recovery management structures in place?* Or *what personnel resources, grants and contract management structures, training and exercise programs, are in place to support the key elements of recovery management?* The results can

help identify where existing mechanisms can be adapted to fit a recovery context and where new policy or guidance will need to be developed.

To focus discussions, it is helpful to develop a disaster recovery scenario to guide framework development. The scenario should describe a major catastrophic event that has a realistic likelihood of occurring in the community (e.g., hurricane, tornado, floods, and windstorm) and be a reflection of the region's risk assessment. As part of the scenario description it should identify the number of individuals that have evacuated or been displaced, the impact on high-value property and infrastructure, and the basic services and local businesses that have been affected. Examples of scenarios can be found in the National Planning Scenarios fact sheet.[2]

Step Four – Develop the Draft

The following are some suggested steps for developing a draft framework.

Developing the focus and goals of the framework

Before the framework can be drafted, its focus and goals must be determined. The framework should be designed to be flexible and scalable so it can serve for all-hazards recovery as well as for a more specific disaster such as a chemical, biological, or radiological incident. Some of the framework goals may include the following:

- Protect life, property, and the environment to the greatest extent possible
- Protect and sustain regional economic stability
- Shorten the recovery timeframe as much as possible
- Define post-disaster recovery conditions, both in the near-term (2 to 5 years) and the long-term (beyond 5 years).

Deciding on the final format and content of the framework

Another key decision early on will be the final format and content to be included. A recovery framework can be as simple or as complex as the regional leadership decides. An example of a recovery framework that was completed by the Denver Urban Area and the State of Colorado is

[2] Federal Emergency Management Agency. 2009. *National Planning Scenarios Fact Sheet*. Available at http://www.fema.gov/pdf/media/factsheets/2009/npd_natl_plan_scenario.pdf.

attached to this document as an example along with a template for a regional recovery framework (See Attachments 1 and 2).

In general, a recovery framework will likely include the following information:

- **Background**: Background information should describe an all-hazards approach as well as the phases of recovery. The National Disaster Recovery Framework identifies three phases of recovery (short-term, intermediate, and long-term recovery) so regions may want to consider aligning their phases of recovery with the national guidance. The background should also describe the purpose of the framework, its intended use, and the organizations involved in its development.
- **Assumptions**: Assumptions highlight any pre-existing decisions or conditions regarding response, regional vulnerabilities, and regional capacity or functions that will be important from a recovery perspective.
- **Regional Coordination/Decision-Making Process**: Multi-jurisdictional decision-making or multi-agency coordination is a process and approach for coordinating regional level decision-making. It should also include who will need to be engaged in the decision-making process. The decision-making structure will need to have financial decision making authority and be able to allocate resources[3].
    - There are a variety of processes and structures that cities are using for multi-agency coordination. See page 15-19 for examples.
- **Recovery Support Functions**: Just as response has Emergency Support Functions (ESFs), recovery efforts focus on Recovery Support Functions (RSF)[4]. There are different approaches that can be taken towards identifying RSFs. One option that is articulated by FEMA in their National Disaster Recovery Framework guidance is to incorporate the six FEMA recovery support functions when developing a regional recovery framework. Any additional recovery functions added wouldn't be designated as a RSF but would be given their own designation (i.e. recovery support issues or themes). Another option is that the region selects those RSFs that are most applicable for that region which maybe a

[3] Under FEMA guidance, this would be considered ***Unified Command* (UC):** An Incident Command System application used when more than one agency has incident jurisdiction or when incidents cross political jurisdictions. Agencies work together through the designated members of the UC, often the senior person from agencies and/or disciplines participating in the UC, to establish a common set of objectives and strategies and a single Incident Action Plan.

[4] FEMA has indicated in the NDRF that 'RSFs will likely activate before all ESFs demobilize; therefore they may coexist within the same operation for a period of time'. Federal Emergency Management Agency. *2011. National Disaster Recovery Framework*. Pg. 38. Available at http://www.fema.gov/pdf/recoveryframework/ndrf.pdf.

combination of FEMA Recovery Support Functions and the Recovery Support Function that the region designates. For example, some jurisdictions have developed their own recovery support function for fatality management and public safety/access control. When building out each recovery support function, the scope, considerations, and policy-related issues need to be included. Specific benchmarks and phases of recovery can also be incorporated.

  - FEMA views ***Recovery Support Functions*** as the coordination structure and mechanism to bring together governmental and nongovernmental organizations that can contribute and coordinate resources, facilitate problem solving, and promote partnership for a particular functional area.

- During the development of the format and the content of the framework, it may also be useful to identify other related regional or state plans and, to the extent possible, reference those documents. Some of those plans may include Emergency Operations Plans, Local Comprehensive Plans, Local Economic Development Plans, Disaster Management Plans, Long-Range Transportation Plans, Mass Fatality Plans, Natural Hazard Mitigation Plans, and Disaster Housing Plans.

Examples of Regional Coordination/Decision-Making Processes

HOUSTON-GALVESTON AREA COUNCIL (H-GAC) REGION

The MACC plan in the Houston-Galveston Area Council (H-GAC) region focuses on resource sharing for a 13-county region in Southeast Texas. Using the National Incident Management System (NIMS), the 13 H-GAC county judges and the mayors of Houston and Galveston, Texas have established a Unified Area Coordination Committee (UACC) to develop, implement, and coordinate a multi-jurisdictional response using the Multi-Agency Coordination System (MACS). The MACS is not an operational function but rather a coordinated resource management function.

To coordinate this function prior to or immediately following an event or incident that affects the region, the UACC may establish a Multi-Agency Coordination Center (MACC). The MACC is an expandable organization that will contain a minimum of two functions: Planning and Logistics. A third function, Medical Operations, is managed by the Catastrophic Medical Operations Center (CMOC). The MACC will liaise with the CMOC as needed. The volume of resource requests and the scope of the event will dictate the number of personnel assigned to each section. The organizational structure is displayed below. Solid boxes and lines indicate physical entities and direct communications. Dotted boxes and lines indicate personnel/entities that will often function virtually, although they may be collocated with the functional arm of the MACC as needed.

Organizational Structure:

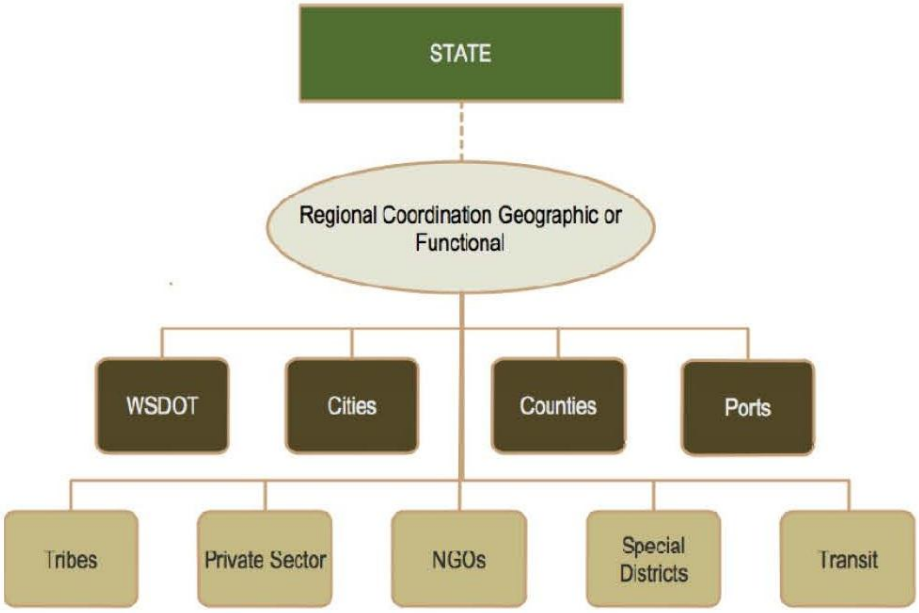
This information was provided by Melanie Bartis, City of Houston. For more specifics, contact her at melanie.bartis@houstontx.gov or (832) 393-0917.

