

State of Delaware
Department of Health and Social Services
Division of Public Health
Standard Operating Guideline

NATURAL DISASTERS

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1.0 Purpose

- 1.1 To provide guidance and actions steps for the Division of Public Health (DPH) before, during and after a potential natural disaster that causes a major public health emergency.
- 1.2 Examples of Natural Disasters are:
 - 1.2.1 *Hurricane (wind)*
 - 1.2.2 *Flooding*
 - 1.2.3 *Tornado*
 - 1.2.4 *Drought*
 - 1.2.5 *Winter storm and/or hail*
 - 1.2.6 *Severe thunderstorm*
 - 1.2.7 *Major earthquake*

2.0 Planning Assumptions


- 2.1 A natural disaster may cause significant health and medicals issues such as inadequate sanitation, dehydration (due to lack of clean potable water) disease, injuries, or fatalities.
- 2.2 Disruption of sanitation services and facilities, loss of power, and massing of people and shelters may increase the long-term potential for additional disease, injury and mental health and crisis counseling.
- 2.3 The Division of Public Health (DPH) may work with Delaware Emergency Management Agency (DEMA) to establish Disaster Recovery Centers (DRCs) in areas that have been affected by a Natural Disaster (See *Delaware Emergency Operations Plan, State Recovery Centers*).


3.0 Concept of Operations


The Division of Public Health utilizes the concept of “Phased Planning” (*Pre-Disaster, Impact, and Post Disaster*). The following concept of operations consists of a series of checklists with action steps during the Pre-Disaster, Impact, and Post Disaster Phases for a Natural Disaster. The action steps are design to provide guidance and suggested actions for DPH. These action steps may take place with or without a state of emergency declared by the Governor.


3.1 **Pre-Disaster Phase Checklist**

- 3.1.1 The State Health Operations Center (SHOC) may be activated prior to impact of the natural disaster to monitor the threat potential and to begin planning efforts.
- 3.1.2 The Pre-Disaster Phase Checklist '*Action Steps*' provides guidance and suggested actions steps that should be taken or considered.
- 3.1.3 Depending on level of SHOC activation and pending natural disaster, Pre-Disaster responsibilities may fall to the Public Health Preparedness Sections (PHPS) and/or SHOC Operations until SHOC is activated at a Level 2.
- 3.1.4 DPH should refer to *the Hurricane Preparedness Standard Operating Guideline* in the event of an impending hurricane (See Section 4.0).

	<p align="center">PRE-DISASTER PHASE CHECKLIST</p> <p align="center">ACTION STEPS</p>	<p align="center">RESPONSIBILITIES</p>
<input type="checkbox"/>	<p>1) Monitor the National Weather Service (NWS) for information regarding flood, tornado, winter storm/hail or severe thunderstorm threats.</p>	<p align="center">PHPS</p>
<input type="checkbox"/>	<p>2) Evaluate SHOC activation level to ensure coordination assessments and preparatory actions are advancing. SHOC staffing should be adjusted as required.</p>	<p align="center">Command Staff/ Ops Chief</p>
<input type="checkbox"/>	<p>3) Participate in Weather Bridge Calls with DEMA when it has been determined that a significant storm may affect Delaware.</p>	<p align="center">Planning/PHPS</p>
<input type="checkbox"/>	<p>4) Develop Situation Awareness Reports (SITREP) based on information from the Weather Bridge Calls.</p>	<p align="center">Planning/PHPS</p>
<input type="checkbox"/>	<p>5) Fill out all appropriate ICS forms and conduct all briefings and meetings according to the SHOC Planning Cycle.</p>	<p align="center">Planning/PHPS</p>
<input type="checkbox"/>	<p>6) Ensure all vehicles and back-up generators have sufficient fuel levels and are in proper working condition.</p>	<p align="center">Logistics/PHPS</p>
<input type="checkbox"/>	<p>7) Preposition Modular Medical Expansion System (MMES) trailers, if possible.</p>	<p align="center">Logistics/PHPS</p>
<input type="checkbox"/>	<p>8) Issue Delaware Health Alert Network (DHAN) and Facility Resource Emergency Database (FRED) alerts as necessary.</p>	<p align="center">Public Affairs/PHPS</p>
<input type="checkbox"/>	<p>9) Conduct an inventory of safe drinking water, food, medical supplies and medicine to determine if sufficient supplies are on hand to support Neighborhood Emergency Help Centers (NEHC), Medical Needs Shelters (MNS) and Emergency Response Teams (ERTs).</p>	<p align="center">Logistics/PHPS</p>

	PRE-DISASTER PHASE CHECKLIST ACTION STEPS	RESPONSIBILITIES
<input type="checkbox"/>	10) Establish communications with key federal, state and local partners.	SHOC IC/Ops Chief
<input type="checkbox"/>	11) Alert Delaware Medical Reserve Corps (DMRC) and Interpreter Corps of potential deployment.	DMRC Coordinator/ F & A Credentialing Unit Leader.
<input type="checkbox"/>	12) Coordinate with ESF 1 (Department of Transportation) and the Delaware National Guard (DNG) for evacuation of hospitals, nursing homes and individuals with special medical needs that live in their own residence.	Operations
<input type="checkbox"/>	13) Coordinate with ESF 1 to activate Medical Evacuation Transportation Plan to support healthcare facility evacuation and patient movement through the MMES	Operations
<input type="checkbox"/>	14) Coordinate shelter resource needs to include for shelter management personnel (DPH Nurses) with the American Red Cross (ARC).	Operations
<input type="checkbox"/>	15) Consider activating MMES. If evacuating, MNS may be required.	Planning
<input type="checkbox"/>	16) Coordinate with the ESF-6 liaison to assist in movement of dialysis patients (See <i>Emergency Dialysis Transportation Standard Operating Guidelines</i>).	Operations
<input type="checkbox"/>	17) Coordinate with DEMA for activation of SART and/or a local animal group such as, the SPCA or the Humane Association, to assist with the care of animals while their owners are being cared for in alternate care facilities.	Logistics
<input type="checkbox"/>	18) Coordinate use of the In-State Stockpile of pharmaceuticals as necessary.	Planning/Logistics

