

Independent Report on the Mid-February 2007 Winter Storm Response for the Commonwealth of Pennsylvania



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Acknowledgements and Note on Methodology

At the outset, we want to emphasize our recognition of the extraordinary efforts of the thousands of Commonwealth employees from the Pennsylvania Emergency Management Agency, the Pennsylvania Department of Transportation, the Pennsylvania State Police, the Pennsylvania National Guard, municipal, borough, township and county governments as well as citizens who volunteered. They worked hard, often in hazardous conditions, to clear the roads and aid those stranded, and performed tens of thousands of actions correctly. We want to give special recognition to those individual members of the Pennsylvania National Guard who were deployed in this effort just before being deployed to, or just returning from, duty in Iraq and Afghanistan.

When asked to conduct reviews such as this, James Lee Witt Associates has found it most efficient, effective and helpful for the client, in this case the Commonwealth of Pennsylvania and its citizens, to focus on specific areas of inquiry that appear to offer the greatest potential for improving performance going forward. This methodology has the unfortunate consequence of emphasizing the negative, but the reader should be aware that JLWA is mindful of the Commonwealth's positive actions as well.

Executive Summary

BACKGROUND

A major winter storm hit the Northeast United States on February 13 to 14, 2007. Unlike the rest of the Northeast, Pennsylvania was caught in the middle of the storm between a northerly snow front and southerly ice and freezing rain. The results were disastrous.

Snow and ice built up on primary and secondary roads in Pennsylvania. Tractor-trailers jackknifed and blocked the interstates. Drivers and passengers in cars and trucks, including some public safety personnel, were stuck in the resulting backups. In some cases, traffic crawled as little as one mile an hour. For others stranded on the road, traffic stood still all night.

All told, approximately 150 miles of interstate highways were blocked. Although the exact vehicle and passenger counts are not available, at least hundreds of motorists were stranded on the interstates for extensive periods of time, some for more than 20 hours. The situation and road conditions were so bad that PennDOT officially closed parts of Interstates 78, 80 and 81 on February 15, impairing travel and commerce. Once the ice and abandoned vehicles were removed, the roads were reopened on February 17.

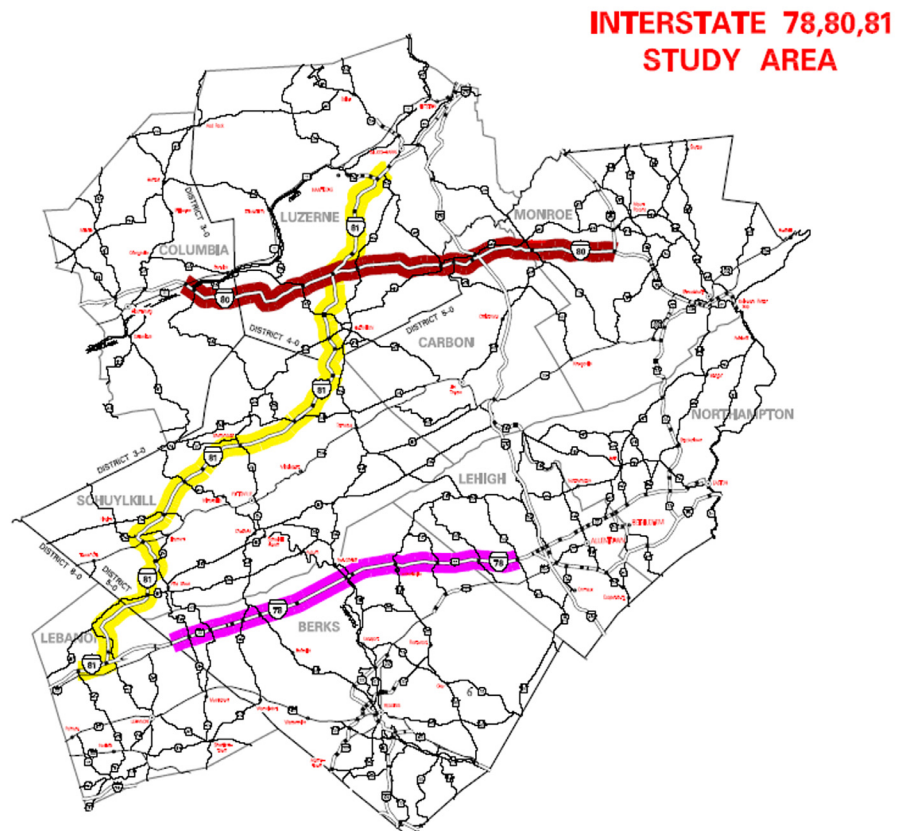
On Friday, February 16, in the midst of the recovery process to reopen the three major interstates, the Governor held a press conference and expressed his disappointment in the performance of state government. In what became national news, he apologized, admitted a “total breakdown in communications” and called for an independent investigation by James Lee Witt

Associates, a Washington D.C.-based firm specializing in emergency management, led by the former Director of the Federal Emergency Management Agency.

This report is the result of that investigation conducted by a team of experts with decades of experience in highway snow operations, law enforcement, incident command, military operations, emergency management and communications, and state government administration.

SUMMARY OF FINDINGS

This event was not unexpected. The National Weather Service and others forecasted a major winter storm for the region. State agencies started preparing on Sunday, February 11. The Office of the Governor sent out a press release on February 13 warning citizens to prepare and noting State preparation actions.



Source: Pennsylvania Department of Transportation

Pennsylvania Department of Transportation

Factors present at the Pennsylvania Department of Transportation (PennDOT) in the weeks before the Winter Storm contributed to the agency's inability to keep the interstates open.

Specifically:

- PennDOT did not have enough operators to man available plows for more than one 12-hour operational period in Berks County and was in violation of staffing guidance. There appears to be a lack of oversight at the district level concerning the review and approval of local staffing practices.
- PennDOT does not subscribe to contracted weather forecasting services, leaving that decision to district management. As a result, District 4-0 had access to more detailed weather forecasts than District 5-0, thereby hindering PennDOT's overall preparedness and response.
- Some PennDOT officials did not have previous experience facing similar winter storms. This was the first major winter storm for the Deputy Secretary for Operations. Managers at the district and county levels in District 5-0 also did not have experience with winter storms. The entire PennDOT Berks County management team had been in office less than a month after the former team's retirement on January 18, 2007.
- PennDOT's sophisticated technology network, designed to enhance awareness of road and traffic conditions, did not function. One of these systems, the Roadway Weather Information System, has not been maintained. The System currently has 55 sensor sites inoperable out of a total of 74 sites statewide. This technology could have dramatically improved the situational awareness of PennDOT management at all levels during this event.

- Customer information systems were not a high priority for PennDOT. Some electronic highway information signs were not operational or updated during the event. The message on the PennDOT highway information phone line was not updated to reflect current conditions. Many times, the system had not been updated for four hours during the storm and reverted to a default message that indicated no problems on the highway. The PennDOT website provided inaccurate and outdated information. The Highway Advisory Radio system in District 5-0 was inoperable before and during the storm.

Pennsylvania State Police

The Pennsylvania State Police had taken steps to prepare for the storm; however, there was no coordinated response to the storm until early evening on February 14. In many instances information did not flow from units on the ground. The individual incidents were managed by personnel on the scene, and no overall incident command existed at the regional or State levels. The State Police Commissioner first learned of problems on I-78 at 5:08 PM on February 14 from a fellow Cabinet member who had been stuck on the highway since approximately 2:00 PM. Until that point, the State Police did not have an appropriate level of situational awareness, which prevented the agency from having a common operational picture. This, in turn, limited the State Police's ability to manage the event over the entire affected areas.

Pennsylvania Emergency Management Agency

Although the event was anticipated, PEMA's overall level of emergency preparedness was not what should be expected. As an example, even though an examination of weather forecasts

and road conditions led to a decision to close state government operations for non-essential personnel at 6:00 AM on February 14, the State Emergency Operations Center's activation level was not raised to Level 3, which required the presence of agency liaisons, until nearly 14 hours later.

Current PEMA policy is to escalate the State Emergency Operations Center activation level only when the agency receives calls for assistance. This policy contributed to the lack of information from PennDOT and the State Police.

PEMA did not fully implement existing procedures, including those required by the U.S. Department of Homeland Security's National Incident Management System, to manage this event.

PEMA did not communicate the seriousness of the events to the Governor and his office in a timely fashion. The Governor learned of the problems from stranded individuals and their relatives, who called his office in the early evening of February 14.

Pennsylvania National Guard

The National Guard had limited quantities of food and water stored in their vehicles, and during the first mission to evacuate motorists, Guardsmen provided these items to motorists when requested. After receiving the mission assignment from PEMA to deliver food and water, some distribution began at Hamburg at 9:30 AM on the morning of February 15. Baby food was first distributed to motorists on I-78 around 10:10 AM. Mass distribution of food and water to those stranded on I-78 began around noon on February 15. According to National Guard leadership, initial distribution could have occurred as early as 3:00 AM that morning if so directed by PEMA.

Overall

The Commonwealth government has not fully adopted emergency management as a core principal and cultural priority.



Source: Pennsylvania National Guard

There is a remarkable lack of awareness and understanding of Pennsylvania's emergency management system, including the emergency alert levels, even amongst senior agency leaders.

The Winter Storm was not the first sign of issues with emergency management in Pennsylvania. After-action reports on previous emergencies outline many of the ongoing problems with emergency management in the Commonwealth. Yet, due in great part to extraordinary efforts by individuals in response to previous events, these problems had not surfaced to the extent that they did during the Winter Storm.

Although some limited reviews have been initiated, Pennsylvania has not updated its emergency management statutes since the events of September 11, 2001 and Hurricane Katrina in 2005.

SUMMARY OF RECOMMENDATIONS

The following report offers several recommendations. In summary:

- The Governor should ensure that emergency preparedness and emergency management is a higher priority throughout Pennsylvania State government.

- We have learned through interviews with current and former officials that roles and responsibilities in an emergency are too ambiguous. To address this issue, the Governor should immediately direct PEMA to clarify, within the State Emergency Operation Plan, the conditions under which PEMA provides emergency direction and control of State and local emergency operations, in accordance with Title 35. This clarification should consider state agencies' respective missions and authorities; command and control responsibilities for specific events; coordination and communications responsibilities; and state agency responsibilities for keeping the Governor's office informed.
- The Governor should ensure that the Commonwealth aggressively adopts and implements the National Incident Management System in both word and practice.
- The Governor should establish a Joint Information Center at the State Emergency Operations Center. This center should coordinate messages to the media and the public in an emergency. The center would gather, verify, and disseminate information during an incident through multiple channels including the print and electronic media, websites, highway radio and electronic sign systems.
- The Governor should appoint a team of State and local officials to develop written traffic diversion plans along primary interstate and state highways. The team should be led by the Secretary of Transportation. The traffic diversion plans should be a part of a statewide evacuation plan.
- The Governor should order the State Police Commissioner to develop immediately a written protocol to formalize the notification process and ensure that communication is conducted vertically and horizontally providing optimum situational awareness and a common operational picture. The protocol should also assure that weather emergencies should have the same communications priority as other high profile crime events within the State Police.
- The Governor should direct the PennDOT Secretary to immediately implement management protocols to assure the agency's ability to maintain and operate the portions of the interstate highway system within Pennsylvania.
- The PennDOT Secretary should revise its customer communication goals and objectives, especially for emergencies, and these objectives should be incorporated into performance measurement systems at all levels. PennDOT should provide quarterly reports to the Governor on progress achieved toward achieving these goals.
- The PennDOT Secretary should immediately direct the repair of existing systems and technology designed to manage highway operations and further enhance situational awareness in Harrisburg and at the district and county levels with new technological and operational solutions.
- The time to discover weaknesses in emergency response systems is long before those systems are needed during a major event. The Commonwealth should develop and implement appropriate ongoing training and exercises to test systems and individuals in accordance with national best practices, as taught at the National Emergency Training Center located in Emmitsburg, Maryland. Following the exercises, lessons learned from those exercises should be documented and translated into changes in procedures and policies.
- Finally, the Governor should call for a thorough examination of preparedness and emergency management in the State to be conducted by a team of key leaders at the State, local and federal levels of government as well as leaders from the private, university and not-for-profit sectors, including those who manage the State's critical infrastructure. This effort should be jointly led by State and local officials appointed by the Governor. This team should utilize technical

subject matter experts as necessary. This review should include a detailed analysis of emergency management structure; identification of statutes to be changed to reflect current challenges; and changes in policy, protocols and procedures. It should also include a review of the medical system's preparedness, efforts to ensure the protection of critical infrastructure and the protection of those citizens requiring unique assistance during a major emergency. The State has a responsibility to ensure that the citizens of Pennsylvania are prepared for emergencies as well and should consider a comprehensive citizen preparedness educational campaign.

Background on Emergency Management in Pennsylvania and Relevant Events Prior to the Winter Storm

It is important to place key components of the Commonwealth's emergency management history in perspective. This section highlights long-term and recent events gleaned from the investigation and management decisions and policies in place long before February 2007 that contributed to the response to this event. Significant findings are bolded.

PENNSYLVANIA EMERGENCY MANAGEMENT AGENCY

PEMA was founded in the 1950s and Title 35 of the Code of Pennsylvania outlines its statutory powers and duties, which include, but are not limited to:

- Providing emergency direction and control of Commonwealth and local emergency operations;
- Preparing and maintaining the Pennsylvania Emergency Management Plan;
- Establishing and equipping the State Emergency Operations Center, a physical location to coordinate multi-agency emergency response;
- Providing technical advice and assistance to Commonwealth agencies and political subdivisions in the preparation of emergency management plans; and
- Providing warning and emergency information and establishing and operating training programs and programs of public information.

Many states have updated their emergency management statutes since the events of September 11, 2001 and Hurricane Katrina. **Pennsylvania has not updated Title 35 since 1989.** The Commonwealth established a working group in recent years to update the statute, but their work is still in progress.

The agency also coordinates the Commonwealth's emergency communication systems, sharing informa-

tion and weather emergency notification among the National Weather Service, local emergency management coordinators, State Police, local police departments, private relief associations and other appropriate organizations.

The State's emergency management culture was influenced by the accident at the Three Mile Island nuclear power plant near Harrisburg, 28 years ago this month. When asked about emergency preparedness exercises, many of those interviewed first mentioned the emphasis on nuclear hazard exercises. Most of the trainings and exercises have been performed as part of preparedness for nuclear power plant accidents.

PEMA has coordinated several major emergency events in the past few years. Traditionally, After-Action Reports are completed to document lessons learned and best practices following recovery from an emergency event. Several deficiencies that surfaced in the response to the mid-February Winter Storms have been cited in these reports.

Prior to the Winter Storm, the last major emergency the agency responded to was the Floods in June 2006. **The After-Action Report for the Floods cites numerous areas that required improvement, which again surfaced as major problems in the agency's response to the Winter Storm,** including a lack of:

- National Incident Management System/Incident Command System implementation
- Training on responsibilities
- Standardized reports, forms and reporting procedures
- Access to the necessary information technology resources in the State

- Emergency Operations Center
- Communications between Command Staff and Incident Command System Sections
- A comprehensive resource management strategy
- Understanding of PEMA's role during disasters

PENNSYLVANIA EMERGENCY MANAGEMENT COUNCIL

Title 35 also defines the role and responsibilities of the Pennsylvania Emergency Management Council, which has been around for more than 30 years. The Council has an administrative, not an advisory, role. There are 17 voting members and it is chaired by a member. Traditionally the Lt. Governor has been the Chair, although the current Lt. Governor does not have an operational role in emergency management.

The Council has not met in regular session for the past three years. Pennsylvania has been hit by enough emergencies that the Council has met its statutory requirements (three meetings per year) by convening in the wake of the Governor's disaster declarations.

OFFICE OF THE GOVERNOR AND LT. GOVERNOR

Under Title 35, the Governor is "responsible for meeting the dangers to this Commonwealth and people presented by disasters." The Governor may issue, amend and rescind executive orders, proclamations and regulations which shall have the force and effect of law. The Governor can also suspend State regulatory provisions that might hinder response, direct and compel evacuation, and limit ingress and egress to and from a disaster area.

The role and relationship between the Governor's Office, Lt. Governor's Office and PEMA has varied in recent years. During the Ridge Administration, Lt. Governor Schweiker and his staff took leading operational roles during emergencies such as the 1996 Flood of the Susquehanna and other rivers. During the Schweiker Administration, his staff continued to take leading operation role during emergencies.

