Statement of

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Before the

United States Senate

Subcommittee on Oversight of Government Management, the Federal Workforce, and the District of Columbia

And the

Ad Hoc Subcommittee on Disaster Recovery and Intergovernmental Affairs

Hearing On:

"From Earthquakes to Terrorist Attacks: Is the National Capital Region Prepared for the Next Disaster?"

December 7, 2011

1. Introduction

Chairman Akaka, Chairman Pryor and Members of the Sub-Committees on Oversight of Government Management, the Federal Workforce, and the District of Columbia and the Ad Hoc Subcommittee on Disaster Recovery and Intergovernmental Affairs, my name is Richard Muth and I am the Executive Director of the Maryland Emergency Management Agency. It is an honor to be invited here today to discuss our shared commitment to ensure the National Capital Region responds effectively to no-notice emergencies whether they arise from a natural event or from terrorism. I bring nearly 40 years of experience to bear on these issues. After spending 33 years at the local level first as a firefighter and then as the Baltimore County emergency manager; I have now spent almost 4 years as the State Director of Emergency Management.

We have only one National Capital – that makes this area different from any other region in the United States. The extensive federal presence in the National Capital Region – not just in the District of Columbia but also Maryland and Virginia and the various state and local government agencies responsible for public safety and security in the region are a unique challenge.

To ensure we are continuously improving the readiness of the National Capitol Region, Maryland:

- Participates in NCR strategic planning, training, and exercises; and
- Coordinates and communicates with NCR stakeholders relating to emergency preparedness and response for the NCR through MEMA and local and regional groups; and
- Identifies and addresses on an ongoing basis the challenges the State faces in preparing for and responding to no-notice emergencies and how it has or plans to address those challenges.

Maryland is working every day with our local jurisdictions and our regional partners to improve the National Capital Region's response during a disaster. We do this both through various coordinating bodies as well as by supporting innovative communication and technology tools. We learn from risk assessments, threat information, and from after-action reviews. We adjust our strategies and tactics and learn both from what has worked and where things need to be improved.

2. The NCR Strategic plan anchors our regional preparedness efforts.

a. Maryland Role in NCR Strategic Planning

Maryland, The District of Columbia, and Virginia coordinate and work together every day whether during rush hour, mutual aid support, or simply to monitor conditions on the ground. Through our watch centers, fusion centers, emergency operations centers, and traffic management facilities, the region is constantly engaged in a dialog about how we can improve on past performance, work together during incidents today, and plan for an even more efficient and effective future.

The Senior Policy Group (SPG), a group that includes the Maryland, Virginia, and District of Columbia Homeland Security Advisors and Emergency Managers and of which I am a member worked closely with the Chief Administrative Officers (CAOs) from the local jurisdictions in the region to build a strong strategic vision for the region. Supported by many work groups made up of first responder subject matter experts and organized around the different response disciplines the region has developed a strategic plan which prioritizes core capabilities.

The SPG and CAOs are implementing a sustainable process that builds the region's capabilities in alignment with the strategic priorities identified in the Strategic plan.

The Strategic Plan was built on a strong foundation of regional collaboration and stakeholder participation including extensive participation by the State of Maryland. This Plan outlines priority capabilities, those key capabilities needed by the region for response during natural disaster or terrorist attack. The region is developing and strengthening these capabilities with all of its partners in a coordinated, efficient, and effective manner. As stewards of the public trust and its resources, we are committed to exercising rigorous oversight to implement this Strategic Plan through a comprehensive process of regional planning and performance measurement. The SPG and local CAOs are all committed to anchoring regional investment on the strategic plan.

In the past year, we have updated information on our spending history, expanded our identification of alternate funding sources, and put in place metrics to measure progress in achieving capabilities. We have also put into place milestones and indicators to help us chart our progress in implementing the Plan. As we begin a new planning cycle we are doubling down on our efforts to use all our data streams on risk, on project management, on better approaches to anchor our oversight and management in the strategic plan. This process builds on past experiences and should yield a more transparent and consistent way to bring state and local leadership together with the responders at the local level to ensure accountability and the best use of our resources

The Plan provides a strategy and vision for the future. We are committed to make sure everyone knows what our goals are, where we are in reaching our goals, and that we invest according to the strategy to reduce or eliminate risk.