	PRE-DISASTER PHASE CHECKLIST ACTION STEPS	RESPONSIBILITIES
<input type="checkbox"/>	19) Coordinate with Delaware Hospital for the Chronically Ill to support SHOC Operations (i.e. Family Support, Lodging, Meals and Security) as necessary.	Logistics
<input type="checkbox"/>	20) Determine the need to evacuate or shelter in place.	SHOC IC

	<p align="center">PRE-DISASTER PHASE CHECKLIST</p> <p align="center">ACTION STEPS</p>	<p align="center">RESPONSIBILITIES</p>
<input type="checkbox"/>	<p>21) Prepare and issue health and medical advisories to the public on such matters as:</p> <ol style="list-style-type: none"> 1. Emergency Water Supplies 2. Waste Disposal 3. Mass Feeding Services 4. Dialysis Center Locations 5. Immunizations 6. Disinfection 7. High Heat Indices 8. Cooling Techniques 9. Location of Cooling Centers (if established) 10. Ways to Conserve Water 11. Water Restrictions 12. Health and Safety Related Winter Storm Advisories 13. Location of MMES Components 14. Location of DRCs 15. Location of Pet Shelters 16. Prepare an Emergency Kit 17. Shelter-in-Place Recommendations 	<p align="center">Public Affairs or Joint Information Center, if activated</p>

3.2 **Impact Phase Checklist**

3.2.1 The Pre-Disaster Phase transitions into Impact Phase when the natural disaster is in the midst of striking an area in the state.

3.2.2 The State Health Operation Center will be activated during this phase. Depending on the natural disaster SHOC may be relocated for safety purpose.

3.2.3 The below Impact Phase Checklist '*Action Steps*' provides guidance and suggested actions steps that should be taken or considered.


<input checked="" type="checkbox"/>	IMPACT PHASE ACTION STEPS	RESPONSIBILITIES
<input type="checkbox"/>	1) Continue to follow the procedures in State Health Operations Planning Cycle and fill out ICS forms accordingly.	All SHOC
<input type="checkbox"/>	2) Deploy rescue teams, medical support and other life saving activities as needed.	Operations
<input type="checkbox"/>	3) Evaluate the SHOC activation level to ensure coordination assessments and preparatory actions are advancing. SHOC staffing should be adjusted as required.	SHOC IC
<input type="checkbox"/>	4) Continue to monitor the NWS for weather information.	Planning
<input type="checkbox"/>	5) Continue to issue DHAN and FRED alerts as appropriate.	Public Affairs/Operations
<input type="checkbox"/>	6) Continue to maintain communications with federal, state and local partners.	SHOC IC/Operations
<input type="checkbox"/>	7) Develop plan of action for damage assessment of DPH facilities	Planning
<input type="checkbox"/>	8) Re-evaluate resources needed to include medical equipment and supplies, personnel, and food and water.	Planning/Logistics


3.3 **Post Disaster Phase Checklist**

3.3.1 There are several categories of public health activities that may need to occur in the aftermath of a natural disaster. The following action steps should be considered for natural disasters that have caused a significant impact on public health and safety:


<input checked="" type="checkbox"/>	POST DISASTER PHASE ACTION STEPS	RESPONSIBILITIES
<input type="checkbox"/>	1) Assess situation and activate one or all of the MMES components to manage medical needs of those who are sick or injured.	Planning/Operations
<input type="checkbox"/>	2) Evaluate the SHOC activation level to ensure coordination assessments and preparatory actions are advancing. SHOC staffing should be adjusted as required.	SHOC IC
<input type="checkbox"/>	3) Monitor the NWS for weather conditions to determine when it is safe to proceed outside.	Planning
<input type="checkbox"/>	4) Continue to follow the procedures in the State Health Operations Planning Cycle and fill out ICS forms accordingly.	All SHOC
<input type="checkbox"/>	5) Continue to issue updates to hospitals via DHAN and FRED.	Public Affairs/Operations
<input type="checkbox"/>	6) Coordinate with ARC for blood and blood products as necessary.	Logistics
<input type="checkbox"/>	7) Disseminated Public Information regarding natural disaster per the <i>Crisis and Risk Communication Plan</i> .	Public Affairs
<input type="checkbox"/>	8) Coordinate to provide Mental Health and/or Crisis Intervention Services for people affected by a natural disaster.	Operations
<input type="checkbox"/>	9) Establish Mental Health and Crisis Counseling in each MMES component as needed.	Operations

<input checked="" type="checkbox"/>	POST DISASTER PHASE ACTION STEPS	RESPONSIBILITIES
<input type="checkbox"/>	10) Disseminate information to the public regarding mildew, mold and fungi abatement, and recommendations to use a licensed asbestos removal company to remove asbestos from dwellings that have been deemed habitable.	Public Affairs/Communication Unit
<input type="checkbox"/>	11) Coordinate with ESF 3 (Public Works) for engineering and architectural staff to evaluate structural integrity of hospitals after a natural disaster.	Operations
Pest Control:		
<input type="checkbox"/>	1) Coordinate with DNREC, Division of Fish and Wildlife to implement actions to prevent or control vectors such as flies, mosquitoes and rodents which may cause an increase health risk.	Planning
<input type="checkbox"/>	2) Coordinate with HSP who may be able to provide basic information on ways to control pests.	Planning


