



**STATE OF NEW HAMPSHIRE**



**DECEMBER 11-12, 2008  
ICE STORM**

**STATE RESPONSE  
AFTER-ACTION  
REPORT**

**DECEMBER, 2009**

**DEPARTMENT OF SAFETY  
HOMELAND SECURITY & EMERGENCY  
MANAGEMENT**

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## Letter From Presenting Group

## HANDLING INSTRUCTIONS

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State of New Hampshire  
Dept. of Safety  
Homeland Security & Emergency Management

## AFTER-ACTION REPORT COMMITTEE

Diane L. Becker  
Assistant Chief of Operations  
AAR, Chair  
Dept. of Safety, Division of Homeland Security & Emergency Management  
33 Hazen Drive  
Concord, N.H. 03301  
(603) 223-3626  
[diane.becker@hsem.nh.gov](mailto:diane.becker@hsem.nh.gov)

Jennifer Harper  
Bio-Terrorism Preparedness Coordinator  
AAR, Co-Chair  
Dept. of Safety, Division of Homeland Security & Emergency Management  
33 Hazen Drive  
Concord, N.H. 03301  
(603) 223-3615  
[Jennifer.harper@hsem.nh.gov](mailto:Jennifer.harper@hsem.nh.gov)

Christopher Pope	DOS, NH Homeland Security & Emergency Management, Director
Kathryn Douth	DOS, NH Homeland Security & Emergency Management Asst. Director
Chief George Klauber	Fire Department, Town of Derry
Chief Shaun Mulholland	Police Department, Town of Allenstown
N. Scott Weden	NH Local Government Center
Michael Pillsbury	NH Department of Transportation
Brad Simpkins	NH Department of Resources and Economic Development
Daniel McElhinney	Federal Emergency Management Agency, Region I
Lt. Col. Ralph Huber	NH National Guard
Michael Geary	DOS, Division of Emergency Services Communications & Mgt.
Katya Brennan	DOS, NH Homeland Security & Emergency Management
Jody O'Marra	NH Public Utilities Commission



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## EXECUTIVE SUMMARY

**Special Note:** This After-Action Report does not cover the long-term recovery activities associated with the incident.

***“ . . . this storm was typical of a winter storm that causes damage to the electric grid in New Hampshire from our studies. But what made it A-typical (sic) was two things; one was the amount of precipitation was very, very large and a good chunk of the precipitation fell in the freezing rain category. Often with the storms, we see a narrow band where there is freezing rain and more often some wet snow and sleet but, in this case, there was more of a large area of freezing rain and, in addition to that, we got a lot of precipitation much more than we would normally get from a winter storm. So those two things were not good news for folks.”***

*Dr. Eric Hoffman, Professor of Meteorology  
Plymouth State University*

Weather conditions during the evening of December 11<sup>th</sup> into the early hours of December 12<sup>th</sup>, 2008 brought the start of one of the most significant disasters experienced by the State of New Hampshire in its history. Winter conditions mixed with ice accretion, totaling 2” in some areas, impacted the public and utility infrastructure causing power outages in 211 of the 234 municipalities and land grants within the State. At its peak, over 400,000 “customers” (translating to over two-thirds of the population of New Hampshire) were without power and/or communications. The incident, which extended for over three (3) weeks, saw freezing temperatures with below zero wind-chills, two significant snowfalls, power and communication outages lasting for weeks and tragically, the loss of four lives.

This event taxed resources at all levels. Since much of New Hampshire is comprised of small, rural communities, local resources – especially human – were quickly expended. Police, fire and public works officials worked tirelessly throughout the incident. Twenty-four to forty-eight hour shifts became the norm for many during the early days of the incident. The utility companies quickly became overwhelmed, calling in resources from other parts of the country and Canada to supplement their own crews. The extent of the damage caused significant delays in assessing restoration needs, compromised the provision of accurate, realistic restoration information, and caused issues and delays with clearing of roads during the two snowstorms that occurred during the event (downed lines prohibited snow plowing).

As difficult and extensive as this disaster incident was, incredible resiliency and cooperativeness was exhibited by the individuals of New Hampshire. Throughout the event, at the State, local and neighborhood levels, people came together to help one another and to tackle difficult situations cooperatively and innovatively.

This incident also highlighted the importance of realistic, accurate communication to, from and with all individuals affected. Some of the greatest challenges were overcoming the sense of isolation many felt, the ability to plan and prepare appropriately based upon information received and the reliance placed upon traditional methods of communication.

Following the incident, the State was asked to embark upon a comprehensive “After-Action” process. The After-Action Core Group met continuously from January through June, 2009 collecting and sorting data and information received. A 30-page “SAC Report” (Strengths and Areas of Concern) was developed indexing items and comments into categories. On April 24<sup>th</sup>, an After-Action Roundtable was held with over 150 representatives from various federal/state agencies and non-governmental organizations (NGOs). Discussion tables reviewed submitted comments and began the development of the IAP.

### **Major Strengths:**

- ◆ Spirit of cooperation, collaboration and “sense of community” at all levels.
- ◆ Inventiveness and ingenuity exhibited.
- ◆ Ability of some communities to meet the needs of their citizens under difficult circumstances.
- ◆ Involvement of Governor and State Emergency Response Leadership.
- ◆ Resiliency of the affected population.
- ◆ Dedication and commitment of emergency response and utility workers.
- ◆ Positive feedback from municipalities regarding communication with State during response phase

### Primary Areas of Concern:

- ◆ Accurate communication and concise information between utilities, the State and community public safety officials and citizens.
- ◆ Coordinated utility response.
- ◆ Notification and Public Information dissemination.
- ◆ Lines of communication, collaboration and policy directives between response organizations.
- ◆ Education in preparedness and emergency response by individuals and families.
- ◆ Identification by local communities of their citizens with Functional Needs.
- ◆ Capabilities of local communities to respond to needs of citizens.
- ◆ Capabilities/redundancy of critical infrastructure at state and local levels.
- ◆ Levels of emergency/response organizational structures, training and emergency plans in affected communities.
- ◆ Sheltering capabilities and other mass care services.

### Summary of Recommendations:

- ◆ Develop improvements to existing and future communications methods and examine model practices for communications between state agencies and electric utilities.
- ◆ Offer NIMS/ICS courses/seminars to utilities and other private sector entities involved in responding to emergency situations.
- ◆ Develop a Joint Information System and plan for activation during emergency incidents.
- ◆ Strengthen the “ESF approach” within the State Emergency Response Organization to build depth and enhance response, resources and capabilities.
- ◆ Partner with federal, state, local and NGO partners to provide year-round individual/family preparedness training and information.
- ◆ Gather and provide information to local responders on methods utilized to address residents requiring specialized attention during an emergency.
- ◆ Explore statute changes to enhance local response.
- ◆ Gather information on local critical facilities, including back-up power/communication capabilities, and provide information to HSEM for mapping, grant application (and review) and situational awareness purposes.
- ◆ Conduct a complete and thorough inventory of all existing communication methods and systems currently available (public and private).
- ◆ Conduct an inventory of capabilities of back-up generators, noting the age of same, for state communication system and develop plan to prioritize and replace those insufficient to maintain operations during a prolonged emergency situation.
- ◆ Develop plans for re-fueling critical generators on communications equipment in remote locations under adverse conditions.
- ◆ Conduct training and awareness campaign for local communities in resource support that can be provided through State and Federal organizations.
- ◆ Encourage use of mutual aid agreements among municipalities.
- ◆ Develop method for the real-time collection and dissemination of ALL shelter information at the SEOC.



## INCIDENT OVERVIEW

### Incident Details:

**Incident Name:** December 11-12 Ice Storm, 2008

**Type of Incident:** Winter Storm (Ice & Snow)

**Incident Start and End Date:** 11 December to 24 December, 2008

**Incident Leadership:** Governor John Lynch, Director Christopher Pope,  
Assistant Director Kathryn Douth

### Emergency Support Functions (ESF) Activated:

(State Emergency Operations Plan as of 12/08)

- ❖ Transportation
- ❖ Communications & Alerting
- ❖ Public Works & Engineering
- ❖ Firefighting
- ❖ Information & Planning

Officials said there may well be further outages as power lines could snap when trees and branches shed ice and revert to their usual position (Photo: Erik Moon)



- ❖ Mass Care & Shelter
- ❖ Resource Support
- ❖ Health & Medical
- ❖ Energy
- ❖ Law Enforcement
- ❖ Public Information
- ❖ Volunteers & Donations
- ❖ Animal Health

### Participating Organizations/Agencies:

- ❖ Office of the Governor
- ❖ NH Public Utilities Commission
- ❖ NH National Guard
- ❖ NH Department of Safety
- ❖ NH Department of Health & Human Services
- ❖ NH Department of Transportation
- ❖ NH Department of Environmental Services
- ❖ NH Department of Agriculture
- ❖ NH Department of Information Technology
- ❖ NH Department of Resources and Economic Development
- ❖ NH Department of Education
- ❖ NH Department of Administrative Services
- ❖ NH Attorney General
- ❖ NH Department of Energy & Planning
- ❖ NH Hospital Association

- ❖ US Coast Guard
- ❖ Federal Emergency Management Agency
- ❖ VolunteerNH!
- ❖ National Weather Service
- ❖ ARES/TERT
- ❖ American Red Cross
- ❖ Regional Mutual Aid Compacts
- ❖ Local and County Emergency Responders
- ❖ Local Hospitals
- ❖ All Health Hazard Regions
- ❖ Medical Response System – NH Strike Team, Northern New England Metropolitan

### **Towns Affected:**

Two hundred and eleven (211) of the two hundred thirty four (234) communities in the State of New Hampshire experienced some power outages and effects of the storm. The northern part of the State was the least affected, with the heaviest impact experienced in the southwestern and southern parts of New Hampshire.