We continue to improve.

3. **The Role of Emergency management and State and Local Government in Preparing for, Responding to, and Recovering from Disasters is built on coordination.**

    a. **The Role of MEMA in the Emergency Management**

Local police, fire, and emergency medical personnel are almost always the first to respond to emergencies. When they exhaust their capabilities or need additional resources they turn to the state. The Maryland Emergency Management Agency (MEMA) is the lead agency for coordinating emergency preparedness, planning, and response during significant events. MEMA is the lynchpin for coordinating preparedness, planning, response, and recovery. When the

Governor declares a State of Emergency MEMA, by law, becomes the responsible agency for managing the emergency at the State level.

We coordinate Maryland state agencies and local Maryland agencies while also working with our sister agencies in the District of Columbia and Virginia. Through various regional entities and the state structure we not only coordinate operations during a response but we provide communications and innovative technological tools to connect decision makers and the public with key information needed to prevent, detect, respond, and mitigate crises.

When the State Emergency Operations Center (SEOC) is fully activated, it is staffed by MEMA employees, a representative from each state agency, as well as representatives from FEMA Region III, the private sector, and volunteer organizations. These people coordinate the state response and work with locals to fill gaps and support the front line first responders in all disciplines.

MEMA also operates the Maryland Joint Operations Center (MJOC). The Maryland Joint Operations Center, a joint civilian and National Guard watch center, functions 24 hours a day, 7 days a week and 365 days a year. The MJOC is the State Warning Point for public notification (i.e. Amber alerts, weather warnings, etc.). The staff helps to coordinate conference calls with state, local and federal partners; maintains detailed call-down lists for SEOC providing regular updates on incidents throughout the state to executive leadership, regional emergency managers in all three state, the Maryland Department of Transportation, State Highway Administration and their D.C. and Virginia counterparts.

Many of the events that have had a significant regional impact over the past year have been transportation related. While emergency management becomes involved during an escalation of circumstances the Departments of Transportation, the highway agencies, and the transit agencies are all working together every day. Maryland has the State Highways State Operations Center which coordinates statewide traffic in conjunction with the Maryland NCR Regional Traffic Management Center. All of these agencies are connected through RITIS (described below) and WebEOC and enhancements to those systems are underway.

We continue to improve.

a. Responding to No-Notice Events

No-notice events are particularly challenging for emergency managers and first responders. We cannot plan for every contingency and every possibility. Instead, Maryland and the region focuses on building the capabilities that allow us to respond in all hazards. In an emergency response, the tools required to respond to a fire caused by an explosive device or a lightning strike do not change. We build core capabilities so that we are better at response, more effective and more efficient.

We continue to improve.

b. Building a Resilient National Capital Region

The snowstorm and the earthquake, two examples of incidents that occurred without notice, highlight the importance of building a resilient community: resilient utilities, resilient communications, and a resilient public. Resilient utilities quickly come back on line after disruption because of redundancy and an active effort to mitigate disruptions. A resilient communications network is both redundant and robust for first responders and public. A resilient citizenry has been educated on what to do and can support emergency management by keeping themselves safe.

In California, citizens react the right way during an earthquake because they have been taught what they need to do. In our region, where earthquakes are very rare, public education efforts have focused on another risk – terrorism. The region has adopted the "See Something, Say Something" campaign and regularly provides individual disaster preparedness education, training, and materials.

The earthquake highlighted that during events of significance (including every New Year's Eve at 12:01) cell phone systems become overloaded and calls from mobile phones will not go through. This is a feature of modern life. Public safety radio communications were not impacted at all. Land lines were open, 911 centers were not impacted. This is a result of a significant effort in the region to ensure that our first responders have interoperable and redundant communications no matter the situation.

Localities are currently providing the public information via email, text messages, Twitter, Facebook and on government agency websites. These methods of communication (in addition to radio and TV) functioned well during the earthquake. We need to invest in broadband for public safety to ensure that data communications are available to first responders. We should also educate the public that, while a phone call may not go through, text messages are a much lower bandwidth solution to communicating to friends and family.