Upon election in 2003, Governor Rendell appointed Governor Schweiker's lead emergency management assistant as his first PEMA Director.

The Governor's first Deputy Chief of Staff served for a brief period as the Governor's second PEMA director until 2005. The current Deputy Chief of Staff's responsibilities include oversight of several public safety and law enforcement agencies including Corrections, State Police, parole issues as well as emergency management.

Finally, an incident last fall has proven pertinent to the current investigation. Last September, while in Pittsburgh, a television reporter asked the Governor what was being done about a landslide in the Pittsburgh area that had closed a local road. The Governor had not been informed about the landslide and the state's response efforts. Subsequently, the Governor's Deputy Chief of Staff sent a memorandum on September 21, 2006, to all Cabinet secretaries emphasizing the importance of emergency management and response, the need to formalize each agency's relationship with PEMA, and the importance of communications during major events. Each agency was to respond with detailed plans by October 30, 2006, and a majority of them submitted their response by the deadline.

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION

PennDOT has the responsibility for all transportation issues in the Commonwealth, including over 40,000 miles of State roads and 25,000 bridges. PennDOT is one of the largest employers in the state, with approximately 11,000 employees and a budget of around \$3.8 billion. PennDOT's mission is "to provide services and a safe intermodal transportation system that attracts businesses and residents and stimulates Pennsylvania's economy."

During emergencies, when requested by PEMA, PennDOT activates its Traffic Control Center, and may send a representative to the State or local Emergency Operations Center. **However, PennDOT liaisons at the Emergency Operations Centers do not have full access to information at the Traffic Control Center.** For example, the liaison to the

State Emergency Operations Center relies on Traffic Control Center staff to translate critical data, including maps, over the telephone.

Interviews revealed that many PennDOT managers felt that emergency operations are the responsibility of PEMA, not PennDOT. In the course of this review, it was clear that PennDOT does not fully understand its role at PEMA, nor has PEMA explained its expectations of PennDOT during an emergency. **In neither the agency's mission nor its Strategic Agenda does it mention emergency preparedness or response.**

An important dynamic for understanding the agency's response to the Winter Storm is that PennDOT's operations are decentralized among its State, district and local offices. The Deputy Secretary for Highway Operations has responsibility for more than 10,000 employees in 11 districts statewide. As necessitated by this large span of control, the Deputy Secretary has delegated much of the managerial oversight to the 11 District Executives who are responsible for the day-to-day operations in the districts. **PennDOT develops guidance documents for the districts' maintenance operations centrally at PennDOT Headquarters, but districts have much latitude in interpreting and executing the agency's mission. Additionally, media communications are decentralized, with each district having a Community Relations Coordinator assigned to the District Executive.** Media Coordinators have the ability to issue travel advisories and press releases directly from the district.

In the past two months, PennDOT has experienced personnel turnover that affected its ability to respond to the mid-February Winter Storms. PennDOT lost its top three managers in Berks County on January 19 of this year. The current Acting Manager has little snow-fighting experience and inherited most of the practices and procedures of the previous Manager. This loss of key management personnel in the heart of the winter season hampered PennDOT's ability to react and adjust to this complex storm. Seasoned managers had their hands full as they scrambled to redirect assets to PennDOT's top priority roads in the interstate system.

Unseasoned managers were at a distinct disadvantage in reacting to the changing and complex weather pattern. In addition, the Deputy Secretary for Operations stated that, even though he is a career PennDOT employee, this was the first major winter storm he has encountered in his current position.

PENNSYLVANIA STATE POLICE

The State Police is a full-service law enforcement agency that provides general policing and investigative and surface transportation law enforcement. It is responsible for patrolling 85 percent of the land of the Commonwealth of Pennsylvania. State Police has approximately 5,700 employees, of which 4,275 are enlisted personnel. The agency is divided into five Area Commands (each managed by a Major), which are divided into Troops (managed by a Captain), which are likewise divided into Stations (managed by a Sergeant). The Area Commands affected by this Winter Storm were Area I Command (Troops H, J, L & T), Area II Command (Troops C, F, P & R) and Area V Command (Troops N, M & K), although not all troops within these area commands were impacted.

State Police's emergency management responsibilities are described in the State Emergency Operations Plan and include providing:

- Assistance to injured, trapped, or incapacitated persons;
- An initial assessment of the nature of the incident, extent or damage, number of injured persons, and number of fatalities;
- Emergency communications to the disaster scene;
- Traffic and access control at essential locations; and
- Other assistance, as directed by appropriate authority.

Emergency Plans for the State mandate that State Police "collect[s] and report[s] to PEMA any

National Incident Management System (NIMS)

NIMS is a system mandated by Homeland Security Presidential Directive (HSPD) 5 that provides a consistent approach for federal, state, local and nongovernmental organizations to work together to prepare for, respond to, and recover from all types of emergencies. To ensure coordination and compatibility, the NIMS includes a core set of concepts, principles, and terminology. HSPD-5 identifies these as the Incident Command System; multiagency coordination systems; training; identification and management of resources; qualification and certification; and the collection, tracking, and reporting of incident information and incident resources. If implemented Statewide, NIMS would have provided the command structure necessary to respond to the Winter Storm.

For more information on NIMS, see www.fema.gov/pdf/regii/hspd_5.pdf or www.fema.gov/emergency/nims/index.shtm.

information on major or significant disaster effects and problems that may lead to a major emergency or danger.” State plans also give State Police the responsibility for enforcing restrictions on travel; collecting and reporting information to PEMA on major or significant disaster effects and problems, including loss of electric power and highway traffic disruption; maintaining law and order; and providing personnel to operate access control points to prevent unauthorized reentry into evacuated areas.

PENNSYLVANIA NATIONAL GUARD

The Pennsylvania National Guard is an emergency response arm of the Commonwealth and can be ordered into service by the Governor after he declares a statewide disaster emergency. The National Guard is part of the Department of Military and Veterans Affairs and is led by the Adjutant General. Its headquarters is located at Fort Indiantown Gap.

State active duty operations are paid for by the State and may range from such routine operations as providing security following a minor flood to massive operations such as the response to a hurricane.

The Pennsylvania National Guard, like National Guards across the United States, is governed by US Code Title 32, Chapter 9, Sections 902 and 907, and it is further restricted by the Commonwealth’s code.

The Adjutant General has the authority to contact the Governor when she believes it is necessary and appropriate. The Pennsylvania National Guard maintains a catalog of contingency plans that can be fully implemented within 48 hours of notice, with a four-hour minimum response time.

THE NATIONAL INCIDENT MANAGEMENT SYSTEM IN PENNSYLVANIA

In recent years, the US Department of Homeland Security (DHS) and the President of the US have mandated the adoption of the National Incident Management System (NIMS) as part of the National Response Plan. NIMS is based on the concept of the Incident Command System which has become widely recognized as best practice in the field of emergency management.

The President’s directive has added to State agencies’ responsibilities to prepare for emergencies, as compliance is a requirement to receive federal funding. PEMA, other State agencies, and local authorities are all working on full NIMS implementation, although staff in some interviews indicated that the State’s progress has advanced more slowly than they would like. Employees at all levels of State government are taking Incident Command System and NIMS courses, but for example, State Police general and command staff have not taken NIMS/Incident Command System training courses at the 300/400 levels.

To fully comply with NIMS, State and local agencies must do more than take classroom and

on-line courses or adopt the Incident Command System. For example, Incident Command System does not solve interagency and inter-jurisdictional communications and coordination issues. Such issues are solved through ongoing exercises, relationship-building activities, demonstrated leadership, and commitment of resources.

While the State's efforts to adopt NIMS is commendable, Pennsylvania has not directed adequate resources toward implementing NIMS statewide, according to the target deadlines set by DHS.

JLWA has identified a lack of a statewide vision and commitment to NIMS implementation. A number of persons interviewed had taken NIMS and Incident Command System courses to comply with federal regulations, but had divergent opinions on how the practices would integrate into their emergency management roles.

The lack of NIMS implementation impeded operations during the mid-February Winter Storm. **No State agency had a standardized documentation process during the event, as required by NIMS. From the start of the incident, PennDOT, PEMA, State Police, and the National Guard failed to implement a formal Incident Command System structure to manage the event.**

NIMS compliance needs to be a statewide partnership that includes local, State and federal agencies. The Commonwealth needs clear guidance and strong leadership to develop the vision, tasks and objectives.

It also requires feedback and follow-up to keep NIMS compliance up-to-date and consistent. This should be a collective effort, involving all of the partners and led by PEMA as the coordinating agency. As such, PEMA needs the resources to implement such a plan.

The Incident Command System

First created in 1970, Incident Command System is a management system that is organized into the following functions: planning, finance and administration, operations, and logistics. Incident Command System. These functions are led by an Incident Commander. Multiple agencies can be integrated into a common organization using the Incident Command System process. In recent years, Incident Command System has been integrated into NIMS.

Summary of Events

The following summary details the actions taken by each of the major State agencies during the Winter Storm. It has been arranged by date, beginning with February 11, with special emphasis on the two days when most of the response activities occurred, February 14 and 15. Significant events are italicized.

February 11, 2007

PENNSYLVANIA EMERGENCY MANAGEMENT AGENCY

PEMA receives its weather information from five National Weather Service offices that cover the State (Pittsburgh, State College, Binghamton, Mount Holly and Cleveland). *On Sunday February 11, National Weather Service-Mount Holly first reported a pending storm that could affect Pennsylvania on Tuesday and Wednesday.* In response to this bulletin, the PEMA Deputy Director spoke with the Director, who was at the National Emergency Management Association (NEMA) conference in Virginia, and with the Emergency Operations Center Lead Supervisor, about the approaching storm. In addition, PEMA headquarters set up conference calls with county emergency managers in the three PEMA Areas for Monday, February 12.

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION

PennDOT received word of the incoming storm through the National Weather Service Special Weather Statement on February 11. In response to the forecast, PennDOT performed their standard pre-storm application of salt brine to State roadways.

PENNSYLVANIA STATE POLICE

The State Police use the National Weather Service forecasts provided by PEMA for its weather updates. This information is transmitted via the Commonwealth Law Enforcement Assistance Network (CLEAN), a statewide communications system that broadcasts information to law enforcement entities. CLEAN is part of a nationwide system and transmits messages including administration notices and emergency alerts. As such, the State Police had accessed the same weather advisories as PEMA on February 11.

February 12, 2007

PENNSYLVANIA EMERGENCY MANAGEMENT AGENCY

On Monday, February 12 at 6:50 AM, National Weather Service-Binghamton issued a Winter Storm Watch for Lackawanna and Luzerne counties. At 9:00 that morning, PEMA held a conference call to discuss the forecast with its Western Area. At 10:00 and 11:00 AM, PEMA held a similar call with its Central and Eastern offices, respectively. On each call the National Weather Service briefed PEMA staff on the impending forecasts. Emergency Preparedness Liaison Officers (Liaisons) participated on the calls. A summary of the calls went to all counties, area offices and Liaisons. Liaisons are staff from various State agencies who have been identified as the points-of-contact for PEMA. The Liaisons' roles and responsibilities are outlined in the September 21, 2006 memo from the Governor's Deputy Chief of Staff to all Cabinet secretaries.

Projections for the storm worsened and by that afternoon the National Weather Service issued two updates: a winter storm warning for Central Pennsylvania (at 2:47 PM) and an urgent weather message for widespread winter weather for the same area (at 3:22 PM).

On February 12, the PEMA Director was at the NEMA conference. While there, the Director gave the National Guard advance warning of an impending snow event. The PEMA Deputy Director was attending a class at the Pennsylvania State Fire Academy. He cancelled his participation the following day to go to the State Emergency Operations Center. PEMA's Eastern Area Director was planning a training on February 13 and 14 for the Eastern Counties, but due to the impending weather, he postponed the training as well.

The PEMA Eastern Area Office, through its headquarters in Hamburg, began coordinating with the Eastern counties and volunteer organizations to prepare for the impending storm. The Director reported that they discussed weather forecasts, resource status, communications plans, and staffing for 24-hour operations.

At 4:01 PM, less than 45 minutes after the two weather updates, the Office of Administration scheduled a conference call to discuss the possibility of closing State government offices on February 13. As this occurred, PEMA staff continued to monitor the weather situation.

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION

PennDOT's Bureau of Maintenance and Operations reports that it was alerted at 11:00 AM on February 12 that a Winter Storm Watch was in effect from the afternoon of February 13 through the night of February 14. The advisory described a developing winter storm that would spread snow into Pennsylvania during the day on February 13 and would likely change into sleet south of I-80 that night and through the early morning on February 14. The advisory also stated that a period of freezing rain was possible in the lower Susquehanna Valley on February 14 and that the precipitation was likely to remain as snow for areas north of I-80. As a result, the Winter Storm Watch predicted between six and twelve inches of snow for Northern

Pennsylvania with lesser amounts expected for Southern parts of the Commonwealth. At 12:54 PM on February 12, PennDOT's Bureau of Maintenance and Operations issued a Hazardous Weather Alert to all districts, reporting this information.

At the same time, the PennDOT Bureau of Highway Safety and Traffic Engineering began preparations for the possible activation of the State Emergency Operations Center. At 1:00 PM, a State Emergency Operations Center staffing plan was prepared to provide staffing until February 15 at 8:00 AM. In addition, the agency activated the Road Closure Reporting System (RCRS) and alerted all district RCRS coordinators. Activation of the Road Closure Reporting System requires the districts to monitor and enter road closure information into a central database so that information can be shared among counties, districts, and PennDOT headquarters in a real-time environment.

PENNSYLVANIA STATE POLICE

In anticipation of the storm, the State Police prepared equipment and vehicles; cancelled training for February 13; reassigned non-uniform personnel to patrol duty; and, in the case of Troop R Dunmore, contacted other State agencies such as the Pennsylvania Department of Corrections, the Pennsylvania Game Commission and the Pennsylvania Fish and Boat Commission to obtain available four-wheel drive vehicles to assist stations in the Troop R area.

February 13, 2007

PENNSYLVANIA EMERGENCY MANAGEMENT AGENCY

On Tuesday, February 13 at 7:00 AM, PEMA's Operations Supervisor and Deputy Director discussed preparedness actions.

Based on the forecasts provided by National Weather Service and reports from the field, many officials in State government assumed that this would be a typical Pennsylvania winter storm. The agency

expected snow, primarily in the Northeastern part of the State. PEMA, as it had done the day before, held conference calls to discuss the weather at 9:00 AM with the Western Area, 10:00 AM with the Central Area, and 11:00 AM with the Eastern Area. *At 11:30 AM, PEMA was on another conference call with the Office of Administration and representatives from other State agencies on whether to close State offices.* From the call, it was decided that State government should remain open until the weather situation could be reassessed later in the day. Additional conference calls were scheduled tentatively that afternoon and evening.

Times vary, but in the afternoon on February 13, officials in Bradford, Bucks, Cumberland, Delaware, Franklin, Montgomery, Lackawanna, Schuylkill and Wyoming counties and in the City of Philadelphia all escalated the activation levels of their emergency operations centers. At 1:00 PM, Allegheny Energy notified PEMA that it had activated its Storm Centers. Although the weather was serious enough to warrant conference calls on closing State government and the activation of several local governments' and a utility's Emergency Operations Centers, *PEMA did not raise the activation level of its Emergency Operations Center to Level 2 until 4:00 PM on February 13.* Moreover, the agency did not activate its Emergency Operations Center to Level 3 until 7:47 PM on February 14.

Level 2 Emergency Operations Center activation, which denotes "increased readiness," called for additional operations staff. PEMA called for this addi-

State Emergency Operations Center Activation Levels

Level 1: Normal day-to-day operations. Two to five watch officers are on duty.

Level 2: Increased Readiness. A heightened level of monitoring and planning. Additional PEMA staff watch officers are brought in.

Level 3: General Response Operations. Includes a multi-agency response. Agencies' Liaisons brought in, depending on the circumstance and need.

Level 4: Major disaster. State government primarily focused on disaster response.

tional operational staff and increased monitoring of and planning for the impending storm.

Approximately the same time the Emergency Operations Center level was elevated, the PEMA Director attempted to return from the NEMA conference but was advised by the Commonwealth of Virginia that roads were treacherous. As a result, he delayed his return until Wednesday.