THE PUGET SOUND CATASTROPHIC DISASTER COORDINATION PLAN – TRANSPORTATION RECOVERY ANNEX

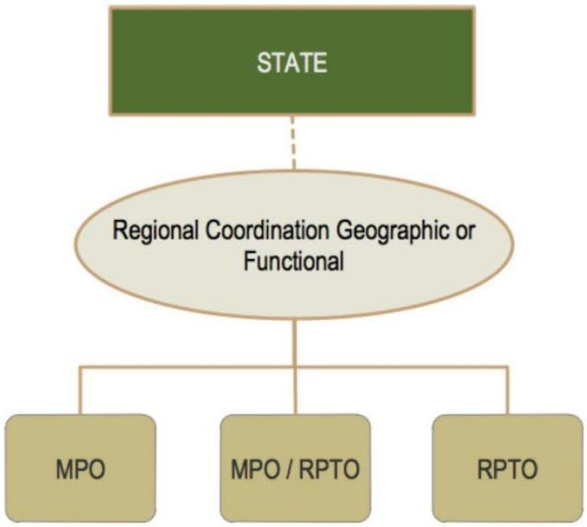
The Puget Sound Transportation Recovery Annex supplements the Puget Sound Regional Catastrophic Coordination Plan (Coordination Plan). It provides recommended guidelines for coordinating multi-jurisdictional regional transportation system recovery in the Puget Sound Region after a catastrophic incident. This Annex addresses transportation issues in Island, King, Kitsap, Mason, Pierce, Skagit, Snohomish and Thurston Counties located in Washington State. It provides information and recommended guidelines for regional coordination, collaboration, decision-making, and priority setting among Puget Sound area emergency response and transportation agencies and other partners across the disaster recovery spectrum.

For regional coordination, the annex establishes three options that can be used to facilitate coordination and refine criteria to set regional priorities if necessary. These options are not mutually exclusive. All may play a role in long term recovery operations as other strategies emerge at either the local or state level.

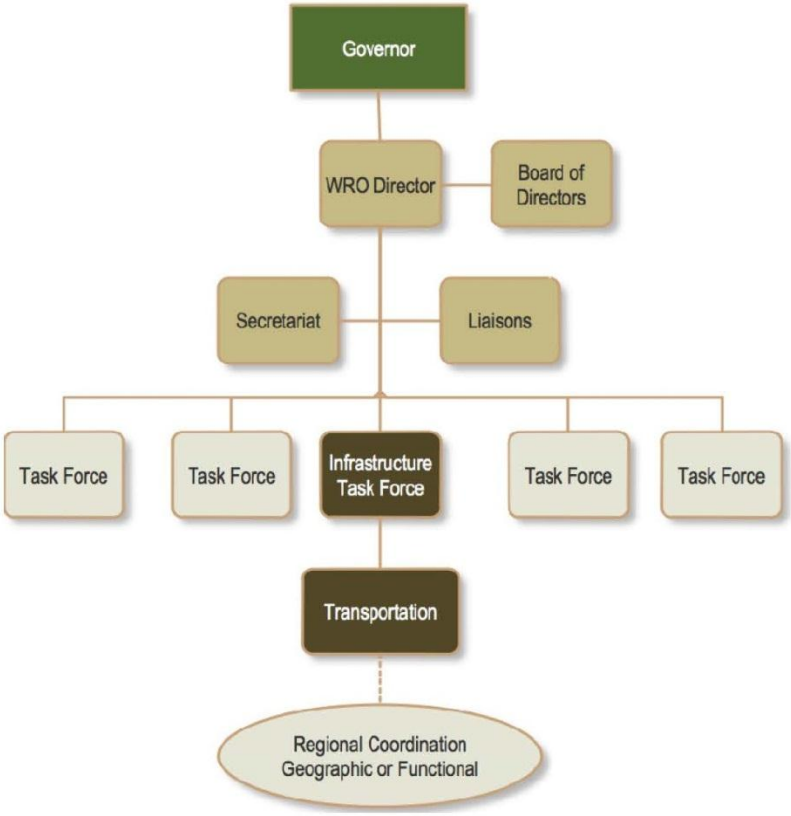
a) **"Bottom up" approach** – This involves local jurisdictions taking the initiative to organize working groups to address regional issues.



b) **Utilization of existing organizations and institutions** – Examples of this are the Metropolitan Planning Organizations (MPOs) and Regional Transportation Planning Organizations (RTPOs).



c) **<u>"Top down" approach</u>** – This involves the State establishing task forces or working groups to address regional issues as part of the governor's long term recovery strategy.

