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Community Resilience: Workshops on Private Sector and Property Owner Requirements for Recovery and Restoration from a Disaster

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December 8, 2008

RE: Distribution of "Community Resilience: Workshops on Private Sector and Property Owner Requirements for Recovery and Restoration from a Disaster"

Enclosed you will find a copy of "Community Resilience: Workshops on Private Sector and Property Owners Requirements for Recovery and Restoration from a Disaster" final workshop report. The purpose of these workshops was to:

- assess the readiness of private-sector businesses, building owners, and service providers to restore property and recover operations in the aftermath of a wide-area dispersal of anthrax
- understand what private property owners and businesses "want and need" from federal, state, and local government to support recovery and restoration from such an incident.

A series of three workshops was conducted August 12-14, 2008, at the Pacific Northwest National Laboratory's offices in Seattle, Washington. Each workshop focused on a specific stakeholder group: 1) private sector businesses; 2) building owners and operators; and 3) service providers/critical infrastructure operators. The workshops were designed to identify and prioritize major concerns of each group regarding their ability to recover from a biological disaster and restore property and normal operations. The body of the report captures discussion and requirements of these three groups which will lead to the development of appropriate tools and information for these groups in the future.

Let me close by saying again, on behalf of our joint Department of Homeland Security and the Department of Defense – Defense Threat Reduction Agency team, we appreciate the time you devoted to the workshops.

If you have any questions, please do not hesitate to contact Steve Stein at 206.528.3340 or Ann Lesperance at 206.528.3223.

Sincerely yours,

Ryan Madden
DoD-Defense Threat Reduction Agency

Lance Brooks
Department of Homeland Security

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1.0 Background

> ***Community Resilience*** *is a community's or region's ability to effectively prepare for, respond to, and successfully recover from a man-made or natural disaster by possessing the ability to quickly return citizens to work, reopen schools and businesses, and restore the essential services needed for a full and swift economic and social recovery.*

In 2006, the Defense Threat Reduction Agency (DTRA) within the Department of Defense (DOD) launched a collaborative program with the Department of Homeland Security (DHS) titled the Interagency Biological Restoration Demonstration (IBRD). The goal of the IBRD program is to reduce the time and resources required to recover and restore wide urban areas, military installations, and other critical infrastructures following a biological incident, by providing a coordinated systems approach. While much work has been accomplished over recent years to better understand the initial exposure and response phases of a biological release event in the areas of detection, characterization, and coordination, little has been explored concerning wide-area recovery. The IBRD program was developed to help address this need.

The Seattle urban area was selected as the demonstration region for the IBRD program. The IBRD program is designed to take a collaborative approach among regional stakeholders in the Seattle urban area and the federal agency partners to develop and deliver solutions that are tailored to the needs of the Pacific Northwest Region, yet extensible to other regions.

The primary activities being conducted under the IBRD program include: 1) performing a systems analysis of gaps and operational/policy-level chokepoints from which materiel and non-materiel solutions can be derived; 2) examining existing frameworks and developing integrated Consequence Management Guidance; 3) selecting and developing promising technology solutions that can be applied in recovery and restoration actions, and 4) conducting exercises, demonstrations, and workshops to showcase these efforts.

Engagement with stakeholders through IBRD and related efforts has elucidated the need to further examine the role of the private sector in supporting community resilience through a follow-on project. To address this need, DTRA is leading an effort to help define the roles and responsibilities of private-sector businesses and property owners and the guidance that will enable the IBRD program to better aid in the restoration of critical functionality following a wide-area biological release. DTRA contracted Pacific Northwest National Laboratory (PNNL) to organize a series of workshops with support from the Pacific Northwest Economic Region (PNWER). This report summarizes the result of that DTRA-sponsored project.

2.0 Project Objectives

The primary objectives of this project are to:

- Assess the readiness of private-sector businesses, building owners, and service providers to restore property and recover operations in the aftermath of a wide-area dispersal of anthrax.
- Understand what private property owners and businesses "want and need" from federal, state, and local government to support recovery and restoration from such an incident.

The information gathered through this project is intended to support DTRA and DHS with the development of guidance and other support for the private sector to enhance recovery and restoration efforts.

3.0 Approach

Tasks associated with this project are described below.

- **Literature review** – A high-level literature review was conducted to determine what guidance or studies on recovery and restoration exist for the private sector and whether any existing resources addressed recovery and restoration specifically from a biological release. An annotated bibliography of journal articles, websites and other resources reviewed can be found in Appendix A.
- **Stakeholder selection** – Key mid-sized and large businesses, building owners and operators (commercial and residential), and service providers were identified to participate in the workshops. Participants represented primarily regional and some national organizations. Typically these individuals were responsible for business continuity or other emergency management functions in their respective organizations. An effort was made to involve organizations from a diverse set of sectors.
- **Baseline assessment interviews** – Telephone interviews were conducted with stakeholders in preparation for the workshops to review workshop objectives and understand each organization's current level of preparedness for recovery and restoration. The interview questions used to guide those discussions are available in Appendix B, and a summary of interview results can be found in Appendix C.
- **Workshops** – A series of three workshops was conducted August 12-14, 2008, at PNNL's offices in Seattle, Washington. Each workshop focused on a specific stakeholder group: 1) private sector businesses; 2) building owners and operators; and 3) service providers/critical infrastructure operators. The workshops were designed to identify and prioritize major concerns of each group regarding their ability to recover from a biological disaster and restore property and normal operations. Background information on anthrax was provided to participants in advance of the workshops. At the outset of each workshop, an anthrax scenario was described and participants were asked to describe their major concerns and needs to support recovery and restoration efforts. The workshop series' agenda is provided in Appendix D, and a list of participants is provided in Appendix E.