PEMA held another conference call at 8:00 PM with National Weather Service on the weather situation.

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION

At 1:00 PM on February 13, PennDOT's Bureau of Maintenance and Operations activated the Traffic Control Center and, at the same time, issued a revised Hazardous Weather Alert to its districts.

PennDOT centrally staffs a Traffic Control Center during emergencies. The Traffic Control Center is in a separate physical location from the State Emergency Operations Center. In addition to maintaining the Traffic Control Center, PennDOT staffs the State Emergency Operations Center when the activation level is escalated to Level 3.

PENNSYLVANIA STATE POLICE

During the day of February 13, the State Police reported responding to a typical amount of calls for winter weather and had normal operations protocols in place. In anticipation of the storm, the State Police reviewed its staffing plans.

PENNSYLVANIA NATIONAL GUARD

Upon notification of an impending weather event, the National Guard started prepping its National Guard Forces for possible active duty. Preparation included conducting roll calls and performing services on vehicles, equipment and communications gear. Information submitted to JLWA indicates that the National Guard had prepared an Operations Plan as early as February 13 prior to its activation by the Governor. The National Guard initiated the purchase of food items, water, and baby supplies for potential stranded motorists.

OFFICE OF THE GOVERNOR

The Governor's Office issued a press release on February 13 "directing state agencies to work together to ensure the health and safety of residents...during the Commonwealth's first, significant winter storm" and alerting citizens and businesses to limit travel and start preparing for the storm.

February 14, 2007, Midnight to Noon

By 4:00 AM in Central Pennsylvania, the precipitation turned from snow to sleet and freezing rain.

PENNSYLVANIA EMERGENCY MANAGEMENT AGENCY

At 1:56 AM, National Weather Service-Mount Holly cancelled the Winter Storm Warning and issued an Ice Storm Warning effective until 10:00 AM. Later in the day, on a 12:00 PM conference call, PEMA received reports from the county emergency management agencies that indicated normal winter storm operations. The counties reported no requests for State assistance at that time.

PennDOT and the State Police reported that accidents on the interstate highways were being handled and cleared. PEMA held conference calls again at 10:00 AM with its Western Area Office, at 11:00 AM with the Central Area Office, and 12:00 PM with the Eastern Area Office. Although some issues with traffic were mentioned on the calls, all agencies reported "no issues". A follow up conference call was scheduled for 8:00 PM. The State Emergency Operations Center requested that a PennDOT ranking official participate on the call to update PEMA on the status of roads. The PennDOT Secretary participated in this conference call.

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION

At 5:45 AM, the Secretary of the Pennsylvania Department of General Services (DGS) noticed that I-78 had not been plowed. He contacted PennDOT and was reportedly told that it is agency policy not to "shovel"

Common Operating Picture and Situational Awareness

A Common Operating Picture (COP) is a visual display of information shared by more than one agency and emergency responders in the field. The COP facilitates collaborative planning and is imperative to achieve situational awareness. The COP paints an overall picture of what is happening in an emergency. Situational Awareness comes from understanding the overall actions, factors, and forecasts, regarding an emergency event.

the roads so that the snow could "absorb" freezing rain. It should be noted that JLWA was not able to confirm this policy, it is not part of the official PennDOT policies and procedures, and PennDOT denies such an approach.

By 7 AM, PennDOT crews had been working for 24 hours and were about to enter their third operational period.

Throughout the late morning and early afternoon, PennDOT district offices issued frequent updates on the state of the roads in their areas. At 11:54 AM, District 5-0 sent out an advisory that travel on I-78 would be very slow due to weather. At noon, District 4-0 reported traffic accidents and blockages on I-80 and I-81.

PENNSYLVANIA STATE POLICE

Between midnight and 11:00 AM on February 14, State Police officers responded to several calls regarding jackknifed tractor-trailers, disabled vehicles and road blockages, in some cases redirecting traffic. At 11:54 AM, PennDOT District 5-0 issued a media advisory that I-78 was very slow due to weather. At around the same time, stations in the hardest hit areas experienced an immediate increase in calls for service due to the rapidly deteriorating weather conditions. This information was transmitted to the individual station operators. No one gathered this information from station operators and formed an overall common operating picture.

Office of the Governor

State offices were shut down at approximately 6:00 AM on Wednesday, February 14.

February 14, 2007, Noon to 4:00 PM

Returning from Harrisburg at around 2:00 PM, the Department of General Services Secretary found himself in very slow moving traffic on I-78. He communicated via remote e-mail and cell phone with others stuck in traffic and state officials throughout the afternoon.

PENNSYLVANIA EMERGENCY MANAGEMENT AGENCY

At 2:03 PM, a notice was sent to PEMA of stopped traffic on I-84, I-81 and I-380 in Lackawanna County. Around this time, PEMA learned of deteriorating road conditions and requested a conference call for 4:00 PM with the county emergency management directors for the northeast counties, primarily those counties north of I-78. On the 4:00 PM call, the counties reported no significant issues, but PennDOT reported “quite a few problems.” At 4:41 PM, the State Police reported to the State Emergency Operations Center that I-78 was now impassable in both directions due to accidents and disabled vehicles.

After the call, the PEMA Director called the Deputy Commissioner of Operations for the State Police, whom the Director knew personally from a previous position as the Chief of Police at Hazleton, for an update. The Deputy Commissioner was unavailable and instead the Director phoned several State Police Barracks directly for information. The Barracks reported problems but said that they were handling them. The Deputy Commissioner returned the PEMA Director’s call shortly after the Director made the calls to the State Police Barracks. The Deputy Commissioner called the Bar-

racks and received a different response. Only after the 4:00 PM conference call on February 14 did the State agencies and the State Emergency Operations Center staff begin to understand that the situation on the interstates had turned from manageable to an imminent emergency.

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION

At 1:15 PM, District 5-0 issued another advisory that the storm would create harsh conditions on the roads, and at 1:32 PM, Districts 3-0 and 5-0 issued specific advisories for motorists to stay off I-81. At 2:18 PM, District 5-0 issued an advisory about multiple disabled tractor-trailers on I-78.

At 2:25 PM, the PennDOT website posted that I-78 and I-81 were very slow due to multiple disabled vehicles, and soon after, at 2:46 PM, it posted another notice about I-81, I-84 and I-380 closures in Lackawanna County.

At 3:56 PM, District 5-0 issued another advisory that I-78 had multiple disabled tractor-trailers and that traffic was very heavy with significant delays.

PENNSYLVANIA STATE POLICE

From 12:00 PM to 4:00 PM, all stations experienced poor weather conditions and different levels of road blockages on ramps and the highways Troop R Dunmore began to establish shelters for stranded motorists. State Police vehicles and personnel reporting to work were stuck in the snow. At 1:00 PM, the Hamburg Station lost power, telephone and generators. Service did not return until February 15 at 1:00 AM. Troop N Hazleton reported normal operations until 1:15 PM when tractor-trailers started to get stuck, causing backups.

February 14, 2007, 4:00 PM to 8:00 PM

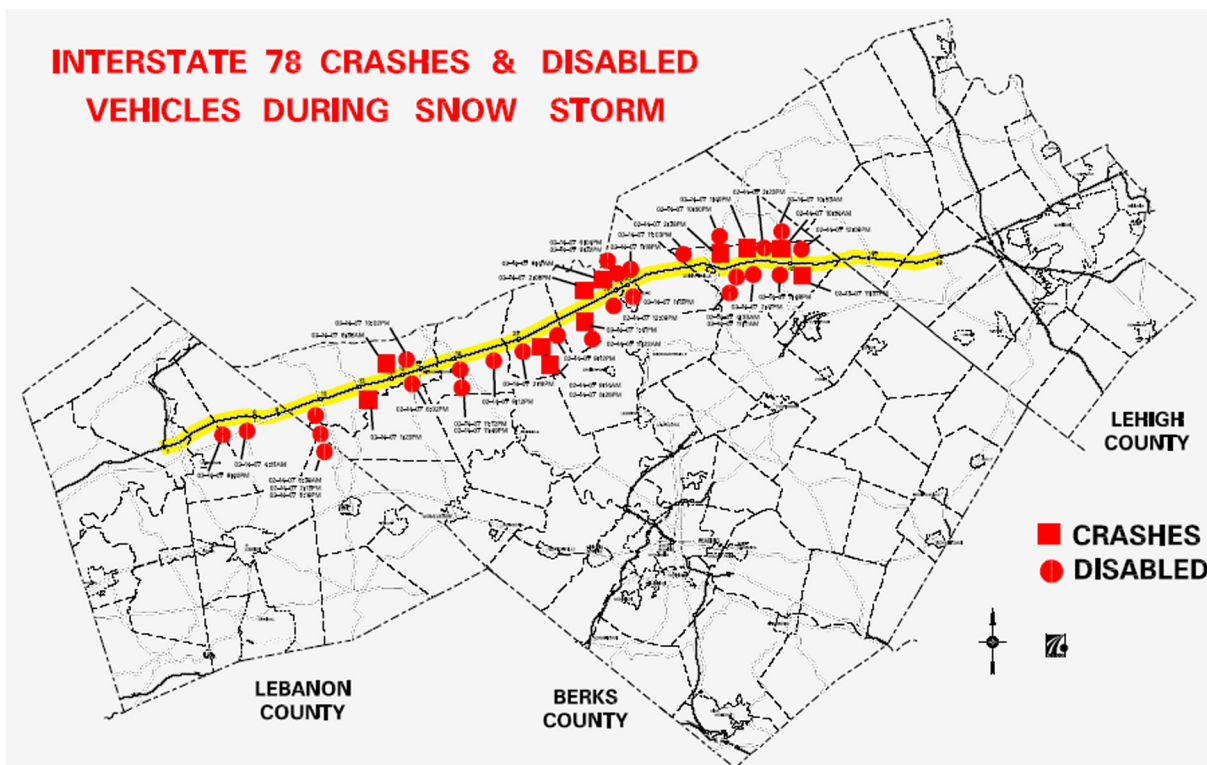
PENNSYLVANIA EMERGENCY MANAGEMENT AGENCY

In the late afternoon on February 14, Berks, Schuylkill, Lackawanna and other emergency management agencies in other counties opened shelters and responded to requests for four-wheel drive vehicles and fire and police support from the State Police and PennDOT.

At 7:47 PM, PEMA raised the State Emergency Operations Center to Level 3 and requested that liaisons from the State Police, PennDOT and the National Guard report to the State Emergency Operations Center. PEMA leadership contends that they did not do so earlier because State agencies and counties participating in conference calls during the day did not request assistance or indicate that there were serious problems that required a multi-agency response. Once at Level 3, however, substantial information flowed from the respective agencies, as their personnel began to report to the State Emergency Operations Center.

The State has a four-tier emergency operations center activation level system. Just as the national Homeland Security Advisory System is commonly at Yellow, the State's system is always at Level 1. According to the State's emergency management plans, when PEMA raises the Levels to 2, 3 or 4, certain actions are to be taken by appropriate state agencies. Level 2 calls for a heightened awareness within PEMA and the State Emergency Operations Center. Level 3 requires representatives from appropriate state agencies, also called Emergency Preparedness Liaison Officers, to come to the State Emergency Operations Center to facilitate the flow of relevant information to and from their agencies.

At 8:00 PM, PEMA held a conference call with senior State officials. This call had originally been scheduled primarily to discuss reopening the State government the following day, but several officials not usually involved in such a call including the Transportation Secretary, Adjutant General and the Governor's Deputy Chief of Staff were on this call as officials had an increased realization of the scope of the problem.



Source: Pennsylvania Department of Transportation

At 8:30 PM, a message to the State Emergency Operations Center concerning a closure on I-80 due to a wreck noted that people had been stranded for six hours. By now, County 9-1-1 centers had received numerous calls from motorists of being stranded on the interstates.

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION

The PennDOT Deputy Secretary and PEMA participated in a 4:00 PM conference call in which the participants discussed the known closures and stranded motorists on I-81 in District 4-0. I-78 was impassable at 5:00 PM due to a multiple vehicle crash, and I-81 reported multiple closures.

At 6:12 PM, PennDOT asked for local fire and police and for State police to help to get people off I-78 in Berks County. PennDOT's District 5-0 contacted the PennDOT Bureau of Maintenance and Operations for procedures on procuring emergency rental equipment. This information was forwarded to District 5-0. The Traffic Control Center coordinated out-of-state Variable Message Signs, or electronic light boards, through TRANSCOM, which is a consortium of highway agencies in Connecticut, New York, New Jersey and Pennsylvania. It is important to note that at this time PennDOT was coordinating with neighboring states on its response to the emergency.

At 6:30 PM, District 5-0 issued an advisory that I-81 in Schuylkill County between Lebanon and Luzerne counties was to be closed until further notice because of heavy snow and multiple disabled vehicles. Managers in Schuylkill identified a need for additional snow equipment. They attempted to find additional rentals in the midst of the storm but without success. This diverted attention from other important issues including staffing levels, roadway conditions, and prioritization of work.

At 7:00 PM, PennDOT activated the Variable Message Signs at the I-81 state line and dispatched a PennDOT representative to the Hamburg State Police Barracks in Berks County.

PENNSYLVANIA STATE POLICE

From 4:00 PM to 8:00 PM, all stations were actively engaged in assisting motorists, using local and county resources to assist with four-wheel drive vehicles. For the first time the command staff was starting to recognize the seriousness of this event.

At 4:08 PM, Hamburg State Police reported a power and phone outage, and at 4:10 PM, the Centralized Dispatch Center (CDC) notified the Troop L Patrol Supervisor that Hamburg's telephones and generator were not operational.

At 4:41 PM, State Police CDC-Norristown reported to the State Emergency Operations Center the closure of I-78 in both directions due to numerous accidents and disabled vehicles between Exits 29 and 40.

At approximately 5:08 PM, the State Police Commissioner learned of the problems of the interstate system from the Department of General Services Secretary, who was still stuck on I-78.

By 5:00 PM, Hamburg Barracks requested four four-wheel drive vehicles from Berks County. They provided two four-wheel drive vehicles, which was the maximum that they could provide, at 5:30 PM. At that time, the State Police notified PEMA that the need for National Guard was anticipated. By 6:00 PM, the National Guard contacted Hamburg Station to offer troops and vehicles. Hamburg requested troop carriers and other heavy vehicles in case evacuation of people to shelters was required. At 6:27 PM, PennDOT's presence was requested at Hamburg Command Post for better coordination of efforts. A second request was made at 7:37 PM.

Berks County EM responded to the Hamburg Barracks and help set up a unified command with the State Police and PennDOT. Phones and electric power were still out at the Barracks, making coordination difficult.

OFFICE OF THE GOVERNOR

At approximately 7:45 PM, the Governor received a call from the State policeman assigned to the Governor's Mansion in Harrisburg. The officer informed him that numerous calls had been coming in since 6:30 PM from people stuck on I-78 and from relatives of those stuck. *The Governor then contacted the State Police Commissioner and Adjutant General of the National Guard for a status report and to inform the Adjutant General that he would officially be activating the National Guard.*

February 14, 2007, 8:00 PM to Midnight

PENNSYLVANIA EMERGENCY MANAGEMENT AGENCY

Resulting from the activation of Level 3 for the State Emergency Operations Center at 7:47 PM and the Governor's Proclamation, the State's response dramatically increased on the evening of February .

PEMA contacted State Police-Dunsmore at 8:16 PM and State Police-Hazleton at 8:36 PM regarding resources needed. The National Guard received numerous requests for troops and vehicles that could operate in the snow and ice and could tow stranded vehicles. The State Emergency Operations Center received much more information concerning road problems, which helped with situational awareness. County Emergency Management Agencies requested PennDOT and State Police representatives to be sent to their Emergency Operations Centers. From 10:00 PM to midnight, the State Emergency Operations Center received requests from the State Police in Frackville, Dunmore, Hazleton, Blooming Grove, Gibson, Bloomsburg, Fern Ridge and Hamburg for National Guard vehicles and troops. At 11:37 PM, Berks County Emergency Management requested information about available cots.

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION

The PennDOT Liaison arrived at the State Emergency Operations Center at 7:47 PM.