	POST DISASTER PHASE ACTION STEPS	RESPONSIBILITIES
Immunizations: Following a natural disaster, SHOC should target efforts to prevent certain preventable diseases that are commonly associated with a natural disaster.		
<input type="checkbox"/>	1) Monitor tetanus among persons working or living among structural damage and debris, hepatitis A, and influenza among persons living in crowded conditions in emergency shelters.	Planning/Operations
<input type="checkbox"/>	2) Conduct communicable disease surveillance and needs assessment activities following the event. <ul style="list-style-type: none"> • For the diseases that people are at risk of contracting. • To determine if a disease outbreak has occurred or the potential to occur. If these efforts determine that a large number of persons may be at risk, DPH should conduct targeted community level mass vaccination activities (See <i>NEHC Plan</i>).	Planning/Operations
<input type="checkbox"/>	3) Provide immunizations against diseases associated with natural disasters to first responders, relief workers followed by evacuees.	Planning/Operations


	<p align="center">POST DISASTER PHASE</p> <p align="center">ACTION STEPS</p>	RESPONSIBILITIES
<input type="checkbox"/>	4) Provide accurate and timely information to the public regarding the risk of vaccine-preventable diseases and the need for immunizations.	Public Affairs
<p>Excessive Heat Safety:</p> <p>Hurricane Season (June 1 through November 30) occurs during the hottest months of the year. During that time, the NWS may issue many heat advisories and excessive heat warnings.</p>		
<input type="checkbox"/>	1) Issue a Heat Advisory (monitored during a 24-hour period) when the heat index reaches or exceeds 105 degrees for two consecutive days.	Public Affairs
<input type="checkbox"/>	2) Shelter or accommodate people who are displaced from their homes or without power due to a natural disaster.	Planning/Operations
<input type="checkbox"/>	3) Activate Delaware Health Alert Network (DHAN) for high heat indices. Message recipients should be alerted to the need for cooling techniques for the highest risk categories: the elderly, the young, and people with mental illness and chronic disease.	Public Affairs
<input type="checkbox"/>	4) Established cooling centers to provide an air conditioned place for individuals congregate and reduce incidence of morbidity and mortality due to heat stress.	Planning/Operations/Logistics


<input checked="" type="checkbox"/>	POST DISASTER PHASE ACTION STEPS	RESPONSIBILITIES
<input type="checkbox"/>	5) Provide drinking water at cooling center facility to prevent dehydration and/or heat stress.	Logistics
Water Safety: Flood water may carry untreated sewage, dead animals, disinterred bodies and hazardous materials. Additionally, flooding compromises the safety of water supplies and the integrity of sewage disposal, leading to threats of food and waterborne illness.		
<input type="checkbox"/>	1) Manage all minor water quality assurance activities.	Office of Drinking Water (ODW)/Planning

	POST DISASTER PHASE ACTION STEPS	RESPONSIBILITIES
<input type="checkbox"/>	<p>2) Activate an ODW Strike Team if there are areas that have been severely impacted by flood.</p> <p>The ODW Strike Team should obtain information about areas that have been identified as severely impacted. This information should be used to identify the public drinking water systems that are located in the impacted areas.</p> <p>If telephone lines are operational, the ODW should contact each identified public drinking water system in the affected area by phone to determine the following, (if relevant to the event):</p> <ul style="list-style-type: none"> • If water supply system has power. • If the water system is without power. • If the system has an operational back-up generator. • If the water system has adequate water pressure. • If the water system was flooded or if the well was flooded. 	Planning ODW Strike Team
<input type="checkbox"/>	<p>3) If telephone lines are not operational, inspect the identified water systems to determine each of the above.</p>	Planning ODW Strike Team
<input type="checkbox"/>	<p>4) If a water system is determined to have 1) no power and no back-up generator, 2) inadequate water pressure and/or 3) a flooded system/well, issue a “Boil Water Order” or “Do Not Use Order” to residents using the water system.</p>	Planning ODW Strike Team/Planning/Public Affairs


<input checked="" type="checkbox"/>	POST DISASTER PHASE ACTION STEPS	RESPONSIBILITIES
<input type="checkbox"/>	5) Once the system has been chlorinated and/or flush, perform testing to determine if contaminants are present. When no contaminants are determined to be present, lift the Boil Water Order.	Planning ODW Strike Team/Planning/Public Affairs
<input type="checkbox"/>	6) Encourage residents to test private wells for contaminants. Planning should provide instructions and, when warranted, assistance to residents to facilitate testing. This assistance may include providing testing samples (e.g. water bottles), and arranging sample drop-off locations.	Public Affairs
<input type="checkbox"/>	7) Coordinate with other state agencies to make clean water available to the public.	Operations
<input type="checkbox"/>	8) Coordinate with DNG to dispatch water "buffaloes" or mobile potable water tanks.	Operations
<input type="checkbox"/>	9) Coordinate with private companies to make clean bottled water available.	Logistics/Finance & Administration

	<p style="text-align: center;">POST DISASTER PHASE ACTION STEPS</p>	RESPONSIBILITIES
<p>Food Safety: Long-term power and utility outages can impact food quality and, if occurring during times of extreme temperatures, can result in an increased risk of food borne related illnesses. Health Systems Protection (HSP) or planning coordinates food safety activities.</p>		
<input type="checkbox"/>	1) Manage all minor food safety issues due power and utility outages.	Planning/HSP
<input type="checkbox"/>	2) Activate Investigative Response Task Force (IRT) if there are areas that have been severely impacted by long-term power and utility outages. IRT should obtain information about areas that have been identified as severely impacted. Within this information, HSPS should identify the food establishments that are located in the impacted areas.	Planning
<input type="checkbox"/>	3) Contact selected food establishments in the affected areas to determine if they have power. If telephone lines are not operational, visit selected food establishments to determine the status of their power.	IRT/HSP
<input type="checkbox"/>	4) Work with each food establishment determined to be without power to ensure that food that must remain cold is condemned if the power outage looks to be sustained and if alternate cold facilities are not available. Inspectors should observe the destruction of identified food.	IRT/HSP
<input type="checkbox"/>	5) Provide relevant information and education regarding food safety to food establishment personnel throughout the event.	IRT/HSP