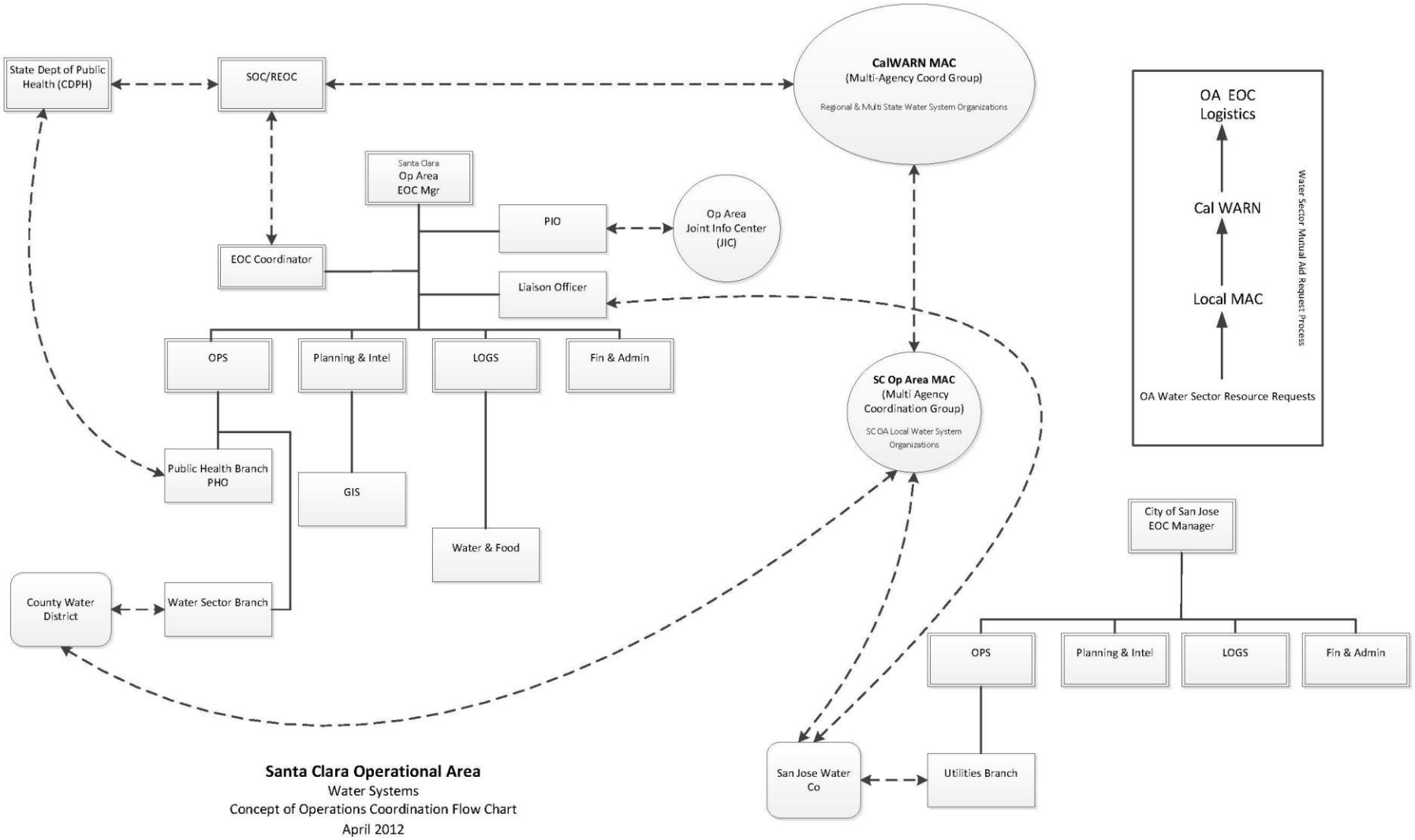


For more information, contact Lisa Kaye, City of Seattle, at lisa.kaye@seattle.gov or (206)733-9552.

SANTA CLARA OPERATIONAL AREA – WATER SYSTEMS CONCEPT OF OPERATIONS COORDINATION

The Santa Clara Water Systems Concept of Operations Coordination integrates private and public water companies into regional emergency operations centers during disasters. The private and public water companies are coordinated by the California Water/ Wastewater Agency Response Network (CalWARN) whose mission is to support and promote statewide emergency preparedness, disaster response, and mutual assistance matters for public and private water and wastewater utilities. During a disaster, CalWARN links directly into the state EOC. By having this linkage CalWARN is able to request resources directly from the state for their members. For more information on CalWARN, see their website http://www.calwarn.org/.

The organizational structure is displayed on the next page.



Santa Clara Operational Area
Water Systems
Concept of Operations Coordination Flow Chart
April 2012

For more information, contact Janell Myhre, City of San Francisco, at janell.myhre@sfgov.org or (415) 353-5244.

Coordinating with partners

To develop a framework that is acceptable to the region, communication and coordination are paramount. The core group will need to identify organizations and actively promote coordination and communication. In many cases, this effort involves leveraging groups with whom the team already has partnerships and expanding coordination by answering the following questions:

- Who needs to be involved from the public sector?
- Who needs to be involved from local, state, and federal government agencies?
- Who needs to be engaged from the private sector?
- What associations need to be engaged?
- Are there tribal authorities that should be engaged?
- Are there key volunteer organizations or faith-based organizations that should be engaged?
- Is the Defense Coordinating Officer or other Department of Defense officials engaged to ensure the military perspective is represented appropriately?

Although not complete, below is a list of potential stakeholders to engage in the development of the recovery framework. [5]

Topic	Stakeholder Group	Function/Contribution
General/ Administrative	Chief Administrative Officer	Leadership focus
	Municipalities (if jurisdiction is a county)	Inter-jurisdictional participation
	Public Information Officer	Information dissemination, communications
	Public Safety or Emergency Management Department	Emergency operations impact on long-term recovery and transitions
	Finance Department	Budgeting, contracting, outside financial assistance
	Legal Department	Emergency ordinances, new regulations
	Administrative or Personnel Department	Staffing capabilities

[5] Adapted from Florida Department of Community Affairs and Florida Division of Emergency Management. *Post-Disaster Redevelopment Planning – A Guide for Florida Communities.* October 2010. http://www.floridadisaster.org/Recovery/IndividualAssistance/pdredevelopmentplan/documents/Toolbox/Post-Disaster%20Redevelopment%20Planning%20Workshop.pdf

Topic	Stakeholder Group	Function/Contribution
	GIS Department	Vulnerability and redevelopment mapping
Land Use/ Comprehensive Planning	Planning or Community Development Department	Land use and other comprehensive plan compatibility
	Community Redevelopment Associations	Redevelopment plans
	Regional Planning Councils	Regional coordination
	Historic Preservation Commission or Cultural Affairs Office	Cultural and historical importance and value
	NGOs for Historic and Cultural Preservation	Cultural and historical importance and value
	National Park Service or Bureau of Land Management	Use of government land
Housing	Building and/or Zoning Department	Building moratoria, permitting procedures
	Community Development Department/ Local Housing Authority	Land use planning
	Code Enforcement Department	Damage assessment, enforcement of redevelopment standards
	Neighborhood or Homeowner's Association	Community representation
	Homebuilder's Association Rebuilding	Rebuilding housing
	U.S. Housing and Urban Development	Federal resources
	Local real estate organization	Alternatives
Economy	Economic Development Organization or Chambers of Commerce	Economic Recovery
	Community Development Department	Economic Recovery
	Tourism/ Visitor and Convention Bureau	Economic Recovery
	Local downtown/urban development councils	Economic Recovery
	U.S. Housing and Urban Development	Economic Recovery, federal resources
	Key business sectors (manufacturing, tourism, etc.)	Economic Recovery
	Major employers	Recovery and resilience of local

Topic	Stakeholder Group	Function/Contribution
		businesses
Infrastructure	Public Works Department	Infrastructure restoration, mitigation projects
	Solid Waste Department	Debris removal
	Public and/or Private Utilities	Utility restoration, mitigation and relocation
	Metropolitan Planning Organization (transportation)	Regional transportation coordination, mitigation
	Transit Organization/Company	Transit restoration, connection with temporary housing/ business sites
	Aviation and Port Authorities	Regional transportation coordination, resumption of trade
Health and Social Services	School Districts and Higher Education Facilities	Transition from sheltering to schools reopening, population return
	Health Department or Medical Organization	Hospital and medical recovery
	Human or Social Services Agencies	Special needs populations
	Non-governmental Organization Service Providers	Coordinate volunteers, special needs populations
Environment	Environmental Resources or Parks and Recreation Department	Land acquisition, environmental protection
	Water Management District	Flood mitigation, environmental protection
	U.S. Army Corps of Engineers	Debris removal
	Federal, state, and local environmental agencies, including EPA, Fish and Wildlife, and natural resource agencies	Regulations, resources

Determining resources

The core team will also need to ensure there is programmatic support from the various represented agencies and partnering organizations to write the recovery framework. They will also determine the resources and assets that can be used in its development. Resources may need to be available to support organizing meetings, planning workshops, drafting meeting summaries, drafting frameworks, conducting one-on-interviews, and consolidating and responding to comments.