PennDOT released the following information concerning the interstates that evening. At 10:39 PM, the PennDOT website posted information on continuing problems on I-80 and I-81 with some sections closed. At 10:58 PM, District 5-0 issued an advisory that one lane was open in each direction on I-78, but there were significant delays. At 11:00 PM, District 5-0 issued an advisory that I-81 in Schuylkill County had reopened. At 11:02 PM, PennDOT issued a notice that I-78 was closed west of Fogelsville. Only six minutes later, at 11:06 PM, the emergency management coordinator at Berks reports that eastbound traffic on I-78 was stopped at State Roads 183 and 61.

PENNSYLVANIA STATE POLICE

State Police personnel and local and county first responders actively assisted stranded motorists by taking them to shelters and hotels. The National Guard began to deploy and assist the State Police sporadically.

At 8:13 PM, State Police-Hamburg requested at least two vehicles for motorist transports, and State Police-Frackville requested at least one vehicle for the same purpose, both from the National Guard.

At approximately 8:30 PM, the State Police liaison arrived at the State Emergency Operations Center. At the same time, the State Police reported road closures on I-80, and the liaison contacted stations in the Northeast to determine their specific unmet needs. At 10:10 PM, the State Police reported road backups on I-81.

PENNSYLVANIA NATIONAL GUARD

The Governor verbally activated the National Guard at approximately 7:50 PM on February 14. The formal proclamation was signed at 10:42 PM, allowing PEMA to task the Guard. Page two of the proclamation authorized the Adjutant General to place soldiers on active duty for the duration of the emergency.

February 15, 2007, Midnight to 8:00 AM

Remarkably, although many local and State first responders were very busy, JLWA found very little activity reported or documented in the time period between Midnight and 8:00 AM on February 15. *At that time, hundreds of people (no one at this time seems to know precisely how many) were stranded in the cold all night.* Many citizens, including the Department of General Services Secretary who remained stranded with hundreds of other motorists from 2:00 PM Wednesday until mid-morning Thursday, reported seeing few, if any, vehicles or individual from the State Police, PennDOT or National Guard.

PENNSYLVANIA EMERGENCY MANAGEMENT AGENCY

Emergency management personnel for the affected counties worked with Red Cross to open shelters and coordinated with Search and Rescue groups for four-wheel drive vehicles.

At 7:25 AM, the local Red Cross obtained meals and water to provide to stranded motorists, especially in Berks County on I-78. The National Guard later helped to deliver this food.

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION

At 4:19 AM, PennDOT reported to PEMA that I-78 was closed from milepost 19 to 29 eastbound and milepost 49 to 40 westbound. PennDOT reported a ten-mile backup eastbound and a one-mile backup westbound in this area. At 4:33 AM, PennDOT reported to PEMA that I-78's eastbound backup was up to nine miles, consisting mostly of truck traffic.

Stockpile Information							
Interstate	District	County	Stockpile Number	Stockpile Reference	Starting Mile Post	Ending Mile Post	Length (Miles)
78	5	Berks	2	Strausstown	8.2	23	15
78	5	Berks	8	Hamburg	23	44	21
80	4	Luzerne	7	Sun Valley	260	273.5	13.5
80	4	Luzerne	10	Sybertsville	247.2	260	13
80	5	Carbon	3	I-80	272.5	282.5	10
81	4	Luzerne	10	Sybertsville	145	155	10
81	4	Luzerne	11	West Hazelton	139	145	5.8
81	4	Luzerne	14	Dupont	165	179	14
81	4	Luzerne	18	Sugar Notch	155	165	10
81	5	Schuylkill	4	Frackville	119	131	12
81	5	Schuylkill	6	Ravine	97	107	10
81	5	Schuylkill	9	Airport	107	119	12
81	5	Schuylkill	16	McAdoo	131	139	8

Source: Pennsylvania Department of Transportation

The PennDOT website posted a notice at 6:08 AM about closures on I-81 in Lackawanna County and I-78 in Lehigh and Berks County. Notices continued at 8:46 AM, 1:00 PM, and 3:26 PM for I-80, I-81, and I-78.

PENNSYLVANIA STATE POLICE

Throughout the early morning, State Police officers cleared the affected areas and assisted motorists trapped in the traffic. During that time, the State Police filed with PEMA requests for support from the National Guard to help troopers get around in the icy road conditions. At 3:33 AM, the State Police reported that troopers were going from vehicle to vehicle waking up drivers.

Troop R had eight troopers on foot patrol for several miles on I-81 to check on motorists (mostly truckers) who chose stay with their vehicles. Troop R



Source: Pennsylvania National Guard

advised that roadway conditions by 8:00 AM were in good to excellent condition and reported no motorists stranded on I-80, I-81 and I-380 in the most northern part of the State. Troop L still actively assisted stranded motorists on I-78 in Berks County through assistance and vehicles from the National Guard. Troop N advised that if motorists on I-80 and I-81 contacted State Police-Hazleton concerning medical problems, they would be offered medical assistance or a helicopter.

PENNSYLVANIA NATIONAL GUARD

The National Guard's first mission was to evacuate stranded motorists^A. This mission became a secondary focus when most motorists preferred to stay with their vehicles. Its second mission was to support the State Police at Traffic Control Points (TCPs).

Recovering from an illness, the Governor's Deputy Chief of Staff arrived at the State Emergency Operations Center between 7:00 and 8:00 AM on the morning of February 15. When he learned that food and supplies had not been distributed to those on the highways, he directed it.

The National Guard was first tasked by PEMA to deliver food and supplies at 7:42 AM on February 15. Some distribution at hamburg began at 9:30 AM. Mass distribution of food and water took place around noon on I-78. The National Guard deployed a total of 919 personnel in support of the Commonwealth during the event.

When asked how quickly the distribution could have occurred if so ordered, the Adjutant General said approximately 3:00 AM on the morning of February 14, more than eight hours earlier than the actual distribution.

February 15, 2007, 8:00 AM to Midnight

During this time, PennDOT, State Police and National Guard team members worked to tow disabled vehicles and tractor-trailers from the highways.

^A Guardsmen had limited quantities of food and water in their vehicles, which they provided to motorists upon request.

Through the evening, National Guardsmen and local resources continued welfare checks of stranded motorists by helping them off the freeways and delivering food and water when requested. While vehicles were cleared, PennDOT, with assistance from the National Guard, worked to clear ice from roadways.

Although I-78, I-80 and I-81 had been severely delayed or fully blocked since morning or midday on February 14, they were not officially closed by order of the PennDOT Secretary until late afternoon on February 15. PennDOT claimed that the primary purpose of this action was so heavy equipment could remove the ice impacted on the roads.

PENNSYLVANIA EMERGENCY MANAGEMENT AGENCY

Throughout the morning, PEMA received reports of accidents and blockages on I-80, I-81 and especially I-78. At 11:04 AM, the State Emergency Operations Center activated the Emergency Alert System (EAS) advising motorists to avoid the interstate highways. The EAS was not activated on February 14, although activation could have kept some motorists off the highways.

At 4:15 PM, PEMA Headquarters held another conference call with affected counties regarding the decision to close selected interstates effective at 6:00 PM.

State Police, the National Guard and local Fire/Police resources were tasked with providing TCPs at selected on/off ramps. At 9:29 AM, the State Emergency Operations Center contacted Luzerne County to assist in closing ramps on I-80 and I-81 near the I-80/81 interchange.

Pennsylvania Department of Transportation
The first group of District 6-0 crews arrived at 1:30 PM in Berks County to work on I-78 at Hamburg.

At 1:55 PM, the PEMA Director requested that PennDOT assist in developing the Incident Action Plan, which outlines the specific tactical actions, staffing needs, and agency responsibilities during the response to the emergency.

At 3:00 PM, PennDOT conducted a conference call with PEMA and the National Guard regarding the closing of I-81. Participants agreed to shut down I-81 between I-78 and I-80. Guardsmen were positioned at exits from mile 89 (I-78 and I-81) to mile 151 (I-81 and I-80) to prevent vehicles from getting on the interstate. A total of 16 exits needed coverage. At 6:35 PM, PennDOT requested the National Guard to provide traffic control assistance to block ramps to I-80 and I-81.

At 6:42 PM, the PennDOT website indicated that I-78, I-80 and I-81 were officially closed.

PennDOT led a command and control conference call with its districts at 9:00 PM.

At 9:31 PM, PennDOT provided a loader and grader to clear snow from the Lehigh County line to Exit 35, westbound. After finishing, they provided the same service on the eastbound side. By 11:27 PM, the eastbound backup on I-78 was gone and PennDOT conducted a plowing and grading operation on the westbound side of I-78.

Pennsylvania State Police

Normal police activities resumed in the northern areas of the State, but Troop L continued to man traffic control points throughout the morning.

At 11:18 AM, Troops L and N contacted the Pennsylvania Fish and Boat Commission and the Pennsylvania Game Commission to assist with resources. By 2:59 PM, five Game Commission officers assisted the State Police with traffic control on I-78.

At 3:30 PM, a Command Post was formally established for Troop N at the Bloomsburg Barracks. All stations assisted PennDOT in getting vehicles off the roadway so that PennDOT could plow. The State Police, the National Guard and other first responders continued to check service areas, mainline roadways and ramps for snowed-in vehicles.

By 5:00 PM, the ramps into the affected interstates were officially, physically staffed by State Police officers.

PENNSYLVANIA NATIONAL GUARD

Baby food was distributed on I-78 at 10:10 AM. Mass distribution of food and water began around 12:00 PM Thursday morning. The National Guard completed 61 missions, manned 35 traffic control points, and had three grader missions, six aviation reconnaissance missions, five ground delivery supply missions to stranded motorists, and six ground reconnaissance missions. In addition, the National Guard distributed a total of 4,432 meals, 372 meals ready to eat (MREs), 335 cases of bottled water (8,040 bottles), three cases of baby formula, 36 gallons of juice, and 576 baby diapers. Although the National Guard provided assistance beginning February 15, guardsmen did not cover all of the more than 150 miles of blocked roads.

February 16, 2007

PENNSYLVANIA EMERGENCY MANAGEMENT AGENCY

During the day on February 16, fueling assistance continued for motorists and trucks along the interstate corridors. Berks and Schuylkill Counties requested traffic control assistance. TCPs continued to keep motorists off of the highways. National Guard graders assisted PennDOT with clearing ice. Luzerne County's shelter was still open, but most of the shelters in other counties were now closed.

Pennsylvania Department of Transportation

At 6:08 AM, the PennDOT Secretary issued the Status Report of Interstate Closures. The Status Report noted that I-78 was closed from I-81 to PA-100 interchange (exit 49). There were no backups and all vehicles had been cleared from I-78. I-80 was closed from exits 241 – US 11 interchange to Exit 304 – US 209 interchange. I-81 was closed from Exit 85 – Ft Indiantown Gap to exit 159 – 309 interchange.

At 8:00 AM, 9:30 AM, 11:00 AM and 12:15 PM and 2:00 PM, PennDOT held regularly scheduled command and control conference calls with its districts.

At 10:17 AM, PEMA tasked PennDOT to supply fuel vehicles in coordination with National Guard fuel depots to deliver fuel to stranded vehicles along the closed interstate corridors.

PENNSYLVANIA STATE POLICE

The State Police continued to move disabled vehicles, clear traffic and clear roadways of ice. *By 10:00 AM, the State Police reported that most vehicles had been removed from the impacted sections of I-81 with a few tractor-trailers remaining.* All backups on I-80 were cleared and PennDOT worked on the packed ice on the roadway. Work continued on I-78.

By 3:21 PM, the State Police asked for additional manpower from the National Guard to watch the on and off ramps on the affected interstates.

February 17, 2007

I-78, I-80, and I-81 remained closed until Saturday, February 17 at approximately 4:00 PM, at which point the State Emergency Operations Center returned to Activation Level 1.

PENNSYLVANIA EMERGENCY MANAGEMENT AGENCY

Luzerne County's shelter remained open overnight assisting three people but closed at 10:00 AM on February 17.

PEMA held a conference call at 12:30 PM to discuss plans to reopen freeways, which was scheduled for 4:00 PM. At 4:00 PM, the freeways were opened.

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION

During the day on February 17, PennDOT, with assistance from the National Guard, made progress in clearing the highways. PennDOT operations by mid-morning included the use of an additional 29 graders (total 46 graders) that had been moved into the

area from western Pennsylvania along with sufficient numbers of operators to allow for 24-hour operations.

PEMA held command and control conference calls with districts at 8:00 AM, 11:00 AM, 12:15 PM, 1:00 PM, 3:00 PM and 5:00 PM, updating them on the current road situations.

As mentioned above, at 12:30 PM, PennDOT participated in a conference call with PEMA regarding interstate reopenings. They agreed that all three interstates would reopen at 4:00 PM. The notice was posted at 4:50 PM on the PennDOT website.

PENNSYLVANIA STATE POLICE

On February 17, the State Police patrolled the interstates to determine their status for consideration of reopening. At approximately 11:40 AM, the Troop L Commander arrived at the Emergency Operations Center. He helped create the State Police operational plan for reopening interstates. By 3:34 PM, the State Police Emergency Operations Center notified Troops L, M, and N to begin 45 mile per hour pilot patrols. *At 7:06 PM, the State Police Emergency Operations Center consulted with other agencies and the State Police Deputy Commissioner of Operations to terminate pilot patrols and end mission.*

PENNSYLVANIA NATIONAL GUARD

At 2:53 PM, the National Guard grader mission was completed.

February 18, 2007

PENNSYLVANIA STATE POLICE

At 4:00 PM, the State Police Emergency Operations Center was deactivated and mission was deemed completed.

PENNSYLVANIA NATIONAL GUARD

At 11:00 AM, the National Guard announced that it would stand down and continue to monitor the situation.

Findings and Recommendations by Agency

The findings and recommendations are based on in-depth interviews with the key players involved in the response to the Winter Storm, a review of relevant documents and industry best practices.

The project team conducted in-person and telephone interviews with State employees, from first-line supervisors to the agency secretaries and elected officials, county emergency management coordinators, local media and citizens affected by the Winter Storm. JLWA reviewed more than two thousand pages of documents, including e-mails, conference call minutes, After-Action Reports from preceding emergencies, timelines, citizen accounts, regulations, policies and procedures, and reports from the State Emergency Operations Center.

Throughout the review, James Lee Witt Associates (JLWA) focused on areas of transportation, law enforcement/public safety, and emergency management. Similarly, the following agencies were a focus of this report. They are among the State agencies that have significant emergency management responsibilities in the Commonwealth of Pennsylvania. Each of the agencies played a key role in the response to the Mid-February Winter Storm.

- Pennsylvania Emergency Management Agency (PEMA)
- Pennsylvania Department of Transportation (PennDOT)
- Pennsylvania State Police (State Police)
- Pennsylvania National Guard, a part of the Pennsylvania Department of Military & Veterans Affairs (National Guard)

When the finding or recommendation is specific to one of these agencies, they have been organized as such. Findings are in bold.

INTERAGENCY AND STATEWIDE FINDINGS AND RECOMMENDATIONS

SUMMARY OF INTERAGENCY AND STATEWIDE FINDINGS

- Insufficient emergency notification
- No consistent reporting or documentation procedures
- No interagency, central gathering point for public and media information
- No designated backup for the Governor's Deputy Chief of Staff
- Lack of understanding of emergency responsibilities
- Inadequate pre-event interagency planning or written agreements for transportation emergencies
- National Incident Management System not fully adopted and implemented
- Lack of communication among state and local authorities
- No written traffic diversion plan or statewide evacuation plan
- Road Condition Reporting System not available to State Emergency Operations Center

COMMUNICATIONS

1. The State's overall response to the Winter Storm confirmed that, despite the written responses to the September 21, 2006 memorandum from the Governor's Deputy Chief of Staff, **State agencies' policies and procedures**

for emergency notification either have not been implemented or the threshold for reporting needs to be revisited.

Recommendation: PEMA should coordinate and fully implement the State agencies' responses to the September 21, 2006 memorandum to Cabinet Secretaries.

2. There were **no consistent reporting or documentation procedures followed across State agencies** during the response to the Winter Storm. The Pennsylvania Emergency Information Reporting System (PEIRS) is not adequate for reporting and documentation in an emergency. Among other PEIRS deficiencies, users cannot track the completion of tasks, search reports under key words or categorize the information reported.

Recommendation: PEMA should provide standard reporting formats and procedures in compliance with the National Incident Management System for agencies, especially State Police, PennDOT, and the National Guard, for reporting to the State Emergency Operations Center. PEMA should consider using a system other than PEIRS for reporting and documentation in an emergency.