4.0 Summary of Findings from Workshops

4.1 Workshop with Private Sector Businesses on August 12

This section presents the findings from the workshop conducted with eight business representatives. The individuals invited to the workshop represented large and medium sized businesses from the Seattle urban area, which collectively represented a diverse set of sectors.

During the three-hour workshop with private-sector businesses, participants were asked to consider the major concerns of their businesses regarding their ability to recover from a biological disaster and restore normal business operations. The collective list of concerns was then consolidated into categories and participants voted to identify the concerns of highest priority to the group. After the priority concerns were identified, participants explored in more detail what was needed to address the top two priority issues.

The priority concerns identified for private sector business owners in the region are listed below in order of importance:

1. **Lack of guidance for business continuity planning** – One of the primary concerns raised was that planning across businesses, communities, and government was not consistent. There was particular concern about the inability of small businesses to adequately plan for and recover from a wide-area incident because they lack the guidance and financial resources to do so. It was noted that most small businesses do not have business continuity plans. Large businesses rely on many of these small businesses for services.

2. **Inconsistent messaging from multiple sources** – Businesses were very concerned about getting mixed messages during and after an incident (e.g., what happened, where to get help, what actions to take, when it is safe to return to the place of business) from different sources. They want messages from a single source and from the highest possible authority (e.g., the Centers for Disease Control and Prevention [CDC]). The media will play a major role in influencing what people do, but are they sending the correct message? Business leaders said they would reach out to employees directly to convey company-specific information, but are concerned that employees would be getting different messages from other sources. If businesses do get conflicting messages they will adopt the most conservative position.

3. **Prioritization of restoration** – Businesses expressed uncertainty about how decisions would be made concerning the order of restoration priorities and who would make those decisions. It was assumed by some that government would probably decide which businesses and parts of infrastructure would be restored first. Would the priorities start with life/health care, then property, then environment? Or would certain areas or blocks be cleaned first, to avoid recontamination? Would businesses have a say in setting priorities?

4. **Access to limited remediation resources –** A related concern was the access businesses would have to contractors that could provide cleanup services. While some businesses may reach out to contractors to support clean up of their own facilities, it was recognized that many organizations would be competing for these limited resources. One participant

raised the issue of whether their own hazardous materials personnel might be trained by government officials to support clean up of their own infrastructure.

5. **Indemnification/liability** – Businesses expressed concern about indemnification and legal liability in the event that their infrastructure is not decontaminated properly. A declaration of an act of terrorism would be required to give businesses the ability to rely on certain types of insurance coverage.

6. **Reduction in workforce** – The likely sizeable reduction in workforce during time-consuming restoration and recovery efforts is an important concern of the businesses represented**.** Reduced access to health care, school/daycare, clothing, food, and services will all impact the likelihood that the workforce will remain in the area and return to work. This is especially problematic for businesses whose demand on human resources increase as a result of the incident (e.g., insurance providers, health care).

Other issues identified by participants during brainstorming, but not scored as highest priority, included:

- **Broad impacts from regional dependencies –** It was noted that many businesses, industries, and states, in the case of Alaska, depend on the Pacific Northwest region for commerce and supply of goods and services. The collective impact of an event that affected commerce in downtown Seattle and the ports would reach well beyond the Pacific Northwest due to this dependence. Participants questioned who might be best positioned to support these entities that could have far-reaching impacts.
- **Timing of recovery** – The timing of recovery concern is related to the prioritization, reduction, and workforce issues identified above. Understanding how long it would take private sector businesses to recover and restore their operations will determine whether they decide to move operations temporarily or permanently relocate, if they are able to do so. A long recovery, or not knowing how long recovery will take, could influence the workforce to consider moving away and regional business customers to look elsewhere for products and services. Businesses that have less flexibility to move (e.g., the ports, major manufacturing facilities) are particularly sensitive to recovery timing.
- **Business/employee confidence to return** – Some business representatives were concerned about how to give their customers and employees the assurance needed to return to support long-term recovery. It was suggested that people need to see a strong government response, along with public relations efforts, to encourage them to stay or return to area businesses.
- **Testing and sampling capability** – Business representatives wanted to understand more about the protocols and tests that would be used to assess anthrax contamination, and who would be expected to do the testing. It was assumed that the government would supply test kits and handle sample collection. If businesses knew more about testing and sampling resources, they might be inclined to initiate their own testing rather than waiting for the government.
- **Influence planning practices of businesses** – There was some discussion around the ability of large businesses with plans in place to influence their suppliers and encourage them to develop business continuity plans. There was a general concern that small businesses did not have adequate continuity plans, and that would impact the ability of large businesses to recover. It was thought that the insurance industry could incentivize the businesses they insure to develop continuity plans, as well as provide guidance in plan development.

- **Access to financial support for restoration and recovery** – Finally, the business representatives were concerned about their ability, and in particular the ability of small businesses, to finance restoration and recovery activities. They wanted to understand what resources if any would be available to support their recovery.

After prioritizing concerns, private -sector businesses discussed what they thought was needed to address the top two priority issues identified above: 1) lack of guidance on business continuity planning and 2) inconsistent messaging from multiple sources.