We continue to improve.

c. No-Notice Response and Maryland's Checklists

The challenge to response during a no-notice event is three-fold. First, you must quickly identify the event, and then assess the extent and work to anticipate secondary events or affects, and finally quickly disseminate information to the public. The first moments of any emergency event that occurs without warning are inherently chaotic and confusing. Responder's first effort is to determine the situation on the ground and then begin to plan to move forward. That initial confusion often leads to cascading effects as the individual decisions of the public aggregate into broad far-reaching consequences. That is what happened during the earthquake – initial confusion led to a reaction from a cross-section of the public who flooded roads and transit and tied up commercial communications networks.

All emergencies are local. They begin with a 911 call to a local dispatch center and local police and firefighters are usually the first on the scene. Any event from a house fire to the Virginia Tech shootings to an attack on the Capitol building will first have a local response and then

emergency managers and other first responders will be called in to support those first on the scene. The region uses the Incident Command System (ICS) as the basis for response to any incident but particularly to no-notice events. ICS was developed as a command scheme for handling forest fires in California. It is a modular, ground up approach to incident management and has been proven, time and again, to be an effective management structure for emergencies. Every first responder in the region is trained in ICS and this forms the backbone of our overall response.

Our strategic plan focuses on building core capabilities – building blocks of response. This approach helps to ensure that we are ready for any and all events of any hazard type. No matter the incident, by building capabilities necessary for all response we build capabilities that are adaptable to any situation.

In Maryland we've focused on providing guidance to our watch centers and our responders on how to react in an unexpected and evolving event. Maryland has developed a series of Emergency Checklists used to systematically identify the correct course of action. Our no-notice checklist leads personnel in our watch center through a series of assessments meant to identify the problem, analyze the risk, and provide for the next steps including notifications to leadership and the public.

We now have hazard specific checklists for hurricanes, winter weather, and terrorism ready to be implemented the moment an event occurs.

We continue to improve.

d. Public Outreach

In some cases, either because of the travel distance of partner agencies and/or road conditions, it is impractical to set up a physical Joint Information Center (JIC). In those instances, Maryland will activate a virtual JIC, allowing public information offices from other agencies to help monitor the media, write and edit press releases, send out social media messages and make phone calls from their local office – providing them with direct access to information that can then be shared with regional partners. During the three blizzards of the winter of 2009-2010, a number of state agency PIOs assisted the MEMA public information office in this way.

In the months ahead, the NCR PIO group will be rolling out a Virtual JIC website developed with DHS grant funds. This will allow all of the local, state, federal and District of Columbia PIOs to coordinate on public messages and to help ensure a consistent and effective message to the public. We have worked hard to facilitate better communications between the PIO professionals in the region and with the public. The public side of the site will allow the public to access the various websites and pages with safety information.

In addition, the public information offices of the National Capital Region have developed a public awareness and education campaign. The final messaging is still being developed, but the tentative theme for the campaign is "Get Where You Need to be Before the Weather Gets Bad."

The purpose of the campaign is to encourage people to be vigilant about the weather forecast and make plans to arrive at your ultimate destination before the roads become dangerous. The campaign will also encourage employees to release employees early enough to get home before the roads become dangerous or encourage workers to stay at work until after the roads have been cleared – very similar to the new Office of Personnel Management policy for federal employees. Many of the transportation issues on Jan. 26 were caused by large volumes of employees headed out just as the snow began to fall, and this program is designed to help avoid a similar situation in the future.

Maryland is also expanding the use of social media for keeping the public informed. MEMA has significantly enhanced our web presence and we now have over 2.2 million fans on Facebook and, after only three months of publicizing our Twitter feed we have 4,000 followers. This is all part of a coordinated State of Maryland effort to expand our reach in social media and partner with other State agencies partner to get a single unified message out to the public.

As our citizens change the way they communicate we have adapted and evolved to communicate in the most effective way possible.

We continue to improve.

4. **The State continues to make efforts to effectively coordinate and communicate with NCR stakeholders relating to emergency preparedness and response for the NCR**

The past year, 2011, has been an eventful one for those of us in the emergency management and response community in the National Capital Region. Beginning with the January 26 Storm and continuing through the Louisa Earthquake, Hurricane Irene, and Tropical Storm Leo, Maryland and the National Capital Region have experienced an unprecedented number of significant natural events. From each of these events we continue to improve and advance – we get better and learn from every incident. .