Developing a schedule

The core team will also need to develop and publicize the schedule for framework development to the respective agencies and partners. The time required will range from jurisdiction to jurisdiction, depending on the level of framework detail, number of stakeholders engaged, and availability to draft a plan. The average time to complete a regional recovery framework from initial agreement and commitment to a draft document is about one year.

Soliciting input

Networking with key agencies and organizations and discussing the role they play in recovery are important to building consensus and developing community support. Information can be gathered through topical workshops, group meetings, interviews, and engagement with specific subject matter experts. This information can then be used to draft sections of the framework. The same groups can then review sections to ensure accuracy and feasibility for implementation. The following are some examples of ways to solicit input. Additional information on specific meetings that might be held is provided in Appendix B. Suggestions for developing incident-specific annexes can be found in Appendix C.

One-on-One Interviews

Members of the core framework team may want to meet with a diverse set of subject matter experts from both the public (e.g., public health, medical services, law enforcement, fire, waste management, agriculture, public utilities, and transportation) and private sector (e.g., private companies, large building owners, cleanup and restoration contractors, and critical service providers) to gain an understanding of their plans and expectations from the public sector during major catastrophic incidents. Some of the questions to pursue with the private sector include the following:

- What are the major concerns of the businesses, private property owners, and critical service providers regarding the ability to recover from a catastrophic incident (e.g., natural disaster or terrorist attack) and restore property and normal business operations?
- What expectations do they have overall for government roles and their own in disaster recovery?
- What are the expectations about financial outlays the private sector would face related to recovery and restoration? What will insurance cover? What would government cover?

- What specific information does the private sector need now from government officials to support recovery and restoration planning? What would they need during the recovery and restoration phase?
- What established communication channels could the lead agency use to provide information about recovery and restoration to the private sector? What types of information do they need?
- What tools are needed by the private sector to support recovery and restoration?
- What other resources (e.g., drugs, equipment, and funding) will the private sector need from government or others to support recovery and restoration efforts?

The following template provides an example interview protocol, which would need to be tailored for the specific groups and situation.

Interview Questions – *Questions for Federal State and Local Participants*	
Name: Title: Organization: Address: Telephone: Email:	
Questions	**Responses**
What are the roles / responsibilities of your organization in coordinating the disposal of anthrax derived wastes? Who are the key players in your organization with these responsibilities? Please explain	
Has your organization completed existing plans or conducted exercises describing how roles / responsibilities will be implemented when dealing with special waste? biohazardous waste? Medical waste? Anthrax derived wastes? Please explain.	
Have you engaged in discussions with other federal, state, and local departments / agencies to understand their roles / responsibilities in managing the disposal of anthrax derived wastes? Please explain.	
Does your organization have a risk	

communication strategy (e.g. how science, technology and or policy issues would be communicated to the public) to implement during an anthrax incident?	
What do you see as the major impediments (if any) for the disposal of anthrax derived wastes in your region? a) At the federal level; b) the state and local level; c) the facility owner / operator level; and / or d) the public	
Do you believe there is sufficient disposal capacity to properly dispose of anthrax derived wastes in the event of an incident? Why or why not? Please explain with specific numbers if possible.	
How would you gauge the willingness of facilities to accept anthrax derived wastes in the event of an incident? Do you anticipate that willingness to change depending on whether waste is verified treated, unverified treated, or untreated?	
Do you perceive issues with the overall ability, including capacity and willingness to accept, to dispose of anthrax derived waste? a) If yes, what do you believe would be the most important action(s) to undertake to increase the number and capacity of facilities willing to accept biological threat agent derived wastes in your Region?	
What outcomes would you most like to see from this workshop?	
Workshops: what date do you prefer? Would like to attend all three workshops? 1. Potential Date 1 2. Potential Date 2 3. Potential Date 3 4. Potential Date 4	

Working Meetings or Workshops

Working meetings or workshops are another means to both provide technical information and engage key stakeholders on recovery-related issues that can help inform the framework. The overall objective is to have a diverse set of perspectives for input.

Working meetings and workshops can range from highly technical topics such as addressing the long-term needs associated with a wide-area anthrax incident to more generalized discussions on topics such as the use of social media and public information officer roles in messaging and the recovery process. Appendix B provides a list of suggested working meetings and workshops, participants, and purposes.

Members of the core group who frequently engage with subject matter experts can identify the key meetings and workshop participants. Such meetings can help frame policies, and develop guidance that will enable recovery in the impacted area.

Reporting on progress

Throughout framework development, it will be important to keep senior leadership of the various agencies and organizations engaged and informed. They should be aware of issues and decisions they may need to make under a variety of catastrophic incident scenarios. The core team may:

- Provide an overview of the program and highlight key activities
- Share key assumptions and issues associated with long-term recovery
- Solicit thoughts on issues confronting decision-makers in the region that should be considered to guide and achieve long-term recovery (e.g., continuity of government, economic recovery, and information coordination).

Jurisdictions that do not have an Executive Steering Committee should report to and engage local political leaders.

Exercising the framework

One of the best ways to ensure the framework is addressing key issues of recovery is to use the draft framework during an exercise, either full-scale or tabletop. The objective would be to enact the framework to determine who plays which roles and how it will be implemented. Some specific questions to address could include the following:

- Have the appropriate lead and support agencies and partnering organizations been identified in the Recovery Support Functions?
- How will the implementing agency organize itself to execute the Recovery Support Functions?
- How will recovery priorities be adjusted as the process proceeds?

Step Five – Adopt and Sustain

Once the framework has been developed and reviewed by stakeholders, it will need final approval from agency leadership across the region. In addition, the region will need to commit to maintaining and sustaining the document. For example, the State of Colorado plans to review the Denver UASI All-Hazards Regional Recovery Framework at least every five years, with the intent of exercising the recovery plans and framework as appropriate. Each jurisdiction will need to determine and outline what their needs are in terms of updating, modifying and sustaining their regional recovery framework.

Appendix A – Frequently Asked Questions

As the nation engages more fully in recovery planning, agencies have posed a number of questions regarding the development of a regional recovery framework and the recovery process in general. The following sections address those questions.

Development of a Multi-Jurisdictional Recovery Framework

What is the goal of a multi-jurisdictional recovery framework? Why is it important?

The goal of the recovery framework is to create a blueprint for multiple jurisdictions to use when developing their own operational plans to recover from catastrophic incidents and restore their communities and critical infrastructures.

Having a multi-jurisdictional recovery framework that identifies policy issues, lead agencies, considerations, and proposed actions will reduce the time and resources required for recovery from a catastrophic incident. The framework also furthers the discussion on how multiple jurisdictions can approach decision-making in such areas as resource allocation, prioritization of cleanup, and post-disaster housing.

How does this regional recovery guidance differ from the National Disaster Recovery Framework?

The Federal Emergency Management Agency's National Disaster Recovery Framework defines how the nation will approach recovery. This regional recovery guidance defines and provides a blueprint on how multi-jurisdictions (primarily cities and counties in conjunction with their state) approach recovery. This guidance links with the national framework in terms of phases of recovery (short-term, intermediate, and long-term) and the Recovery Support Functions, which can also be tailored to meet each individual jurisdiction's requirements.

What are the elements of success in the development of a regional recovery framework?