Recommendations to address the lack of guidance on businesses continuity planning
The workshop participants identified two general needs/solutions regarding businesses not having the guidance they need to do effective business continuity planning for a biological incident:

- *Uniform planning guidance and education* – It was recommended that the government provide simple, uniform guidance and education that can be used specifically by small businesses and others that currently have no plans in place for business continuity. The guidance should be basic enough for use by someone with no background in business continuity.
- *Technical guidance on biological event/anthrax* – The private sector business representatives also sought more technical guidance, including access to technical experts/resources, on anthrax-specific incidents. Such information would be incorporated into their all-hazards plans. Specifically, they want information on the nature of anthrax, how it is detected, what the impacts would be (e.g., Are food and water safe?), the hot zone boundaries, how to get treatment, and decontamination procedures.

Recommendations to address inconsistent messaging from multiple sources
Needs associated with the messaging and general communication challenges included:

- *Messaging from a trusted source* – Participants agreed that the CDC is the best communication source for an anthrax incident. They are viewed as trusted and credible by businesses. Locally, that information may be disseminated through the health district.
- *Consistent messages* – Business representatives need to know that communications from local to state to federal emergency operations centers (EOCs) will be consistent. They recognize that they cannot control the media, from which their employees may get conflicting messages.
- *Relevant information* – Business representatives want information relevant to the scope of their business operations. If a business has statewide or international operations, they want more than just local EOC communications.
- *Timely communication* – Information must be actionable, so timing is of the essence.

4.2 Workshop with Building Owners and Operators on August 13

This section summarizes findings from the three-hour workshop with 16 representatives of Seattle urban area building owners and operators. Participants in the workshop with building owners and operators were also asked to consider the major concerns of their organizations regarding their ability to recover from a biological disaster and restore normal operations. The concerns were consolidated into several categories and participants voted on their priority issues.

The building owners and operators identified a similar set of priority concerns as the private business owners, as presented below in order of importance. Comments on associated needs and possible solutions were integrated into the discussion of concerns.

1. **Knowledge about anthrax remediation** – Building owners need to know more about anthrax to support their restoration planning efforts. They are specifically interested in information on protocols and technologies used in testing and remediation, names of anthrax remediation service providers, an understanding of how companies get certified to do small and large scale cleanup, and training of building operations staff. There is concern that companies would be competing for very limited remediation resources. They also want information in advance about on how to access federal funding for restoration activities.

2. **Actionable and two-way communications** – Like the business owners, the building community is concerned about getting credible information from a trusted source in a timely manner. They need information to help their tenants (both residential and commercial) understand what actions to take. The building owners commented that ideally this information would come from a single entity at the federal level, such as the CDC. A related communications concern was that there is currently no effective means for the building community to feed information back to the EOCs and broader emergency management community about what information they and their tenants need. They want to ensure a vehicle exists for two-way information sharing, not just a one-way push by the public information officers.

3. **General anthrax education** – In addition to wanting specific knowledge about anthrax remediation, as noted above, the building owner community also identified the need for general education on anthrax, including health information, direction on how to respond, an understanding of who will be responsible for cleanup, and key contacts with knowledge about anthrax at the federal, state, and local levels. They would want this information both pre-event and during event response so that they could better help their tenants recover quickly. Having well-informed tenants in office or residential buildings could save lives and accelerate re-occupancy.

4. **Financial support and incentives** – There was great concern among the building community participants about their ability to finance cleanup of their assets and to remain viable when they would not be receiving tenant rent. Timely cleanup or notification of the government condemning a building is critical to minimize the financial burden on building owners. If the city or state government were to say it is unlawful to occupy a building, the building owner would not receive rent, and consequently could not pay their mortgages. Lease contracts are typically null and void after six months if a property remains unusable. Commercial building owners may have the ability to wait up to six months but residential property will have greater difficulty waiting that long without revenue. They would need federal assistance and access to low-cost loans and loan deferrals as they will have difficulty paying mortgages without rental income. Insurance and mortgage companies would need to support this as well. It was noted that no FEMA grants exist for businesses to recover, but there may be some from the Small Business Association. If buildings were condemned, the building community also wondered if they would be able to extract value out of functionally obsolete assets.

Residential building owners do carry "loss of rental income" insurance but coverage is limited. There was concern that most insurance only covers acts of foreign terrorism, and that it needs to cover domestic terrorism.

Finally, relocation assistance for tenants was considered an important need, particularly for residential tenants, because it is more difficult for them to move to another city than it is for a business.

5. **Prioritization of restoration** – There was general uncertainty about how the government would prioritize restoration of infrastructure. For example, would homes come first? Critical infrastructure (e.g., Westin building for telecom services)? Who would remediate roads? In light of the financial burdens described above, timing of cleanup will be critical as to whether a business survives or residents stay or relocate, possibly outside the region. Commercial building owners said they are likely to walk away if remediation takes more than six months. Residential property owners said buildings would need to be clean within about two months of an incident for tenants to return to the building.

Other concerns identified by the building owner and operator community included:

- **Toolkit for integration into existing plans** – Building owners need a toolkit for facility planning for a biological event, including guidance on how to integrate it with existing disaster preparedness plans (i.e., the all -hazards approach). It should include much of the information cited above under education, such as basic health information, anthrax response and remediation information (e.g., how can building HVAC systems be managed to mitigate the impact on the building and its occupants), remediation service vendors, key government contacts, and risk management planning.
- **Indemnification –** If tenants do return, building owners would need federal backing to indemnify or limit their liability for building safety. They are concerned about future lawsuits if people get sick, even years after the building has been declared safe to inhabit. Without indemnification, the owner might walk away from the property. They will need some assurance that tenants will not sue if they return to the building after it is clean.