State officials should be trained and exercised frequently on proper reporting so the procedures become part of an automatic response culture. PEMA should work with other State agencies to develop strategies to improve statewide communications and coordination.

3. Although PennDOT, PEMA, and the Governor's Office communicated individually to the media, JLWA did not receive any evidence that the agencies attempted to communicate jointly or establish a Joint Information Center. During this event, **there was no interagency, central gathering point for public and media information to be verified, coordinated and disseminated.**

Lack of coordination of public information was a problem among State and local governments as well.

For example, on the night of February 14, PennDOT District 5-0 issued an advisory that one lane was open in each direction on I-78, but there were significant delays. Four minutes later, the Emergency Management Coordinator for Berks County reported that East-bound traffic on I-78 was impassable at State Roads 183 and 61.

Also, JLWA did not find evidence that State Police communicated to the press from its headquarters in Harrisburg, although Troop R reported that it attempted to communicate with motorists using conventional press releases, via print, radio, television, and the Internet.

Recommendation: The State should establish a Joint Information Center (JIC) to coordinate messages to the media and the public in an emergency. The JIC would gather, verify, and disseminate information during an incident. The JIC should be co-located with the State Emergency Operations Center and is the place that media should call for emergency updates. Following the establishment of a JIC, designated participants from the Governor's office and key State agencies should be trained on roles and responsibilities to work in or alongside JIC operations.

4. There was a **lack of overall situational awareness among local and State officials** responding to the Winter Storm. Local emergency management directors noted that they were unaware of the seriousness of the situation on the interstates until late on Wednesday, although records indicate that both PennDOT and State Police were responding to numerous problems that collectively resulted in massive delays and stranded motorists much earlier.

In another example, until late afternoon on February 14, several PEMA personnel reported that no issues were mentioned on conference calls, nor were there requests for assistance that indicated to them that a higher level of attention to the situation was necessary.

Also, emergency 9-1-1 calls regarding traffic issues were forwarded to State Police. The counties handled

fire and emergency medical services calls only. As a result, the counties were unaware of the seriousness of the situation. The Berks County first responders reported that they were first aware of the event's magnitude in the evening of February 14, when PennDOT asked for local assistance to remove motorists from the interstates.

Recommendation: Leadership for State agencies should have multiple data points to assess situational awareness. A workgroup should be established among State and local governments to develop a written protocol to formalize the communication processes, the methods for sharing situational awareness and developing a common operational picture.

5. Current and former State officials reported that their roles and responsibilities in an emergency are too ambiguous under Title 35 or the State's emergency plans. In addition, many government officials do not understand procedures and terminology in the plans. For example, **senior officials from State Police and PennDOT did not know the meaning of the different activation levels for the State Emergency Operations Center.** Also, throughout the response to the Winter Storm, the term "**road closure**" **did not have a consistent meaning** within or across state agencies.

Recommendation: To address this issue, the Governor should immediately direct PEMA to clarify, within the State Emergency Operation Plan, the conditions under which PEMA provides emergency direction and control of State and local emergency operations, in accordance with Title 35. This clarification should consider State agencies' respective missions and authorities; command and control responsibilities for specific events; coordination and communications responsibilities; and State agency responsibilities for keeping the Governor's office informed. PEMA should train State personnel on their roles, terminology and procedures under Title 35 and the State emergency plans.

PREPAREDNESS

1. There is **no designated backup staff member for the Governor's Deputy Chief of Staff.**

Recommendation: A backup should be trained to respond to emergencies in the event that the Governor's Deputy Chief of Staff is unavailable.

2. Before and during the Winter Storm, **PennDOT did not fully understand how to work alongside PEMA in an emergency, nor did PEMA explain its expectations of PennDOT during an emergency.**

Recommendation: PennDOT and PEMA should develop, train and exercise written plans for responding together to an emergency.

3. The State agencies responding to the Winter Storm, including **PennDOT and State Police, lacked adequate pre-event inter-agency planning and written plans and agreements** specifically related to responding to a transportation emergency.

Recommendation: PEMA, State Police and PennDOT should develop plans, including a statewide evacuation plan, that outline each agency's roles and responsibilities during an emergency. The Commonwealth should update Title 35 to address the specific roles of each agency. The agencies should train appropriate personnel on their roles.

4. **The lack of Statewide NIMS compliance impeded operations** during the Mid-February Winter Storm. For example, training on NIMS and the Incident Command System has not been mandated within PennDOT's highway operations. During the Winter Storm, the lack of training inhibited PennDOT's ability to incorporate their agency into the State's emergency management structure once it finally ramped up.

Recommendation: All emergency incidents and preplanned (recurring/special) events should be managed in accordance with the Incident Command System organizational structures, doctrine and procedures, as defined in NIMS. Incident Command System implementation must include the consistent application of Incident Action Planning and Common Communications Plans.

5. The Commonwealth redirected traffic off of I-78 on February 15 after the Governor's declaration. This caused delays and congestion management issues for municipal and county jurisdictions. For the most part, **State Police and PennDOT did not communicate with local emergency management and police before sending car and truck traffic through their towns.** Municipal and county roadways in Berks County were overwhelmed with tractor-trailer and passenger vehicle traffic, causing additional delays and congestion. State Police **and PennDOT did not have formalized written traffic diversion plans for the Commonwealth's interstate highway system** prior to the storm. No documentation was provided by PennDOT, State Police, PEMA or the National Guard outlining any attempt to develop pre-incident traffic diversion plans. Several other States have completed written diversion plans of their interstate highway system and JLWA used these as a baseline for the inquiry.

Recommendation: PennDOT, State Police and local Emergency Management officials should develop written traffic diversion plans with the input of PEMA and the National Guard. These plans should be a part of a statewide evacuation plan.

6. Information that was available and being transmitted internally did not reach those officials who could have used that information to make informed decisions on the scope of the emergency and subsequent response and recovery plans. For example, **PennDOT's Road Condition Reporting System (RCRS) was not directly available to PennDOT staff at PEMA's State Emergency Operations Center.**

Recommendation: The State should review all information systems and make appropriate systems available to allied State agencies like PEMA, PennDOT and State Police.

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION

SUMMARY OF FINDINGS

- Loss of key personnel at PennDOT a month before the Winter Storm
- Not all districts contract transportation-specific weather forecasting services
- Roadway Weather Information System (RWIS) currently has 55 sensor sites inoperable out of a total of 74 sites statewide
- Emergency operations do not appear to be treated as a core mission of PennDOT
- PennDOT provided flawed information to the public in press releases, on highway electronic message boards and over its telephone information system
- Highway Advisory Radio (HAR) in District 5-0 was inoperable
- PennDOT's representative at the State Emergency Operations Center did not have access to all information available to PennDOT's Traffic Control Center staff
- No statewide definition for "road closure;" lack of clearly defined terminology
- PennDOT allows districts and counties to modify individual approaches for snow and ice control
- Quantity of chemical additives in PennDOT's stockpiles is not governed by policy or procedure
- Staffing guidance not followed, particularly in PennDOT's Berks County, and lack of guidance at the district level
- Measures to improve pavement condition may be considered as more important than snow and ice control
- Turnpike has a "Bare Pavement" philosophy to snow and ice control; PennDOT does not

PREPAREDNESS

1. **The loss of key management personnel in the heart of the winter season hampered PennDOT's ability to react and adjust to this complex storm.**

Recommendation: PennDOT should consider adopting a policy to limit the number of mid-season retirements and conduct an annual review to see where this potential exists in the organization.

2. **PennDOT districts vary in their use of contracted weather forecasting services.** It should be noted that PennDOT's Snow and Ice Control Manual offers several options for weather forecasting, mostly using freely available sources, such as commercial television or the National Weather Service website. PennDOT headquarters relies primarily on National Weather Service for its weather reports. The use of contracted weather forecasts is optional but is paid from a district's budget. As a result, Pennsylvania districts vary in their use of contracted weather forecasting services. District 4-0 and the Turnpike Commission use a contracted service; District 5-0 does not. The Turnpike's forecasting service provided them with 6 to 8 hours of advance notice of the anticipated mid-storm changeover from a snowstorm to an ice storm. This advance warning provided them adequate notice to reassess their snow-fighting plan, adjust the plan, and communicate the changes in approach to each equipment operator. District 4-0 also felt that the advance warning provided them adequate time to be prepared for the oncoming storm.

Recommendation: PennDOT should reassess the use of a common weather forecasting service as an option in counties and districts with the potential for problematic storms like heavy snowfall or ice.

3. PennDOT maintains technologies to help the State assess road conditions in an emergency. Yet,

existing weather-related technology has been allowed to degrade to the point where it has proven almost useless to PennDOT. **The existing Roadway Weather Information System (RWIS) currently has 55 sensor sites inoperable out of a total of 74 sites statewide.** This technology would have dramatically improved the situational awareness of managers up and down the PennDOT chain of command. The RWIS would have allowed managers to determine surface conditions and, in many cases, view a live picture of the roadway. This technology would have allowed managers to verify not only the weather but also the condition of traffic flow.

Recommendation: Immediately repair existing RWIS. Develop an ongoing repair and oversight program. Identify areas where this technology could have helped and expand technology to those areas.

4. **Emergency operations do not appear to be treated as a core mission of PennDOT.** The PennDOT mission statement does not mention emergency management.

Recommendation: PennDOT should consider adding emergency operations for all hazards as a core mission.

COMMUNICATIONS

1. Despite PennDOT's written commitment to customer service in its mission statement and Strategic Agenda, throughout the storm the **agency provided flawed information to the public** in press releases, on highway electronic message boards and over its telephone information system. Numerous respondents complained that the PennDOT website updated accidents and road blockages infrequently and was difficult to navigate. The delay in circulating information to the public resulted in a number of motorists believing that roads were clear enough to drive, which subsequently added to the backups.

Recommendation: PennDOT should examine its practices during the Winter Storm to evaluate how the agency can better carry out an agency-wide commitment to customer service as defined in its mission statement.

2. During the Winter Storm there were **problems with PennDOT reporting and communications technologies**, like the I-Road Condition Hotline, PennDOT's toll free number to call about road conditions (1-888-783-6783). That system often reported incorrect conditions because staff did not provide timely updates. The lack of updates resulted in the Hotline playing an automatic "no adverse conditions reported" message. This added to the misinformation to the public about the storm. Additionally, the Highway Advisory Radio System (HAR) in District 5-0 was inoperable during the storm.

Recommendation: Public notification should have been a greater priority during PennDOT's response to the Winter Storm. PennDOT should review information protocols and adjust the communication process accordingly. PennDOT should repair existing HAR technology.

3. When the PennDOT liaison was called in to staff the State Emergency Operations Center, **the agency's representative did not have access to all information available at the PennDOT Traffic Control Center**. PennDOT's Liaison relied on Traffic Control Center staff to translate data and other information over the telephone. The lack of detailed information from PennDOT compounded the situational awareness gap in the State Emergency Operations Center.

Recommendation: PennDOT should consider relocating the Traffic Control Center to be physically within the State Emergency Operations Center and consider connecting all PennDOT weather systems and road condition systems into the State Emergency Operations Center. Additionally, PennDOT and State Police should establish a formal communications process to transmit detailed weather and road conditions data and analysis.

4. There was an obvious lack of timely and accurate information through the emergency phase of this event. Information from the field was passed up the chain of command without verification. This resulted in partial information, omitted information, and, at times, incorrect information being distributed to PennDOT management, allied State agencies, and the public. **Some of the misinformation was based on the lack of clearly-defined terminology**. For example, a road that had not been "officially" closed through the issuance of an official statement was considered open. However, some of the roads that were not officially closed had experienced significant blockages, trapping entering motorists behind accidents.

Recommendation: PennDOT should develop common definitions and reporting protocols.

SNOW AND ICE CONTROL

1. PennDOT has a very good reference manual on maintenance operations, including snow and ice control (see PennDOT Maintenance Manual, Chapter 4: Snow and Ice Control). Much of that information is disseminated in the PennDOT Snow Training Academy for Supervisors and Managers. However, for the most part, the information is considered as guidance, not policy. **PennDOT districts and counties are allowed to modify their individual approach for snow and ice control**. They are allowed to forego the use of additive and alternative chemicals for salt (NaCl). Calcium Chloride (CaCl) and Magnesium Chloride (MgCl₂) are used as additives to salt in snow and ice control, mainly because they depress the freezing point of water significantly lower than salt alone. This technique provides snow crews additional time to remove accumulated snow and ice from the road as temperatures drop. Accumulated snow and ice are pushed off the road and a new application of chemicals is applied. If the accumulated snow and ice is not removed in a timely manner, the existing salt and chemical additives are diluted to a critical point where this snow, ice,

and chemical mix will freeze to the pavement, which is what happened on February 14, 2007 on I-78, I-80- and I-81. In some cases, managers did not have sufficient quantities of these chemical additives for this type of storm. **The quantity of chemical additives in PennDOT's stockpiles is currently not governed by policy or procedure.**

Recommendation: PennDOT should review its current policies to mandate certain approaches for snow and ice removal and to ensure that sufficient chemical additives are stockpiled.

2. Some PennDOT staff members feel **those measures to improve pavement condition, such as resurfacing and construction, are more important than snow and ice control** and that their managers have endorsed that philosophy. This contradicts current PennDOT policy. This cannot be concluded to be a universally-accepted viewpoint due to the limited scope of interviews. However, it does give concern that there is the potential. This issue goes beyond the scope of this analysis but exploration of this issue requires further analysis.

Recommendation: PennDOT management should reiterate current policy that the interstate system is priority one in snowstorms.

3. There are differences between how PennDOT and the Pennsylvania Turnpike Commission plan and execute in response to snow and ice storms. The Turnpike, having an operating budget financed through the collection of tolls, traditionally has a more aggressive approach to fighting snow. **The Turnpike has what they refer to as a "Bare Pavement" philosophy to snow and ice control.** This means that every attempt is made to quickly remove accumulated snow and ice from the pavement through the application of chemicals and/or through plowing. The practice of applying more chemicals has a direct impact on the cost to fight a snow and ice storm. The exact cost comparison was not calculated as part of this analysis, but it can be concluded that the cost per lane mile to fight a storm with this philosophy will be higher.

Recommendation: PennDOT should explore the fiscal impacts of adopting a higher standard (such as a "bare pavement" standard) for snow and ice control on the interstate roadways.

PENNSYLVANIA EMERGENCY MANAGEMENT AGENCY

SUMMARY OF FINDINGS

- PEMA did not fully ramp up State Emergency Operations Center operations to Level 2 until 4:00 PM on February 13, and to Level 3 until 7:47 PM on February 14, despite external indicators
- Shortage of PEMA State Emergency Operations Center personnel
- Pennsylvania has not updated Title 35 since 1989
- After Action Review for the Floods cites numerous areas that required improvement, which again surfaced as major problems in the agency's response to the Winter Storm.

COMMAND AND CONTROL

1. **PEMA did not fully ramp up State Emergency Operations Center operations to Level 2 until 4:00 PM on February 13, and to Level 3 until 7:47 PM on February 14, despite external indicators** from local governments that activated their Emergency Operations Centers and colleagues in other agencies who were considering closing State government. An earlier activation would have brought the liaisons from other agencies to the State Emergency Operations Center to increase situational awareness and planning ability. Currently, State Police and PennDOT are not represented at the State Emergency Operations Center until it is activated to Level 3. The liaisons from State Police and PennDOT did not arrive to the Emergency Operations Center until late in the evening on February 14.

Recommendation: Revise Standard Operating Procedure (SOP) 16, which defines the State Emergency Operations Center levels, to include more specific triggers for raising the Emergency Operations Center activation level, such as the closing of state government. Also, consider bringing the liaisons into the State Emergency Operations Center at Level 2.

view for the Floods cites numerous areas that required improvement, which again surfaced as major problems in the agency's response to the Winter Storm.

Recommendation: PEMA should review past After-Action Reports and implement lessons learned.

PREPAREDNESS

1. PEMA has some key vacant positions including the Director of the Operations and Training Bureau. In addition, there was a shortage of trained staff members available to run a more than 24-hour operation, requiring those trained to work extraordinary long shifts.

Recommendation: PEMA should fill critical vacancies such as the Director of Operations and Training as soon as possible. If appropriate, reorganization of resources should be considered as well. In addition, PEMA should expand the pool of trained personnel capable of manning the Emergency Operations Center.