A successful regional recovery framework requires the commitment to collaborate across and among jurisdictions. To collaborate effectively requires partnership, communication, and relationships with participating jurisdictions, agencies at all levels, the private sector, and non-governmental organizations. Recovery does not occur in a vacuum, and the government plays

only a small part in the bigger picture. Therefore, alliances and partnerships with the private sector and other organizations need to be developed before disaster strikes.

What major challenges may confront agencies when initiating the development of a regional recovery framework?

Agencies that have developed such frameworks have found several key challenges:

- **Coordinating across multiple jurisdictions**. Regional political officials need a mechanism for coordination, joint decision-making, and prioritization.
- **Understanding multi-jurisdictional implications of various types of disasters**. Many organizations have worked together through natural disasters such as floods, wild fires, and wind storms. Gaining a baseline understanding of disasters with which a community is unfamiliar (especially chemical, biological, or radiological threats that require the help of subject matter experts with whom the community may also be unfamiliar) may be more of a challenge. In such cases, agencies may need to reach out to other communities, academia, or federal agencies to identify needed resources, and then hold special meeting or workshop sessions to bring people together for understanding and consensus.
- **Working through issues.** Getting beyond the response discussion and focusing on the phases and activities associated with long-term recovery takes time. Having recovery-based scenarios can help address this issue.
- **Maintaining and sustaining the framework after completion**. Unless the framework is reviewed on a consistent basis, it can become "just another plan" gathering dust on the shelf.

What is important to know about the selection and development of the Recovery Support Functions?

Subject matter experts from the local, state, and federal levels or relevant organizations and agencies should be utilized to help identify and capture all elements of a Recovery Support Function. These individuals or organizations can serve as the champion of the Recovery Support Function through the framework development process and if necessary, potentially establish partnerships with relevant entities to reach consensus on policy issues. Similar to Emergency Support Functions, each Recovery Support Function should have a lead agency, an organization that owns the function during recovery.

How are multi-jurisdictional coordination/decision making processes for recovery established?

A multi-jurisdictional coordination/decision-making process can be developed in several ways, but it is recommended that a core team be established to develop an approach and process as well as work through some of the policy issues. The approach should be built from existing processes and modified as necessary. If multi-jurisdictional coordination is not evident in response, it will be difficult to achieve in recovery. This process will also require multi-agency coordination at the local level so needs and requests can be elevated as needed in the decision-making process. Once all parties are in agreement, the core group will need to advocate and bring in political leadership for official approval.

Will additional funding be provided for the development of a multi-jurisdictional recovery framework?

There are several homeland security grants managed by DHS that include recovery planning as an eligible activity. In particular, the Homeland Security Grant Program (HSGP) provides funding for states and urban areas to prevent, protect against, mitigate, respond to, and recover from acts of terrorism and other threats. Other potential sources of grant funding include the State Homeland Security Program and the Urban Area Security Initiative. For more information on these programs, see: http://www.fema.gov/preparedness-non-disaster-grants

How can I use this recovery guidance?

There are several ways that this guidance can support disaster recovery planning:

1. The framework should be integrated with local/regional economic development plans and capital improvement plans.
2. The framework should be linked with local land use planning documents.
3. The framework should be shared with local jurisdictions so they can develop or update their operational plans.

Where can I find the technical expertise and knowledge needed to develop the framework?

Most states and regions have access to many subject matter experts, within government agencies, professional organizations, or voluntary organizations with a stake in disaster response and recovery. Identify these experts for each Recovery Support Function, starting with the lead agency. If military expertise in needed for any Recovery Support Function, work with

the Federal Emergency Management Agency's Defense Coordinating Officer for your region to connect with military experts. Then hold workshops with the subject matter experts to allow them to think through various aspects specific to your region or the type of disaster. See Appendix B for a list of potential workshops and participants.

General FAQs about Recovery

When does recovery begin?

Recovery begins the minute a disaster strikes. Initially, response plans will be put in motion, and response operations will have priority. However, the complexity of recovery requires that recovery planning activities be started as soon as possible. Efforts will transition to the priorities of recovery once areas are secure enough to begin initial disaster assessment.

What does economic recovery mean?

Economic recovery means community recovery. Unfortunately, prior catastrophic incidents have shown that many businesses will never recover. Thus, the ability of the local economy to rebound after a disaster is vital for the success of the community's long-term recovery. The return of jobs, schools, tourism, capital investments, and other indicators of economic health are interdependent with housing recovery, infrastructure restoration, environmental restoration, and restoration of social services.

What is the Stafford Act? Why is it important?

The Stafford Disaster Relief and Emergency Assistance Act (the Stafford Act) authorizes the President to issue major disaster or emergency declarations in response to catastrophes in the United States that overwhelm state and local governments. Such declarations result in the distribution of a wide range of federal aid to individuals and families, certain nonprofit organizations, and public agencies.

What funds are available for recovery?

The National Disaster Recovery Program Database (NDRPRD) provides high-level information on programs sponsored by various levels of government and for-profit, non-profit, and charitable organizations that may help communities rebuild after a disaster. The database is geared towards state, local, tribal and territorial governments and emergency managers. Users can sort through different search criteria to find programs from specific agencies, types of resources,

eligibility criteria, applicable states and types of beneficiaries. For more information, see their website at http://www.fema.gov/ndrpd.

A resource for individuals and families is the DisasterAssistance.gov website. The website hosts information on more than 70 different forms of Federal assistance from 14 different Federal agencies. Individuals can apply for assistance from FEMA, learn or apply for Small Business Administration loans, identify federal disaster recovery centers near their home, have their social security benefits sent to a new address, search a list of housing options available for rent, or get information on their federal student loan. For more information, see their website at http://www.disasterassistance.gov.

What support can the Small Business Administration provide to long-term recovery?

The Small Business Administration can provide revolving loan funds to small businesses, grants to state and local governments for distribution, and assistance for property loss and working capital. For more information, see their website at http://www.sba.gov.

Additionally the Department of Commerce's Economic Development Administration (EDA) plays a role in disaster recovery by facilitating delivery of Federal economic development assistance to local government for long-term community economic recovery planning, reconstruction, redevelopment and resiliency. EDA serves as the Coordinating Agency on behalf of the Department of Commerce for the Economic Recovery Support Function to coordinate the activities of a diverse group of partner agencies supporting recovery in disaster-impacted communities. The activities consist primarily of leveraging existing resources and authorities to make a positive impact for communities affected by disasters. For more information, see their website at http://www.eda.gov/disasterfunding.htm.

Appendix B – Example Framework Development Working Meetings and Workshops

The following table summarizes some example working meetings or workshops that can be organized in a region to help inform development of a regional recovery framework or otherwise support recovery planning. Such interactions can range from meetings that are informative in nature (waste management plan development, lessons learned or additional information on particular types of disasters) to those that are more exploratory (to identify issues to be addressed for a particular type of disaster or recovery in general). Meetings can also be held to resolve specific issues. Depending on the situation and time/scope constraints, involvement can also range from small group interactions (for example, for issue resolution) to larger meetings of up to 100 people (for informational meetings).