## INCIDENT EVENT OVERVIEW

*“The most difficult thing is just the sheer magnitude of the entire event, which is three times larger than our largest storm ever,” said Matt Chagnos, a spokesman for Public Service of New Hampshire. “The second thing is the number of trees, wire and debris in the road, and in some cases are still in the road and need to be cleared.”* Katie Zeaima, “New York Times”, Dec. 15, 2008

On **Monday, December 8, 2008**, the New Hampshire Dept. of Safety, Division of Homeland Security and Emergency Management (HSEM) received notification from the NWS Offices in Gray, Maine and Taunton, Massachusetts that severe winter weather was expected for Wednesday, December 10<sup>th</sup> through Friday, December 12<sup>th</sup>. Expectations were for snow and ice throughout the state. HSEM began monitoring the situation and made daily contact with NWS to receive updates. By Wednesday, the forecast called for severe weather with the possibility of significant icing and potential for power outages due to downed power lines and trees. HSEM began sending situational reports out to towns and held conference calls with partner agencies regarding possible SEOC activation. Documentation of the event was begun on WebEOC.

On **Thursday, December 11<sup>th</sup>** weather reports called for significant amounts of icing (up to 1”) starting during the evening and lasting through mid-day on Friday and the possibility of coastal flooding due to high astronomical tides, gusty winds and heavy snow accumulation of 6-10” in the northern part of the state. The NWS put out an Alert for possible degradation of communication systems and utility outages. An 0900 briefing was held with HSEM staff and a conference call with agencies warning of the weather situation. The decision was made to upgrade the SEOC activation to a Level II with staffing of 6-7 personnel from HSEM for round-the-clock operations. Field Representatives from HSEM began making calls to possible affected communities to provide situational awareness. A press release was issued at 1100 and ESF leads were put on alert.

On **Friday, December 12<sup>th</sup>** at 0200, the SEOC began receiving its first reports of downed trees and wires. NH Department of Transportation (DOT) crews in the southern part of the State were treating roads and the utilities all reported crews out and at “Alert” status. The Marine terminals on the coast were checked for impact. By 0700, over 240,000 utility customers were without power, various local (168) and state (15) roads had sections closed and the towns of New Ipswich and Greenville were reported as “inaccessible.”



The SEOC status was elevated to a Level III with all appropriate state agencies asked to report in. At 0920, Governor Lynch declared a State of Emergency for the State. Throughout the day, conditions worsened, 448 schools were closed, Concord Hospital reported being on diversion power, the Sarah Long Bridge in Portsmouth was on generator power, 81 local EOCs and 25 shelters were open. By 1700, the skies began clearing but freezing temperatures continued with some areas reporting up to 2” of ice accretion. The Sea3 marine terminal in Newington was reported off-line. Estimates of total number of “customers” without power rose to over 400,000 – representing approximately 800,000 individuals (over one-half of the population of the State of New Hampshire). The State Public Inquiry Line (a toll free number) was set up and staffed by Department of Health and Human Services (DHHS) personnel to handle calls regarding the incident from the public.



*"The night of the storm I heard what sounded like explosions as branches fell and trees got knocked over. I peered out the window after 3:00 a.m. and it was oddly beautiful but also scary as the power was already out and I knew the roads would be too bad to drive on for a while."* The Great New Hampshire Ice Storm of 2008 by Jim, Dec. 13, 2008 Blog Posting WMUR Website

On **Saturday, December 13<sup>th</sup>**, sections of 150 State and 186 local roads were reported closed. Although approximately 20,000 of the approx. 400,000 customers had their power restored, the US Army Corps. of Engineers was called in to help the utilities assess the impact on the power infrastructure. Phone service interruptions began to be reported. It was difficult to accurately determine the number due to the power outages. 46 shelters were open with a census of 684 residents. Requests for generator support were being received regularly at the SEOC. Due to the expected extended power outages and freezing temperatures, Emergency Alert System (EAS) messages were developed and broadcasted on a regular basis advising individuals to seek shelter.

*"New Hampshire Governor John Lynch on Saturday warned those affected that they should not expect power to be restored for several days. "If you don't have power, assume that you will not get it restored today, and right now make arrangements to stay someplace warm tonight," he said. "BBCAmerica", December 14, 2008*

The American Red Cross (Red Cross) chapters in New Hampshire attempted to respond to numerous calls for sheltering resources throughout the state but were challenged by available resources and policies on pets in shelters. Over 85% of the 100 shelters on stand-by were established by local communities, 16 reported being "pet-friendly". Red Cross opened several regional shelters, the largest located in Londonderry.

Over 62 Action Request Forms (ARFs) were developed and sent to FEMA for generators, cots and blankets. NH VOAD was tasked to find volunteers to staff shelters and provide feeding for both victims and responders. Many of the local EOCs, with stretched personnel resources closed for the evenings and re-opened for daytime operations.

On **Sunday, December 14<sup>th</sup>**, cots, blankets, water, Meals Ready to Eat (MREs) and generators from FEMA arrived at a staging area established at the armory at the Pease International Tradeport in Newington and distribution began. 1,254 residents were reported in 59 shelters with another 41 shelters on stand-by or functioning as "warming centers." Acute Care Centers (ACC) were established at armories in Concord, Manchester and Newington. HSEM's Disaster Behavioral Health Response Team (DBHRT) was called in to assist with mental health issues at Rochester, several other shelters and the SEOC. Issues surrounding the provision of water to livestock began to surface. Over 2,122 calls were received by E-911. Many of these were health-related due to carbon monoxide poisonings from generator operations by individuals. One (1) fatality was reported. During a conference call held by the Department of Education, 33 School Administrative Units (SAUs) reported closings for Monday.

Several key communications repeaters needed for the strengthening of radio signals utilized by responders and emergency personnel, were down. The Department of Resources and Economic Development (DRED) Trails Bureau was dispatched to clear the trail to the Warner Hill Communications Tower, one of the most critical. A large chipping truck to assist with clearing of trees and limbs was moved from Connecticut by PSNH, requiring special waivers and police escort. Over 385,000 utility customers were still without power. A waiver of hours of operation was provided to utility companies to allow extended workdays. Portions of 37 State roads and 200 local roads remained impassable, many unable to be plowed and cleared awaiting clearance by the utilities of downed wires.

Weather reports from the NWS in Gray, ME. and Taunton, MA. projected continued frigid weather through the overnight. Conference calls at noon were held on a daily basis with the Governor, State agencies and local emergency management officials. The National Guard deployed 96 members, with another 100 personnel on standby, who worked on clearing roads, served in the SEOC and Planning Cells and assisted the HSEM Field Representatives with incoming and outgoing calls from/to the towns to collect situational awareness information. The State Attorney General's Office was contacted to clarify the use of the Guard in making local door-to-door welfare checks and supplementing local police duties.



Rumors began to circulate in local communities regarding possible shortage of food supplies in local grocery stores. The NH Department of Agriculture was consulted and made calls to large distributors who indicated there were only minor issues regarding deliveries at the current time. Meals on Wheels organizations were reporting issues with food procurement and preparation. The Department of Environmental Services (DES) began to receive some calls, primarily from small, local water systems without power, some serving housing and elderly developments. These systems needed power to run the pumps and maintain the quality of water for their customers. A comprehensive listing of those systems impacted, was difficult to obtain despite a State law requiring them to notify DES when power outages occurred.

On **Monday, December 15<sup>th</sup>** the NWS was calling for winter weather moving into the area with 3-5" of snow starting on Tuesday after midnight through Wednesday with potential change to freezing rain Wednesday afternoon. High temperatures were not expected to be above freezing. Governor John Lynch met with representatives of the utility companies to ascertain status and projected restoration schedules. This meeting was followed by a meeting with all appropriate State Department Commissioners for a situational update. These "Commissioner Meetings" were then held daily throughout the incident.

The New Hampshire Hospital Association (NHHA) held routine calls with local hospitals to determine bed count/capacity and status of power. The Department of Health & Human Services (DHHS), following the Food Emergency Response Plan, dispatched food inspectors and began reviewing the effects of power outages on food establishments and supermarkets. Educational messaging regarding food safety measures went out through the Grocers' Association, the NH Lodging and Restaurant Association., and health officers for affected communities.