2. Many states have updated their emergency management statutes since the events of September 11, 2001 and Hurricane Katrina. **Pennsylvania has not updated Title 35 since 1989.** The Commonwealth established a working group in recent years to update the statute, but their work is still in progress.

Recommendation: The State should update its emergency management laws to reflect changes in emergency management, NIMS and other best practices.

3. Prior to the Winter Storm, the last major emergency PEMA responded to was the Flooding of June 2006. Remarkably, the **After-Action Re-**

PENNSYLVANIA STATE POLICE

SUMMARY OF FINDINGS

- Police commanders did not communicate horizontally to each other
- The State Police Commissioner was not fully aware of what was happening in the field until February 14 at 5:08 PM
- No written or verbal Incident Action Plan completed for the Hamburg or Hazleton Command Post

COMMAND AND CONTROL

1. State Police notification protocol is an informal process in which messages are transmitted vertically through the agency. Interviews revealed that during the Winter Storm, **commanders did not communicate horizontally to each other** (e.g., Station Commander to Station Commander, Troop Commander to Troop Commander, or Area Commander to Area Commander). Rather, each Troop sent information through their individual chain of command to the Deputy Commissioner of Operations. As a result, from the beginning of the Winter Storm, State Police did not have an agency-wide common operational picture of the event.

Between approximately 6:00 AM and 5:08 PM on February 14, State Police Head-

quarters was not fully aware of what was happening in the field. This lack of information prevented State Police leadership from having adequate “situational awareness” to make decisions on how to respond to the total area affected by the Winter Storm. Despite the individual reports of accidents and stopped traffic on the interstate highways throughout the day, no one at the Area Command or at the Troop or Station level reported the escalating seriousness of events to the State Police Commissioner. Only at 5:08 PM, when the State Police Commissioner heard from the Secretary of General Services who was stuck on I-78 in Berks County, did the State Police Commissioner begin to understand what was happening on the interstates.

Recommendation: State Police should establish an internal workgroup to formalize the notification process and ensure that communication is conducted vertically and horizontally within the agency. This would allow optimum situational awareness and a common operational picture. Additionally, weather emergencies should have the same communications priority as other high profile crime events.

2. **No written or verbal Incident Action Plan (IAP) was completed for the command post established at Hamburg Station** (established at approximately 4:30 PM on February 14) **or Hazleton Station** (established at approximately 1:00 PM on February 15). The shift supervisor of the Hamburg command post stated that he did not document any events or capture any information other than what was captured by CAD or AMIS. No information was provided to JLWA regarding common NIMS documentation or the development of an Incident Action Plan for both command posts. The Commonwealth does have an Incident Management Team that has been activated for previous major events. It was not requested in this event.

Recommendation: The State Police should train key operations staff in both NIMS and advanced Incident Command System in specific areas of planning and logistics to assist Station, Troop or Area Command Incident Commands.

Conclusion

A major precept of emergency management is that it is best to recognize gaps identified from events and apply lessons learned.

It is paramount that State officials address the deficiencies identified in order to assure overall preparedness for larger scale natural or manmade disasters. Therefore, the State should immediately clarify the conditions under which PEMA provides emergency direction and control of Commonwealth and local emergency operations in accordance with Title 35. This clarification should take into consideration several factors including:

- Other state agencies' respective missions and authorities
- Command and control responsibilities for specific events
- Coordination and communications responsibilities
- State agency responsibilities for keeping the Governor's office informed

The State has not updated its emergency management statutes since the events of September 11, 2001 and Hurricane Katrina. As part of an overall review of the emergency management structure, systems and organization, the State should consider potential changes to Title 35.

The State should develop and implement appropriate ongoing training and exercises to fully implement the revisions to State Code and plans.

Finally, the State should also complete full implementation of operations, logistics, planning and administration in both the State Emergency Operations Plan and State Emergency Operations Center operations in compliance with National Incident Management System and incident command system standards and timelines. These will take time, resources and commitment but will go far to better prepare the State for the next major emergency event.

The Governor should call for a thorough examination of preparedness and emergency management in the State to be conducted by a team of key lead-

ers at the State, local and federal levels of government as well as leaders from the private, university and not-for-profit sectors, including those who manage the State's critical infrastructure. This effort should be jointly led by State and local officials appointed by the Governor. This team should utilize technical subject-matter experts as necessary.

This review should include a detailed analysis of emergency management structure; identification of statutes to be changed to reflect current challenges; and changes in policy, protocols and procedures.

It should also include a review of the medical system's preparedness, efforts to ensure the protection of critical infrastructure and the protection of those citizens requiring unique assistance during a major emergency.

The State has a responsibility to ensure that the citizens of Pennsylvania are prepared for emergencies as well, and should consider a comprehensive citizen preparedness educational campaign.

Appendix

APPENDIX A: Interviews Conducted

APPENDIX B: National Weather Service – State College Report on Valentine’s Day Storm

APPENDIX C: JLWA Project Team

APPENDIX D: Acronyms and Abbreviations

APPENDIX A: Interviews Conducted

The following individuals were interviewed in person or via telephone for this review.

Citizens

Seeking feedback from those individuals on the roads during this event, JLWA requested and reviewed correspondence received from citizens. Senator Elizabeth Baker, Chair of the Veterans Affairs and Emergency Preparedness Committee and Senator Roger Madigan, Chair of the Transportation Committee provided over 1,300 pages of emails received from more than 800 individuals. JLWA reviewed each of these and followed up with phone calls in some cases.

Local Governments in Pennsylvania

Steve Shaver, Emergency Management Coordinator, Dauphin County
 Art Kaplan, Emergency Management Coordinator, Schuylkill County
 Brian Gottschall, Emergency Management Coordinator, Berks County
 Alan Pugh, Public Safety Director, Luzerne County
 Steve Bekanich, Emergency Management, Luzerne County
 Mark Nalesnik, Emergency Management Coordinator, Carbon County
 Robert Flanagan, Emergency Management Coordinator, Lackawanna Co.
 Jack Garner, Executive Director Pennsylvania League of Cities and Municipalities;
 Doug Hill, Executive Director County Commissioners Association of Pennsylvania;
 Keith Hite, Executive Director Pennsylvania State Association of Township Supervisors;
 Tom Klaum, Executive Director Pennsylvania State Association of Boroughs

Commonwealth of Pennsylvania Government

Office of the Governor

Governor Edward Rendell
 John Estey, Chief of Staff
 Arthur Stephens, Deputy Chief of Staff
 Joseph Martz, Secretary of Administration

Office of the Lt. Governor

Lt. Governor Catherine Baker Knoll
 Salvatore Sirabella, Chief of Staff to the Lt. Governor

Pennsylvania Department of Transportation

Amar Bhajandas, PennDOT District Executive District 5-0
 Don Lerch, Maintenance Engineer, District 5-0
 Richard Hogg, Deputy Secretary
 Stephen Shimko, District 4-0 Executive
 Allen Biehler, Secretary
 Frank Barone, Schuylkill County Maintenance Manager
 Bill Bellas, Berks County Maintenance Manager
 Tucker Ferguson, Director, Bureau of Maintenance and Operations

Pennsylvania Emergency Management Agency

General James Joseph, Director
John Comey, Executive Assistant
Richard D. Flinn, Jr., Deputy Director for Operations
Maria Finn, Press Secretary
Jose E. Morales, Chief Counsel
Scott Forster, Emergency Operations Center Lead Supervisor
Tony Camillocci, Eastern Area Office Coordinator
Fern Harmon, Central Area Office Coordinator
Tim Baughman, Director of Western Central Office
Bud Mertz, State Emergency Operations Center staff member
Alan Brinser, State Emergency Operations Center staff member
Ed Mann, State Fire Commissioner

Pennsylvania State Police

Lt. Tim Shannon, PEMA Liaison
Col. Jeffrey B. Miller, Commissioner
Cpl. Richard Morgan, Shift Supervisor, Hamburg Station
Cpl. William Stanback, Shift Supervisor, Hamburg Station
LTC Ralph Periandi, Operations Commander
Capt. Oscar Rivera, Troop L
Capt. Bob Evanzhick, Troop R
PSP Area Commanders
Sgt. Dan Wade, Patrol Sergeant, Troop L
Major Charles Skurkis, Emergency Preparedness Liaison Officer
Capt. James Murtin, Commander, Troop N
Major Jon Kurtz, Area I Commander
Major Joseph Marut, Area II Commander
Major John Rice, Area V Commander

Department of Military and Veterans Affairs and Pennsylvania National Guard

Major General Jessica Wright, Adjutant General
Colonel Xavier Stewart, Director Military Support to Civil Authorities
Lt. Col. Blosser
Maj. Hassler
Maj. Gottschall
Capt. Howett
Lt. O'Leary

Department of General Services

Secretary James Creedon, Department of General Services

Pennsylvania Turnpike

Joseph Brimmeier, CEO
John Stewart, Director of Maintenance
Bill Capone, Director of Communications

Former PEMA Directors

David Sanko, Bucks County Administrator and former PEMA Director
Charles Wynne, California Office of Emergency Management and former PEMA Director

APPENDIX B: National Weather Service – State College Report on Valentine’s Day Storm

The following pages are from the National Weather Service website and describe in detail the weather during the Winter Storm.



National Weather Service Forecast Office

State College, PA



The Valentine's Day Storm 13-14 February 2007



Summary

A complex and wide-reaching winter storm moved from the Mid-Mississippi Valley into the Tennessee Valley on Tuesday the 13th of February, and into the Mid Atlantic and New England on the 14th and 15th of February. This strong storm produced widespread snowfall across the [Mid Atlantic](#) and [New England](#). The heaviest hit areas were the Adirondack Mountains in New York and Northern Vermont where over 2 feet of snow fell! [Across Pennsylvania](#) totals ranged from a few inches in the far Southeast to around 20 inches in the Northeast.

The storm began to produce light snow in Southwestern PA very early Tuesday morning. The snow then spread to the north and east, becoming heavy in the afternoon.

The snow started to mix with sleet in the Southern tier of PA in the evening, and eventually turned to freezing rain over the Southeast. [The upper air soundings at KLRX](#) showed a warm (above-freezing), mid-level layer of air moving into Southern Pennsylvania causing the snow aloft to melt into rain aloft. The rain then froze into sleet as it fell through a deep layer of sub-freezing air beneath the elevated warm layer aloft. (If the layer of cold air near the surface is relatively thin, then the precipitation at the surface would be rain, but it would freeze on contact with the sub-freezing ground and objects = Freezing Rain.)

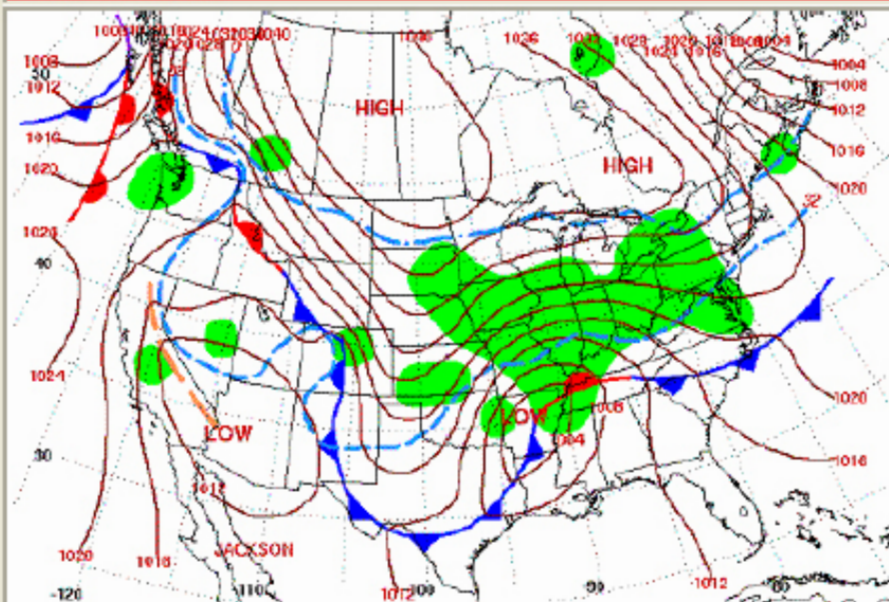
[The precipitation was heaviest over Central Pennsylvania Tuesday night and Wednesday morning](#), as the storm re-developed, and strengthened along the Mid-Atlantic Coast on Wednesday morning, prolonging the heavy snow in the North and East. Radar views at [0600](#), [0900](#), and [1200UTC](#) show the higher reflectivity echoes transitioning from Central PA into the east as a secondary low strengthened over the eastern seaboard.

The storm produced very heavy snow across Northcentral PA, and a snow and sleet mix for the Central and Southern counties. Significant amounts of freezing rain also occurred Tuesday night and Wednesday morning in the Southeast. Harrisburg even set a daily record for the amount of (melted) liquid precipitation on Feb 14th (2.12 inches), while 6.0 inches of snow and sleet fell for the entire storm there.

The storm snarled traffic, and halted airline flights over more than a dozen States from Virginia and Maryland, where it produced [lots of freezing rain and a thick coating of ice](#), up to interior New England, where Blizzard conditions existed on Wednesday.

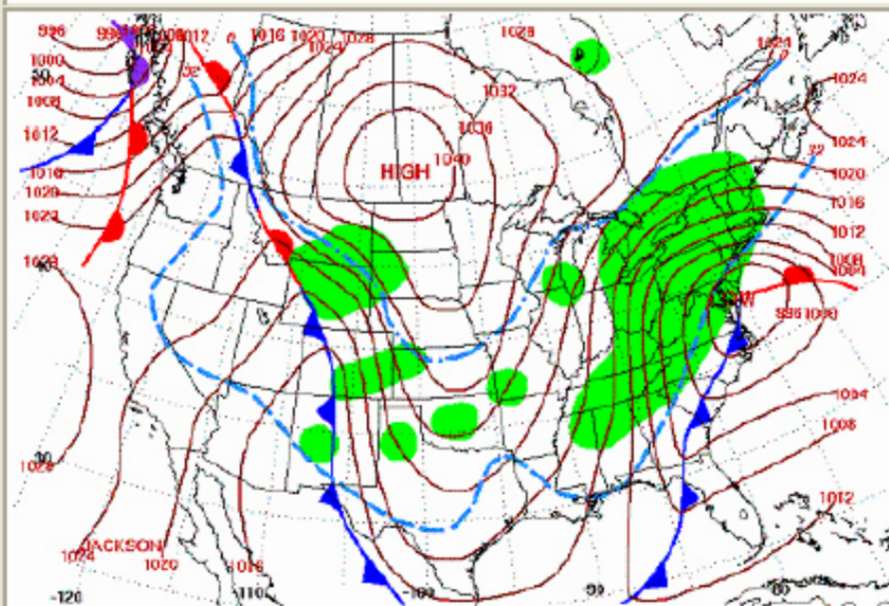
This storm was the first widespread winter storm for the State during the Winter of 2006-2007. The snowfall came almost one year to the day after [the last major snowfall of the winter of 2005-2006 \(11-12Feb2006\)](#). Thanks to the public [we received many snowfall reports](#) which we were able to use in our [Public Information Statement](#) products. This product is helpful to emergency managers who use this information to make decisions.