The January 26 Storm was serendipitous in the worst possible way - early road treatments, a staple of winter preparedness, were washed away by mid-afternoon rains which were followed by a temperature drop and icing of roads. The now ice covered roads quickly filled with commuters on early release from regional employers and conditions worsened – buses were stuck on icy hills, tractor trailers were jackknifed – and the congestion familiar to many DC commuters on the best of days made a quick response to individual incidents difficult.

The January 26 Storm was not, in itself an emergency – the snowfall amounts were not exceptional and wind was not a significant factor. Instead, the storm resulted in a series of significant traffic incidents across the region – in Maryland there were up to ten significant traffic incidents statewide – each requiring individualized attention and management. Emergency responders, however, had difficulty getting where they needed to be and that resulted in a slower than normal response and mitigation of incidents. But we have learned some lessons from this event.

We improved the resources available to our highway crews and improved the sharing of information internal to government and with the public through technology and better coordination. The deployment of the Regional Information Center – a recommendation of a regional after-action review effort – is another change in the right direction. Our decision to invest in something new and innovative – to make real changes in our process – is evidence of our commitment to a regional, coordinated, cooperative approach to incident management.

We continue to work diligently; everyday both during disasters and in our day-to-day operations, to improve our situational awareness, refine our processes and procedures, and build capabilities that ensure the same mistakes do not happen again.

We continue to improve.

a. Technology

The region and Maryland utilize several technology tools to facilitate the sharing of information. I would like to share some of the key resources used by Local, State, Federal, Private Sector and Non-Profit entities within the region.

i. WebEOC

The primary system for sharing regional incident information in the NCR and, in fact, across the State of Maryland, is WebEOC. It is crisis information management software that allows decision makers to have access to real time data, entered from the field, about incidents throughout the NCR regardless of location and helps incident commanders, emergency operations centers, and support personnel manage events, resources and information to deal with emergencies.

WebEOC currently serves every county in Maryland, the Northern Virginia localities, the District of Columbia, state emergency operations centers in Maryland and Virginia, the U.S. Secret Service, and the Joint Forces Headquarters National Capital Region, the Washington Metropolitan Area Transit Authority (WMATA), and the Metropolitan Washington Airports Authority. Other groups that are tied into the system include:
- Red Cross
- Maryland - National Capital Park & Planning Commission
- Pepco
- Washington Suburban Sanitary Commission
- FBI
- Federal Reserve Board
- George Mason University
- CIA
- TSA
- FEMA – NCRC
- NRO
- Jefferson County, West Virginia
- Mount Weather Operations Center (FEMA)

The NCR has invested in purchasing, maintaining, and upgrading the system and training personnel since 2004. The use of WebEOC is consistently being refined and improved and we must continue to invest in the technology that allows us to do our jobs more effectively and efficiently. The system is being used every day and emergency management professionals across the region are constantly reviewing and assessing the system to find ways to get better.

We continue to improve.

ii.   OSPREY and Map-Based Situational Awareness and Public Outreach

Since its launch in August, Maryland's public facing emergency map called OSPREY, has received over a quarter of a million hits. This represents 61% of all the hits on any Maryland government GIS map in the past 12 months and this system has only been in use since August.

This map contains a great deal of information for the public including weather radar, traffic conditions, flood plains, hurricane storm surge, real-time power outage information, and medical and citizen services.[1] It provides a visual, online tool for citizens to use for their own preparedness and to track events as they occur. We expect that this resource will continue to be a benefit to our citizens in future weather events and for manmade disruptions to provide information quickly and with the appropriate context to assist in their decision making.

In addition to the publicly available map, MEMA also utilizes OSPREY for response and recovery operations. The internal OSPREY, available to first responders and emergency managers only, includes additional information that might be considered sensitive including critical infrastructure information, shelter information, and other key information sources which are geo-located providing enhanced situational awareness. Virginia and D.C. also have similar systems and we, as a region, have invested in linking across jurisdictional lines to ensure important information is shared.

Maryland and the NCR will be holding an exercise of regional coordination of GIS systems and situational awareness on December 19. The goals will be to test systems, train staff, and evaluate our ability to ingest, analyze, and share data across government and across jurisdictions. A second follow up exercise is also planned in mid-April 2012.