	POST DISASTER PHASE ACTION STEPS	RESPONSIBILITIES
<input type="checkbox"/>	6) Ensure that the public receives timely, accurate, and relevant information regarding food safety.	Public Affairs/Planning
Unattended Children and Children in State Care:		
<input type="checkbox"/>	1) Coordinate with DSS and DSCYF to provide medical, mental health and healthcare services to meet the needs of unattended children and children in state care.	Operations/Planning
<input type="checkbox"/>	2) Assign interpreters to communicate with non-English speaking children.	Operations
<input type="checkbox"/>	3) Ensure medical and mental health professionals have appropriate forms and office supplies as necessary.	Logistics


	POST DISASTER PHASE ACTION STEPS	RESPONSIBILITIES
Dialysis Patients: In the event of a natural disaster, (impeding, current or post) DHSS assists with providing DSS representatives for the ESF-6 liaison position in the State EOC during activation.		
<input type="checkbox"/>	1.) Coordinate as required to provide additional resources to meet transportation and other shortfalls during implementation of this plan.	Operations/Logistics
<input type="checkbox"/>	2.) Coordinate any media support with the ESF-6 liaison in the State EOC.	Public Affairs

4.0 Hurricane Preparedness Standard Operating Guideline

<u>Pre-Season Phase</u>			
Implement a minimum of 30 days prior to hurricane season (June 1 to November 30).			
	ACTION REQUIRED	SHOC RESPONSIBILITES	PLAN REFERENCE
<input type="checkbox"/>	Enhance education on Public Health and Hurricane Preparedness related issues including personal preparedness. <input type="checkbox"/> General Population <input type="checkbox"/> SHOC Responders / Families <input type="checkbox"/> Health Care Facilities	All	All
<input type="checkbox"/>	Review, update, and exercise plans: <input type="checkbox"/> ESF-8 <input type="checkbox"/> SHOC <input type="checkbox"/> DEOP <input type="checkbox"/> Hazard Specific “Hurricane” <input type="checkbox"/> Annex (HS-10) <input type="checkbox"/> MNS <input type="checkbox"/> DHCI Emergency Plan	All	All
<input type="checkbox"/>	Review and update entire Hurricane Preparedness Guidelines.	All	Natural Disaster SOG
<input type="checkbox"/>	Review and update resource lists. <input type="checkbox"/> Staffing <input type="checkbox"/> Alert Lists <input type="checkbox"/> Supplies / Equipment	All	Resource Manual
<input type="checkbox"/>	Test and maintain emergency communication systems and equipment.	Logistics	COMM
<input type="checkbox"/>	Deploy MNS equipment trailers to county EOCs	Logistics	MNS

Pre-Season Phase


Implement a minimum of 30 days prior to hurricane season (June 1 to November 30).

	ACTION REQUIRED	SHOC RESPONSIBILITES	PLAN REFERENCE
<input type="checkbox"/>	DPH Administration reminds staff of their responsibility to take care of their families prior to incident/event.	All	

Pre-Incident Phase Through Landfall +1

Implement 7 days (168 hours) prior to TS.

TS pattern may be unpredictable. Actions should be used as a guide only.

	ACTION	SHOC RESPONSIBILITES	PLAN REFERENCE
<input type="checkbox"/>	Ensure sufficient copies of Hurricane Preparedness Standard Operating Guidelines have been distributed.	Planning	
<input type="checkbox"/>	Conduct initial assessment group conference call.	Assessment Group	
<input type="checkbox"/>	Evaluate SHOC activation level to ensure coordination assessments and preparatory actions are advancing. Adjust staffing (as required).	IC Staff	SHOC
<input type="checkbox"/>	Review Hurricane Preparedness Guidelines and emergency plans.	All	SHOC

Pre-Incident Phase Through Landfall +1

Implement 7 days (168 hours) prior to TS.

TS pattern may be unpredictable. Actions should be used as a guide only.

<input checked="" type="checkbox"/>	ACTION	SHOC RESPONSIBILITIES	PLAN REFERENCE
<input type="checkbox"/>	Review and consider actions provided in the previous phases and complete those actions not performed as appropriate.	All	
<input type="checkbox"/>	Alert SHOC Personnel to prepare to report to the SHOC and/or a forward operating location.	IC Staff/Public Affairs	
<input type="checkbox"/>	Review FEMA Hurricane CONOPS.	IC Staff	DHS/FEMA Region III 2007 Hurricane Season CONOPS
<input type="checkbox"/>	Monitor National Hurricane Center and NWS information.	Planning, PHPS	
<input type="checkbox"/>	Initiate/Distribute Situation Report (SITREP).	Operations	SHOC
<input type="checkbox"/>	Initiate Incident Action Plan (IAP).	Planning	SHOC
<input type="checkbox"/>	Coordinate with DHCI to support SHOC activation Operations (to include Family Support). <input type="checkbox"/> Lodging <input type="checkbox"/> Meals <input type="checkbox"/> Security <input type="checkbox"/> Family	Planning	

Pre-Incident Phase Through Landfall +1

Implement 7 days (168 hours) prior to TS.


TS pattern may be unpredictable. Actions should be used as a guide only.

<input checked="" type="checkbox"/>	ACTION	SHOC RESPONSIBILITES	PLAN REFERENCE
<input type="checkbox"/>	Establish contact with state and local partners and set update schedule, to monitor national and regional preparations and coordination efforts. <input type="checkbox"/> DEMA <input type="checkbox"/> Hospitals <input type="checkbox"/> Delaware National Guard <input type="checkbox"/> DHSS	Operations	
<input type="checkbox"/>	Coordinate and conduct teleconferences for the purpose of identifying potential Federal resource deployment requests (as needed): <input type="checkbox"/> CDC, Senior Management Official <input type="checkbox"/> FEMA, Region III, HHS Coordinator <input type="checkbox"/> NDMS Regional Coordinator	IC Staff	All
<input type="checkbox"/>	Participate in DEMA / NWS weather bridge calls (as scheduled). <input type="checkbox"/> Review/Update e-mail distribution groups (as necessary). <input type="checkbox"/> Ensure information is distributed to state and local partners.	Operations	
<input type="checkbox"/>	Issue DHAN and FRED alerts as appropriate. <input type="checkbox"/> DHSS <input type="checkbox"/> DPH <input type="checkbox"/> Hospitals <input type="checkbox"/> Clinics	Public Affairs / Logistics / IT	

Pre-Incident Phase Through Landfall +1

Implement 7 days (168 hours) prior to TS.