Topic	Purpose/Suggested Content	Possible Participants
	Recovery Coordination	
Federal-State-Local Interface Issues during a Catastrophic Incident	To addresses the federal government's role during a catastrophic incident, including the following: • What is the role of each federal agency (national and locally)? • How do federal agencies fit into the Incident Command structure? • How are federal agency roles coordinated with one another at the federal level? • What would Stafford Act assistance and non-Stafford Act assistance look like from the federal government during the recovery period after a wide-scale, largely unprecedented incident? • How are regional priorities developed and decisions made at the state and federal level? Also, to define and understand the command and control structure among federal, state, and local organizations, and to develop a concept of operations that illustrates the relationships, decision frameworks, and resources of the local, state, and federal agencies.	Policy makers, emergency managers, critical infrastructure owners, environmental agency staff, and medical and public health officials at the federal, state, and local levels
Multi-Agency Coordination–How Would It Really Work?	To address key questions such as the following: • How is the multi-agency coordination concept truly implemented within the region and the state? • What are functions and activities of multi-agency coordination? • Who is a member of the multi-agency coordination group? • What do they do? • How do they do it? • What is the relationship of a state multi-agency coordination group to a county multi-agency coordination group? Also, to highlight good examples of how multi-agency coordination is effectively utilized in other regions of the country.	Representatives of jurisdictions that could be involved in multi-agency decision-making
Civilian Coordination	To examine interdependencies and discuss ways to improve mutual aid, coordination, and communication at the local level	Emergency management, health care, public

Topic	Purpose/Suggested Content	Possible Participants
		information, environmental management, law enforcement, and fire
Military-Civilian Coordination (for areas with a large military presence)	To understand the military's role and perspective on long-term recovery from a catastrophic incident by examining interdependencies and discussing ways to improve mutual aid, coordination, and communication at the local level	Representatives from the local military, emergency management, health care, public information, law enforcement, and fire
Recovery Process		
Lessons Learned – Recovering from Catastrophic Incident	To learn from past efforts and address such questions as the following: • How can we better prepare ourselves to enable a speedy recovery following a catastrophic incident? • Are there policies we should put in place now to expedite recovery? • What can we do about private security protections within critical infrastructure?	Local and federal experts experienced in recovery as well as others responsible for recovery who have yet to experience it firsthand
Decisions Needed in Disasters	To review decisions necessary in past disasters to prepare decision makers for the future, including developing measures to limit the extent of damage following another disaster.	Elected officials and regional emergency management officials
More Resilient Communities	To assess the status and level of resiliency among local communities and businesses and to identify policies and ideas that would encourage community resilience.	Small business owners, community leaders, regional emergency management officials, and local non-profits engaged in disaster response and recovery
Damage Assessment	To understand how damage assessment would be conducted after a catastrophic incident by developing and documenting best practices.	A wide range of representatives from police to mental health,

Topic	Purpose/Suggested Content	Possible Participants
		public works, environmental agencies, and building inspectors from the local up to the federal level, including FEMA and private insurance companies
Remediation and Cleanup Strategies	To identify remediation and cleanup strategies for various types of disasters, including the following: • How will "clean" be determined? • Who will certify what is clean? • How will cleanup/remediation firms be identified and vetted?	Regulatory agencies at the local, state, and federal levels; emergency management officials; public and environmental health officials; environmental agency representatives
Legal Implications at the Local Level of State and Federal Disaster Declarations	To discuss the legal implications and authorities associated with a disaster declaration, including what plans are in place (Continuity of Operations/Government) to respond to disasters.	Policy/planning staff and law enforcement
Key Recovery Issues		
Economic Recovery	To understand and brainstorm ideas to retain businesses following a major catastrophic incident, with a focus on "lessons learned" from other incidents.	Representatives from small and large business, banks, economic development agencies at all levels, real estate organizations, and others
Debris and Waste Management	To address how debris and waste will be handled in a variety of disasters including chemical, biological, and radiological disasters. Discussions can include	Public works department representative; federal,

Topic	Purpose/Suggested Content	Possible Participants
	the following topics: • Identifying methodologies for cleanup at varying levels of "clean" (as determined by pertinent regulatory agencies outside of this meeting). • Establishing criteria for evaluating waste management facilities for consideration (compliance history, waste compatibility, distance, public acceptance, environmental justice, etc.) • Identifying tools for quantifying the amount of wastes to be generated from cleanup actions • Developing a waste sampling and analysis plan • Developing a waste transportation plan • Developing a waste/material tracking and reporting system • Determining regulatory agency oversight activities • Determining how volunteers will be used in debris and waste management • Developing a waste management community outreach and communications plan. The key outcome is an integrated federal, state, local ,and tribal waste management plan that addresses the key chemical, biological and radiological threat agents that are identified within the Department of Homeland Security National Planning Scenario's and also to reflect the unique challenges posed by waste management operations to be performed in an urban environment.	state, local, and tribal waste management officials; state transportation department or state patrol representative; parks and recreation; city water department representative; state and local emergency management agencies; public and private sector waste management facility owner/operators; state and local departments of public/environment health; state, local, and federal environmental protection agencies; state and federal agriculture agencies; U.S. Army Corps of Engineers; decontamination/cleanup experts
Fatality Management	To address some of the challenges of an overwhelmed system in a catastrophe, including the following: • Will each fatality be investigated and certified? • Given the limits of national capacity, how will the overflow of bodies and	Coroners and medical examiners, public health leadership, and non-governmental

Topic	Purpose/Suggested Content	Possible Participants
	remains be addressed? • How will contaminated bodies or remains (from sewage, burning, or chemical, biological, or radiological agents, for example) be handled?	organizations
Family Assistance Center	To highlight how family assistance centers are set up, who sets them up, services they provide, coordination with key recovery organizations, and long-term staffing. Also, to develop timely and accurate information that would be provided to the families of the injured or the deceased.	Medical examiners, coroners, public health agencies, emergency management, community/government services, and non-governmental organizations, particularly Voluntary Organizations Active in Disaster
Public Health Needs	To identify the key restoration and recovery issues that need to be addressed following a catastrophic incident.	Representatives from the U.S. Centers for Disease Control and Prevention, the state department of health, U.S. Department of Health and Human Services, and local public health departments
Social Networking for Emergency Management and Public Safety	To showcase ways social media networking technologies can be used to support emergency management and public safety operations.	A wide range of local, state, and federal agencies; and representatives of the military and private sector
Volunteer and Donation Management	To help train and inform “affiliated organizations” on the recovery concepts for volunteer and donation management.	A broad array from faith-based organizations, non-profits, local emergency

Topic	Purpose/Suggested Content	Possible Participants
		managers, and the private sector
Property Owner Roles and Needs		
Vacant Buildings and Private Property in Emergency Situations	To address some of the issues surrounding the commandeering and abandonment of buildings following a catastrophic incident, including the following: • What if a building is abandoned by the owner or the owner does not want to remediate it? Who pays for it to be remediated? Who now 'owns' it from a liability perspective? • If the building contains private-sector-owned critical infrastructure that is important for long-term recovery of the region, can the public sector demand cleanup? • If a building owned by a private company has been contaminated with a hazardous substance and has been abandoned, can the government assume ownership and remediate it? • What does it mean for a building to be condemned? Are there specific conditions? How long does the process take? Who owns the building after it is condemned? • How is the decision made to demolish versus remediate, and how will cleanup standards differ for decontamination of structures destined for demolition? • What are the appropriate laws and regulations that need to be addressed?	Legal representatives from the local cities and counties, the private sector, environmental management agencies, and the State Attorney General's Office
Private Sector Buildings	To gain an understanding of the step-by-step recovery needs and requirements to address commercial building owners as well as building interdependencies with respect to remediation and long-term recovery.	Buildings managers of large commercial facilities with a variety of tenants
Private Sector and Private Property Owner Requirements for	To identify and prioritize major concerns regarding the ability to recover from a catastrophic incident and restore property and normal operations.	Private sector businesses, building owners and operators, and service providers/critical