Governor Lynch ordered activation of the EAS at 3, 4, 6 and 8 p.m. daily to provide guidance to seek out shelters for those still without power as well as generator safety information. Issues surfaced regarding local gas stations without power that were unable to pump fuel for local emergency vehicles, personal vehicles and generators. The Office of Energy and Planning (OEP) collected information on back-up power capacity for 937 gas stations. The DOT allowed local emergency response vehicles to fill their tanks at DOT District pumps. Shelters without phone service requested priority restoration from utilities. The Public Utility Commission (PUC) reported that it was difficult to obtain accurate numbers on phone and internet outages, many needing power restoration to function. Over 160,000 customers were still without power – one company (Unitil) reporting an increase of over 1,000. PSNH expected restoration to approximately 6,000 of their customers during the day.

Concerns began to be received at the SEOC from some communities who had established town shelters and expected support from the American Red Cross based upon Memorandums of Understanding (MOUs). In other communities, decisions regarding shelter closings were being made on a day-by-day basis the weather conditions, school availabilities and staffing capabilities playing major roles in the decision-making. Requests from local responders also indicated a desire for mobile feeding operations for those choosing to stay in their homes and response workers unable to leave their positions or find restaurants with power. No known mobile feeding routes were established, although many local communities allowed workers to visit shelters to eat.



The Town of Deering reported that a majority of residents were still without power and a heavy amount of debris was still in the road. Two of the three fire stations were also without power. This was reflective of many communities, particularly in the southern part of the State that had facilities important to the response without back-up generators.



On **Tuesday, December 16<sup>th</sup>** the National Guard had delivered 2,438 cots and 1,327 blankets to 23 different facilities. Generators available through FEMA and HSEM were prioritized and scheduled at critical facilities throughout the state. The Army Corp. of Engineers conducted generator surveys to ascertain types and number of generators needed. Sirens, on battery power, located in the Emergency Planning Zone (EPZ) towns for the Seabrook Nuclear Power Plant were running low and were being monitored by Florida Power and Light, owners of Seabrook Station. Door- to-door canvassing of “at-risk” citizens continued in most communities.

The SEOC went to Level IV and remained there for the duration of activation. Sawyer crews were dispatched to clear communications points on Oak Hill, Plausawa, Blue Job, Warner, Monadnock and Pitcher Mountain. Microwave communications on Hyland Hill were also down compromising communication for the Vermont Yankee Nuclear Power Plant EPZ towns. Eight State forests and parks were closed. The PanAm Amtrak “Downeaster” rail service stopped routes from Portland to Boston substituting with bus service.

Communities, utility companies and state agencies were becoming concerned about another incoming winter weather system. Temperatures continued in the 20's with significant wind chill. The PUC reported 710 utility crews out. Because of the snow forecast, concentration was switched to the clearing of downed lines in roads to allow plowing. Carbon monoxide poisonings continued to be called in, resulting in 102 patients. Generator safety messages were again broadcast and released to print media. In one instance, a local store for a home supply chain was reported to be selling generators with incorrect installation directions. A call was placed to the chain headquarters by the Fire Marshal's Office (FMO) requesting the provision of the installation instructions be halted. Over 81,000 PSNH customers remained without power. Fairpoint Communications (formerly Verizon) now reported 3,425 customers without service. OEP checked with fuel terminals for Sprague & Irving Oil to assure no delays in fuel distribution with two more snowstorms expected. Projections were for rapidly falling snow over the next few days, sometimes at a rate of 1” – 2” per hour. Thirty-one (31) State roads and 212 local roads continued reporting section closings and multiple accidents were occurring as a result of the weather.





All medical/functional needs shelters were now closed having only a total of six (6) residents during the incident. Thirty-eight (38) general population shelters remained open with a population of 460 and plans were being made for the possibility of sheltering through Christmas. Portable showers were being requested for some. Thirty-seven (37) local EOCs continued to report open.

On **Thursday, December 18<sup>th</sup>**, only six (6) State roads and 83 local roads were reported closed, all due to downed power lines. 23,313 gallons of water, 1,298 cots and 1,676 blankets had been distributed through the National Guard at local armories. 28 shelters were still open with 315 residents.



Many former 24-hour shelters were now staying open as warming shelters providing residents with hot meals, warmth and shelters during the day. Affected SAUs were making decisions to close early for the Christmas holiday vacation.

Snow fell and most of the area experienced 5-7" with a glaze of ice. This slowed progress on power restorations and caused some problems with FEMA Damage Assessments due to snow covering much of the debris and damage. Over 60,000 customers were now without power. Carbon monoxide poisonings continued - now 111 individuals reported as affected with 15 severe and two fatalities.

On **Friday, December 19<sup>th</sup>**, all State roads had been cleared and "very few" local roads closed. Power outages had been reduced substantially to just over 31,000. One (1) utility, Unutil, seemed to be "struggling" - still recording over 3,000 customers still without connectivity. Twenty-seven (27) shelters remained open with 126 clients. Several towns continued to request MREs for residents appearing at warming shelters. The National Guard had distributed close to 2,300 cots and over 2,600 blankets to local communities. Potable water distribution points were reduced to two. Thirty-five (35) local EOCs remained open but most during the daytime hours only due to exhausted and overworked personnel. The SEOC, was still at Level IV, but staffing during the overnight hours was reduced with selected agencies (DOT, SP, PUC, etc.) and HSEM providing coverage. Other agencies remained on standby if the situation warranted callbacks. NH State Police, National Guard, FEMA and DRED were called upon to help support SEOC leadership, providing personnel for the EOC Director, Operations and Planning during various shifts. Public Assistance (PA) reviews by FEMA and HSEM teams were begun as well as information-collection beginning for a possible Individual Assistance (IA) request. Both are FEMA provided programs. Individual Assistance is comprised of various programs that may be available to individuals to help meet some disaster-related needs and necessary expenses not covered by insurance

and other aid programs. Public Assistance is aid to state or local governments that may pay part of the costs of rebuilding a community's damaged infrastructure.

The weather was again predicted to deteriorate during the day with heavy snow expected in central and southeast New Hampshire from the afternoon into the night. A Winter Storm Advisory was posted by the NWS until 0300 Saturday. Heaviest amounts were expected in the 6"-10" range. Gusty winds of 30-40 mph at the coast and 25-30 mph inland were predicted. This would be the second "plowable" snowstorm experienced during the incident. Temperatures continued in the 20s with significant wind chill. Wintry conditions were expected to continue through Sunday night, with Monday and Tuesday clear but temperatures in the teens and low 20s. Reports of numerous motor vehicle accidents were being reported and slowed some restoration efforts – some of the accidents involving running into poles recently restored causing crews to be called off of other efforts to respond. One (1) town reported that a local public works vehicle took down a pole leaving live wires on top of the truck.

Several communication towers were still without power or on generator back-up but low on fuel. DRED closed most state trails, especially in the southern part of the State. DES worked with small, local water systems to assure that health issues that may be caused by non-functioning systems were addressed appropriately. Local communities requested waivers on open burning for debris. The State Debris Management Group, formed after the 2008 Tornado, began to meet on issues dealing with right of way, slash laws, emergency and long-term emergency measures, burn issues as well as the possible need for regional debris staging areas.

On **Saturday, December 20<sup>th</sup>**, just over 26,000 customers continued to be without power, with some communities still reporting outages throughout their entire municipality. State Police and communication specialists, including Amateur Radio Emergency Services (ARES) and individual amateur operators assisted in providing communication needs to communities. Some local communities reported now having utility representatives embedded within their EOCs. The NWS continued to predict a heavy snowfall of approx. 12" statewide with wind chills down to 5-15 degrees below zero.

During the night, a transformer fire in Manchester occurred causing approximately 1,500 customers in the city to be without power including a city homeless shelter for men (the largest in the State). Concern was expressed around the possible need for establishing a separate shelter for those individuals. A request for a generator for the facility was processed. Fortunately, the power was restored overnight and no additional or specialized sheltering was needed.

On **Sunday, December 21<sup>st</sup>**, 26 shelters continued to operate primarily through the southern and western part of the state housing 87 individuals. Some communities which had previously closed shelters were assessing the needs to reopen them due to the extremely cold weather. The PUC began receiving solid numbers on the communications infrastructure with over 4,000 customers still out. The weather had deteriorated and zero visibility due to blowing snow was being reported in some areas of the state. DOT crews were out clearing roads and the restoration efforts by the utilities continued but were somewhat hampered by the weather. At 1600, the NWS predicted heavy snow for another 6-8 hours. E911 was notified of a 1.8 magnitude earthquake centered right over the New Hampshire border in Haverhill, MA. but caused no issues within the State.