We are developing new systems for response and public outreach. We exercise and train on these systems regularly looking for ways to make progress.

We continue to improve.

iii.   Regional Integrated Transportation Information System (RITIS)[2]

The Regional Integrated Transportation Information System (RITIS) is an automated data sharing, dissemination, and archiving system used every day by traffic management officials in

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[1] The OSPREY Map is available to the public at www.mema.state.md.us/MEMA2/map2.html .

[2] For more information on RITIS please visit http://www.cattlab.umd.edu/index.php?page=research&a=00023 .

Maryland, the District, and Virginia. RITIS improves transportation efficiency, safety, and security through the integration of existing transit and transportation management data.

RITIS provides an enhanced overall view of the region's transportation network. Participating agencies are able to view regional traffic information from each state and jurisdiction and use it to improve their operations and emergency preparedness. RITIS uses regional standardized data to enable traveler information, including web sites, paging systems, and 511. Maryland, Virginia and the District of Columbia each have access to each other's internal traffic management system data seamlessly through RITIS. RITIS is also available within OSPREY. Maryland continues to support the steady improvement and expansion of the information available within this system.

MEMA now uses RITIS information to identify critical roadway incidents and is using a new critical incident board to track and seek to remedy significant incidents such as personal injury accidents and incidents resulting in closure of more than one lane of significant roadways and arterials.   RITIS includes data on lane closures, expected backup, and a timeline of response pulled directly from each State and the District's internal traffic management systems. In addition, through a new collaborative Transportation Task Force, the State of Maryland is developing a strike team approach to critical traffic events allowing responders to flood an area with response capability to quickly remedy any issues and move on to the next most critical area.

We have learned from past mistakes and now have processes in place to leverage the information we have to enhance our response.

We continue to improve.

iv.   Closed-Circuit Television (CCTV)

Three years ago there was limited web-based real-time video of road conditions and traffic available to the Maryland residents or visitors. The video that was available was not available on smart phones and local and state systems were not integrated.

Maryland has made significant and sustained commitment to improving situational awareness using CCTV. Governor O'Malley identified CCTV as one of the State's Core Goals for a Prepared Maryland. Currently there are 541 cameras available on the Coordinated Highways Action Response Team (CHART) system, Maryland's internal traffic management system, with more on the way. These feeds can be distributed to any agency that has access to the State Highway Administration (SHA) CHART system – this is an exponential expansion of 750 percent up from 45 videos available in 2009. This video can also be sent to secure sites that can be used in command posts or desktops of agencies which do not have direct access. The video streams can also be sent to wireless devices such as smart phones.

Maryland, Montgomery County, Prince George's County and the District now share over two hundred live traffic video feeds, a capability built since the January 26 Storm. We have invested to bring this capability to every jurisdiction in the region so that all of the cameras in the NCR from various entities are available.

During the January 26 Storm it became apparent that, despite the increases in fixed camera coverage, gaps in these views still existed. As part of the State's after-action improvement from the Storm, SHA developed mobile dash cameras capable of broadcasting video from a patrol vehicle on scene to central decision makers. All Maryland State Highway Emergency Patrol vehicles are currently outfitted with portable cameras in their vehicle which will provide live streaming video which can be distributed across the network. In addition, each of MEMA's regional vehicles has a similar capability.

Video is also available from helicopters – a capability used by MEMA in the aftermath of Hurricane Irene to conduct preliminary fly-over damage assessments throughout the state. Currently SHA can view video from Baltimore County and Baltimore City helicopters with expansion to other aerial platforms as they become available including State MedEvac aircraft and local jurisdiction aircraft. An additional seventeen portable camera trailers which can be deployed wherever live video may be needed but is not available are being purchased. Even those without access to CHART can access these videos through secure web portals.

We are identifying gaps in our video coverage and creating new solutions to fill those gaps. There is now more video available to both responders and citizens than ever before.

We continue to improve.

v.   Automatic Vehicle Location and Commercial Trucker Outreach

The January 26, 2011 snow storm highlighted a key issue that required a solution: in emergency weather conditions, response crews, heavy wrecker tow trucks, snow plows, and other emergency vehicles are often unable to chart a course to the site of a particular incident.