Surface Charts



Surface Weather Map at 7:00 A.M. E.S.T. **13 February 2007**

US Surface Chart, Tuesday Morning (2/13/2007), 1200UTC (7am EST)

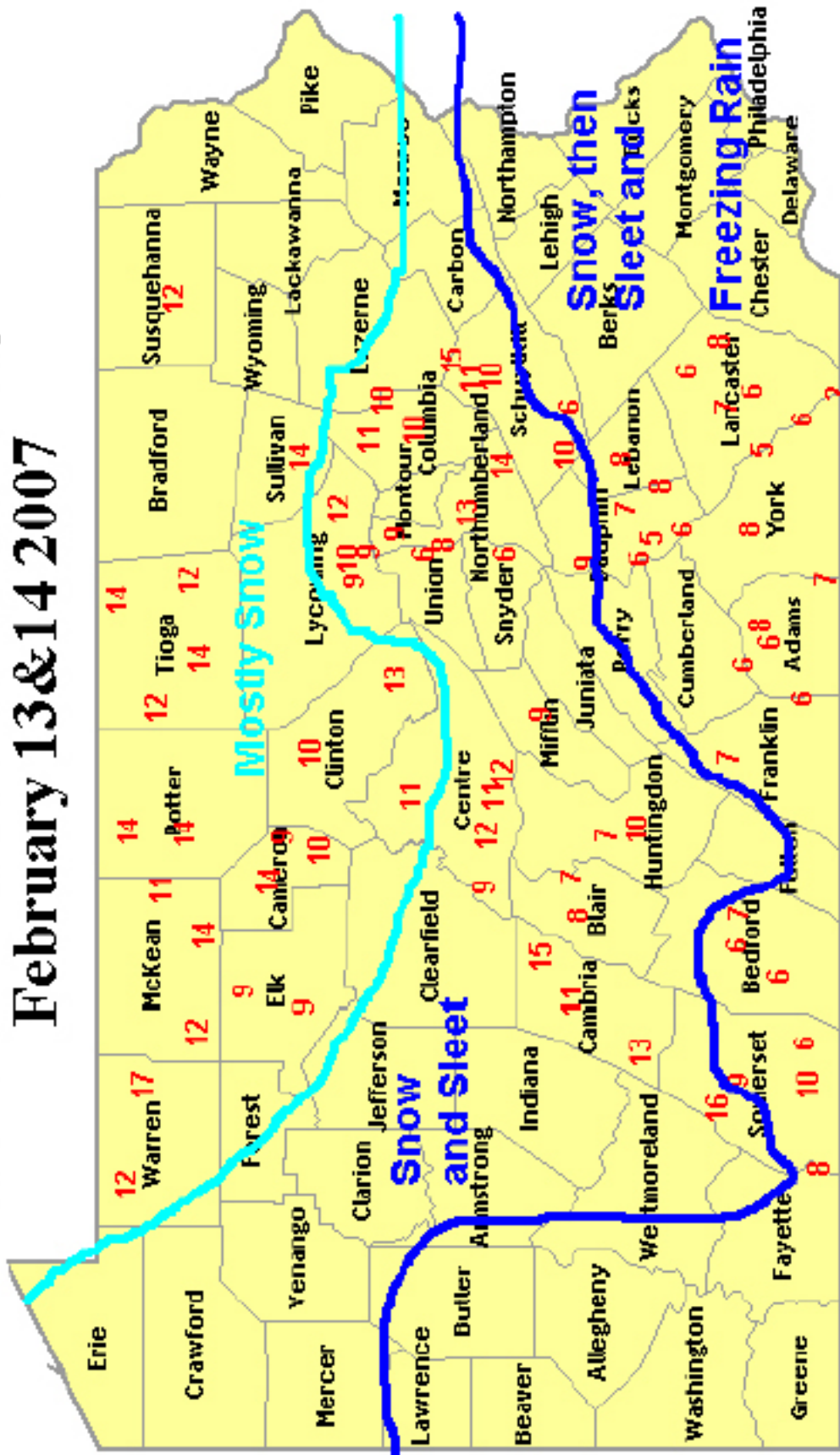


Surface Weather Map at 7:00 A.M. E.S.T. **14 February 2007**

US Surface Chart, Wednesday Morning (2/14/2007), 1200UTC (7am EST)

Snowfall Map

Snowfall from the Valentine's Day Storm February 13&14 2007



Storm Total Snowfall from the Valentines Day Storm

Snowfall Reports (text)

000
 NOUS41 KCTP 151658
 PNSCTP
 PAZ004>005-010>012-017>019-024>028-033>034-037-041>042-045>046-
 049>053-056>059-063-065>066-160300-

PUBLIC INFORMATION STATEMENT
 SPOTTER REPORTS
 NATIONAL WEATHER SERVICE STATE COLLEGE PA
 1158 AM EST THU FEB 15 2007

THE FOLLOWING ARE COOP STORM TOTAL SNOWFALL ACCUMULATIONS IN INCHES
 FOR THE VALENTINES DAY STORM OF 2007 FROM THE NATIONAL WEATHER
 SERVICE IN STATE COLLEGE PA. THANKS TO COOPERATIVE OBSERVERS AND THE
 PUBLIC FOR YOUR REPORTS. THIS SUMMARY CAN ALSO BE FOUND ON OUR HOME
 PAGE AT [HTTP://WWW.NWS.NOAA.GOV/CTP](http://www.nws.noaa.gov/ctp)

*****STORM TOTAL SNOWFALL*****

LOCATION	STORM TOTAL SNOWFALL (INCHES)	TIME/DATE OF MEASUREMENT	COMMENTS
PENNSYLVANIA			
...ADAMS COUNTY...			
BIGLERVILLE	6.0	700 AM 2/15	COOP REPORT
...BEDFORD COUNTY...			
BUFFALO MILLS	5.1	700 AM 2/15	COOP REPORT
EVERETT	6.3	700 AM 2/15	COOP REPORT
WOLFSBURG	4.8	700 AM 2/15	COOP REPORT
...BLAIR COUNTY...			
ALTOONA	7.0	700 AM 2/15	COOP REPORT
WILLIAMSBURG	7.3	700 AM 2/15	COOP REPORT
...CAMBRIA COUNTY...			
EBENSBURG	10.5	500 PM 2/14	PUBLIC REPORT
JOHNSTOWN	11.0	1200 PM 2/14	PUBLIC REPORT
PRINCE GALLITZIN	14.6	700 AM 2/15	COOP REPORT
...CAMERON COUNTY...			
SINNEMAHONING	10.5	700 AM 2/15	COOP REPORT
EMPORIUM	10.0	500 PM 2/14	PUBLIC REPORT
STEVENSON DAM	8.5	700 AM 2/15	COOP REPORT
...CENTRE COUNTY...			
PHILIPSBURG 2S	10.7	700 AM 2/15	COOP REPORT
CLARENCE	9.0	700 AM 2/15	COOP REPORT
STATE COLLEGE	10.4	700 AM 2/15	COOP REPORT
...CLEARFIELD COUNTY...			
GRAMPIAN	9.9	700 AM 2/15	COOP REPORT
...CLINTON COUNTY...			
LOCK HAVEN	12.5	700 AM 2/15	COOP REPORT
RENOVO	9.5	700 AM 2/15	COOP REPORT
...COLUMBIA COUNTY...			
BENTON	10.6	700 AM 2/15	COOP REPORT
...CUMBERLAND COUNTY...			
PINE GROVE FURNACE	6.0	700 AM 2/15	COOP REPORT

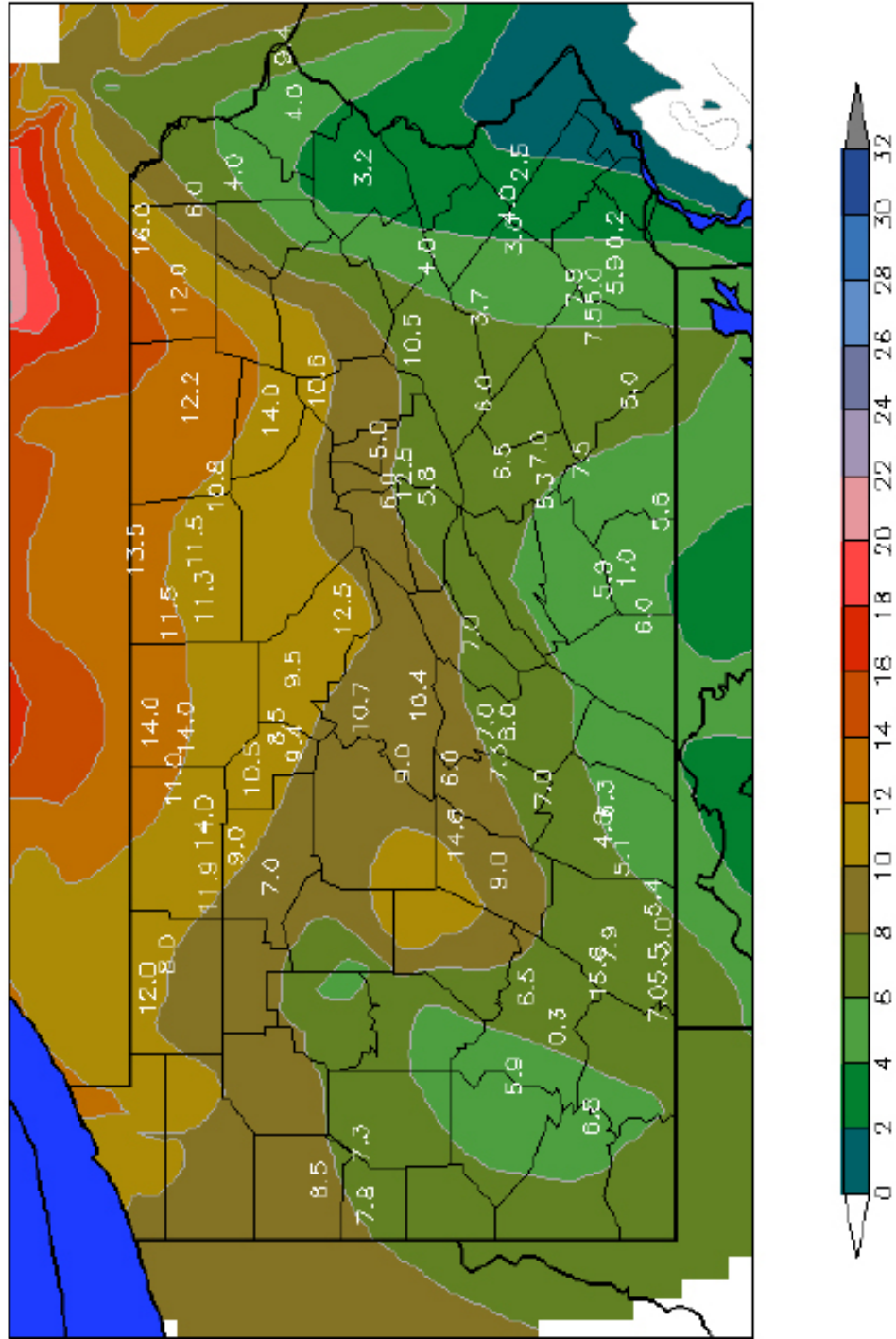
...DAUPHIN COUNTY...					
DEHART DAM	6.5	700 AM	2/15	COOP REPORT	
HARRISBURG	6.5	700 AM	2/15	COOP REPORT	
HERSHEY	7.0	700 AM	2/15	COOP REPORT	
...ELK COUNTY...					
RIDGWAY	9.1	700 AM	2/15	COOP REPORT	
WILCOX	9.0	700 AM	2/15	COOP REPORT	
...FRANKLIN COUNTY...					
GREENCASTLE	5.3	800 AM	2/15	PUBLIC REPORT	
SOUTH MOUNTAIN	6.0	700 AM	2/15	COOP REPORT	
UP. STRASBURG	7.0	700 AM	2/15	COOP REPORT	
...HUNTINGDON COUNTY...					
HUNTINGDON	7.0	700 AM	2/15	COOP REPORT	
RAYSTOWN LAKE	8.0	700 AM	2/15	COOP REPORT	
...LANCASTER COUNTY...					
GLEN MOORE	5.8	700 AM	2/15	COOP REPORT	
HOLTWOOD	5.5	700 AM	2/15	COOP REPORT	
LANCASTER	8.0	700 AM	2/15	COOP REPORT	
NEW HOLLAND	7.5	700 AM	2/15	COOP REPORT	
SAFE HARBOR	5.0	700 AM	2/15	COOP REPORT	
...LYCOMING COUNTY...					
ELMSPORT	8.5	1255 PM	2/14	PUBLIC REPORT	
MUNCY	11.5	1000 AM	2/15	PUBLIC REPORT	
WILLIAMSPORT	8.5	500 PM	2/14	PUBLIC REPORT	
...MCKEAN COUNTY...					
CLERMONT	14.0	700 AM	2/15	COOP REPORT	
KANE	11.9	700 AM	2/15	COOP REPORT	
PORT ALLEGHENY	11.0	700 AM	2/15	COOP REPORT	
...MIFFLIN COUNTY...					
LEWISTOWN	7.0	700 AM	2/15	COOP REPORT	
...NORTHUMBERLAND COUNTY...					
SHAMOKIN	11.0	400 PM	2/14	PUBLIC REPORT	
SUNBURY	12.5	700 AM	2/15	COOP REPORT	
WATSONTOWN	9.0	500 PM	2/14	PUBLIC REPORT	
...POTTER COUNTY...					
COUDERSPORT	14.0	700 AM	2/15	COOP REPORT	
OSWAYO	14.0	700 AM	2/15	COOP REPORT	
...SCHUYLKILL COUNTY...					
MAHANAY CITY	10.5	700 AM	2/15	COOP REPORT	
PINE GROVE	6.0	700 AM	2/15	COOP REPORT	
SHENANDOAH HEIGHTS	9.5	500 PM	2/15	PUBLIC REPORT	
ZION GROVE	15.0	500 PM	2/14	PUBLIC REPORT	
...SNYDER COUNTY...					
SELINGSGROVE	5.8	700 AM	2/15	COOP REPORT	
...SOMERSET COUNTY...					
CONFLUENCE	7.0	700 AM	2/15	COOP REPORT	
GLENCOE	6.1	700 AM	2/15	COOP REPORT	
LAUREL SUMMIT	15.6	700 AM	2/15	COOP REPORT	
MOUNT DAVIS	12.5	700 AM	2/15	COOP REPORT	
SOMERSET	7.9	700 AM	2/15	COOP REPORT	
...SULLIVAN COUNTY...					
LAPORTE	14.0	700 AM	2/15	COOP REPORT	
...TIOGA COUNTY...					
COWANESQUE DAM	11.5	700 AM	2/15	COOP REPORT	
COVINGTON	11.5	700 AM	2/15	COOP REPORT	
WELLSBORO	14.0	530 PM	2/14	PUBLIC REPORT	
SABINSVILLE	13.5	700 AM	2/15	COOP REPORT	
...UNION COUNTY...					
LEWISBURG	7.5	530 PM	2/14	PUBLIC REPORT	
...WARREN COUNTY...					
CHANDLERS VALLEY	12.0	700 AM	2/15	COOP REPORT	
WARREN	16.5	500 PM	2/14	PUBLIC REPORT	
...YORK COUNTY...					
HANOVER	5.6	700 AM	2/15	COOP REPORT	
YORK HAVEN	7.5	700 AM	2/15	COOP REPORT	

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CONNELLY

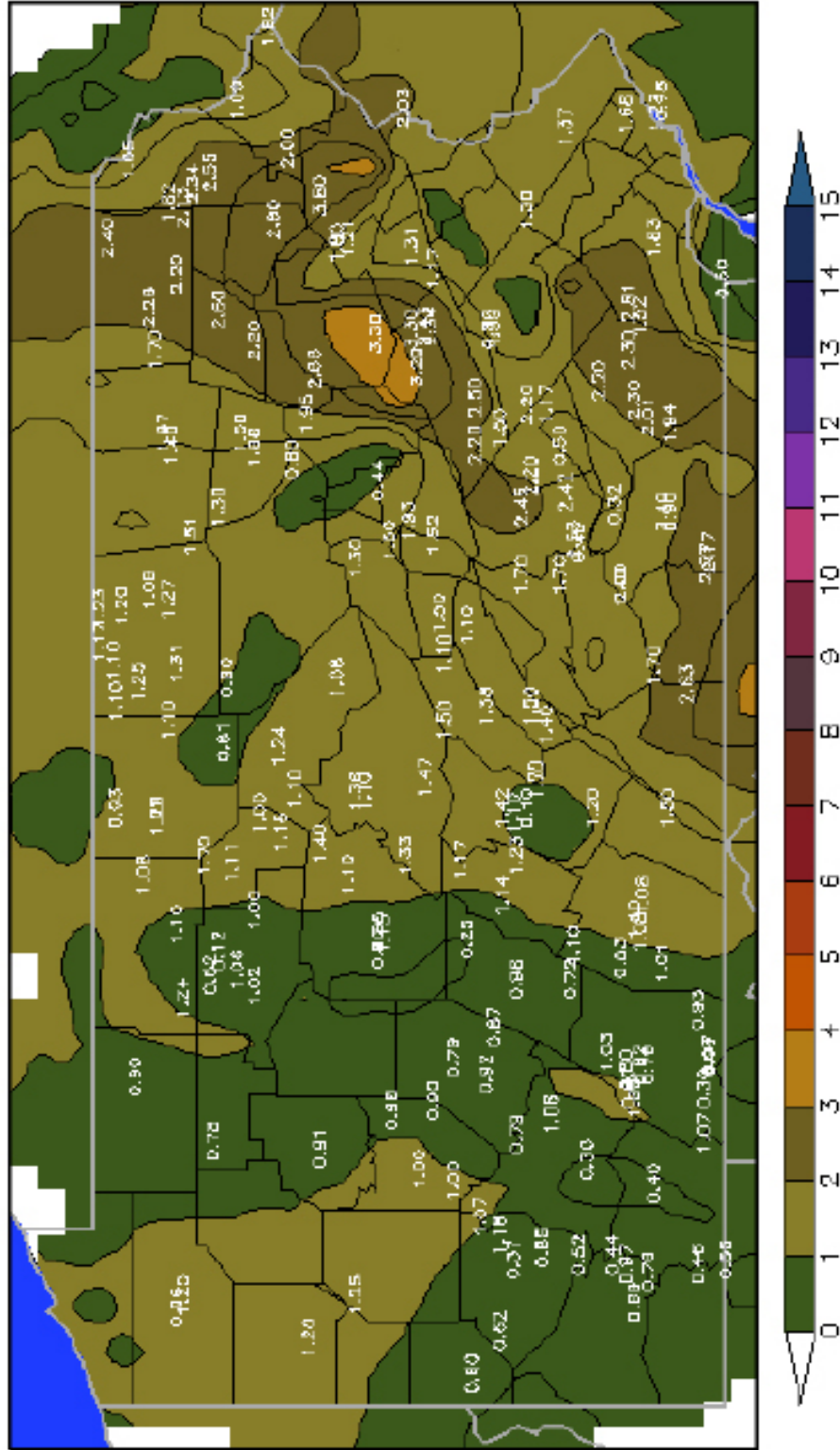
COOP Snowfall Map Showing 2 Day Total Snowfall
7:00 am Feb 13 to 7:00 am Feb 15