On **Monday, December 22<sup>nd</sup>**, the Governor's request for a Presidential Disaster Declaration along with the State Impact Statement were completed and submitted. Twenty-four (24) local EOCs remained open with 19 operational during the day and on standby overnight, should the situation warrant. Additional power outages were reported during the overnight hours, one due to a breaker failure. Most outages were now confined to the Monadnock, Derry and Greater Milford areas. Close to 11,000 customers were without power and 3,850 without communication connectivity. Five (5) shelters remained open for 57 residents as well as six (6) warming/feeding stations.

The SEOC remained at a Level IV but was staffed minimally during the overnight hours. Communications was turned back over to the State Police during the night shift. 184 National Guard troops remained activated. DES reported only two small, local water systems still without power. Noontime calls between HSEM and local Emergency Management officials continued providing updates and responding to questions. By far, the most concern expressed by the local officials dealt with the lack of reliable or established communications from the utilities. DHHS continued to staff the Public Inquiry Line and a new board was developed on WebEOC for recording those calls and in support of a possible IA declaration.

On **Tuesday, December 23<sup>rd</sup>** the deactivation planning activities for the SEOC began and local activities requiring state resources were being closed out. Water and cot distribution was being wrapped up, having distributed 2,369 cots and 2,804 blankets to 23 facilities and 36,395 gallons of water. State Police troopers were still on mission at the Temple Mountain communications facility with the utility for a repair and the towers in Derry were still functioning on generator power. Moose Mountain remained the only communications facility still non-operational. The State Public Information Officer (PIO) reported that "Good Morning America" had done a live report with the Red Cross on the sheltering efforts. Three (3) shelters and one (1) local EOC were open but expected to close during the day. The Town of Temple reported that its warming shelter was closed but was still feeding people (both residents and line crews) during the day and some individuals coming in for showers. Several communities started to transition into long-term recovery issues. The economic impact on the State was beginning to be tabulated. By 1900, the SEOC returned to a Level I.

On **Wednesday, December 24<sup>th</sup>**, the SEOC issued the final Situation Report at 1300. All local EOCs had closed, all roads were reported open, shelters and feeding/warming stations were closed. Approximately 1,200 customers were still without power but the utilities expected restoration within the next day or two.



*The timing of the ice and snowstorms was particularly onerous and costly given the mad holiday rush. Steve Boucher, of the N.H. Department of Resources and Economic Development, estimated the cost could be more than \$30 million in storm damage, lost productivity and missed sales.*

*"It is unprecedented in terms of scope," Boucher said. "Most of the other (major weather) events were pretty much isolated in individual communities." Pat Cronin, "Seacoast Online", Dec. 26, 2008*

Local Apple Orchard in Londonderry, N.H.

On **January 2, 2009**, President George W. Bush declared a major disaster existed for the State of New Hampshire. This declaration made PA from FEMA available to State, eligible local governments and certain private, non-profit organizations on a cost-sharing basis. All counties in the State were included in the Declaration: Belknap, Carroll, Cheshire, Coos, Grafton, Hillsborough, Merrimack, Rockingham, Strafford and Sullivan Counties. Although IA was not granted, 211 of the State's 234 local municipalities were affected in some fashion by the December 11-12, 2008 Ice Storm. Cost estimates for the storm are still being tallied (FEMA PA is currently over \$15 million and estimates are that total costs will be closer to \$20 million as of the publication of this report). It is anticipated that this storm will be one of the costliest, if not the most costly, in the State's history.

## AFTER ACTION COLLECTION METHODOLOGY

The State Emergency Response to the December 11-12, 2008 Ice Storm represented one of the largest in New Hampshire's history. Over 211 of the 234 municipalities were impacted, over two-thirds of the State's population was affected and response agencies activated more personnel and for longer periods of time than ever before.

At the request of Governor John Lynch, the State Emergency Response Organization was asked to conduct a comprehensive review of its activities during and immediately after the incident and to identify strengths, areas for improvement, and "Model Practices" to guide and improve future responses.

An "After-Action Core Group" was convened to spearhead this process. The group was made up of representatives from state agencies and organizations and local municipalities. They met on a regular basis from the months of February to May, 2008.

- ◆ Collection of information on the response was gathered through various means. After-Action Reports and debriefs held within local municipalities.
- ◆ After-Action Reports and debriefs held by state agencies and organizations.
- ◆ Four (4) facilitated "Public Safety Officials Debriefs" were held regionally throughout the State (Hampton, Derry, New London and Rindge).
- ◆ After-Action Debrief of representatives of agencies/organizations that served within the State Emergency Operations Center during the response/initial recovery phases of the operation.
- ◆ WebEOC documentation and "Situation Reports" developed during the response and initial recovery phases of the incident.
- ◆ Collection of information obtained during exploration of FEMA PA & IA assistance.
- ◆ After-Action Media Debrief with members of the State and local media.
- ◆ General public responses to an on-line survey posted on the Public Utilities Commission website (linked through the Dept. of Safety, Homeland Security & Emergency Management website).
- ◆ Series of Public Hearings held throughout the State by the Public Utilities Commission and DOS, Homeland Security & Emergency Management.
- ◆ Collection and analysis of calls received during the incident through the Public Inquiry "hotline".
- ◆ Comments and communications received during and after the incident.
- ◆ Review of After-Action reports developed following exercise "Granite Frost", "The July Tornado and August Weather Incident" and an internal HSEM After-Action Report of the "September Rains."
- ◆ Review of After-Action Reports on Ice Storm/Winter Storm incidents from other States.
- ◆ Meetings and After-Action comments with various organizations throughout the State including the NH Assn. of Civil Engineers.
- ◆ After-Action Questionnaire distributed through organizations with functional needs audiences.
- ◆ Governor and Commissioners After-Action Debrief- a facilitated round-table at which "Target Capabilities" and "Emergency Support Functions" were discussed within the context of the response.



Governor John Lynch opening the "After-Action Roundtable"

Following the collection of information, areas of strength and areas of concern were broken down by ESF responsibility, those with an over-arching impact and those specific to agencies or communities. Those with specificity to an agency or local municipalities, while recorded, were not considered for the overall report but were provided to the interested parties for individual attention. The others were collated into a "SAC Report." (Strengths/Areas of Concern). Also incorporated in the SAC Report were model practices identified through the reviews.

The SAC Report was then provided to work groups at the After Action Roundtable as the basis for their discussions and beginning work on an Improvement Action Plan.





## ANALYSIS OF CAPABILITIES

An After-Action Roundtable was held on April 24, 2009. Over 150 participants from state, support agencies and NGOs were represented. The meeting was hosted by Governor Lynch and State Agency Commissioners. It included an overview of the incident, preliminary findings of this report and introduction into the proposed Emergency Support Functions (ESFs) and Support Annexes for the rewrite of a new State Emergency Operations Plan (SEOP).

Eight (8) worktables were established, based upon broad categories identified through the review of the collection of materials obtained to that date. Each table was provided with comments and notations relative to the category and "Target Capabilities" (See Attachment 1 – Target Capabilities) within those categories (SAC Report). Over a period of approximately four (4) hours, each group reviewed the observations and issues needing improvement; discussed solutions and corrective actions and then prioritized the top three for presentation to the entire group.



Discussion Table	Capabilities Discussed	ESF/Support Annex Lead
<b>Communications</b> ESF#2 Communications and Alerting	Communications Planning Intelligence and Information Sharing Emergency Public Information and Warning	<b>Dept. of Safety Emergency Services (E-911)</b>
<b>Health &amp; Medical</b> ESF#8 Health & Medical	Mass Care Planning Citizen Evacuation and Shelter-in-Place Environmental Health	<b>Dept. of Health &amp; Human Services</b>
<b>Infrastructure</b> ESF#3 Public Works & Engineering ESF#11 Agriculture & Natural Resources ESF#12 Energy	Restoration of Lifelines Economic & Community Recovery Environmental Health Intelligence and Information Sharing Risk Management Planning	<b>Dept. of Transportation Dept. of Agriculture Public Utilities Commission</b>
<b>Mass Care</b> ESF#6 Mass Care	Mass Care Planning Citizen Evacuation and Shelter-in-Place	<b>Dept. of Health &amp; Human Services</b>
<b>Public Information</b> Public Affairs Support Annex	Emergency Public Information and Warning Intelligence and Information Sharing Planning Communications Community Preparedness and Participation	<b>Homeland Security &amp; Emergency Management</b>
<b>Resource Procurement</b> ESF#7 Resource Support	Critical Resource Logistics and Distribution Planning Intelligence and Information Sharing Community Preparedness and Participation Restoration of Lifelines Economic and Community Recovery	<b>Department of Administrative Services</b>
<b>Volunteers and Donations</b> Volunteers & Donations Support Annex	Volunteer Management and Donations Planning Community Preparedness and Participation Critical Resource Logistics and Distribution	<b>VolunteerNH</b>

## DISCUSSION GROUP SUMMARIES

### DISCUSSIONS AND PRIORITY OBSERVATIONS OF AREAS NEEDING IMPROVEMENT

Discussions conducted at each of the group tables were based upon prioritized findings and comments from the collection of After-Action materials. Each group discussion was facilitated by a member of the After-Action Core Group. Those discussion group topics are identified in **bold type** and were drawn from responses/comments made during the information collection phase of the After-Action.

