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**Testimony of Tom Axtell
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Subcommittee on Economic Development, Public Buildings, and Emergency Management
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On behalf of the Association of Public Television Stations, Vegas PBS and the nation's more than 360 public television stations, I would like to thank you for inviting me to participate in today's hearing. Public television stations are playing an integral role in the nation's alert and warning system and today I would like to speak to that role and the potential for greater alert and warning at the local, state and regional level as well.

Additionally, I would like to offer two recommendations that are necessary in enhancing national alert and warning, as well as public television's capabilities in this area. First, a renewed focus on the Integrated Public Alert and Warning System (IPAWS) by Congress is essential to ensuring the quality and reliability of alert and warning. The legislation introduced by Chairman Oberstar, H.R. 3377 includes language that we believe is the right approach. Second, the WARN Act made funding available to stations to provide the equipment necessary to send targeted messaging and allow for better bandwidth allocation management; however those funds are currently being held at the National Telecommunications and Information Administration (NTIA). We urge this Committee to request that NTIA release those funds in order for public television to further build out the Digital Emergency Alert System. Both of these recommendations will be discussed further in my testimony.

When public television stations began their investment in equipment required to make the switch to digital transmission in the late 1990s, we quickly realized the significant advantages digital technology could offer to education, public health and public safety. Digital television's bandwidth can be partitioned into multiple wireless content streams creating a system that could serve the public in many ways. An example of a different bandwidth configuration includes the following scenario:

- One stream can send open circuit information to the general public;

- Another can send closed circuit encoded information to first responders;
- A third can send encrypted information to emergency managers and policy makers; while
- A fourth can communicate with health care institutions.

This revolutionary multi-casting technology is a vital emergency response and public alert and warning asset that transforms the capacity of television broadcasters well beyond the base-line approach of merely re-transmitting Emergency Alert System (EAS) or Amber Alert messages. In emergencies, when traditional communication systems are hopelessly over-taxed, the ability of a congestion-free digital television signal to send large volumes of critical, time-sensitive data to first responders in the field, citizens and government decision makers should not be underestimated.

Public Television Digital Emergency Alert System

Public television's congestion-free digital bandwidth is able to simultaneously support public alert and warning systems as well as closed networks to enable public safety and emergency management agencies to transmit vital information securely. These services are provided through a broadcast technology called "digital data-casting," whereby data originating from a public safety agency is received by a local public television station, encrypted, inserted into the digital television signal, and sent through the station's transmitter to personal computers; computers in police, fire, or ambulance vehicles; or computers on local area networks. This occurs through an inexpensive DTV tuner card and a small antenna.

Such transmissions are:

- As instantaneous as live TV;
- Invulnerable to congestion-induced delays on public networks;
- Addressable to a specific pre-determined viewing device through IP coding;
- Accessible even in the middle of a parking lot without a wire connection; and
- Preserving of the spectrum demands on narrower point-to-point technologies.

At Vegas PBS, we began our planning for the digital television transition shortly after the Federal Communications Commission (FCC) DTV order was issued. However, the 9/11 terrorist attacks caused us to experiment with digital data-casting as an emergency response technique.

We believe we were the first TV station in the nation to transmit:

- Closed circuit building blueprints;
- Security camera videos;
- Utility and hazmat maps; and
- Safety training videos

The transmissions can be made at the same time – and without interrupting – broadcast programs to the general public.

Our demonstrations along with those of a dozen other public broadcasters led our industry to seek support from Congress for enhanced public alerting infrastructure that would provide nationwide alert and warning services. Because public television stations reach nearly every American household, this capacity would marry national communication needs with enhanced emergency response services at the local level.

Thus, the Digital Emergency Alert System, or DEAS, was born. In October 2004, the Department of Homeland Security (DHS) signed a cooperative agreement with the Association of Public Television Stations (APTS) to conduct the DEAS-National Capital Region pilot program. The project involved the Public Broadcasting Service (PBS), the Federal Emergency Management Agency (FEMA), the National Oceanic and Atmospheric Administration (NOAA), and the FCC's Homeland Security Office, as well as a wide range of participants from the broadcast, cable television, wireless telecommunications, and electronic equipment manufacturing industries.