Topic	Purpose/Suggested Content	Possible Participants
Restoration and Recovery from a Disaster		infrastructure operators
Credentialing Private Security Staff	To establish a process for communicating how access would be provided to private sector security companies, as well as security staff employed by private organizations that will play a key role in public safety and access control. Also, to address the role these individuals play during response and recovery.	Representatives from law enforcement, fire, public health, and private sector internal security firms
Specific Hazardous Agents		
Long-Term Recovery from a Hazardous Agent	To provide the necessary background on hazardous agents (chemical, biological, and radiological) so the framework developers and response agencies can gain critical knowledge and information necessary for long-term recovery.	County emergency management directors; elected officials; public health professionals from county, state, and federal levels; military emergency and public health managers; private sector representatives; and federal Department of Homeland Security, Environmental Protection Agency, and Department of Defense officials

Appendix C – Developing Chemical, Biological and Radiological Annexes

While emergency management takes an all-hazards perspective towards recovery, there may be the need to develop approaches for recovery from chemical, biological and radiological incidents. For such incidents, annexes should be developed that identify key issues, considerations, approaches, and policy decisions that need to be addressed that are distinct from an all-hazards perspective.

The annexes should be developed in a collaborative process similar to the process used to develop the main framework, with an emphasis on working with subject matter experts (SMEs). In this appendix, we will discuss how recovery from a chemical, biological or radiological incident may differ from an all-hazards approach. Below are some of the aspects jurisdictions may want to think about when developing chemical, biological and radiological annexes following the five step process outlined in the first half of the document.

Step One – Agree and Commit

Jurisdictions will have to decide if a chemical, biological or radiological annex will be needed based on threat and vulnerability assessments.

Step Two – Form a Team to Guide Development

In addition to the core team, CBR subject matter experts will need to be identified. These SMEs may be included as part of the core team or be sought out and tasked with the development of a particular section of the annex(es). Similar to the all-hazards recovery framework, the core team may be comprised of local and state officials but will still need to include officials that have dedicated expertise in such issues as waste management, waste water treatment, air quality, transportation, and building operations.

The CBR subject matter experts will help identify the unique considerations of CBR annexes that differ from all-hazards. For example, there are a range of biological agents and threats from contagious to non-contagious to drug-resistant. Each agent will have unique aspects on the long term recovery of the region. In the case of wide area anthrax incident, local and state public health departments and state public health laboratories can advise on confirmation procedures, mass treatment and distributions options which may exist for months or even years after the incident. They can also assist in developing messaging strategies which will be needed due to these long term health implications. Additionally, coroners and medical examiners can provide expertise on procedures, processing and final disposition of fatalities

involving CBR and cleanup contractors can identify the specialized training that will be needed depending on the typical CBR of incident.

Although not a complete list, agencies that have CBR expertise that could use to help develop CBR annexes include:

- State level – State Public Health Laboratories, National Guard, Civil Support Team, Environment Agencies, Worker Safety Agencies
- Federal Level – Environmental Protection Agency, the Centers for Disease Control, Food and Drug Administration, US Department of Agriculture, Department of Energy and associated national laboratories, Department of Defense
- Local – Colleges and universities, medical and public health schools, may also have some resident expertise.

Step Three – Assessing Hazards, Vulnerabilities, & Capabilities

- The Threat and Hazard Identification and Risk Assessment (THIRA) guide developed by FEMA can serve as an approach to identify and assess the risks in the region.
- SME's can work in smaller focused meetings to discuss the implications of any of these hazards and vulnerabilities. This information can also be considered for inclusion in the scenario.
- Developing a community based scenario that will help frame the recovery discussion will be important. The scenario should identify a specific agent, the number of individuals that have evacuated or been displaced, the impact on high-value property and infrastructure, and the basic services and local businesses that have been affected. It should also address the phases of recovery – short-term, intermediate, and long-term.

Step Four – Develop the Draft

- Meet with subject matter experts to assess and validate key technical information. These meetings can also be used for vetting the content of the annexes. It will be important to develop annexes that are coherent and not highly technical so a broad group of end-users can read, comprehend and implement the information.

- Meet with stakeholders and SMEs to review and validate issues, policies and to clarify misinformation or conflicting information

- Draft the annex in close coordination with the main all-hazards recovery framework to ensure consistency.

Step Five – Adopt & Sustain

Similar to an all-hazards approach, once the annexes have been developed and reviewed by stakeholders, they will need final approval from agency leadership across the region. Further, the region will need to commit to maintaining the documents by determining a timeframe and process for updating, modifying and sustaining the documents.

Appendix D – Additional Resources

General Disaster Recovery Resources

Comprehensive Planning Guide 101 at: http://www.fema.gov/about/divisions/cpg.shtm

National Disaster Recovery Program Database at: https://asd.fema.gov/inter/ndhpd/public/home.htm

National Flood Insurance Program (NFIP) at: http://www.fema.gov/business/nfip/

National Incident Management System (NIMS) at: http://www.fema.gov/emergency/nims/

National Disaster Recovery Framework at:

Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act) (Public Law 93-288) as amended at: http://www.fema.gov/about/stafact.shtm

Recovery Support Function-Specific Resources

Community Planning and Capacity Building RSF

Disaster Assistance (DA) at: http://www.disasterassistance.gov

Executive Order 13175 – Consultation and Coordination with Indian Tribal Governments at: http://ceq.hss.doe.gov/nepa/regs/eos/eo13175.html

Title VI, *Rehabilitation Act of 1973* at: http://www.access-board.gov/enforcement/rehab-act-text/intro.htm

Age Discrimination Act of 1975 at: http://www.dol.gov/oasam/regs/statutes/age_act.htm

Fair Labor Standards Act at: http://www.dol.gov/whd/flsa/index.htm

National Labor Relations Board (NLRB) at: http://www.nlrb.gov/

Economic RSF

The Department of Commerce's Economic Development Administration at: http://www.eda.gov

Economic Recovery Resources at: http://restoreyoureconomy.org

Health and Social Services RSF

Chapter 7 of the *Americans with Disabilities Act (ADA) Best Practices Tool Kit, Emergency Management* at: http://www.ada.gov/pcatoolkit/toolkitmain.htm

Hurricane Ike Impact Report: Special Needs Populations Impact Assessment Source Document, White Paper at: http://www.disabilitypreparedness.gov/pdf/ike_snp.pdf

SME: Interagency Council on Emergency Preparedness and Individuals with Disabilities (ICC) at: http://www.dhs.gov/files/committees/editorial_0591.shtm

National Commission on Children and Disaster: Interim Report at: http://cybercemetery.unt.edu/archive/nccd/20110426214402/http://www.acf.hhs.gov/ohsepr/nccdreport/nccdreport.pdf

National Council on Disability (NCD) August 2009 Report: Effective Emergency Management: Making Improvements for Communities and People with Disabilities at: http://www.ncd.gov/publications/2009/Aug122009

