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I want to thank the Air and Waste Management Association for inviting me to speak here today. I appreciate the opportunity to talk about the environmental challenges posed by terrorist attacks, natural disasters, and major accidents.

My goal is to raise awareness of the significant homeland security issues confronting us, from “dirty bombs” to bioterrorism. I’d also like you to think about three important questions:

- Is this country really ready to respond to and recover from the next big catastrophe?
- Is your family prepared?
- Is your agency, business, or organization prepared?

Fifteen years ago, this country was attacked. The bombing of the World Trade Center on February 26, 1993 was a warning. It should have been a big wake-up call. Apparently, it was not enough. The same building was hit again on September 11, 2001, with devastating results. This time, the Nation reacted with very definite improvements, such as better transportation and border security, enhanced infrastructure protection, and stronger first responder capabilities.

But have you noticed – as time goes on – our memories of 9/11 are starting to fade? America seems to be falling asleep again. We’re becoming complacent. It’s too easy for us to get caught up in what we’re dealing with today: gas prices and the economy, presidential campaigns, and the war in Iraq. We’re not thinking about what we may need to do tomorrow.

Let me ask you a question: How many of the 12 or so presidential candidates whom we have seen over the past year and a half have really focused on homeland security? I live in DC, so I’m very aware of what goes on in the political arena. I do not recall any of the candidates emphasizing homeland security. They should be addressing how prepared we are and how they think we could respond more effectively. And so should you.

9/11 and major events since then – the anthrax and ricin attacks, the Columbia shuttle disaster, and Hurricanes Katrina and Rita – have taught us to expect the unexpected. The environmental community represented in this room certainly should.

It’s important for all of us to acknowledge that environmental professionals are key actors in a much larger homeland security drama. Each of our roles is important. Our success ultimately will be measured by how well we prepare for and respond to the unknowable, the unprecedented, and maybe the unthinkable.

I spend a lot of time thinking about this....because that's my job. And I have to tell you: I'm concerned. I do not believe that this country is as prepared as it should be.

9/11 and the subsequent catastrophes presented unprecedented challenges for every public, private, and non-profit organization involved. In my position at EPA, I've used the lessons learned from these incidents to move the Agency towards the next level of preparedness.

EPA is preparing for 5 simultaneous, catastrophic events. Why?

Well, imagine this country trying to deal with the consequences of two Katrina-sized natural disasters at the same time. Or imagine terrorists releasing chemical, radiological, or biological agents in multiple cities across the US. We know it can happen. Recent events around the world have shown that terrorists like to use multiple, simultaneous attacks as a way to maximize physical damage and economic loss, and increase their psychological impact.

Consider these data:

- U.S., September 2001: 4 planes, plus one more aircraft may not have gotten off the ground.
- U.S., September and October 2001: At least 4 anthrax letters mailed. 14 contaminated sites in Florida, New York, Washington, DC and Connecticut.
- Madrid, Spain, March 2004: 10 explosive devices on trains.
- London, England, July 2005: 4 explosive devices on subway cars and a bus.
- London, England, July 2005: 5 explosive devices, 4 activated, all malfunctioned.
- Mumbai, India, July 2006: 8 explosive devices on trains.
- London, England to U.S., August 2006: British Intelligence disrupted a planned attack targeting 10 planes bound for the U.S.
- Jaipur, India, May 2008: 7 bombs throughout the city.

See the pattern? The likelihood of multiple, simultaneous events is a very reasonable planning assumption. At EPA, we're working towards building and maintaining the capability to respond to and recover from 5 catastrophes with more emphasis on planning, additional personnel, better training, and more equipment.

Our Federal, State, Local, and Tribal partners have made considerable progress in building their own capabilities as well. So have the private and non-profit sectors.

I wish that I could say that EPA's heightened preparedness stance will be enough to deal with whatever catastrophes tomorrow brings. I wish that I could say that the progress made in

homeland security by the Nation as a whole will be enough. But I do not believe that. Instead, if we face multiple, large-scale events, I fear that we will fail. And fail miserably.

Just a few short years ago, what happened in New Orleans shook many people's faith in our system of governance. How can we, as a country, feel better prepared when the new National Response Framework – the successor to the plan used during Hurricane Katrina – does not really address long-term recovery? Talk about short-sightedness. Or maybe I should call it failure of hindsight.

We and our legislators need to address this glaring gap in recovery. Now, some of you may be tempted to dismiss me as a professional cynic, but I ask that you hear me out. We cannot afford to forget the real risk from natural disasters. We cannot afford to forget that we have very determined adversaries committed to destroying our people, our freedom, and our way of life.