Phase I of the pilot, conducted in 2004 and 2005, focused primarily on technology demonstration and proof of concept. It included the design and deployment of the basic DTV digital data-

casting system, installation of DTV data-cast receivers among participants, and development of text and audio alerting software applications that utilize the Common Alerting Protocol (CAP). The early pilot showed that digital broadcasts to media and telecommunications service providers will significantly improve and enhance the ability of Federal, State and local government to provide critical and lifesaving emergency messaging to the nation.

In Phase II, which ran during 2005 and 2006, DHS examined how public television digital technology could best provide support and enhancement to state and local activations of the alert and warning system. The exercise consisted of DHS originating encrypted test messages through an access point at local public television station WETA to digital data-cast receivers at more than 20 public television stations throughout the country.

These successes paved the way for an agreement between APTS and DHS/FEMA to deploy the DEAS nationally as part of the DHS/FEMA Integrated Public Alert and Warning System (IPAWS). Using best practices developed in the pilot program, APTS and PBS added technological upgrades to every public television station across the country, creating the backbone infrastructure of a digital presidential emergency alert and warning system to supplement the current EAS. The build-out also served as a foundational infrastructure that could facilitate governors' and local authorities' use of the DEAS for state and local emergencies.

WARN Act and Commercial Mobile Alert System

While the original national build-out established the basic infrastructure of the DEAS, the system was designed to be enhanced with the addition of equipment to allow geographically targeted alerts and equipment to permit public television stations to dynamically allocate bandwidth to have full use of their spectrum bandwidth when the DEAS is not triggered.

The Warning Alert & Response Network (WARN) Act, passed by Congress at the end of 2006, specified that additional funding would be made available from the Department of Commerce to provide equipment to public television stations which would enable the distribution of alerts for

the Commercial Mobile Alert System (CMAS). Under the WARN Act, funding was to be provided soon after the FCC adopted technical relevant technical standards based on recommendations from the Commercial Mobile Service Alert Advisory Committee, of which APTS was a member. In July 2008, the FCC adopted rules requiring stations to install this equipment; however, more than a year later the money remains at the National Telecommunications and Information Administration (NTIA) at the Department of Commerce, and stations continue to lack this equipment.

IPAWS

With a new Congress and Administration there is a need for renewed interest in oversight of CMAS, DEAS, and IPAWS and consideration of new measures to improve the nation's alert and warning capabilities. H.R. 3377, the Disaster Response, Recovery, and Mitigation Enhancement Act of 2009, would create a new Integrated Public Alert and Warning System Modernization Advisory Committee, and would require that public television be represented on the Committee. We support the holistic approach Congress is taking in this area, and we are gratified that public television will be an integral part of the decision-making process as Congress moves forward with the modernization of America's alert and warning capabilities. However, we urge Congress not to permit this effort to hold up the implementation of ongoing projects, including finalizing public television's equipment needs to provide the CMAS capabilities funded under WARN. In particular, we stress that this effort should not delay the distribution of funding that is ready and waiting at NTIA. Public television stations are ready to install this necessary geo-targeting and dynamic allocation equipment that will greatly improve and enhance federal, state, and local alert and warning information, and to take additional steps to assist our nation in preparing for emergencies whether natural or man-made.

Since September 11, 2001, Vegas PBS has invested considerable time, talent and financial resources in creating strong relationships with state and local emergency response agencies. We believe it is essential to put our public telecommunications expertise and capacities to work protecting a potential terrorism target city. To achieve this goal, Vegas PBS has created links to data sources, established relationships with emergency managers, and purchased equipment that

that delivers voice, video, and data at very high speeds. The system allows the highest level of encryption.

Vegas PBS Local DEAS Services

One of the most comprehensive Emergency Response Broadcasting systems in the country was created at Vegas PBS using a grant from the Corporation for Public Broadcasting. Vegas PBS created a data-base that allows rapid response in the event of a school emergency. On servers in our television facility, we have assembled the information that first responders tell us they need in an emergency including:

- Building blueprints;
- Aerial photos of building sites;
- Hazardous material descriptions and locations;
- Utility connections;
- Student, parent, and staff contact information; and
- Special medical considerations for students and staff.