TS pattern may be unpredictable. Actions should be used as a guide only.

	ACTION	SHOC RESPONSIBILITES	PLAN REFERENCE
<input type="checkbox"/>	Ensure State EOC ESF-8 Liaison Reports to DEMA State EOC (if activated).	Operations	SHOC, ESF 8
<input type="checkbox"/>	Consider/Confirm site selection and protective pre-positioning of equipment: <input type="checkbox"/> SHOC (Alternate) <input type="checkbox"/> ACC <input type="checkbox"/> NEHC <input type="checkbox"/> MNS <input type="checkbox"/> Equipment Trailers <input type="checkbox"/> Vehicles	Operations/Logistics	SHOC NEHC ACC PPE MNS
<input type="checkbox"/>	Inventory essential supplies and stock to support NEHC, MNS, and Emergency Response Teams: <input type="checkbox"/> Safe Drinking Water <input type="checkbox"/> Food <input type="checkbox"/> Medical Supplies <input type="checkbox"/> Medications <input type="checkbox"/> Other:	Logistics	MNS NEHC
<input type="checkbox"/>	Ensure all vehicles and back-up generators have sufficient fuel levels (ensure a minimum of 72 hours of fuel for generators).	Logistics	

Pre-Incident Phase Through Landfall +1

Implement 7 days (168 hours) prior to TS.


TS pattern may be unpredictable. Actions should be used as a guide only.

	ACTION	SHOC RESPONSIBILITIES	PLAN REFERENCE
<input type="checkbox"/>	Provide Just-In-Time training for 800 MHz system to SHOC staff, hospital staff, etc.	Logistics/Training	
<input type="checkbox"/>	Conduct test of 800 MHz radios on public health and hospital channels.	Operations	
<input type="checkbox"/>	Test back-up power generator service for: <input type="checkbox"/> SHOC <input type="checkbox"/> ACC <input type="checkbox"/> NEHC <input type="checkbox"/> MNS	Logistics	
<input type="checkbox"/>	Test and maintain emergency communication systems with state and other partners.	Logistics	
<input type="checkbox"/>	Test and maintain emergency equipment.	Logistics	Resource Manual
<input type="checkbox"/>	Continue reviews and updates of resource lists. <input type="checkbox"/> Staffing <input type="checkbox"/> Alert Lists <input type="checkbox"/> Supplies / Equipment	All	
<input type="checkbox"/>	<input type="checkbox"/> Develop a timeline for receipt of Federal assets/resources (if federal assets have been requested or deployed).	IC Staff	DHS/FEMA Region III 2007 Hurricane Season CONOPS
<input type="checkbox"/>	Review/Update safety issues for SHOC personnel and ensure widest dissemination.	Safety Officer	

Pre-Incident Phase Through Landfall +1

Implement 7 days (168 hours) prior to TS.


TS pattern may be unpredictable. Actions should be used as a guide only.

	ACTION	SHOC RESPONSIBILITES	PLAN REFERENCE
<input type="checkbox"/>	DPH Administration reminds staff of their responsibility to take care of their families prior to incident/event.	All	
<input type="checkbox"/>	Activate time tracking mechanisms and distribute to SHOC staff.	Finance & Administration	SHOC
<input type="checkbox"/>	Ensure funding is available to support event.	Finance & Administration	

Pre-Incident Phase Through Landfall +1

Implement 6 days (144 hours) prior to TS.


TS pattern may be unpredictable. Actions should be used as a guide only.

	ACTION REQUIRED	SHOC RESPONSIBILITIES	PLAN REFERENCE
<input type="checkbox"/>	Evaluate SHOC activation level to ensure coordination assessments and preparatory actions are advancing. Adjust SHOC staffing (as required).	IC Staff	SHOC
<input type="checkbox"/>	Review Hurricane Preparedness Guidelines and emergency plans.	All	SHOC
<input type="checkbox"/>	Review and consider actions provided in the previous phases and complete those actions not performed as appropriate.	All	
<input type="checkbox"/>	Review FEMA Hurricane CONOPS.	IC Staff	DHS/FEMA Region III 2007 Hurricane Season CONOPS
<input type="checkbox"/>	Monitor National Hurricane Center and NWS information.	Planning, PHPS	
<input type="checkbox"/>	Update IAP.	Planning	
<input type="checkbox"/>	Participate in DEMA / NWS weather bridge calls (as scheduled). <input type="checkbox"/> Ensure information is distributed to state and local partners.	Operations	

Pre-Incident Phase Through Landfall +1

Implement 6 days (144 hours) prior to TS.


TS pattern may be unpredictable. Actions should be used as a guide only.

	ACTION REQUIRED	SHOC RESPONSIBILITES	PLAN REFERENCE
<input type="checkbox"/>	Issue DHAN and FRED alerts as appropriate. <input type="checkbox"/> DHSS <input type="checkbox"/> DPH <input type="checkbox"/> Hospitals <input type="checkbox"/> Clinics	Public Affairs / Logistics / IT	
<input type="checkbox"/>	Ensure State EOC ESF-8 Liaison Reports to DEMA State EOC if activated.	Operations	SHOC, ESF 8

Pre-Incident Phase Through Landfall +1

Implement 6 days (144 hours) prior to TS.

TS pattern may be unpredictable. Actions should be used as a guide only.