#### Communications Table:

- **Redundancy capabilities in the communication system infrastructure affected communication with dispatch centers, state and local officials.**
- **Access for fueling at communications' sites/facilities and capacity of back-up generators.**

The ice storm and several previous incidents highlighted the importance of communications to coordinate and effectively respond to emergencies. During this incident, some of the communication sites were in danger of being compromised due to inaccessibility of roads/trails to re-fuel the back-up generators. Icing on towers and antennae also prevented some of the communications systems from effectively functioning, limiting the ability of the general public and responders to receive critical information. Concern was also expressed by the discussion group that some of the generators could breakdown or be incapable of sustaining back-up capabilities due to increased power requirements added since originally installed, or age of the generators themselves.

Group recommendations were:

- Establishment of an inventory of all communications infrastructure, methods and systems in the state including public and private. Ideally this inventory would include necessary information such as frequencies, repeater sites, back-up power capabilities, etc. It was felt that such an inventory would provide a clearer picture to the State of the redundancies and back-up systems currently available. The collection of such information from the private sector may require some statutory changes.
- Development of a plan for generators that would include inventory, age and capabilities of back-up generators at remote communication sites and during long-term power outages when access roads are blocked or impassable.

The group also discussed the value of "ruthless pre-emption" of communications during a declared State of Emergency should the system become overwhelmed and the ESF#2 -Communications & Alerting priorities in a SEOP revision.

#### Health & Medical Table:

- **Procedures and coordination of ESF#8 – Health and Medical lead and support organizations/personnel.**
- **Relationship and responsibilities of ESF#8 – Health and Medical and ESF#6 – Mass Care, Housing and Human Services.**
- **Role of hospitals in response to activities within local communities and their interface with local EOCs.**

The overwhelming nature of the ice storm and its effects on the population of New Hampshire caused considerable challenges for the ESF#8 – Health and Medical lead and support agencies/organizations. The extent of the power and communication outages, both in the length of time and geographical impact, created issues that quickly overwhelmed the response organizations. Individuals with specific health and medical challenges often presented themselves at general population shelters that had not anticipated their presence. Local response personnel found it difficult to identify those in their communities needing special assistance and hospitals were often viewed as a resource for local care and shelter equipment/supplies. Carbon monoxide poisonings became a focus area as some individuals utilized generators inappropriately. Transportation routes for ambulances and other critical response personnel were often blocked or impassable due to downed wires and trees. The collection, dissemination and assessment of critical information for the health and medical response were not clear and definite. The ESF#8 – Health and Medical lead agency also functioned as the ESF#6 – Mass Care, Housing and Human Services lead and the representatives from that agency often found themselves switching back and forth between the two emergency support functions. Unfamiliarity of ESF#8 – Health and Medical personnel with the use of WebEOC and its Mission Tasking component also created some confusion. The DHHS Incident Command Center (ICC) was not immediately established to help filter and/or fill some of the responsibilities. It was also suggested that support agencies to ESF#8 might have assisted in carrying out ESF#8 – Health and Medical tasks to a greater extent.

The table discussion group developed the following suggested recommendations based upon the findings:

- Development of a comprehensive response plan for ESF#8 with clearly identified structure, responsibilities and roles for lead/support agencies, All Health Hazard Regions (AHR), Multi-Agency Coordinating Entities (MACEs), ICC and an information collection methodology.
- Training for personnel in roles/responsibilities of ESF#8, including resources available through support agencies and organizations, WebEOC Mission-Task, and the interface with SEOC ESF#8 representative(s) and the ICC.
- Greater utilization of the New Hampshire Hospital Assn. (NHHA) in working directly with hospitals to provide support, guidance to and information for response activities.
- Clearly defined guidance on separation of roles/responsibilities of ESF#8 and ESF#6.

#### **Infrastructure Table:**

- **Generator policy for eligible agencies, organizations, businesses and individuals.**
- **Pre-identified priority list for power and communication restoration.**
- **Relationship and communication between utilities, local communities and response agencies.**

The ice storm's length and impact extenuated the need for back-up power and the SEOC received numerous requests for generators. At the time of the event, a standardized approach for prioritizing and filling requests to the State was not in existence. Because many of the requestors provided very little information relative to the need justification, and/or the size and capacity of the generator being requested, state representatives struggled to prioritize and distribute generators in a timely fashion. Commercial entities not previously identified as critical facilities (either to the State or a local community) also made requests to the State. Support to the private sector had not been fully considered in previous disasters. In addition, back-up generators located at remote locations were running out of fuel with no plan for reaching them if access roads were impassable (see Communications Table discussion) or failing due to increased load or age. Similar to requests for generators, requests to the SEOC for utility power restoration on a priority basis contained inadequate information to enable some type of comprehensive regional approach.

The information provided to the State and local EOCs by the utility companies relative to expected outage duration and planned work activities was inadequate or faulty. This hampered the planning efforts of emergency responders, public works officials, school administrators, mass care/sheltering workers and the public and meant authorities and individuals were required to make life safety decisions possibly without pertinent information.

Recommendations formulated by this table work group were:

- Development of a comprehensive state generator-lending program containing inventory, criteria, protocols, pre-identified prioritization (when available) and specifications to lessen delay and confusion as resource requests are made and filled.
- Suggesting local communities should have an emergency back-up power plan for their critical municipal facilities and private sector businesses (single gas station or store in community, small water treatment facilities, etc.). These plans should include funding the acquisition of generators for these facilities or agreements (contracts) with private entities to provide them. These should also include up-to-date lists of emergency power needs with specifications, identification of a licensed electrician to assist with installation, and a prioritization of the facilities.
- Development of comprehensive protocols to identify, compare and prioritize facilities within communities to assist the utilities with their power restoration plans. This should be a statewide plan that would aid in the development of a comprehensive approach to decision-making by the various response organizations and agencies.

#### **Mass Care Table:**

- **“Regional” approach to sheltering.**
- **Response and capabilities of ESF#6 – Mass Care, Housing and Human Services agencies.**
- **Relationship and responsibilities of ESF#8 – Health and Medical and ESF#6 – Mass Care, Housing and Human Services.**

Many of the challenges associated with the ESF#6 – Mass Care, Housing and Human Services response centered on sheltering. With 211 of the 234 communities in New Hampshire affected with power outages and winter conditions, local officials were quick to identify the need for temporary sheltering for their residents. Local municipalities called upon local NGOs to provide shelter resources and personnel for their communities when, within the first 24-hours, it became evident that restoration efforts would take days rather than hours. Unfortunately, those resources quickly became depleted and additional support from National organizations was delayed. Many locals then relied upon local assets or through requests to FEMA via the SEOC. Within the SEOC, the representatives for ESF#6 – Mass Care, Housing and Human Services were often challenged in providing support and coordination for both ESF#6 – Mass Care, Housing and Human Services and ESF#8 – Health and Medical. Accurate shelter information for state reporting was difficult to obtain and was gathered from multiple and often duplicative sources.

As the event progressed, some “regional” shelters were established by the American Red Cross. Some local officials felt that it was difficult to obtain information regarding people from their communities housed at these shelters. Many individuals also resisted the regional approach, wishing to stay within their own community and closer to their homes. Road conditions made it difficult for some citizens to travel distances. Although some pet shelters were established, many



individuals preferred to be in community shelters that could accommodate pets within the same room(s). In response, many communities opened “warming shelters”, which allowed individuals (and in some cases, responders) to visit a congregation point for warmth, food, hot showers and information then returning to their homes for the night. Local response officials also found it was difficult to locate individuals within their communities who may need transportation or special assistance. The power and communication outages created challenges for local officials and the State in transmitting shelter information to the public.

Planning by individuals, families and shelter/warming station personnel was problematic due to the lack of accurate information from the utilities regarding restoration projections. Many local school boards looked to the N.H. Dept. of Education for guidance on school re-openings. The decisions made affected those organizations utilizing school facilities for sheltering and the families of school-aged children whose safety could be compromised by waiting for school busses in areas with downed wires.

Based upon the issues identified and discussed, the Mass Care Table group members made the following recommendation:

- Development of a comprehensive ESF#6 - Mass Care, Housing and Human Services plan that identifies roles and responsibilities of the lead and support agencies. This plan should contain information collection and dissemination strategies, identification and utilization of federal, state and local resources for mass care/sheltering, regionalization and guidance for local communities in providing these services.

