1150 Parkview Drive
P.O. Box 4875
Jackson, WY 83001-4875
307-733-3664
Fax 732-0455
peward@wyoming.com

October 27, 2004

The Honorable Christopher Cox
U. S. House of Representatives
Chairman, Select Committee on Homeland Security
Washington, DC 20515

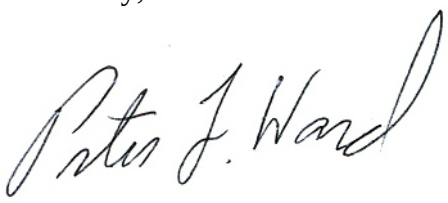
Dear Chairman Cox,

This document is submitted in response to your letter of October 13, 2004 containing several additional questions concerning the oversight hearing entitled "Emergency Warning Systems: Ways to Notify the Public in the New Era of Homeland Security," on Wednesday, September 22, 2004.

Attached are my answers to the questions supplied by the Honorable Bennie Thompson, Subcommittee Ranking Member.

Thank you for the opportunity to appear before the Subcommittee on Emergency Preparedness and Response. Thank you especially for your strong continued interest in improving our public warning capability in America.

Sincerely,



Dr. Peter L. Ward

1. In February of this year, the Partnership for Public Warning assessed the EAS, and made a number of recommendations for improvement. In particular, you recommended that DHS take the lead in creating an effective national public warning capability.

- **What organization in DHS should take the lead on updating or replacing the EAS? Should it remain a "national security" based system, or should it be changed to better address the all- hazards nature of most warnings?**

The national need is to upgrade public warning systems of which the EAS is a part.

Approximately 75% of the public warnings typically issued each year come from the National Weather Service and are for severe weather or flooding. Approximately 15 to 20% relate to accidents or ongoing hazards issued by first responders or emergency managers. The balance includes missing children (AMBER Alerts) and many other hazards such as volcanoes, earthquakes and such. Specific National Security Warnings are likely to be less than 1% of the warnings issued based on current experience.

Coordinating an effective National Warning System involves working with most groups in DHS including:

- Emergency Preparedness & Response (FEMA has the deepest roots in the communities and with the emergency managers and fire services)
- Information Analysis & Infrastructure Protection
- Border & Transportation Security
- Science & Technology
- Coast Guard
- Citizenship & Immigration Services
- Homeland Security Advisory Council
- National Infrastructure Advisory Council

It also involves close interaction with many other agencies involved in warnings or regulating warning services including:

- Federal Communication Commission
- Department of Commerce/NOAA/National Weather Service
- Department of Interior/US Geological Survey
- Department of Agriculture/Forest Service
- Department of Justice
- Department of Transportation
- Department of Health and Human Services/CDC and others
- Nuclear Regulatory Commission

Thus the overall responsibility for warning within DHS should rest with a person or small office within the Office of the Secretary for Homeland Security.

You also need to ask the question: What is the appropriate role of the Federal government in national public warning?

1) The primary responsibility for public warning lies with county, city and tribal government and nearly all public warnings issued are focused on very specific localities. Thus the primary role of the Federal government is to support State and local government with technical information from organizations such as the National Weather Service and with

intelligence information from law enforcement and intelligence agencies. The Federal government may issue warnings, but it is on behalf of local government where time is of the essence.

2) The other primary role of the Federal government in public warning is to assure that nationally standardized public warning systems are available nationwide, that they are effective, and that they are properly utilized.

These issues are addressed more fully in *A National Strategy for Integrated Public Warning Policy and Capability* published by the Partnership for Public Warning on May 16, 2003 (ppw.us/ppw/docs/nationalstrategyfinal.pdf).

It is also important to realize that most infrastructure for warning the public is and will be privately owned and operated. Thus the Federal government needs to work closely not only with local government but also with industry. Development of an effective public warning system requires a public/private partnership. A top down approach from Washington has not worked effectively in the past. The Federal government needs to provide leadership by bringing the key stakeholders together. Thus within DHS, it seems very appropriate to establish a National Public Warning Advisory Committee.

As I explained in my testimony, a public/private partnership among law enforcement, emergency managers, first responders, the nations broadcasters and industry has already implemented the AMBER Alert Web Portal warning system in two States and it will soon to be implemented in 12 more States. The National Association of State Chief Information Officers (NASCIO) has proposed to DHS to extend this approach to all-hazard warning through a pilot project in the National Capitol Region and Washington State over the next 6 months. I believe that such a partnership working closely with DHS and other Federal agencies has the best chance for significantly improving public warning capability within the near future. As you know, Congressman Shadegg has introduced an amendment included in the House version of the 9/11 bill supporting this approach.