4.3 Workshop with Critical Service Providers on August 14

This section summarizes findings from the three-hour workshop with critical service providers. Eight representatives of critical service organizations participated in the workshop. The representatives identified a broad set of concerns that would impact their ability to support business and community resiliency in the event of a biological incident. This group also shared ideas on possible solutions to these challenges throughout the discussion.

1. **Communications** – The top priority concern service providers identified was communications. Information must come from a trusted, credible, and scientific source. It was thought that someone local (not federal), such as a public health officer, would be most credible to local citizens. It was noted that to ensure consistent messaging, the media must be a partner before an event (in planning) and throughout response and restoration. Also important are two-way communications between the lead agencies and the private sector to understand private sector priorities. Finally, public education was considered key to reducing the fear factor. For example, people need to understand that those infected with anthrax cannot infect others and that effective vaccinations are

available. Communication with the general public in advance is important, as it is with earthquakes. The event should not be the first time people learn about it.

2. **Worker safety assurance** – Another priority concern was ensuring that the employees of different critical services organizations are safe and finding effective ways of allaying their fears. People in service jobs such as solid waste removal, wastewater treatment, and utilities (e.g., meter readers who traverse broad areas), may face a higher risk of exposure. Workshop participants wanted to know how medications would be dispensed to their employees and whether OSHA would be expected to establish more stringent requirements for worker safety. They know that employees will not come to work until they believe it is safe. A rapid healthcare response (i.e., distribution of antibiotics and vaccines to workers), education on the risks and safety, and frequent situation updates will help to manage employee fears.

3. **Command and control –** The service providers wanted to understand what the command and control structure would be during the recovery and restoration phase of a biological incident. Who would be in charge? How could they communicate with command and control to ensure they understand their actions' consequences on service providers and the private sector? There were also questions raised about when and how command and control would transition from response to recovery. And, like the other workshop groups, service providers wanted to understand how decisions would be made about restoration prioritization.

Other concerns and needs identified by the critical service providers included:

- **Transportation –** Rapid restoration of key transportation corridors (e.g., Interstate 5) will be critical to enable distribution of supplies and long-term recovery. It was estimated that after just three days, food, gas, and other supplies would grow scarce. There would need to be restricted routes for transportation to avoid recontamination. Communicating with the trucking industry may be difficult because the industry is highly fragmented. A freight notification system could help communicate what routes to take, how to get certified (if necessary), and other pertinent information. Finally, it was noted that decontaminating public transportation (e.g., 1400 buses, bus tunnels, trains) would be a major undertaking —larger than the local agencies could handle. Service providers wanted to understand who would be responsible for decontaminating the transportation infrastructure.
- **Understand interdependencies –** It was noted that, due to the interdependencies across sectors and organizations, continuity of operations planning can only go so far in assuring private sector recovery. The federal government does not have a prioritization approach that takes these dependencies in the private sector into consideration. There were also concerns about the suppliers of critical regional businesses not having business continuity plans in place. It is important that businesses understand their supply chain and work with them to align planning.
- **Legal and regulatory** – To expedite restoration and recovery, service providers may need waivers for certain permits, regulatory requirements, and liability. They should expect to comply with regulations throughout the restoration phase, but may need to seek relief from agencies on a case-by-case basis when there is a compelling need.
- **Essential supplies and services –** There is a need for a pre-determined system that identifies which supplies are necessary and how to get them to the populations that need them. Specific services identified as critical for restoration were utilities, water, solid

waste management, food, and fuel, including diesel fuel to keep trucks with supplies moving.

- **Expanding cleanup resources and capabilities** – In light of the competing demand for cleanup services and the likely reduction in the critical service sector workforce, there will be an important need to find ways to expand cleanup capabilities. This could involve establishing protocols and providing training, pre-certifying key people that will support restoration (e.g., truck drivers, building inspectors), credentialing of essential workers, and leveraging a large citizen corps to help build community resilience.

5.0 Conclusions from Workshops

While private sector businesses, building owners and operators, and community service providers each play unique and key roles in community resiliency, a number of common themes emerged across the three groups.

A central theme was the importance of **communications** throughout restoration and recovery. Communications must come from a trusted, credible source (many participants saw the CDC as a credible voice in a biological incident), messaging must be consistent, and there must be a feedback loop from the private sector to command and control information that is needed. The likely reduction in workforce for businesses and critical service organizations, and the exodus of tenants from residential buildings, was a key concern raised by all three groups. Communications were considered particularly important to ensuring worker/tenant safety and helping to manage workforce reduction.

Another common theme was **prioritization of remediation and restoration activities.** There was uncertainty among all three groups about how restoration prioritization decisions would be made for buildings, businesses, and public infrastructure and who would make those decisions; yet they were all interested in having a voice in the process. The timing of recovery is critical for businesses and building owners in particular, as it determines whether they will leave their assets permanently or return to the region. As a result, there is a need for quick, clear direction from the government as to which buildings are unfit for occupancy. *Six months was thought to be the "walk away" point for commercial building owners, and two months for residential building owners.*

A related concern was **access to limited remediation resources**. It was recognized that there are a limited number of contractors available to provide remediation services and many organizations would be competing for these resources. There was an interest in understanding what companies provide anthrax remediation services and how others might be trained to support cleanup in light of these limited resources.