### **Public Information Table:**

- **Formation and utilization of a Joint Information System (JIS).**
- **Dissemination to the public of emergency information.**
- **Effect of restoration information on response and planning by communities and individuals.**

The communication and dissemination of critical information to the public proved to be a significant challenge during this incident. A majority of the State experienced power and communication outages which made the normal methods and modes primarily ineffective. The public that relies upon television, radio or computer had no electricity, and/or depletion of battery-power due to the length of the event. Some people relied upon their car radios, trying to ascertain “prime times” when relevant information may have been broadcasted. Local news via radio was difficult to obtain since many stations carried “syndicated” shows with little or no local staff to receive and air local information. The Emergency Alert System (EAS) was utilized to a limited extent for shelter and storm-relevant information. Findings from the After-Action Surveys indicated many people felt the system was stopped too soon or should have been broadcasted at a set time so public could tune in for that brief period. The impact of downed trees and lines upon the roadways and driveways kept many in their homes or within their neighborhoods. Local general stores and/or gas stations became information hubs. Local community officials showed great innovation in attempts to reach out to their public with critical information. (See Model Practices). Cell towers and communication antennae came down due to icing. Hard-line phone service seemed somewhat less affected; but, in areas of downed telephone wires, restoration was delayed since power lines needed to be repaired first.

Information on restoration from the utilities was vital for planning by the public. Personal decisions regarding leaving homes for a shelter often rested upon the length of time estimated for restoration. As identified previously, there was a lack of accurate information available on this. A Public Inquiry “hot-line” was established at the State within the first 24-hours of the event. Over 44% of the 2,564 calls received dealt with requests on restoration time estimates.

Within the SEOC, agencies were asked to coordinate any public releases through HSEM and the Governor’s Office. The intent was to avoid duplicative or conflicting information and to develop a cohesive messaging strategy. The formation of a formal JIS would have been helpful and information gathered from the Public Inquiry Line could have been utilized to strategize message content, format or dissemination method(s).

Based upon comments and topics identified, the Public Information Discussion Group made the following recommendations:

- Establishment of a Joint Information Center (JIC) with effective resources, planning, collaboration and practice.
- Development of a JIS plan to utilize in emergency situations. This should include all partners involved in the response, strategies for messaging based upon information obtained from Public Inquiry line and other feedback, and alternative/redundant methods for reaching the public when regular vehicles are compromised. (Special note: Coordination should also occur with the Governor’s Commission on Disability for the members of the public with functional needs).
- Recommend to towns that their local EOPs include public information dissemination and redundant strategies. Some of these may be incorporated into the SEOP’s Public Affairs Support Annex.
- Development by the utilities of a uniform method of providing accurate and timely information to the public and other stakeholders.
- Coordination of information on school closings and postings among ESF#6 – Mass Care, Housing and Human Services, Dept. of Education and the JIC.

### **Resource Procurement Table:**

- **Resource Management process in SEOC and between response entities.**
- **Policies on resource qualification, prioritization and availability.**

The length and volume of utility outages associated with this storm brought numerous requests from local communities for resource support. As shelters began to open and local NGO supplies were depleted, the State immediately requested cots, blankets and water from FEMA through the Action Request Form (ARF) process. FEMA's staging area was at Pease Air National Guard Base (Newington), where the NH National Guard transported the items to armories situated throughout the State. As requests from local officials came in, they were directed to the armories to pick-up commodities for their communities.

As the outages continued, more and more requests came in for generators. There were several sources available: those owned by the State, those owned by the National Guard and those acquired through FEMA channels. However, there was no consistent or comprehensive plan in place for their distribution. Each source seemed to have different criteria for fulfillment which at times, seemed conflicting. Many private entities that had not been considered essential prior to the event became critical to communities for food, gasoline and information. Some local EOCs, shelters or other emergency response "critical" facilities had no system for back-up power or communication. In most instances, when requests for generators were received the specific type or size was unknown. Communities also had expressed they were unaware of resources that were available through the State.

Concern began to surface regarding the availability of food supplies. One major distributor in the State was without power for a significant amount of time and became concerned over food spoilage, which would impact the ability to supply community grocery stores. Those grocery stores without power experienced a significant amount of food spoilage and DHHS Food Safety was called in to provide guidance to them. The condition of the roads created challenges in supplying gasoline which quickly became depleted at local stations. The DOT allowed local emergency response vehicles to fill their tanks at State supply depots.

Human resources were stretched to their limit. In the SEOC, the National Guard supplemented personnel in the command structure, as mission assignment coordinators, as planning facilitators, and staffing phone lines for agency Field Representatives. The Guard was also dispatched to the field to assist state and local agencies.

Based upon some of the After-Action collections, the table for Resource Procurement made the following recommendations:

- Development of a comprehensive Resource Management Plan containing inventory, typing, criteria, protocols (including the ARF process), pre-identified prioritization (when available) and specifications. This should lessen delay and confusion as resource requests are made and filled. Supply matrixes would be helpful. There should be special focus on provision of generators and incorporation of private sector resources and needs.
- Stronger coordination and interfacing between ESF#7 Resource Support and the Private Sector and Volunteer and Donations.
- Coordination between Logistics Section, ESF#7 and Critical Infrastructure Support to identify a process for providing support to State and local critical facilities and infrastructure during times of emergency.

### **Volunteers & Donations Table:**

- **Program/procedures for donations of service and money.**
- **Volunteer Management Program for statewide response.**
- **Strategies for identification and prioritization of needs in statewide response.**

During the Ice Storm, offers of goods, equipment, money and volunteers were received through the Public Inquiry Line and directly into the SEOC. There was no coordinated state-wide plan or procedures/methods to sort and verify these offers. Many received no call-backs or response, or at least in a timely manner or at all. If contact was made, follow-up and/or thanks for offers was often sporadic. Many communities had local agencies and NGOs that put valuable volunteers into the field, but they were performing tasks at the local level directly, rather than in response to a statewide need. One or two Community Organizations Active in Disaster (COADs) did activate but, again, efforts were directed to specific communities. No private-sector employers were approached from a state-wide perspective for donations of goods or services.

The Volunteers and Donations Roundtable Discussion Group made the following recommendations:

- Development of a comprehensive Volunteer and Donations Support Annex for the revision of the SEOP. This annex should include a plan to enhance the capabilities of the coordinating and cooperating agencies in response to a statewide need/request and incorporate private sector organizations/businesses that could bring value-added to the state response.
- COADs, the agencies associated with those COADs, as well as the additional agencies that potentially might be part of a regional COAD, should develop stronger partnerships within their regions in order to coordinate volunteers and resources and maximize the benefit.
- Develop strategies for a higher level of involvement and activity of the State VOAD in statewide response.
- Develop marketing strategies to heighten awareness among business and other private sector entities of volunteer and resource opportunities during preparedness, response and recovery phases of emergencies.

## CONCLUSION



In 2008, New Hampshire had experienced a Spring Flood, a July tornado, and two flooding events in September. The December 11/12, 2008 Ice Storm was New Hampshire's 4<sup>th</sup> Federally-declared disaster within a one-year time period.

This storm proved to be one of the most widely impacting disasters experienced by the State in recent memory. Over 2/3 of the State's residents experienced power and communication outages, many for a two-week or longer period. All public utilities reported the storm as the worst in their recorded history. FEMA assistance reached over \$20 million, not including the impact upon the economy of the State.

Generator safety messaging was widely distributed throughout the incident, coordinated primarily through the State Fire Marshal's Office and included in the daily Situation Reports emanating from HSEM. Local officials were provided with "just-in-time" generator safety training and made spot checks throughout their communities for those residences that they observed utilizing generators. Tragically four lives were still lost and hundreds suffered carbon monoxide poisoning.

Resources at the local and State levels were taxed beyond those utilized in past disasters and, in some instances, close to breaking points. Nevertheless, the response by all partners at all levels was extraordinary. As with any incident, we come away with a better sense of capabilities, resources and those areas to be focused upon to make our next response more effective and efficient.

Communication, in all forms, represents the key to a comprehensive, effective response. The infrastructure must be in place and capable of withstanding extraordinary circumstances. Reaching antennae and communication facilities located on mountaintops to assure availability of back-up power, provision of gas and battery re-charge and comprehensive systems for redundancy with minimal human resource capabilities are essential.

Human interaction and assuring all partners, including the citizens themselves, receive accurate information to make appropriate plans is key to an effective response. The stylizing, accuracy and development of messaging should be based upon the specific needs of the audience. A Public Inquiry Line was activated but not fully incorporated into the workings of the Joint Information Section for analysis and stylizing of messaging. Information on the timing of utility restoration was necessary in making appropriate arrangements for sheltering, mass care, assistance to those with functional needs and prioritizing of response and recovery initiatives. Workarounds for notification and information-sharing to those without traditional methods of communication (no phones, radios, computer connectivity) needed to be formulated and implemented. The PUC has launched an intensive after-action review which will result in changes to the way the utilities report to the public. Many of the local and county dispatch centers were also quickly overwhelmed due to the number of calls received and the availability of operators and in-coming lines. Many individuals may have experienced lengthy periods on hold or continuous busy signals.