National Voluntary Organizations Active in Disaster (NVOAD), "Disaster Spiritual Care Points of Consensus" at: http://www.nvoad.org/resource-library/documents/doc_download/12-disaster-spiritualcare

Housing RSF

National Disaster Housing Strategy (NDHS) at: http://www.fema.gov/pdf/emergency/disasterhousing/NDHS-core.pdf

National Disaster Housing Task Force (NDHTF) at: http://www.fema.gov/emergency/disasterhousing/national_task_force

Infrastructure System RSF

Critical Infrastructure and Key Resources (CIKR) at: http://www.dhs.gov/files/programs/gc_1189168948944.shtm

National Infrastructure Protection Plan (NIPP) at: http://www.dhs.gov/nipp

Occupational Safety and Health Administration (OSHA) at: http://www.osha.gov/

Department of Transportation's (DOT) National Transportation Recovery Strategy at: http://www.dot.gov/disaster_recovery/

Disaster Recovery and Building Reconstruction at:
http://www1.eere.energy.gov/buildings/disaster_recovery/

Hazardous Agent-Specific Resources

Biological Agents

CDC's information on bioterrorism and biological agents: http://www.bt.cdc.gov/bioterrorism/

Medical Management of Biological Casualties Handbook, Seventh Edition. September 2011. U.S. Army Medical Research Institute on Infectious Diseases, Blue Book:
http://www.usamriid.army.mil/education/bluebookpdf/USAMRIID%20BlueBook%207th%20Edition%20-%20Sep%202011.pdf

U.S. Environmental Protection Agency's Emergency Management page:
http://www.epa.gov/oem/

U.S. Environmental Protection Agency's National Homeland Security Research Center:
http://www.epa.gov/nhsrc/

Chemical Agents

CDC's Fact Sheets on Specific Chemical Agents:
http://www.bt.cdc.gov/chemical/factsheets.asp

CDC's and the National Institute of Occupational Safety and Health's Emergency Response Safety and Health Database: http://www.cdc.gov/niosh/ershdb/

U.S. National Response Team Quick Reference Guides on Various Chemical Agents:
http://www.nrt.org/production/NRT/NRTWeb.nsf/PagesByLevelCat/Level3ChemicalHazards?Opendocument

Radiological Agents

CDC's Radiation Emergency page: http://emergency.cdc.gov/radiation/

Department of Health and Human Services Radiation Emergency Medical Management:
http://www.remm.nlm.gov/recovery.htm

EPA's Protective Action Guides for Emergencies: http://www.epa.gov/rpdweb00/rert/pags.html

EPA's Technology Reference Guide for Radiologically Contaminated Surfaces: http://www.epa.gov/rpdweb00/docs/cleanup/402-r-06-003.pdf

FEMA's 2008 Planning Guidance for Protection and Recovery Following Radiological Dispersal Device (RDD) and Improvised Nuclear Device (IND) Incidents: http://ogcms.energy.gov/73fr45029.pdf

National Council on Radiation Protection's NCRP Report No. 165, RESPONDING TO A RADIOLOGICAL OR NUCLEAR TERRORISM INCIDENT: A GUIDE FOR DECISION MAKERS*:* http://www.ncrponline.org/Publications/Press_Releases/165press.html

National Library of Medicine Web Wireless Information System for Emergency Responders (WISER), Ionizing Radiation: http://webwiser.nlm.nih.gov/getSubstanceData.do;jsessionid=AB1B2873B9846FDDE3DB8914A488EEBC?substanceID=426&displaySubstanceName=Ionizing%20Radiation&UNNAID=&STCCID=&selectedDataMenuItemID=58

Nuclear Regulatory Commission's Fact Sheet on "Dirty Bombs": http://www.nrc.gov/reading-rm/doc-collections/fact-sheets/dirty-bombs-bg.html

SURVEY PROCEDURES AND MEASUREMENTS

Federal Radiological Monitoring and Assessment Center (FRMAC) Manuals: http://www.nv.doe.gov/nationalsecurity/homelandsecurity/frmac/manuals.aspx

EPA National Air and Radiation Environmental Laboratory: http://www.epa.gov/narel/

Multi-Agency Radiological Laboratory Analytical Protocols Manual: http://www.epa.gov/radiation/marlap/

EPA Radiation Cleanup and Assessment Website: http://www.epa.gov/radiation/emcp-overview.html

Intergovernmental Data Quality Task Force Uniform Federal Policy for Implementing Environmental Quality Systems Evaluating, Assessing, and Documenting Environmental Data Collection/Use and Technology Program**:** http://www.epa.gov/fedfac/pdf/ufp_v2_final.pdf

NUREG-1507, Minimum Detectable Concentrations With Typical Radiation Survey Instruments for Various Contaminants and Field Conditions: http://pbadupws.nrc.gov/docs/ML0036/ML003676046.pdf

NUREG-1761, Radiological Surveys for Controlling Release of Solid Materials: http://pbadupws.nrc.gov/docs/ML0223/ML022320121.pdf

GENERAL REFERENCES

The Effects of Nuclear Weapons: http://www.fourmilab.ch/etexts/www/effects/

Planning Guidance for Response to a Nuclear Detonation, Second Edition: http://www.remm.nlm.gov/PlanningGuidanceNuclearDetonation.pdf

International Atomic Energy Agency (IAEA) Safety Standards Series: Application of the Concepts of Exclusion, Exemption and Clearance: http://www-pub.iaea.org/books/iaeabooks/7118/Application-of-the-Concepts-of-Exclusion-Exemption-and-Clearance-Safety-Guide

IAEA Stakeholder Involvement in Nuclear Issues: http://www-pub.iaea.org/MTCD/publications/PDF/Pub1276_web.pdf

Radiological Emergency Manual for Livestock, Poultry, and Animal Products: http://www.dem.ri.gov/topics/erp/nahems_radiological_emergency.pdf

RECOVERY CRITERIA AND GUIDELINES

EPA Lessons Learned from Liberty RadEX: www.nrt.org/production/NRT/.../2010_LRE_RRT_overview.ppt

Preliminary Report on Operational Guidelines Developed for Use in Emergency Preparedness and Response to a Radiological Dispersal Device Incident: http://ctosnnsa.org/vtra/documentLibrary/22_Preliminary_Operations_Guidelines_%20for_%20RDD.pdf

PUBLIC HEALTH CRITERIA AND GUIDELINES

National Academies of Science, BEIR VII on Radiological Risk:

http://www.nap.edu/catalog.php?record_id=11340&utm_medium=etmail&utm_source=National%20Academies%20Press&utm_campaign=NAP+mail+eblast+3.18.11+-+Radiation&utm_content=Downloader&utm_term=

OTHER RESOURCES

RESRAD Family of Codes at http://web.ead.anl.gov/resrad/home2/

Radiogenic Cancer Risk Models and Projections for the U.S. Population: http://www.epa.gov/radiation/assessment/blue-book/index.html

NCRP Report 139, *Risk-Based Classification of Radioactive and Hazardous Chemical Wastes*: http://www.ncrppublications.org/Reports/139

IAEA, Manual for First Responders to a Radiological Emergency: http://www-pub.iaea.org/MTCD/publications/PDF/epr_Firstresponder_web.pdf