This data is updated daily through a computer “ping” of appropriate data repositories. We have also constructed fiber links to over 400 public buildings and much more extensive data centers operated by local governments.

Our emergency response partnerships include the following:

- Vegas PBS provides the Clark County Office of Emergency Management with a telephone bank, satellite communications, and closed circuit communications to selected sites in the event of an emergency.
- Vegas PBS is designated as the backup Emergency Operations Center for the Clark County School District and provides the school district with all levels of information sharing during an emergency.

- Vegas PBS has fiber optic connectivity with more than 400 public school sites that will be used as immunization centers or temporary shelters in the event of an emergency, as well as donated fiber connections to the county's Emergency Operations Center, the Las Vegas Fire and Metro Police Headquarters, the Regional Transportation Commission, and the Regional Flood Control District.
- Vegas PBS has completed a plan to link wirelessly in 2010 with the EOCs of Clark County, Las Vegas, Henderson and North Las Vegas, plus the Las Vegas Fire and Metro Police Headquarters.
- Vegas PBS has installed over \$500,000 in backup power generators and included earthquake resistant construction design in its new technology campus to insure continuous operations in the event of a civil emergency.
- Vegas PBS and the City of Mesquite Police have agreed to co-locate TV and police transmitters and share a backup power generator on the northbound Interstate Highway evacuation route from Las Vegas.
- Vegas PBS engineers serve on the Clark County Interoperability Communications Committee that assists multi-jurisdictional fire and police departments, the National Guard, the FBI, the Forrest Service and other emergency responders designing a current "work-around" communications plan and a future technology migration route for a common communications system.
- Vegas PBS was asked to serve on the Avian Flu Response Planning Committee with planners from the county health department, Office of Emergency Management, school district and Chamber of Commerce.

- Vegas PBS is working with the Nevada Silver Shield administrator to utilize data-casting as a back-up outlet for “in the field” delivery of Critical Infrastructure/Key Resources (CI/KR) data.

Vegas PBS also continues to expand its wireless broadband emergency response network. Vegas PBS has proposed a partnership with a wireless microwave provider that will provide redundancy for fiber that could be compromised by an earthquake. It will add wireless links to more than 100 sites in the Las Vegas Valley, including many critical public safety sites:

- Four sites - Government Data Centers;
- Three sites - Fire Stations - One municipality;
- Three sites - Police Stations - Two municipalities;
- Two sites - 911 Emergency Dispatch Centers - Two municipalities;
- One site - Traffic Management Center - State government;
- Seven sites – Hospitals or Medical Centers; and
- One site - State Headquarters.

Vegas PBS already has fiber links to the Cox Cable head end. We plan to add in 2010 connections to:

- Eighteen local radio stations (Five locations);
- Seven television stations; and
- Five regional cable head ends.

The new broadcaster links capacity will increase the likelihood that emergency communications to the general public from public safety and commercial news gathering organizations will be available even if one or more broadcasters are off the air.

Conclusion

In conclusion, we believe that public television can play an integral role in alert and warning. While the scope of alert and warning nationwide is currently limited to a Presidential emergency message, we believe that Vegas PBS can serve as a model for how digital television technology can serve the public at the local, state, and regional level as well.

There are two steps that will go a long way toward improving alert and warning, and the ability of public television stations to enhance alert and warning.

A renewed focus on IPAWS by Congress is essential to ensuring the quality and reliability of alert and warning. The legislation offered by this Committee is the right approach and we greatly appreciate being included in the IPAWS Modernization Advisory Committee as we believe that we can offer a unique perspective.

Additionally, we recommend that this Committee request the release the remaining WARN Act funds from NTIA, as our stations need that funding to complete the installation of equipment that will enable greater targeting of messages and better control of bandwidth allocation at each station.

I would like to thank the Committee for allowing me to participate in today's hearing and represent the views of the public television industry. We look forward to continuing to work with the Committee on these important issues going forward.