Individuals needing special attention or assistance were often difficult to identify within communities. HIPPA Laws, or their interpretation, prevented the release of information to local response and emergency personnel, making welfare visits and communications difficult. Hospitals were often seen as a source locally for blankets and other shelter needs. Alternate Care Centers established by the State, although not utilized, were in state armories and were not conducive to the specialized type of care intended. Many individuals requiring special assistance arrived at general population shelters that could not handle some of their needs. The activation of the State DHHS ICC at an earlier point in the event would have been beneficial, especially concerning communications with the hospitals.

Public and private infrastructure concerns arose as the power outages continued. Water and sewer systems require power to function and many had no back-up capabilities. Smaller, private systems were difficult to

identify, some not reporting their status on an annual basis to the NH Dept. of Environmental Services. Impaired or downed systems place public health at risk. Locally, many rural communities quickly realized those local gas stations, markets and businesses represented a “critical facility” to their area. Often, these were the only service and information distribution points that citizens could access. Without power or back-up capabilities, gas stations could not pump gas needed for local emergency vehicles or generators, or to keep their food refrigerated for purchase. Poor road conditions or closed roadways often prohibited travel to other areas.

Sheltering was a major area of concern during the response. The resources of the American Red Cross chapters in New Hampshire were quickly exhausted and support from the national level was delayed. MOUs between communities and local chapters were not fully understood as to content, obligations and mutual expectations. “Regional” shelters were established a few days into the event but many local residents resisted this approach preferring to stay near their homes and within their own communities. Blocked roads and travel conditions also limited the ability of many to travel extra miles to shelters established in nearby communities. Local municipalities struggled with providing resources for “locally-run” shelters and warming stations. The restrictions on bringing household pets into Red Cross “general population” shelters led some communities to establish their own “pet-friendly” shelters based upon the need expressed by their citizens even though some other shelters offered nearby pet-sheltering capabilities.

Cots, blankets and water were procured through FEMA and distributed to local communities via the National Guard armories located throughout the State. No organized mobile feeding was established during the incident to provide meals (hot and/or cold) to emergency workers or residents staying within their homes. “Warming shelters” were established by local communities providing individuals and responders with a place to get warm, take showers and receive a hot meal during the daytime, before returning home at night.

Human resources were stretched at all levels. Local communities had limited depth within their response capabilities. Locally, many “positions” were held by part-time volunteers and/or individuals filling multiple positions. These individuals worked tirelessly, some 24-hour shifts, to try to meet the needs of their communities. Hospitals, nursing homes, etc. often had staff without power or a way to return home, resulting with them sleeping at their facilities. At the State level, agency staffs were scheduled for 12-hour shifts at the SEOC and in the field, but some could not sustain that type of schedule. Throughout the entire Emergency Response Organization, response personnel were impacted by the disaster – many without power or communications at home. Personnel worked response activities for extended periods of time then returned home to clear driveways, removed downed trees, shovel or plow, etc. The NH National Guard played a significant role in supplementing resources within communities and at the State level, activating almost 500 members, and proving to be invaluable to the success of the response.

Innovation, resiliency, commitment and dedication by all involved responders and citizens alike proved to be the most dramatic and effective aspect of this response. Everyone became a “team player” and worked to help their neighbors and each other. Governor John Lynch held daily briefings with Commissioners and Directors, hosted daily conference calls with local Emergency Managers (including HSEM Director Pope and various state agency officials) and made visits to affected areas. The SEOC was staffed from December 11<sup>th</sup> through 1800 hours on December 24<sup>th</sup>. Local EOCs and response personnel worked tirelessly to meet the needs of their citizens.

Areas of concern, discussed in the After-Action Review, will be addressed through improvement planning. “Model Practices” have been highlighted, and “Lessons Learned” will be incorporated into future planning. Table participants from the “After-Action Roundtable” will reconvene to further work on the “Improvement Action Plan” for their areas. Each work group will be led by the appropriate ESF Lead Agency. Participants will be expanded to include as many ESF support agencies as possible. Activities and action steps identified will then be incorporated into ESF Annexes in the rewrite of the State Emergency Operations Plan.

“Thank you’s” go to all who labored, participated and were affected by this disaster. Despite the tremendous hardships this disaster caused, the State of New Hampshire in its entirety benefited greatly by the efforts of all involved.

## Attachment 1 – Target Capabilities

### INCIDENT OBJECTIVES AND TARGET CAPABILITIES UTILIZED

#### Incident Objectives, Capabilities and Activities:

- ◆ **Objective 1:** Protect life safety of responders and citizens of New Hampshire
- ◆ **Objective 2:** Enhance local capabilities in response and recovery phases of the incident through collaborative and cohesive information sharing and resource support by State Emergency Response Organizations.
- ◆ **Objective 3:** Effectively implement and utilize State Emergency Operations Plan.

#### Major Target Capabilities Used in Review:

(Source: "Target Capabilities List, A companion to the National Preparedness Guidelines"; U.S. Department of Homeland Security, Sept. 2007)

#### PLANNING

Planning is the mechanism through which State and local governments, non-governmental organizations (NGOs), and the private sector develop, validate, and maintain plans, policies, and procedures describing how they will prioritize, coordinate, manage, and support personnel, information, equipment, and resources to prevent, protect and mitigate against, respond to, and recover from emergency situations.

**Recommended Outcome:** Plans incorporate an accurate threat analysis and risk assessment and ensure that capabilities required to prevent, protect against, respond to, and recover from all-hazards events are available when and where they are needed. Plans are vertically and horizontally integrated with appropriate departments, agencies, and jurisdictions. Where appropriate, emergency plans incorporate a mechanism for requesting State and Federal assistance and include a clearly delineated process for seeking and requesting assistance from appropriate agency(ies).

#### COMMUNICATIONS

Agencies must be operable, meaning they must have sufficient wireless communications to meet their everyday internal and emergency communication requirements before they place value on being interoperable, i.e., able to work with other agencies.

Communications interoperability is the ability of public safety agencies (police, fire, EMS) and service agencies (public works, transportation, hospitals, etc.) to talk within and across agencies and jurisdictions via radio and associated communications systems, exchanging voice, data and/or video with one another on demand, in real time, when needed, and when authorized. It is essential that public safety has the intra-agency operability it needs, and that it builds its systems toward interoperability.

**Recommended Outcome:** A continuous flow of critical information is maintained as needed among multi-jurisdictional and multidisciplinary emergency responders, command posts, agencies, and the governmental officials for the duration of the emergency response operation in compliance with National Incident Management System(NIMS). In order to accomplish that, the jurisdiction has a continuity of operations plan for public safety communications including the consideration of critical components, networks, support systems, personnel, and an appropriate level of redundant communications systems in the event of an emergency

#### RISK MANAGEMENT

Risk Management is defined by the Government Accountability Office (GAO) as "A continuous process of managing—through a series of mitigating actions that permeate an entity's activities—the likelihood of an adverse event and its negative impact." Risk Management is founded in the capacity for all levels of government to identify and measure risk prior to an event, based on credible threats/hazards, vulnerabilities, and consequences, and to manage the exposure to that risk through the prioritization and implementation of risk-reduction strategies. The actions to perform Risk Management may well vary among government entities; however, the foundation of Risk Management is constant.

**Recommended Outcome:** Federal, State, local, tribal and private sector entities identify and assess risks, prioritize and select appropriate protection, prevention, and mitigation solutions based on reduction of risk, monitor the outcomes of allocation decisions, and undertake corrective actions.

## COMMUNITY PREPAREDNESS AND PARTICIPATION

The Community Preparedness and Participation capability provides that everyone in America is fully aware, trained, and practiced on how to prevent, protect/mitigate, prepare for, and respond to all threats and hazards. This requires a role for citizens in personal preparedness, exercises, ongoing volunteer programs, and surge capacity response.

**Recommended Outcome:** There is a structure and a process for ongoing collaboration between government and nongovernmental resources at all levels; volunteers and nongovernmental resources are incorporated in plans and exercises; the public is educated and trained in the four mission areas of preparedness; citizens participate in volunteer programs and provide surge capacity support; nongovernmental resources are managed effectively in disasters; and there is a process to evaluate progress.

## INTELLIGENCE AND INFORMATION SHARING

The Intelligence and Information Sharing and Dissemination capability provides necessary tools to enable efficient prevention, protection, response, and recovery activities. Intelligence/ Information Sharing and Dissemination is the multi-jurisdictional, multidisciplinary exchange and dissemination of information and intelligence among the Federal, State, local, and tribal layers of government, the private sector, and citizens. The goal of sharing and dissemination is to facilitate the distribution of relevant, actionable, timely, and preferably declassified or unclassified information and/or intelligence that is updated frequently to the consumers who need it. More simply, the goal is to get the right information to the right people at the right time.

An effective intelligence/information sharing and dissemination system will provide durable, reliable, and effective information exchanges (both horizontally and vertically) between those responsible for gathering information and the analysts and consumers of threat-related information. It will also allow for feedback and other necessary communications in addition to the regular flow of information and intelligence.