	ACTION REQUIRED	SHOC RESPONSIBILITIES	PLAN REFERENCE
<input type="checkbox"/>	Coordinate and conduct teleconferences for the purpose of identifying potential Federal resource deployment requests (as needed): <input type="checkbox"/> CDC, Senior Management Official <input type="checkbox"/> FEMA, Region III, HHS Coordinator <input type="checkbox"/> NDMS Regional Coordinator	IC Staff	All
<input type="checkbox"/>	Coordinate and conduct teleconferences for the purpose of identifying potential resource shortfalls or issues for: <input type="checkbox"/> SHOC <input type="checkbox"/> Hospitals <input type="checkbox"/> Bay Health <input type="checkbox"/> Beebe <input type="checkbox"/> Christiana Care <input type="checkbox"/> A.I. DuPont <input type="checkbox"/> Nanticoke <input type="checkbox"/> St. Francis <input type="checkbox"/> V A Medical Center <input type="checkbox"/> State Facilities <input type="checkbox"/> DHCI <input type="checkbox"/> Governor Bacon <input type="checkbox"/> Stockley <input type="checkbox"/> Emily Bissell <input type="checkbox"/> Delaware Psychiatric Center <input type="checkbox"/> NEHC <input type="checkbox"/> ACC <input type="checkbox"/> MNS	All	All

Pre-Incident Phase Through Landfall +1

Implement 6 days (144 hours) prior to TS.


TS pattern may be unpredictable. Actions should be used as a guide only.

<input checked="" type="checkbox"/>	ACTION REQUIRED	SHOC RESPONSIBILITES	PLAN REFERENCE
<input type="checkbox"/>	Continue participation in FEMA-initiated Region/State conference calls.	IC Staff	
<input type="checkbox"/>	Begin evacuation and shelter coordination with appropriate agencies. <input type="checkbox"/> ESF 1 <input type="checkbox"/> ESF 6 <input type="checkbox"/> DNG	Operations	
<input type="checkbox"/>	Coordinate shelter resource needs to include shelter management personnel (DPH Nurses) with American Red Cross.	Operations/ (SHS/NHS Liaisons)	
<input type="checkbox"/>	Determine needs for special populations: <input type="checkbox"/> Evacuation/Transportation <input type="checkbox"/> Food <input type="checkbox"/> Medications/Equipment	Operations/Logistics	
<input type="checkbox"/>	Prepare MMES equipment for deployment (as required).	Operations/Logistics	
<input type="checkbox"/>	Develop and maintain roster and organization charts for deployed personnel (if deployed).	Finance & Administration	
<input type="checkbox"/>	Update/distribute SITREP.	Planning	SHOC

Pre-Incident Phase Through Landfall +1

Implement 6 days (144 hours) prior to TS.


TS pattern may be unpredictable. Actions should be used as a guide only.

	ACTION REQUIRED	SHOC RESPONSIBILITES	PLAN REFERENCE
<input type="checkbox"/>	Inventory SHOC staff essential supplies and stock to support 24-hour operations for a minimum of 72-hours: <input type="checkbox"/> Water <input type="checkbox"/> Food <input type="checkbox"/> Cots <input type="checkbox"/> Blankets <input type="checkbox"/> Medical Supplies	Logistics	
<input type="checkbox"/>	Review/Update safety issues for SHOC personnel and ensure widest dissemination.	Safety Officer	

Pre-Incident Phase Through Landfall +1

Implement 5 days (120 hours) prior to TS.


TS pattern may be unpredictable. Actions should be used as a guide only.

	ACTION REQUIRED	SHOC RESPONSIBILITES	PLAN REFERENCE
<input type="checkbox"/>	Evaluate SHOC activation level to ensure coordination assessments and preparatory actions are advancing. Adjust SHOC staffing (as required).	IC Staff	SHOC
<input type="checkbox"/>	Review Hurricane Preparedness Guidelines and emergency plans.	All	SHOC
<input type="checkbox"/>	Review and consider actions provided in the previous phases and complete those actions not performed as appropriate.	All	
<input type="checkbox"/>	Review FEMA Hurricane CONOPS.	IC Staff	DHS/FEMA Region III 2007 Hurricane Season CONOPS
<input type="checkbox"/>	Monitor National Hurricane Center and NWS information.	Planning, PHPS	
<input type="checkbox"/>	Update IAP.	Planning	
<input type="checkbox"/>	Participate in DEMA / NWS weather bridge calls (as scheduled). <input type="checkbox"/> Review/Update e-mail distribution groups (as necessary). <input type="checkbox"/> Ensure information is distributed to state and local partners.	Operations	

Pre-Incident Phase Through Landfall +1

Implement 5 days (120 hours) prior to TS.

TS pattern may be unpredictable. Actions should be used as a guide only.

	ACTION REQUIRED	SHOC RESPONSIBILITIES	PLAN REFERENCE
<input type="checkbox"/>	Issue DHAN and FRED alerts as appropriate. <input type="checkbox"/> DHSS <input type="checkbox"/> DPH <input type="checkbox"/> Hospitals <input type="checkbox"/> Clinics	Public Affairs / Logistics / IT	
<input type="checkbox"/>	Establish and maintain lines of communication with State/local authorities daily for incident venues.	Logistics	
<input type="checkbox"/>	Continue participation in FEMA-initiated Region/State conference calls.	IC Staff	
<input type="checkbox"/>	Ensure State EOC ESF-8 Liaison Reports to DEMA State EOC if activated.	Operations	SHOC, ESF 8
<input type="checkbox"/>	Develop and maintain roster and organization charts for deployed personnel (if deployed).	Finance & Administration	

Pre-Incident Phase Through Landfall +1

Implement 5 days (120 hours) prior to TS.


TS pattern may be unpredictable. Actions should be used as a guide only.