So what can we do? How can this Country become better prepared? I offer a two-part answer to this.

First, it's a matter of balancing our homeland security priorities: prevention, protection, response, and recovery. The Government has spent billions of dollars on homeland security, with most of the funding going to the detection and prevention efforts. Think about your most recent trip through an airport or crossing a border. As a Nation, we've also invested heavily in critical infrastructure protection, which benefits us all.

But we simply cannot detect everything. We will not be able to prevent every potential attack. So, we must plan for the inevitable and prepare for response and recovery. And not just the immediate response, but the long haul of restoring the impacted community, the environment, and people's livelihoods.

The country's response capabilities have improved greatly in the past couple of years. However, our investments have focused on the short-term, and not as much on the long-term. This is what I mean about balancing our homeland security priorities. We need to make sure that we can handle all aspects of prevention, protection, response, and recovery. I am particularly concerned with improving our Nation's ability to decontaminate following chemical, biological, and radiological events.

Second, we need to do a better job of assessing the possible threats and prioritizing them based on risk. Every environmental professional in this room is familiar with the possible threats. We know that terrorists have the ability to weaponize certain biological agents. We also know that terrorists have the knowledge to build radiological dispersion devices, commonly called "dirty bombs".

Just how probable are these possibilities? Some of you may listen to Randall Larsen's "Homeland Security: Inside and Out" on public radio. Larsen is a retired Air Force Colonel, Director of the Institute for Homeland Security, and author of a compelling book, *Our Own Worst Enemy: Asking The Right Questions About Security To Protect You, Your Family, And*

America. According to Larsen, a biological weapon can be made using open source information with equipment bought off the internet for less than what people pay for a luxury car.

As seen from the anthrax incidents in 2001, exposure can be deadly if not caught early enough and clean-up can be costly. However, Larsen points out in his book that dirty bombs are easy to construct, and are therefore the most likely choice among the types of chemical, biological, or radiological weapons terrorists could use.

In fact, many of the radionuclides that a terrorist could use to make a dirty bomb are available in routine commerce. Detonation of a dirty bomb may not kill a lot of people directly. But it will create significant environmental, psychological, social, and economic damage. And 300 million other Americans will be worrying if their communities will be targeted next.

Of course, it's not just terrorism that presents profound challenges. Certain naturally occurring diseases have the potential to cause pandemics and threaten the security of our homeland. Many of you are aware of avian influenza – bird flu. According to the medical experts, if the bird flu virus mutates enough to sustain human-to-human transmission, we're in serious trouble. A severe influenza pandemic would be a catastrophic event: We could have 90 million people ill in the U.S., and as many as 2 million deaths.

Outbreaks of the disease would likely come in multiple waves, each lasting 6 - 8 weeks. There would be severe disruptions in critical infrastructures – power, water, cyber – and the economy at large would suffer significant disruptions. It certainly will not be “business as usual” in your agencies, companies, and organizations. Up to 40% of your workforce could be ill or unable to work because of sick family members or children at home due to school closures. If your organization has not done contingency planning for pandemic influenza, you should.

So how do we prepare for all these potentially devastating scenarios? In the face of multiple and diverse catastrophic possibilities, we must: (1) objectively characterize the relative risks; (2) prioritize the gaps in our ability to prevent, protect against, respond to, and recover from the greatest risks; and (3) allocate resources accordingly to fix the critical gaps. EPA's own assessment of the greatest and the most likely risks is consistent with Larsen's and many of the other national experts' analyses. While preparing for all hazards, we're focusing on dirty bombs and anthrax. Why?

The insurgents in Iraq have already demonstrated their ability to combine chlorine gas with Improvised Explosive Devices. A dirty bomb is an easily-accomplished variation on this. I truly believe that it's not a matter of “if”, but a matter of “when”. As for a major anthrax attack, all it will take to cause tens of thousands of deaths is the outdoor release of anthrax spores in a major metropolitan area.

I spoke earlier of prioritizing and fixing the most critical response and recovery gaps. These gaps are insufficient numbers of trained personnel, inadequate laboratory capacity and capability, about which I testified before Congress last November, major scientific and technological unknowns, such as how to address wide-area or outdoor releases, lack of cleanup contractors and equipment, lack of disposal options and facilities.

To make these gaps more tangible, let me discuss TOPOFF 4, which was held in October 2007. TOPOFF 4 stands for Top Officials of all levels of government – Federal, State, Local, Tribal, and Territorial, Private and non-profit organizations also participated. In this national-level exercise, we practiced responding to simulated terrorist attacks in three cities. The city of Portland was one of the venues for TOPOFF 4. In fact, the Convention Center in which we're meeting right now is mere blocks from where a dirty bomb "exploded".