- **What roles should the FCC and the National Weather Service play if DHS is the lead agency for the EAS and other warning systems?**

The FCC carries the big stick with respect to the communication industries and infrastructure. They need to be involved in encouraging and potentially regulating all types of warning capabilities, not just EAS.

The National Weather Service issues most warnings and has an excellent operational capability throughout the United States. They need to play a major role and perhaps should assign an employee to work with the warning coordinator or Office within DHS.

- **Do you believe legislation is required to clarify responsibility and accountability for warnings? What would such legislation do?**

The primary reason for the poor warning systems existing today in America is that no one agency has been assigned legislated responsibility or has assumed it. While the FCC, FEMA, and NOAA/NWS signed a Memorandum of Understanding in 1981 for operation of EBS (now EAS), all three agencies have reduced their involvement and funding over the years citing their legislative mandates and priorities. Thus legislation is required to assign and clarify responsibilities. The content of the legislation needs to be discussed in detail but should include:

- A statement that an integrated public warning capability is a national priority
- Assign lead responsibility to the Secretary DHS for ensuring that national public warning systems and procedures exist, are effective, and are properly utilized to distribute warnings and information for all types of hazards from all official warning providers, to all potential warning disseminators, and ultimately to all people directly at risk.
- A statement that development of an effective public warning system in America depends on a public/private partnership between Federal, State, and local government and industry.
- Possibly establish a small office within the Secretary's office or leave this for the Secretary to decide
- Possibly establish a national advisory committee that would involve the many stakeholders in warning systems
- Discuss the need to coordinate with other Federal agencies and what their roles might be
- Describe what the relationship of the Federal warning program should be in assisting the States, counties, and cities who have the primary responsibility for public warning
- Perhaps specify some characteristics of the national warning capability
- Provide appropriate funding for integrating public warning policy and capability

The pilot project proposed by NASCIO will provide an excellent test bed for refining such legislation.

2. The February report also recommended that the Administration provide the necessary funding and resources to support and operate the EAS system.

- **What is the appropriate level of funding to adequately maintain the current EAS system, and how much funding would be required to significantly upgrade the system to reach multiple communications modes and to be regularly utilized for purposes other than "Presidential alerts?"**

Proper maintenance and operation of EAS requires restoring the roles that FCC and FEMA played in training locals and working with them to develop warning plans. A minimal effort might involve approximately $1 million per year and several times that could be spent wisely.

To upgrade public warning capability significantly within the United States, the first step is to establish a digital national warning infrastructure as outlined in my testimony. Those involved have proposed to DHS (FEMA, Science and Technology, and the DHS CIO) through the National Association of State Chief Information Officers (NASCIO) to carry out a pilot project in the National Capitol Region and Washington State within 6 months to demonstrate how such an infrastructure would work and to evaluate issues that would need to be resolved to expand nationally. That proposal requests $1.65 million. Expansion to a national capability can probably be done for approximately $10 million. Once this national warning infrastructure exists, warning capability will be significantly improved. The next step is to evaluate ways to improve specific technologies for delivering warnings directly to the people at risk. The issue becomes how much the government should fund versus what can be done through a public/private partnership and in the competitive marketplace. With clear national standards and a place for industry to receive official warnings for delivery, warning capability could be built into a wide variety of electronics as a way to sell new products. The government could spend some millions of dollars to stimulate these activities or some hundreds of millions to pay for them all.

3. Based on your work, are there any particular technologies that would be best suited to improving the nation's warning systems? Rep. Meek, a member of the Full Committee, has introduced legislation that would implement a landline-based interactive notification system that would convey national, regional, and local emergency messages via the public switched telephone network to wire-line telephone subscribers located in the specific geographic areas affected by emergencies. Would this type of system be more effective than the current EAS?

An effective public warning system needs to utilize all available technologies:

- The EAS reaches only people listening to the radio or watching television broadcast from ground based transmitters. Few people listen or watch many hours per day. More than 20% receive television via satellite and satellite radio is increasing in popularity. For EAS to work via satellite there needs to be intelligence built into the receiver to relay only warnings that apply to that specific location. Receivers could be built that turn themselves on upon receipt of a warning.
- Most homes and offices have wire-line telephones and warning by telephone would reach a large number of people during the evening and night at home and during the day at work. But it would not reach people who are out and about. Many modern telephone handsets do not work during a power failure. Equipment similar to Caller ID devices could receive, display, and sound an alarm for a warning without answering the phone. These could be built into future telephones.
- 170 million Americans now have cellular telephone service that may be the best way to reach them during the day. Many have their handsets switched off at night. Cellular telephones receive their signals from local transmitters so broadcasting an alert to all cell phones within receiving distance of a local transmitter is one of the most promising technologies available currently for warning just the people at risk. While this technology exists for most types of cell phones, industry has not been supportive of implementation.
- Internet is revolutionizing the way we share information and programs are available to not only issue email to a specific region but to push a warning directly onto your screen and sound an alarm. This technology is most effective for the 50% of Internet users in the US who are connected to broadband Internet service typically 24 hours a day. Once a warning has been issued, people often want more information. Internet and an 800 number service are excellent sources.
- NOAA Weather Radio (NWR) is a government sponsored service with special receivers owned by up to 11% of the population. Many of these receivers can turn themselves on to broadcast a warning and one television manufacturer uses the NWR signal to turn televisions on to broadcast a warning. Such technology to turn on and sound a warning can easily be built into all radio and television receivers when there are widely accepted national standards.
- Numerous other devices typically carried by people could provide warnings including pagers, pocket computers, digital wrist watches, and portable music players.
- Automobile navigation systems and On-Star type systems could relay warnings.
- Sirens and digital signs are two of the few ways to reach people who are outside or at places of public gatherings and not carrying some type of warning receiver.

All of these types of technologies and many more need to be integrated into an effective national warning system using the approach described in my testimony. No one system will be sufficiently effective.

4. We can likely all agree that in times of national crisis, reliable and timely information is crucial. Most Americans presently get their emergency information from the antiquated Emergency Broadcast System. But in the event of a local or regional power failure, these information sources are mostly unavailable. We should have the capability to use a quick, accurate and versatile official communications alternative that can focus in on specific neighborhoods or cities, or be expanded if necessary to whole regions or the entire country. Because of this need, I introduced HR 2250, referred to as the READICALL bill. My bill requires the Secretary of Homeland Security to use existing resources--just like the present emergency broadcast system uses existing resources--to create a fast, efficient and reliable emergency communication system based on the nation's public telephone system, including cellular phones, on a 24 hour/365 days-a-year basis. The system could only be activated by order of the Secretary of Homeland Security, and only to keep the public informed of imminent or current hazardous events or on measures that should be taken to alleviate or minimize danger. The aim of this legislation is to keep our citizens informed in the terrible event that there is a national, regional or local terrorist emergency and present sources of communication are not simply available. Minutes can make a huge difference in an attack or disaster; accurate information pin-pointed to the affected area can make all the difference.

- **What are your initial thoughts on such a system?**

In theory this seems like an excellent approach. In practice there are some serious issues:

The primary problem is that the number of telephone calls that a local telephone switch can handle per minute is severely limited. Telephone systems are built to handle typical peak traffic loads but can become overwhelmed even on Mother's Day and especially by computers trying to dial every number in a region. It is hard to get specific numbers of calls that could be dialed per minute because industry is concerned about their liability if the phone system crashes. One developer of telephone technologies claims they have a new approach that they tested using a modern switch in a major city and were able to dial 68,000 numbers every 30 seconds and to deliver a recorded 20 second message. Others have yet to be convinced that such rates are achievable. It will take significant testing to establish which techniques will work best and what rates they could achieve using the variety of switches currently installed within the US.

A second issue is that most people are not near their wired telephone for large parts of the day. A third issue relates to people at work and how calls would be routed to large offices. A fourth issue is that most modern telephone handsets require power and do not work during major disasters involving power failures. A fifth issue is that phone systems are typically overloaded as a major disaster unfolds, which is why broadcast techniques tend to reach more people without overloading the infrastructure.

Research and testing of this approach should be pursued. No one system is the ultimate answer to public warning as discussed above, so we need to pick a few good ones and push those forward.

5. What information should the public receive in a warning message? How tailored or specific should warning messages be in order to be effective? Do the current warning systems provide enough information for the public to take appropriate action in response to a disaster, emergency or act of terrorism?

Public warning delivered with little choice by the recipient, should be limited to hazards that are life threatening or of major financial impact. People should have the opportunity to request warnings for less significant events.

The key characteristics of a public warning are:

- A warning is a communication that directs attention to new information about a hazard or threat for the purpose of causing focused action that reduces harm.
- A warning may alert people to an imminent hazard or may notify them about a hazardous event that is in progress or just happened.
- A warning should communicate what, where, when, and how severe the hazard is, how likely the hazard is to occur, and what action is appropriate.
- A warning needs to communicate clearly and succinctly the risk people face, to motivate them to take specific action, and to provide guidance as to what that action should be.
- The success of a warning is measured by the actions people take.
- Public warning is a public good that is generally delivered through privately-owned communication networks and devices.
- A warning is basically a terse “heads up” alert. A warning ideally should specify places to get more information.

Current warning systems generally provide sufficient information but there is room for improvement. The Homeland Security Advisory System is not a warning system because it does not provide specific, actionable information.