Recognizing the need for improvement, SHA developed a plan to install automatic vehicle location units in its vehicles so that the State of Maryland can more effectively track its vehicular assets and intelligently re-route them in situations where traffic prevents a swift response. The AVL units will also improve SHA's snow removal ability as they will facilitate better fleet management. These additional response vehicles will be strategically located through the Maryland portion of the NCR to quickly respond to incidents involving large vehicles, tractor trailers, and buses. To date, SHA has completed AVL installation for 96 percent of its intended fleet (883 out of 918 vehicles).

In addition to installing AVLs in State-owned vehicles, SHA has also acquired 500 additional mobile AVL units that can be temporarily installed in contracted vehicles. In snow emergencies, the State often utilizes contracted plows and equipment. The mobile units will seamlessly integrate management of contract trucks with management of State vehicles.

SHA has also expanded outreach to the private sector - it now utilizes an email group to quickly provide pertinent information to commercial truckers and trucking companies, increasing time to re-route to avoid traffic-related impacts on their deliveries. Providing trucking businesses with emergency information also helps to avoid incidents involving large commercial vehicles, which can have an exasperating affect on traffic conditions.

We looked critically at our response capabilities and made long-term strategic investments in our technological systems to ensure that our traffic managers have the information they need to allocate resources effectively and efficiently.

We continue to improve.

vi.   511[3] and Citizen Traffic Spotters

Maryland 511 is Maryland's official travel information service. Maryland 511 provides travelers with reliable, current traffic and weather information, as well as links to other transportation services. Building on the data in RITIS and other sources, 511 will allow commuters to "know before they go" and adjust their route or otherwise make accommodations for traffic backups.

Unavailable during the January 26 Storm, this system will get better and better as more commuters dial 511.

After the January 26 storm, the State Highway Administrations realized that even with its many traffic cameras, road sensors and deployed personnel, the agency still was missing situational awareness from some areas. To help remedy this situation, the SHA Office of Public Information is developing a cadre of volunteer traffic spotters who will provide real-time information to the SHA Chart Center, which monitors highway condition across the state 24 hours a day.

5. The NCR has completed extensive modeling, simulation, and evacuation planning.

The region has invested in a combination of monitoring, computer modeling, computer simulation, and planning to ensure the region is capable of evacuating.

a. Evacuation Plans

It is critical to note that the January 26 Storm and Louisa Earthquake and the related traffic and transit delays were not an evacuation of the District or the region. This was nothing like an evacuation – commuters and others just passing through crisscrossed the region in all directions to get home causing congestion. An evacuation is markedly different and evacuation plans are, therefore, drafted with different assumptions in mind.

A no-notice evacuation of the region would be an unprecedented event that would, without a doubt, result in a loss of life and property and would be a massive multi-day undertaking For the first time in recent memory, a mandatory evacuation of a portion of Maryland, the barrier island of Ocean city, was ordered. This successful, orderly, and preventative evacuation of approximately 250,000 people still took 24 hours to complete. An evacuation of the District or the NCR would be and exponentially more complicated and significantly more time consuming effort even if prior notice is available.

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[3] For more information please visit http://www.md511.org/

The region has looked critically at evacuation and has developed a model for evacuation that is being used all along the eastern seaboard. Maryland and the region continue to refine these plans, develop better more accurate models, and improve the data available to decision makers for evacuation.

The Maryland NCR (All Hazards) evacuation plan was the first comprehensive evacuation plan in the region and takes into consideration multiple scenarios within and around the NCR region. This is a four directional plan for moving traffic from North to South, East to West, South to North, and West to East. The plan includes intersection by intersection traffic management diagrams for use by law enforcement to route traffic during emergencies.

The plan also integrates the use of the transit system to move residents from the city to gathering points for evacuation further from the affected area. This portion of the plan has identified large assembly areas such as shopping malls which are a short distance from designated metro stations where evacuees can seek shelter and other facilities while awaiting transportation to off site locations outside of any red zone.

Not only does this plan address evacuating citizens away from the DC region but also accommodates plans to evacuate towards or through the NCR for other scenarios which may occur in adjacent jurisdictions. Virginia and the District are also working with the same format allowing for evacuation traffic management plans that are fully integrated across borders with Maryland and the region. West Virginia and Pennsylvania are using the same format and this assures they too will be integrated with plans in Maryland, Delaware, the District and Virginia.