There was a common need identified by both the business and building communities for further **education on anthrax/biological incident-specific restoration**. Specifically they identified the need for information about health risk and treatment, standard protocols and technologies used for testing and remediation, and general direction on how each sector should respond. Such information might be part of a preparedness toolkit for a biological event, with guidance on how to integrate this information into existing disaster preparedness plans.

While not identified as one of the highest priority concerns by all groups, **indemnification and legal liability** were issues raised in each of the three workshops. Business and building owners

shared concerns about future liability in the event that the infrastructure was not decontaminated properly and a building tenant was infected. It was noted that the Stafford Act for disaster relief and emergency assistance does not provide business with adequate coverage. Critical service providers were concerned that they may need waivers for regulatory requirements and liability in some situations to enable the rapid restore of infrastructure.

Finally, the need for **financial support for restoration and recovery** efforts was a common concern to both the business and building communities. Of particular concern to the building community participants was their ability to support cleanup without a revenue stream from rent. The business community was particularly concerned about the ability of small businesses to fund restoration efforts.

Appendix A: Annotated Bibliography

A high-level literature review was conducted to determine what guidance or studies on recovery and restoration exist for the private sector and whether any existing resources addressed recovery and restoration specifically from a biological release. The annotated bibliography below summarizes findings from that literature review.

Reopening Public Facilities after a Biological Attack: A Decision-Making Framework
Kenneth Berns, Ronald M. Atlas, Manuel S. Barbeito, Jacqueline Cattani, Lee Clarke, Christopher J. Davis, Patricia Fellows, Charles N. Haas, Thomas V. Inglesby, Harvey W. Ko, R. Paul Schaudies, Monica Schoch-Spana, John D. Spengler, James Tucci, Christopher J. Davis, Committee on Standards and Policies for Decontaminating Public Facilities Affected by Exposure to Harmful Biological Agents: How Clean is Safe?, National Research Council. Copyright © 2005, National Academy of Sciences. Available at: http://www.nap.edu/catalog.php?record_id=11324

The National Research Council was asked by the Department of Homeland Security to consider the criteria that must be met for cleanup of a facility to be successful. The report found that efficiently sampling and characterizing a pathogen is critical for choosing the best remediation strategy, but does not advocate for a universal standard for deciding when a building is safe to re-enter. The report provides a flowchart to support decision-making about reopening a facility including questions about the characteristics of the pathogen, how far it has spread, whether it is transmissible between humans, and how long it will survive to pose a threat. It also recommends that a risk-assessment approach be adopted as part of a strategy for achieving a "socially acceptable" standard for cleanup.

Emergency Management Guide for Business and Industry: A Step-by-Step Approach to Emergency Planning, Response and Recovery for Companies of All Sizes
Federal Emergency Management Agency, Washington D.C., October 2003. Available at: http://www.fema.gov/pdf/library/bizindst.pdf

This guide provides advice to businesses on how to create and maintain a comprehensive emergency management program. It is designed to be accessible to individuals without in-depth knowledge of emergency management. It provides hazard-specific information on the most common hazards, including hazardous materials, earthquakes, and storms, but does not include info specific to bioterrorism or anthrax. The document includes a short section on recovery and restoration with a number questions to help businesses think through planning considerations (e.g. setting contractual arrangements with vendors), insurance provisions, continuity of management/decision-making, employee support (e.g. counseling, flexible work hours), and steps to resuming normal operations.

Running Scared: From Disaster Recovery to Business Resilience
Mardecia Bell and Larry Conrad. June 30, 2006. Presented at EDUCAUSE Southeast Regional Conferences 2006. Available at:
http://connect.educause.edu/Library/Abstract/RunningScaredFromDisaster/43539?time=1215028105

This presentation describes the shift from disaster recovery to organizational resilience, which requires a more flexible structure, rapid response, high state of readiness, and mobile work environments. It provides useful framing questions for thinking about organizational resilience at different levels including strategy and vision, organization, processes, technology, and facilities.

Advice for Safeguarding Buildings Against Chemical or Biological Attack
Website developed by Lawrence Berkeley National Laboratory. Last updated April 27, 2005. Available at: http://securebuildings.lbl.gov/secure.html

The website is intended for emergency personnel and for building operators. It contains advice for dealing with a biological or chemical release, including pre-event (e.g. securing buildings and HVAC systems) and response to an event (e.g. shut off HVAC, close outdoor dampers). It also provides guidance on conducting a vulnerability assessment using the Building Vulnerability Assessment and Mitigation Program (BVAMP) for facility managers. The website does not address restoration and recovery activities specifically.

How Clean is Safe? Improving the Effectiveness of Decontamination of Structures and People Following Chemical and Biological Incidents
Barbara Muller Vogt and John H. Sorensen. October 2002. Prepared for the U.S. Department of Energy Chemical and Biological National Security Program by Oak Ridge National Laboratory. Available at: http://emc.ornl.gov/EMCWeb/EMC/PDF/How_Clean_is_Safe.pdf

This report sought to describe what was known about decontamination of structures, objects, and people following an exposure to chemical or biological materials. It examines reported decontamination experiences to determine what decontamination procedures and protocols were employed, the timeframe involved, how the contaminants were identified, the factors determining when people were decontaminated, the problems encountered, how response efforts were coordinated, and the perceived social psychological effects on people who were decontaminated.

Disaster & Recovery Planning: A Guide for Facility Managers, Fourth Edition
Joseph F Gustin. Published by the Fairmont Press, Inc., 2007

This book addresses prevention, as well as managing the effects of a disaster on a company's operations. Areas covered include contingency planning, loss prevention, facility evacuation, employee training, chain of command, checklists, computer and data protection, bomb threat response, standby power, and self-inspection. It discusses the role of the media to provide the facility manager with a framework for enlisting the media's assistance in recovery planning.