COOP 2-Day Total Snowfall (inches)
ending 7:00 AM Thu Feb 15 2007



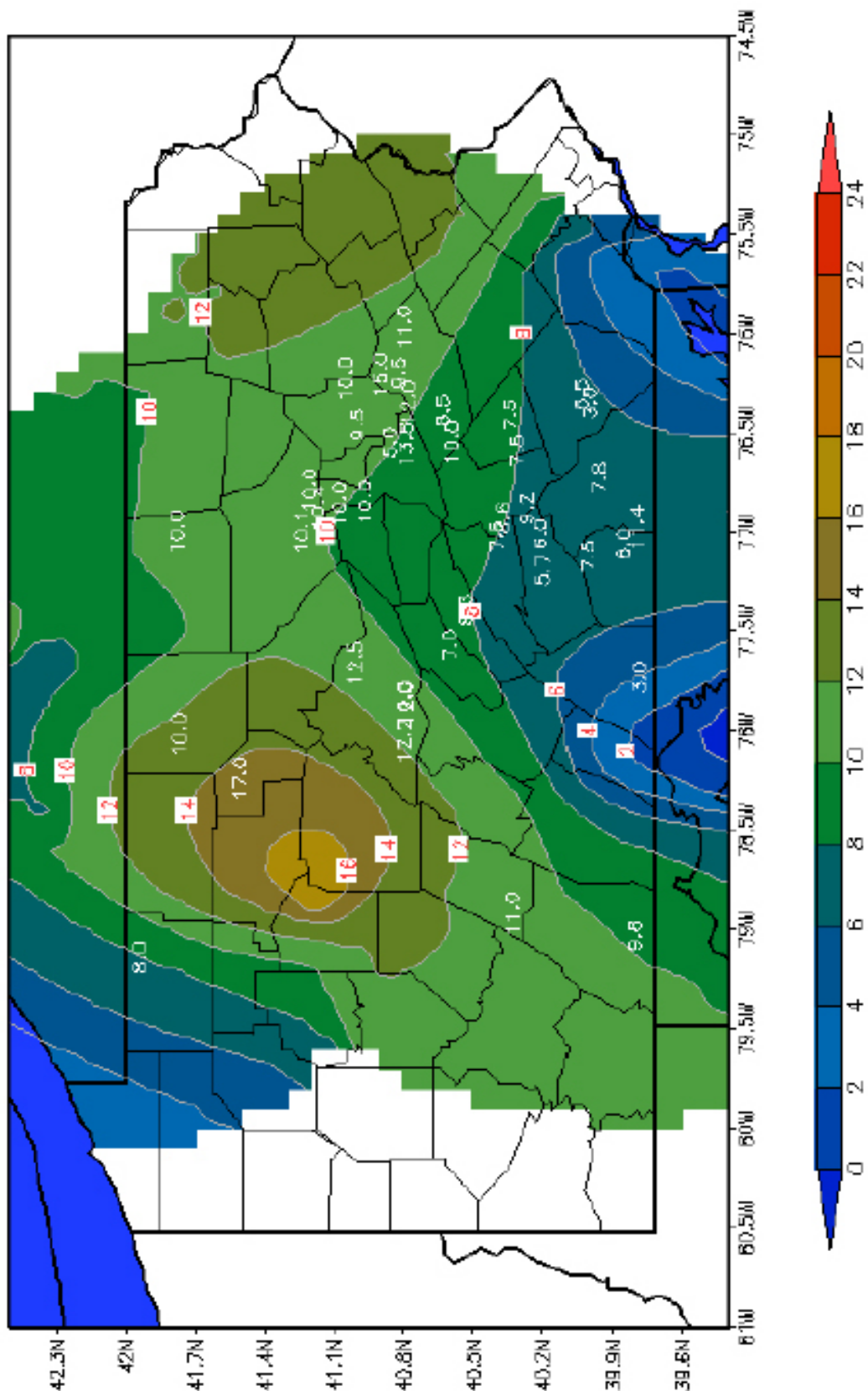
COOP Rainfall Map Showing 2 Day Total Precipitation 7:00 am Feb 13 to 7:00 am Feb 15

Precipitation Total (inches)
past 48 hours ending 7:00 AM Thu Feb 15 2007



Unofficial Public Reports of Snowfall (limited to Central PA) for Feb 14, 2007

Public Reports Total Snowfall (inches)
for Wed Feb 14 2007



APPENDIX C: JLWA Project Team

JAMES LEE WITT

James Lee Witt is Chairman and Chief Executive Officer of James Lee Witt Associates (JLWA), a Part of GlobalOptions Group. In this capacity, he provides consulting and crisis management services to state and local governments, educational institutions, corporations and the international community. He served as Principal in the review of the State of Pennsylvania's response to the February Winter Storm.

Mr. Witt has more than 30 years of disaster management experience, culminating in his appointment as the Director of the Federal Emergency Management Agency (FEMA), where he served from 1993-2001. As FEMA Director, Mr. Witt coordinated federal disaster relief on behalf of President Clinton, including the response and recovery activities of 28 federal agencies and departments, the American Red Cross and other volunteer agencies. In February 1996, President Clinton elevated Mr. Witt to cabinet status – a first for a FEMA Director. Mr. Witt is credited with turning FEMA from an unsuccessful bureaucratic agency to an internationally lauded all-hazards disaster management agency. FEMA adopted a new emphasis on customer service under his direction.

Mr. Witt has expertise integrating community-based disaster management with national emergency management strategy. He initiated Project Impact, a public-private partnership, and the first federally funded program dealing with emergency preparedness and mitigation at the local level. Mr. Witt has directed response and recovery operations for more than 350 disasters in all 50 states, including the most costly flood disaster in the nation's history, the most costly earthquake, and a dozen damaging hurricanes.

CHARLES FISHER

Charles Fisher served as Project Manager in the review of the State of Pennsylvania's response to the February Winter Storm.

Mr. Fisher is the Managing Director for JLWA's Utility and Critical Infrastructure Practice. He oversees numerous JLWA teams involved in helping public and private sector entities, such as the City of Philadelphia and a major electric utilities, perform after-action reviews, identify gaps in emergency preparedness and implement recommendations and solutions to address those gaps.

Before joining JLWA, Mr. Fisher served as a consultant on utility, telecommunications and transportation issues. He was the executive director of the Illinois Commerce Commission, the state public service commission, during a period of significant changes in the electricity, natural gas and telecommunications industries. He has also overseen the development of critical infrastructure and public education efforts to improve public safety for natural gas pipelines, rail, and 9-1-1 emergency telephone systems.

JENNIFER HOLT THAMER

Jennifer Holt Thamer served as the Deputy Project Manager in the review of the Winter Storm. In this role, she supported the Project Manager with overall project coordination, interviews and document review, and led the development of the report.

Ms. Thamer manages the Higher Education Practice at James Lee Witt Associates and works closely with clients, especially institutions of higher education, on projects to minimize or prevent the economic, physical and cultural damage that can be caused by disasters. She has coordinated projects to train students, staff and faculty on the principals of public safety; to develop partnerships among academic institutions and the public and private sectors; to create emergency operations, hazard mitigation and business continuity plans; and, to conduct business impact and hazard vulnerability analyses.

Her past clients have included Pennsylvania Ready Campus, an initiative that is bringing together colleges and universities across Pennsylvania to form partnerships with their local and state governments for emergency preparedness. The manual she wrote for the Ready Campus included an overview of emergency management laws in Pennsylvania and at the federal level. Recently, she helped lead the subcommittee for special needs populations on the JLWA project to review the City of Philadelphia's emergency preparedness efforts. She has also worked recently with Northwestern University, George Mason University, and a top-tier medical school on assessments, planning, training and exercising.

KENNETH MALLETTE

Kenneth Mallette was the Lead Investigator in the review of the Winter Storm, focusing on the response of the State Police. He currently serves as the Director of Homeland Security for James Lee Witt Associates, providing technical expertise and consultation services to government and the private sector on Homeland Security, Crisis and Consequence Management, Emergency Services, and Government Affairs.

Mr. Mallette has over twenty-five years of diverse service with the New Jersey State Police and retired as a Captain. Mr. Mallette was the Executive Officer for the Special Operations Section of the Homeland Security Branch. He was responsible for the day-to-day operation of six bureaus: aviation, technical response, deployment services, commercial transportation safety, marine services and state governmental building security and the Governor's executive protection services. Mr. Mallette was also assigned as the Executive officer for the Administration and Division Staff Section of the State Police. In that capacity he was responsible for a \$331 million budget, Human Resources Bureau, Planning Bureau, Logistics Bureau and the Training Academy. Operationally, Mr. Mallette has served as the Deputy Troop Commander for Troop "A" South Jersey and Troop "C" Central Jersey.

WILLIAM LOKEY

William Lokey served as a Subject Matter Expert during the review of the response to the Winter Storm, focusing on emergency management response at the State and local levels. Mr. Lokey is a Program Director at JLWA.

Mr. Lokey has been active in emergency management and search and rescue for more than 35 years. He began as a Mountain Rescue volunteer and a survival and search & rescue instructor for the US Antarctic Program in the late 1960's. He went to work for the Washington State Department of Emergency Management

in 1977, working on development of the State Disaster Plan, earthquake preparedness and search and rescue. In 1981, he was appointed Assistant Director for Operations, responsible for disaster response, warning, communications, search and rescue, hazardous materials planning, and recovery efforts and Restricted Zone management for Mt. Saint Helens. Mr. Lokey's previous positions and experience include Director of Emergency Management for Pierce County, Washington; Task Force Leader for one of the U.S. National Urban Search and Rescue Response teams; an adjunct instructor at the National Emergency Training Center in Emmitsburg, Maryland; a graduate of the U.S. Coast Guard's National Search and Rescue School; Assistant Chief for Special Operations for the California Governor's Office of Emergency Services; and a Federal Coordinating Officer (FCO) for FEMA. He served as FCO for 24 declared disasters. He has also served as the Operations Branch Chief of the Response Division at FEMA Headquarters.

KURT AUFSCHEIDER

Kurt Aufschneider is a transportation engineer with more than 30 years experience in transportation operations and planning. Most recently, he completed an operations audit of the Atlantic City Expressway for the South Jersey Transportation Authority. He has also served as the Executive Director for Statewide Traffic Operations for the New Jersey Department of Transportation, where he was responsible for the technology program, dispatch operations, and several operations centers.

Mr. Aufschneider has served on several traffic incident management organizations and committees, including the Institute of Electrical and Electronics Engineers Incident Management Standards Committee (P1512). He is a member of the Institute of Transportation Engineers, a graduate of the Newark College of Engineering, and is a Certified Public Manager.

On this project, Mr. Aufschneider was responsible for examining the processes, procedures, and protocols used by the transportation agencies responding to this Mid-February Winter Storm.

JACK PERRY

Jack Perry was a Subject Matter Expert during the review of the Winter Storm, focusing on the National Guard aspects of the review. Mr. Perry is Director of Logistics at JLWA. He is a 30 year Military Veteran, served 21 years in the United States Army as an Officer and nine years in the United States Marines. Mr. Perry served his last tour of duty with the United States Northern Command, Military Department of Homeland Security as a worst case scenario medical operations planner. Mr. Perry has worked on several major national security projects to include the Democratic National Convention, Republican Convention and the G-8 Summit.

Mr. Perry is currently assigned to the JLWA Team in New Orleans as a Deputy State Coordinating Officer for the Louisiana Governor's Office of Homeland Security. Mr. Perry holds a Bachelors Degree, Masters in Business Administration and an Honorary PhD from the National Consortium for Homeland Security. Mr. Perry is credentialed as a Homeland Security Professional (CHSIII) from the American College of Forensic Examiners Institute. Prior to his Army career, Mr. Perry served as a Police Officer in Tucson, Arizona.

MATTHEW OSTER

Matthew Oster currently serves as Client Executive for the State and Local Practice and International Operations Division within JLWA. He served as Project Coordinator for the review of the Winter Storm.

Since joining JLWA, Mr. Oster has held prominent advisory roles for both public and private clients. He was a member of the JLWA team that performed an all-phases review of the City of Philadelphia's emergency preparedness plans and drafted recommendations to be implemented by the City. He co-wrote the resulting comprehensive recommendations report and monitored the City's implementation of the goals set forth in the report. He has performed similar reviews for other state and local actors, including the City of Alexandria, Virginia.

Prior to joining James Lee Witt Associates, Mr. Oster administered international energy and infrastructural contracts for PA Consulting Services, a global management consulting firm based out of Washington, DC. He specifically oversaw federal procurement operations under the General Services Administration's Federal Supply Schedule.

KRISTIN ROY

Kristin Roy served as Design Specialist for the review of the Pennsylvania Winter Storm Response.

Kristin Roy currently serves as a Client Executive at JLWA. In this role, Ms. Roy handles a number of client, business development, marketing, and office management responsibilities. Her key roles include media relations, design and layout of a variety of company reports and collateral, management of the company website, and development marketing-related materials.

Ms. Roy is the first line of defense for media relations inquiries and single-handedly triaged over 100 media inquiries per day during the Hurricane Katrina situation. She is the author of a number of letters to the editor, articles and op-eds for a variety of clients that has helped persuade public opinion about emergency management issues.

Prior to joining JLWA, Ms. Roy held an internship in the public relations department of a non-profit organization in Washington, DC. There, she organized events and fundraisers, created materials for press kits, wrote and edited press releases, and provided administrative support to the public relations department staff.

APPENDIX D: Acronyms and Abbreviations

AMIS: Asset Management Information System
CDC: Centralized Dispatch Center
CLEAN: Commonwealth Law Enforcement Assistance Network
COP: Common Operational Picture
DHS: Department of Homeland Security
DMVA: Department of Military and Veterans Affairs
EAS: Emergency Alert System
EPLO or Liaison: Emergency Preparedness Liaison Officer
FEMA: Federal Emergency Management Agency
HAR: Highway Advisory Radio
IAP: Incident Action Plan
ICS: Incident Command System
JIC: Joint Information Center
JLWA: James Lee Witt Associates
NEMA: National Emergency Management Association
NIMS: National Incident Management System
NWS: National Weather Service
PEIRS: Pennsylvania Emergency Incident Reporting System
PEMA: Pennsylvania Emergency Management Agency
PennDOT: Pennsylvania Department of Transportation
RCRS: Road Closure Reporting System
RWIS: Roadway Weather Information System
TCP: Traffic Control Point
VMS: Variable Message Sign