Maryland State Highway Administration has also developed site-specific emergency transportation evacuation plans for several large federal facilities in the region. Each of these site specific plans is also built to be integrated into the other regional plans. The importance of this integrated planning approach is evident in the plans developed for two large federal employers located along a critical evacuation route. If these two large employers allowed all of their employees to be released by passenger vehicle it would result in near total shut down of that route. Through pre-planning, there is an established plan to allow a walk out of employees to exit the facility to pre-designated staging areas off campus where they can shelter in place or await transit vehicles to relay them to other facilities.

We continue to improve.

b. Evacuation Traffic Modeling and Simulation

Maryland also utilizes a state-of-the-art NCR Simulation and Monitoring Tool – a computer model for analyzing and predicting traffic during evacuation. Developed by the University of Maryland it includes all state and interstate routes in the Maryland portion of the region as well as interstate routes in Virginia. DHS grant funding was used to install traffic detection devices along major interstate highways and some other major routes to capture traffic entering and exiting the Beltway. New traffic monitoring, speed sensor, and volume sensors, installed with federal grant funds, will enhance Maryland's existing capabilities and will capture the volume data needed for planning as well as monitoring the traffic conditions during an event.

The model not only takes into account traffic but also transit and pedestrian movements and the interaction between pedestrian, transit, and commuter traffic on the region's roads. The model also provides the capability to monitor the transportation network and predict up to a 45 minutes into the future a view of traffic to determine when to make adjustments to the system.

An upgrade to the system, a joint effort between the University of Maryland and the Johns Hopkins Applied Physics Lab, is currently under way to streamline the calculations which would allow users to utilize the tool from their computers and over the internet rather than through the high-powered super computers available only at the University.

Maryland SHA is also working with District of Columbia DOT on a Washington D.C. Simulation and Monitoring Tool. This new model is unique and state-of-the-art. It was built for an incident commander during a release or attack in which a quick decision must be made to either shelter in place or evacuate. The affected area is outlined by the user and the appropriate traffic analysis zones and available roadway capacities are identified. The system, once complete and fully vetted, should be able to recommend traffic control measures which may be needed to expedite the exodus of citizens such as turn prohibitions, signal timing changes, and other remedies. This goes against an older philosophy for evacuation where everyone leaves even if they are not in an affected area.

We continue to improve.

6. Conclusion

The National Capital Region looks critically at our response during disasters. The region must continue to conduct full and frank reviews to identify our shortfalls and build the capabilities we need. Our Strategy will help us do that. Our governance structure will bring together the people necessary to get it done. The collaboration of the leadership at both the Local, State, and Federal level will ensure that there is the executive oversight in place to ensure progress.

We must continue to invest in building our regional situational awareness capabilities. The region has already made significant investments in this area and should continue to do so.

We must continue to invest in communications and technology for our first responders. We do not just talk on radios anymore. We exchange data, video, and pictures. But it remains difficult to push large volumes of information, the information needed to make first responders safer and more efficient, wirelessly to and from the field. The President's vision for a Nationwide Public Safety Broadband Network is a first step in the right direction in bringing public safety technology into the 21st century. This will increase first responder communications resilience and will free up other areas of spectrum for potential commercial use while also reducing the costs to public safety of maintaining multiple communications systems. The National Capital Region should invest now to implement that technology in the future.

We should be investing in the foundations of preparedness – building a resilient community and citizenry. The region, the State of Maryland, and the Nation should look for ways to educate

young people and citizens in general on emergency preparedness in the same way that kids were taught to "stop, drop, and roll" or "duck and cover."

Maryland is already working with the region to develop Business Operations Centers to facilitate public/private sector partnership. MEMA will launch an Office of Resiliency in the New Year to coordinate these efforts. These investments in the future have to continue and the funding must be there to continue them. We must engage the private sector and leverage their resources and expertise for the greater good.

As technology evolves – our response evolves.

As gaps are exposed – our planning improves.

As our tools for communications expand – our outreach grows.

Emergency responders and managers are not being complacent – in fact the exact opposite is true. We are actively working to improve preparedness in this region and beyond.

We continue to improve.

Thank you very much for the opportunity to address these issues.