Open for Business: A Disaster Protection and Recovery Planning Toolkit for the Small to Mid-Sized Business. Prepared by the Institute for Business and Home Safety (IBHS). 2007. Available at: http://www.disastersafety.org/resource/resmgr/pdfs/OpenForBusiness_new.pdf

IBHS is a nonprofit initiative of the insurance industry to reduce the social and economic effects of natural disasters and other property losses by conducting research and advocating improved construction, maintenance, and preparation practices. “Open for Business” is a toolkit designed to help small and mid-sized businesses in developing business continuity and property protection plans. It includes a number of forms (primarily contact lists) to support business continuity efforts, including:

- Employee Contact List
- Key Supplier/Vendor Information
- Key Contacts
- Critical Business Functions
- Recovery Location
- Vital Records
- Critical Telephone Numbers
- Critical Supplies
- Equipment/Machinery/Vehicles
- Computer Equipment and Software
- Voice/Data Communications

- Miscellaneous Resources
- Disaster Response Checklist
- Incident Response, Recovery & Restoration Checklist
- Property Protection Checklist – Protecting Your Building and Its Contents

Financing Recovery from Catastrophic Events
Prepared for the Department of Homeland Security Science and Technology Directorate by the Homeland Security Institute. March 30, 2007. Available at:
http://www.homelandsecurity.org/hsireports/Financing_Recovery_HSI_final_report.pdf

This report is intended to provide a reference document for the Department of Homeland Security on financing recovery from mega-catastrophes. It documents how losses are compensated and what methods were effective in stabilizing the local economy and initiating recovery throughout recent history. It examines the use of all four sources of compensation (i.e. government, insurance, charity and litigation).

Appendix B: Pre-Workshop Interview Questions

Pre-workshop Interview Questions

1. Who are the key players in charge of recovery and restoration in your organization?

2. Do you have an all -hazards disaster recovery plan for ensuring continuity of operations? If so, does it address:
    - Critical IT and communications systems?
    - Physical infrastructure/facility operations?
    - Personnel engagement to restore operations?
    - Legal and regulatory requirements?
    - Other major topics?

3. If you do have a disaster recovery plan, is recovery and restoration from biological release part of that plan?

4. Do your service providers have recovery plans?

5. [for buildings and business owners] Have you shared your restoration and recovery plans with your building tenants/building owners?

6. What are your plans for communicating with building owners/tenants/business customers/service providers during recovery and restoration?

7. Have you discussed plans and potential for collaboration with adjacent building owners/business owners/service providers from other areas? Have you established mutual aid agreements with them?

8. Have you talked with or made contractual arrangements or service -level agreements with key vendors to provide recovery and restoration services (e.g., specialized cleanup contractors)? Does this include restoration services for a biological release?

9. Have you addressed coverage and liability issues regarding a biological incident with your insurance providers? Have you addressed the implications of changing standards of care in an emergency with your insurance provider?

10. What outcomes would you most like to see from this workshop?

Appendix C: Summary of Pre-Workshop Interviews

Summary of Pre-Workshop Interviews

Pre-workshop interviews were conducted with representatives each of the three groups to gain an initial understanding of the baseline level of preparedness for recovery and restoration. The following is a summary of these interviews.

Summary of Interviews with Private Sector Businesses

Recovery and Restoration Staff

Each representative was asked who in their organizations had responsibility for recovery and restoration. Most indicated that they had departments with dedicated staff (up to nine individuals) for business continuity operations. Thirty percent had a single individual staffing a business continuity department who liaised with other staff throughout the organization.

Recovery/Business Continuity Plans

Ninety percent of interviewees said their organizations have an all-hazards plan that addresses disaster recovery and business continuity, some of which are detailed and others quite basic. (The one business without a plan said they have a number of disjointed department plans but not a comprehensive business continuity plan; however, they intend to complete one by the end of the year.) The plans were characterized as addressing each of the following issues: critical IT and communications systems; physical infrastructure/facility operations; personnel engagement to restore operations; and, in some cases, legal and regulatory requirements. Interviewees were asked whether recovery and restoration specifically from biological release was part of those plans. Eighty percent said no, but two of those said it will eventually be included. One interviewee said it is addressed in their pandemic flu plan; another said biological threats are part of their planning and training process.

Service Provider Preparedness

Recognizing the importance of interdependencies in the supply chain to ensure business continuity, business representatives were asked whether their service providers had recovery plans in place. Fifty percent said they do not know whether their suppliers have recovery plans in place (one interviewee noted that it would be difficult to track because they rely on hundreds of vendors). Forty percent knew that their vendors did have recovery plans in place. Several interviewees said they actively communicate with strategic vendors to make sure they have plans.

Information Sharing and Plans for Communication

Business representatives were asked if they had shared their recovery and restoration plans with their building owners. (This question was not relevant for three companies that own their own buildings.) Of the six who responded, five (83%) said they did not, and only one company (16%) said they do share their plans and even hold collaborative training sessions with the building owners.

When asked about plans for communicating with building owners and service providers during recovery and restoration, 90% of the businesses interviewed indicated they had plans in place. Most elaborated on their emergency response plans, whereby they would use established call lists if telecommunications were available or rely on a variety of communications tools (e.g., 800 MHz radios, HAM radio, satellite phones, email lists) if telecom services were not available. An email notification system called SendWordNow, which sends notices to predetermined lists, was cited by one as an example. None of the businesses specifically indicated that they would communicate with the building owners; most referred to communicating with service providers and customers. One business (10%) said they are prepared to communicate only if phone lines are working.