Many of the downtown buildings, facilities, and roadways were also impacted. By the time the dust settled – so to speak – an estimated 11,000 residences, public structures, and businesses were contaminated. We're talking 90,000 people impacted by 50 pounds of high explosives and 5,000 curies of Cesium-137. I have personally driven through the projected contaminated area, which extends more than 15 miles from the blast site. EPA and other Federal agencies supported the local and state response efforts during the exercise.

Unfortunately, like most exercises, TOPOFF 4 ended before the participants could really address the decontamination and recovery aspects of the attacks. Five weeks ago, EPA came back to Portland to consider the long-term implications of a dirty bomb incident. We used the TOPOFF 4 scenario as our starting point.

Let me set the scene. Following any radiological, chemical, or biological attack, the public and political pressures will be overwhelming. Demands for information will be incessant; everyone from the President to the person on the street will want accurate information as fast as possible. Radiation evokes a special fear. The immediate concern will be the health of the citizens. What are the effects? How can people protect themselves?

The responding organizations will not have the luxury of only focusing on the short-term response. They will be asked right away: What is your decontamination and recovery plan? Where are you going to start? How fast will you get it accomplished? When can you reopen the impacted areas?

Portland is the economic engine for the state of Oregon. The people of this city, indeed the entire state, would expect a speedy recovery to such an incident. If it happened tomorrow, we will not be able to meet their expectations. The current gaps in the country's response and recovery capabilities are just too big to overcome without significant resource investments by the public and private sectors.

If there were multiple, large-scale attacks like the TOPOFF 4 scenario, the national system we currently have in place would be seriously strained. Today's technology and trained personnel are simply not sufficient to meet the needs of such a response.

In the case of a dirty bomb, responders and recovery workers must limit their exposure time in the contaminated area. Extensive field monitoring, sample collection, and laboratory analyses will be needed. It's the only way to determine whether the public can return to their homes, schools, and businesses. Unfortunately, the universe of radio-analytical laboratories in the U.S.

is limited. These laboratories will face competing demands for clinical, animal, and environmental analyses. The question becomes, “How should we prioritize these demands?”

The same is true for decontamination activities and will be critical. Early on, the obvious priority would be getting critical infrastructure and other key resources functioning again. However, as the days and weeks go by, you can count on conflict erupting on what the next monitoring and cleanup priorities should be. All levels of government will be in competition with the private sector for existing contractor resources. Priorities will have to be set at a very high level.

From a technological standpoint, this country has no precedent for a large-scale decontamination of an urban area. Determining which decontamination technique works best where will involve a lot of trial-and-error and time.

And let’s not forget the waste management issues. Cleanup activities will generate tens of millions of gallons of contaminated waste water and tons of contaminated debris. These will pose technical and political challenges: How to treat the contaminated waste water, how to temporarily store the contaminated debris, and where to transport it for permanent disposal.

So you can see why clean-up activities would likely continue for a long time in the aftermath of a dirty bomb. And a community cannot recover until you’ve cleaned up. I’m not talking weeks, or even months. It will take years to recover. Slow progress inevitably measured by finger-pointing and blame...

I served as a point person for EPA’s response to Hurricanes Katrina and Rita. And I saw firsthand the enormous loss and suffering that people living there had to endure. But there’s no doubt that their suffering would have been worse if not for time, money, and energy of many corporations and non-profits. And that is how it should be.

The private and non-profit sectors must be full partners in homeland security. Businesses are the country’s principal providers of goods and services, and are the owners or operators of approximately 85 percent of the Nation’s critical infrastructure. They have both an interest in and a responsibility for ensuring their own security. Indeed, America must foster a culture of preparedness that permeates all levels of society.

The environmental professionals in this room certainly share responsibility for homeland security, regardless of where we work. Creating a prepared Nation will be an enduring challenge. To be successful, we must guard against complacency. We must plan for the possibility of multiple, simultaneous catastrophes. We must fix the critical gaps in our ability to respond to and recover from the greatest risks. All of us working together will allow us to leverage our unique strengths, capabilities, and resources.

I’ll leave you with some final thoughts:

If a terrorist attack or other catastrophe was to happen where you live, your community needs to be ready to respond and recover. You should have a family emergency plan. Your organization

should conduct the continuity planning necessary to address the potential consequences. You should assess your ability to operate — fulfill your function or meet your customers' needs. In other words, you need to do what you can do personally and professionally to prepare.

Remember, it's not a matter of "if"; it's a matter of "when."

Thank you.