<input checked="" type="checkbox"/>	ACTION REQUIRED	SHOC RESPONSIBILITES	PLAN REFERENCE
<input type="checkbox"/>	Maintain contact and conduct teleconferences for the purpose of identifying potential Federal resource deployment requests (as needed): <input type="checkbox"/> CDC, Senior Management Official <input type="checkbox"/> FEMA, Region III, HHS Coordinator <input type="checkbox"/> NDMS Regional Coordinator	IC Staff	All
<input type="checkbox"/>	Coordinate and conduct teleconferences for the purpose of identifying and mitigating potential resource shortfalls or issues for: <input type="checkbox"/> SHOC <input type="checkbox"/> Hospitals <input type="checkbox"/> Bay Health <input type="checkbox"/> Beebe <input type="checkbox"/> Christiana Care <input type="checkbox"/> A.I. DuPont <input type="checkbox"/> Nanticoke <input type="checkbox"/> St. Francis <input type="checkbox"/> V A Medical Center <input type="checkbox"/> State Facilities <input type="checkbox"/> DHCI <input type="checkbox"/> Governor Bacon <input type="checkbox"/> Stockley <input type="checkbox"/> Emily Bissell <input type="checkbox"/> Delaware Psychiatric Center	All	All

Pre-Incident Phase Through Landfall +1

Implement 5 days (120 hours) prior to TS.


TS pattern may be unpredictable. Actions should be used as a guide only.

	ACTION REQUIRED	SHOC RESPONSIBILITIES	PLAN REFERENCE
	<input type="checkbox"/> NEHC <input type="checkbox"/> ACC <input type="checkbox"/> MNS <input type="checkbox"/> MMF		
<input type="checkbox"/>	Continue participation in FEMA initiated Region/State conference calls (as required).	IC Staff	
<input type="checkbox"/>	Coordinate shelter resource needs to include shelter management personnel (DPH Nurses) with American Red Cross.	Operations/ (SHS/NHS Liaisons)	
<input type="checkbox"/>	Coordinate public health inspection requirements for portable water tanks (water buffaloes) with DEMA/DNG.	Operations	
<input type="checkbox"/>	Coordinate, determine and source evacuation capabilities with inter-agency and private sector resources needed to evacuate impacted population/pets out of affected areas [Medical/Decon actions may be required].	Logistics and ESF 1, ESF 5, ESF 6	
<input type="checkbox"/>	Confirm transportation (acquisition of transportation resources and timeline) requirements: for possible patient evacuation.	Logistics and ESF 1, ESF 5, ESF 6	
<input type="checkbox"/>	Coordinate Emergency Pharmaceutical Assistance Program.	Planning	

Pre-Incident Phase Through Landfall +1

Implement 5 days (120 hours) prior to TS.


TS pattern may be unpredictable. Actions should be used as a guide only.

	ACTION REQUIRED	SHOC RESPONSIBILITES	PLAN REFERENCE
<input type="checkbox"/>	Plan for establishing Alternate Care Sites. Consider activating MMES Sites.	Logistics	
<input type="checkbox"/>	Coordinate Participate in Temporary Housing Planning process with ESF # 6 for Public Health Issues.	Operations/ESF 6 Liaison	
<input type="checkbox"/>	Be prepared to recommend last minute sheltering of those individuals who did not evacuate and are asking where they can go for safety.	Operations/Logistics	
<input type="checkbox"/>	Implement statewide active daily surveillance system for evacuation shelters, Hospital EDs, MNS, NEHCs, and ACCs for: <ul style="list-style-type: none"> <input type="checkbox"/> Chronic Medical Conditions <input type="checkbox"/> Injuries <input type="checkbox"/> Mental Health Issues <input type="checkbox"/> Infectious/Communicable Diseases 	Planning	IRT
<input type="checkbox"/>	Review/Update safety issues for SHOC personnel and ensure widest dissemination.	Safety Officer	
<input type="checkbox"/>	Update/distribute SITREP.	Planning	SHOC

Pre-Incident Phase Through Landfall +1

Implement 4 days (96 hours) prior to TS.


TS pattern may be unpredictable. Actions should be used as a guide only.

	ACTION REQUIRED	SHOC RESPONSIBILITES	PLAN REFERENCE
<input type="checkbox"/>	Evaluate SHOC activation level to ensure coordination assessments and preparatory actions are advancing. Adjust SHOC staffing (as required).	IC Staff	SHOC
<input type="checkbox"/>	Review Hurricane Preparedness Guidelines and emergency plans.	All	SHOC
<input type="checkbox"/>	Review and consider actions provided in the previous phases and complete those actions not performed as appropriate.	All	
<input type="checkbox"/>	Monitor National Hurricane Center and NWS information.	Planning, PHPS	
<input type="checkbox"/>	Review FEMA Hurricane CONOPS.	IC Staff	DHS/FEMA Region III Hurricane Season CONOPS
<input type="checkbox"/>	Update IAP.	Planning	SHOC
<input type="checkbox"/>	Confirm arrival of Federal Operational Staging Area (FOSA) Team(s) and FOSA Managers (Public Health Component).	Planning	

Pre-Incident Phase Through Landfall +1

Implement 4 days (96 hours) prior to TS.


TS pattern may be unpredictable. Actions should be used as a guide only.

	ACTION REQUIRED	SHOC RESPONSIBILITES	PLAN REFERENCE
<input type="checkbox"/>	Coordinate and conduct teleconferences for identified potential Federal resource deployment requests (as needed): <input type="checkbox"/> CDC, Senior Management Official <input type="checkbox"/> FEMA, Region III, HHS Coordinator <input type="checkbox"/> NDMS Regional Coordinator	IC Staff	All
<input type="checkbox"/>	Continue participation in FEMA-initiated Region/State conference calls (as required).	IC Staff	
<input type="checkbox"/>	Participate in DEMA / NWS weather bridge calls (as scheduled). <input type="checkbox"/> Ensure information is distributed to state and local partners.	Operations	
<input type="checkbox"/>	Issue DHAN and FRED alerts as appropriate. <input type="checkbox"/> DHSS <input type="checkbox"/> DPH <input type="checkbox"/> Hospitals <input type="checkbox"/> Clinics	Public Affairs / Logistics / IT	
<input type="checkbox"/>	Ensure State EOC ESF-8 Liaison Reports to DEMA State EOC (if activated).	Operations	SHOC, ESF 8

Pre-Incident Phase Through Landfall +1

Implement 4 days (96 hours) prior to TS.