**Recommended Outcome:** Effective and timely sharing of information and intelligence occurs across Federal, State, local, tribal, territorial, regional, and private sector entities to achieve coordinated awareness of, prevention of, protection against, and response to a threatened or actual domestic terrorist attack, major disaster, or other emergency.

## ON-SITE INCIDENT MANAGEMENT

Onsite Incident Management is the capability to effectively direct and control incident activities by using the Incident Command System (ICS) consistent with the National Incident Management System (NIMS).

**Recommended Outcome:** The event is managed safely, effectively and efficiently through the common framework of the Incident Command System.

## CRITICAL RESOURCE LOGISTICS AND DISTRIBUTION

Critical Resource Logistics and Distribution is the capability to identify, inventory, dispatch, mobilize, transport, recover, and demobilize and to accurately track and record available human and material critical resources throughout all incident management phases. Critical resources are those necessary to preserve life, property, safety, and security.

**Recommended Outcome:** Critical resources are available to incident managers and emergency responders upon request for proper distribution and to aid disaster victims in a cost-effective and timely manner.

## VOLUNTEER MANAGEMENT AND DONATIONS

Volunteer Management and Donations is the capability to effectively coordinate the use of volunteers and donations in support of domestic incident management.

**Recommended Outcome:** The positive effect of using volunteers and donations is maximized to augment incident operations.

## RESPONDER SAFETY & HEALTH

Responder Safety and Health is the capability that ensures adequate trained and equipped personnel and resources are available at the time of an incident to protect the safety and health of on scene first responders, hospital/medical facility personnel (first receivers), and skilled support personnel through the creation and maintenance of an effective safety and health program. The program also needs to be integrated into the Incident Command System (ICS) and include training, exposure monitoring, personal protective equipment, health and safety planning, risk management practices, medical care,



decontamination procedures, infection control, vaccinations for preventable diseases, adequate work-schedule relief, psychological support, and follow-up assessments.

**Recommended Outcome:** No illnesses or injury to any first responder, first receiver, medical facility staff member, or other skilled support personnel as a result of preventable exposure to secondary trauma, chemical/radiological release, infectious disease, or physical and emotional stress after the initial incident or during decontamination and incident follow-up.

### **ENVIRONMENTAL HEALTH**

Environmental Health is the capability to protect the public from environmental hazards and manage the health effects of an environmental health emergency on the public. The capability minimizes human exposures to environmental public health hazards (e.g., contaminated food, air, water, solid waste/debris, hazardous waste, vegetation, sediments, and vectors). (Potable water, water systems, etc.)

**Recommended Outcome:** The at-risk population (i.e., exposed or potentially exposed) receives the appropriate countermeasures, including treatment or protection, in a timely manner. The rebuilding of the public health infrastructure, removal of environmental hazards, and appropriate decontamination of the environment enable the safe re-entry and re-occupancy of the impacted area.

### **CITIZEN EVACUATION AND SHELTER-IN-PLACE**

Citizen evacuation and shelter-in-place is the capability to prepare for, ensure communication of, and immediately execute the safe and effective sheltering-in-place of an at-risk population (and companion animals), and/or the organized and managed evacuation of the at-risk population (and companion animals) to areas of safe refuge in response to a potentially or actually dangerous environment. In addition, this capability involves the safe reentry of the population where feasible.

**Recommended Outcome:** Affected and at-risk populations (and companion animals to the extent necessary to save human lives) are safely sheltered-in-place or evacuated to safe refuge areas.

### **EMERGENCY OPERATIONS CENTER MANAGEMENT**

Emergency Operations Center (EOC) Management is the capability to provide multi-agency coordination (MAC) for incident management by activating and operating an EOC for a pre-planned or no-notice event. EOC management includes EOC activation, notification, staffing, and deactivation; management, direction, control, and coordination of response and recovery activities; coordination of efforts among neighboring governments at each level and among local, regional, State, and Federal EOCs; coordination public information and warning; and maintenance of the information and communication necessary for coordinating response and recovery activities. Similar entities may include the National (or Regional) Response Coordination Center (NRCC or RRCC), Joint Field Offices (JFO), National Operating Center (NOC), Joint Operations Center (JOC), Multi-Agency Coordination Center (MACC), Initial Operating Facility (IOF), etc.

**Recommended Outcome:** The event is effectively managed through multi-agency coordination for a pre-planned or no-notice event.

### **EMERGENCY PUBLIC INFORMATION AND WARNING**

The Emergency Public Information and Warning capability includes public information, alert/warning and notification. It involves developing, coordinating, and disseminating information to the public, coordinating officials, and incident management and responders across all jurisdictions and disciplines effectively under all hazard conditions.

(a) The term “public information” refers to any text, voice, video, or other information provided by an authorized official and includes both general information and crisis and emergency risk communication (CERC) activities. CERC incorporates the urgency of disaster communication with risk communication to influence behavior and adherence to directives.

(b) The term “alert” refers to any text, voice, video, or other information provided by an authorized official to provide situational awareness to the public and/or private sector about a potential or ongoing emergency situation that may require actions to protect life, health, and property. An alert does not necessarily require immediate actions to protect life, health, and property and is typically issued in connection with immediate danger.

(c) The term “warning” refers to any text, voice, video, or other information provided by an authorized official to provide direction to the public and/or private sector about an ongoing emergency situation that requires immediate actions to protect life, health, and property. A warning requires immediate actions to protect life, health, and property and is typically issued when there is a confirmed threat posing an immediate danger to

the public. (d) The term “notification” refers to any process where Federal, State, local, and nongovernmental organization, department, and/or agency employees and/or associates are informed of an emergency situation that may require a response from those notified.

**Recommended Outcome:** Government agencies and public and private sectors receive and transmit coordinated, prompt, useful, and reliable information regarding threats to their health, safety, and property, through clear, consistent information-delivery systems. This information is updated regularly and outlines protective measures that can be taken by individuals and their communities.

### **MEDICAL SURGE**

Medical Surge is the capability to rapidly expand the capacity of the existing healthcare system (long-term care facilities, community health agencies, acute care facilities, alternate care facilities and public health departments) in order to provide triage and subsequent medical care. Medical Surge is defined as rapid expansion of the capacity of the existing healthcare system in response to an event that results in increased need of personnel (clinical and non-clinical), support functions (laboratories and radiological), physical space (beds, alternate care facilities) and logistical support (clinical and non-clinical equipment and supplies).

**Recommended Outcome:** Injured or ill from the event are rapidly and appropriately cared for. Continuity of care is maintained for non-incident related illness or injury.

### **MASS CARE (SHELTERING, FEEDING AND RELATED SERVICES)**

Mass Care is the capability to provide immediate shelter, feeding centers, basic first aid, bulk distribution of needed items, and related services to persons affected by a large-scale incident. Mass Care is usually provided by nongovernmental organizations (NGOs), such as the American Red Cross, or by local government. The capability also provides for companion animal care/handling through local government and appropriate animal-related organizations.

*Functional and Medical Support Shelters (formerly known as Special Needs Shelters) are addressed as a separate capability.* However, this capability does cover those individuals who have disabilities that can be accommodated in general population shelters. These individuals could include the following:

- ◆ A person requiring medication, Consumable Medical Supplies ([CMS], such as hearing aid batteries, incontinence supplies), or Durable Medical Equipment ([DME], such as wheelchairs, walkers, canes, etc);
- ◆ A person with a stable medical or psychiatric condition;
- ◆ A person who requires a caregiver where the regular caregiver can stay with the person;
- ◆ A person requiring assistance with transferring from a wheelchair to a cot where the assistance does not require specialized training or lifting equipment;
- ◆ A person requiring oxygen who is mobile and does not require medical attention; or
- ◆ A person needing assistance with some activities of daily living such as cutting of food.

This list does not include all accommodations that can be made in a general population shelter, but each shelter will have different capabilities based on location and available facilities at the time of the disaster

**Recommended Outcome:** Mass care services, including sheltering, feeding, and bulk distribution, are rapidly provided for the population and companion animals within the affected area.

### **RESTORATION OF LIFELINES**

Restoration of Lifelines is the capability to initiate and sustain restoration activities. This includes facilitating the repair/replacement of infrastructure for oil, gas, electric, telecommunications, drinking water, wastewater, and transportation services.

**Recommended Outcome:** Lifelines to undertake sustainable emergency response and recovery activities are established.

### **ECONOMIC AND COMMUNITY RECOVERY**

Economic and Community Recovery is the capability to implement short- and long-term recovery and mitigation processes after an incident. This will include identifying the extent of damage caused by an incident, conducting thorough post-event assessments and determining and providing the support needed for recovery and restoration activities to minimize future loss from a similar event.

**Recommended Outcome:** Economic impact is estimated; priorities are set for recovery activities; business disruption is minimized; and individuals and families are provided with appropriate levels and types of relief with minimal delay.