Mutual Aid and Service Agreements

Business owners were asked if they have mutual aid or contractual agreements in place with neighboring businesses and key vendors to facilitate restoration and recovery of business operations. Sixty percent said they have some sort of agreement with neighboring businesses, although most of those were informal, verbal agreements. The remaining 40% have not made plans with neighbors. However, 80% of the businesses interviewed do have agreements (e.g., service-level agreements) in place with key vendors, such as fuel vendors for generators. Only 20% have agreements with contractors for biological decontamination services. One representative was uncertain about vendor agreements and another said that biological restoration would be handled by building owners.

Insurance Coverage and Liability

Finally, business representatives were asked whether they had addressed coverage and liability issues regarding a biological incident with their insurance providers. Only 20% said yes, 20% said no, and 60% were not sure. While some business owners have business interruption insurance, they did not know if that would cover a bio-terrorism incident. Those who had investigated the insurance issue elaborated on what their company learned. Workers' compensation insurance would cover any employee injury from anthrax, but the business would not be covered by business interruption insurance. The Terrorism Risk Insurance Act does not cover biological or chemical terrorist acts, so if anthrax is certified as a terrorist event, customer injuries would not be covered.

Overall, there was significant interest among the businesses contacted in participating in the workshop. When asked what they hoped to take away from the workshop, general interests included:

- Guidance to expand their business continuity plans beyond response to include recovery and restoration
- Best practices for developing a process to address a biological release, including what other companies are doing
- Improving communication between emergency planners and business owners to assist in recovery planning. The public sector needs to better understand the business community.

Summary of Interviews with Building Owners and Operators

Recovery and Restoration Staff

Building owners and operators were first asked who in their organizations had responsibility for recovery and restoration. Of the nine respondents affiliated with building management companies, five (56%) indicated that general property managers and/or onsite engineers had responsibility for recovery and restoration. In two of these organizations, a vice president or executive was said to be ultimately accountable. One interviewee said the information technology manager is a primary person responsible for their business continuity plan.

Recovery/Business Continuity Plans

Six of eleven people who responded (55%) said their organizations have an all-hazards plan that addresses disaster recovery and business continuity, three of whom said their plans covered critical IT and communications systems, physical infrastructure/facility operations, personnel engagement to restore operations, and legal and regulatory requirements. Five (45%) do not have plans in place, although one indicated they have drafted some general guidance for each building they own. Thirty-six percent of interviewees said they had plans that specifically covered a biological release.

Two-thirds of the interviewees were not sure if their service providers had recovery plans in place.

Information Sharing and Plans for Communication

Building owners were asked whether they have shared restoration and recovery plans with their building tenants. Sixty-seven percent have not, and the 33% who have shared their plans indicated that they also conduct training with tenants.

When asked about plans for communicating with building owners and service providers during recovery and restoration, most elaborated on their plans for communicating during an event whereby they would rely on standard communications tools, such as phone, email and, in some cases, building intercom systems. One also uses the SendWordNow service, which serves as a call tree in the event of an emergency. Another indicated that during the recovery phase they would rely on a website for external communications.

Mutual Aid and Service Agreements

The building owners and operators were asked whether they had discussed recovery plans and the potential for collaboration with adjacent building owners. Sixty percent of the interviewees indicated that they have reached out to adjacent building owners and have agreements–both informal and formal–to support each other after a disaster. Fifty percent have also had discussions or made service-level agreements with key vendors to provide recovery and restoration services, but most of those are for janitorial, mold remediation, or other basic services. Only two (20%) of the interviewees had looked at agreements to support recovery from a biological incident.

Insurance Coverage and Liability

A majority of representatives interviewed (60%) were not sure whether their organizations had addressed coverage and liability issues regarding a biological incident with their insurance providers. Only 20% said they had addressed the issue and 10% said they had not.

Finally, the building owner community identified a number of things they hoped to get out of the workshop, including:

- An understanding of existing communication procedures, such as what communication channels are established for sharing intelligence about threats to buildings and how to best communicate with clients about such threats
- An opportunity to discuss ways to improve public-private sector communication, including getting information both to and from the responsible government agencies
- A better understanding of recovery and restoration issues because it has not been as big of a priority as response
- An awareness of what other companies, other cities, and the federal government are doing with respect to recovery and restoration planning
- A way to access resources about the risks and names of companies that can support cleanup from a biological incident.

Summary of Interviews with Critical Service Providers

Recovery/Business Continuity Plans and Staffing

Each of the critical service-provider organizations interviewed had emergency management teams and roles defined to support recovery and restoration efforts, as well as comprehensive emergency management plans. A few respondents noted that they have detailed continuity of operations plans, which identify critical functions and infrastructure for restoration and alternative work locations. In some cases, planning elements were dictated by external mandates (e.g., Western Electricity Coordinating Council requirements for utilities). Of the 12 interviewees, one (13%) indicated that their plans do specifically address biological incident, although 50% have done some planning for pandemic flu.

When asked if their service providers had recovery plans in place, 50% indicated that their most important service providers did have plans in place, 38% were either uncertain or they thought no plans were in place, and 12% commented that they use very few contractors, so it is not relevant.

Information Sharing and Plans for Communication

The critical service providers were asked about plans for communicating with businesses and building operators during recovery and restoration efforts. Almost all had multiple communication channels established. Most primarily use cell phones, pagers, email, and satellite phones for internal communications. For external communications they rely on phone and email from major account representatives who are operating from the EOCs, website postings, and having key account representatives on-call 24/7.

Mutual Aid and Service Agreements

All but one of the critical service providers interviewed (88%) said they have discussed plans and the potential for collaboration during recovery and restoration with neighboring service providers. For example, some have mutual assistance agreements with utilities in other parts of the region and outside the area in the event the broader region were affected. Healthcare providers cited a regional coalition that supports coordination on medical issues. Five interviewees (83%) also cited the use of service-level agreements with key vendors (e.g., fuel vendors for generators, food vendors for employees, oil spill remediation service providers), although none of these cited agreements with biological remediation service providers. Two interviewees (25%) said any biological decontamination would be done in-house by staff familiar with the procedures, and one (13%) indicated that they did not have either in-house or third-party service providers in place.

Insurance Coverage and Liability

Critical service providers were asked whether they had addressed biological incident coverage and liability issues with their insurance providers. Fifty percent said the issue was not relevant because they were self-insured, while 25% have not addressed the issue; 25% did not specify.

Finally, critical service providers identified a number of results they wanted from the workshop, including:

- Identifying what the private sector and other stakeholders expected from their organizations (e.g., hospitals, transit)
- Understanding how private-sector companies would communicate/coordinate with their own organization if they wanted to establish services for restoration and recovery ahead of time
- Learning what other service providers are doing to prepare for restoration and recovery
- Establishing alternative forms of communication (e.g., setting up wikis using flikr.com for photos to support recovery as electricity gets back up and running).

Appendix D: Workshop Agenda

Workshop on Private Sector and Property Owner Requirements for Restoration and Recovery from a Biological Disaster

August 12-14, 2008

Workshop Objectives

The objective of this workshop is to understand what private property owners and businesses need to support recovery and restoration from a disaster. The information shared during today's workshop will be used by the U.S. Department of Defense's Defense Threat Reduction Agency (DTRA) and the U.S. Department of Homeland Security (DHS) to support the development of guidance or other resources identified as high priority that might enhance the ability of private -sector businesses and property owners to recover and restore operations.

Agenda

9:00	Introductions
9:10	Workshop objectives
9:15	Overview of Interagency Biological Restoration Demonstration (IBRD) program
9:25	Anthrax scenario discussion
9:45	Discussion: What are the *major concerns* of businesses, private property owners, and critical service providers regarding the ability to recover from a biological disaster and restore property and normal business operations?
10:45	Break
11:00	Prioritization of concerns
11:10	Discussion: What do businesses, private property owners, and critical service providers *need* to address the top issues identified above? ▪ What are your expectations about financial outlays your organization would be responsible for related to recovery and restoration? What insurers would cover? What government would cover? What others might cover? ▪ What specific information do you need from government officials now to support your recovery and restoration efforts? What would you need during the restoration and recovery phase? ▪ What established communication channels exist for getting information from lead government agencies responsible for recovery and restoration or do you need them? ▪ What tools do you need to support your recovery and restoration efforts? ▪ What other resources (e.g., drugs, equipment, funding) will you need from the government or others to support your recovery and restoration efforts?
11:55	Next steps and close

Appendix E: Workshop Participants

Organization	Last Name	First Name
Private sector businesses (Aug 12)		
Boeing	Austin	Thomas
Boeing	Johnson	Steven
Costco Wholesale	Marcus	Gabriel
Port of Seattle	Gleaves	Kathy
Premera Blue Cross	Reagan	Bryan
Safeco Insurance	Kamps	Ron
Unified Grocers	Hutchins	Robert
Unigard	Milligan	Hilarie
Building Owners (Aug 13)		
Able	Johnson	Jim
ABM	Safsten	Mark
Beacon Capitol Partners	Donovan	Joe
Building Owners and Managers Association (BOMA) of Seattle and King County	Kaufman	Rod
CAC Real Estate Management	Phillips	Michael
CBRE	Perry	Jeff
Institute of Real Estate Management	Lewis	Sue
McKinstry	Caldwell	Dan
Metzler Realty Advisors, Inc	Wise	Don
Private residential building owner	Johnson	Craig
Rental Housing Association of Puget Sound	Johnson	Julie
The Ashforth Companies	Lange	Wade
Tishman Speyer	Mattes	Charlie
Washington Real Estate Holdings	Holt	Tim
Wright Runstad & Company	Clark	Patrick
Wright Runstad & Company	Myrter	Jeff
Service Providers (Aug 14)		
Harborview Medical Center	Newcombe	Anne
King County Metro Transit	Harrington	Roy
Seattle City Light	Serra	Roger
Seattle Public Utilities	Van Leuven	Laurie
Seattle Public Utilities	Labadie	John
Tacoma Power	Tong	Francis
Virginia Mason Medical Center	Savaglio	Fred
WSDOT	Ivanov	Barbara
Observers		
DHS – Science & Technology	Brooks	Lance
DHS - Infrastructure Protection	Crafton	Dave
DHS - Office of Health Affairs	McCracken	Kathie
DHS Office of Health Affairs	Sadovich	Julie
DTRA	Madden	Ryan
DTRA	Sobey	Margaret

Fort Lewis	Sheline	Jim
Fort Lewis	Williamson	Mark
JRO-CBRND	McLane	Chris
Public Health Seattle-King County	Loehr	Michael
Tauri Group	Walker	Ray
Washington State Emergency Management Division	Freitag	Wendy

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