TS pattern may be unpredictable. Actions should be used as a guide only.

	ACTION REQUIRED	SHOC RESPONSIBILITES	PLAN REFERENCE
<input type="checkbox"/>	Prepare necessary documentation and provide to DEMA for the Governor to declare a State of Emergency addressing Public Health actions: <input type="checkbox"/> Standards of Care Regulation/Laws <input type="checkbox"/> Pubic Health Safety/Hazards <input type="checkbox"/> Volunteer Healthcare Provider Liability Protection	IC Staff / Legal / Safety	ESF 8
<input type="checkbox"/>	Activate MNS Shelter as determined by SHOC/IC. <input type="checkbox"/> Contact Delaware National Guard	Operations/Logistics	MNS, SHOC
<input type="checkbox"/>	Activate operational staging areas, outside projected incident area (MMES).	Logistics	ACC, NEHC, MNS
<input type="checkbox"/>	Coordinate shelter resource needs to include shelter management personnel (DPH Nurses) with American Red Cross.	Operations/ (SHS/NHS Liaisons)	
<input type="checkbox"/>	Coordinate with ARC on shelters to be opened. Determined DPH requirements.	Operations	
<input type="checkbox"/>	Deploy mobile IT trailer to State EOC, Unified Command location, SHOC or location as determined by IC staff.	Logistics	

Pre-Incident Phase Through Landfall +1

Implement 4 days (96 hours) prior to TS.


TS pattern may be unpredictable. Actions should be used as a guide only.

	ACTION REQUIRED	SHOC RESPONSIBILITES	PLAN REFERENCE
<input type="checkbox"/>	Conduct hazard vulnerability assessment based on the storm path. <input type="checkbox"/> Tidal Surge Modeling (DEMA)	All ESFs/DOD	
<input type="checkbox"/>	Confirm with DEMA the arrival of ERT-A Teams in Delaware (if deployed).	Operations	
<input type="checkbox"/>	Review and consider actions provided in the previous phases and complete those actions not performed as appropriate.	All	SHOC
<input type="checkbox"/>	Secure/safeguard equipment from potential weather related hazards. <input type="checkbox"/> Vehicles <input type="checkbox"/> Equipment Trailers	IT/Logistics	
<input type="checkbox"/>	Develop and maintain roster and organization charts for deployed personnel (if deployed).	Finance & Administration	
<input type="checkbox"/>	Review/Update safety issues for SHOC personnel and ensure widest dissemination.	Safety Officer	
<input type="checkbox"/>	Update/distribute SITREP.	Planning	SHOC

Pre-Incident Phase Through Landfall +1

Implement 3 days (72 hours) prior to TS.


TS pattern may be unpredictable. Actions should be used as a guide only.

	ACTION REQUIRED	SHOC RESPONSIBILITES	PLAN REFERENCE
<input type="checkbox"/>	Evaluate SHOC activation level to ensure coordination assessments and preparatory actions are advancing. Adjust staffing (as required).	IC Staff	SHOC
<input type="checkbox"/>	Review Hurricane Preparedness Guidelines and emergency plans.	All	SHOC
<input type="checkbox"/>	Review and consider actions provided in the previous phases and complete those actions not performed as appropriate.	All	
<input type="checkbox"/>	Monitor National Hurricane Center and NWS information.	Planning, PHPS	
<input type="checkbox"/>	Review FEMA Hurricane CONOPS.	IC Staff	
<input type="checkbox"/>	Update IAP.	Planning	SHOC

Pre-Incident Phase Through Landfall +1

Implement 3 days (72 hours) prior to TS.


TS pattern may be unpredictable. Actions should be used as a guide only.

	ACTION REQUIRED	SHOC RESPONSIBILITES	PLAN REFERENCE
<input type="checkbox"/>	Continue to coordinate and conduct teleconferences for identified potential Federal resource deployment requests (as needed): <input type="checkbox"/> CDC, Senior Management Official <input type="checkbox"/> FEMA, Region III, HHS Coordinator <input type="checkbox"/> NDMS Regional Coordinator	IC Staff	All
<input type="checkbox"/>	Continue participation in FEMA-initiated Region/State conference calls.	IC Staff	
<input type="checkbox"/>	Participate in DEMA / NWS weather bridge calls (as scheduled). <input type="checkbox"/> Review/Update e-mail distribution groups (as necessary). <input type="checkbox"/> Ensure information is distributed to state and local partners.	Operations	
<input type="checkbox"/>	Issue DHAN and FRED alerts as appropriate. <input type="checkbox"/> DHSS <input type="checkbox"/> DPH <input type="checkbox"/> Hospitals <input type="checkbox"/> Clinics	Public Affairs / Logistics / IT	
<input type="checkbox"/>	Ensure State EOC ESF-8 Liaison Reports to DEMA State EOC if activated.	Operations	SHOC, ESF 8
<input type="checkbox"/>	Determine if alternate SHOC location will be necessary based on possibility of change of direction in hurricane.	Logistics	SHOC

Pre-Incident Phase Through Landfall +1

Implement 3 days (72 hours) prior to TS.


TS pattern may be unpredictable. Actions should be used as a guide only.

	ACTION REQUIRED	SHOC RESPONSIBILITES	PLAN REFERENCE
<input type="checkbox"/>	Make arrangements to maintain operational continuity during SHOC relocation (if necessary).	Logistics	SHOC
<input type="checkbox"/>	Obtain updates from ESF 6 and staging areas (ongoing through TS-24) if MNS are activated.	Operations	
<input type="checkbox"/>	Establish a statewide active daily surveillance system for evacuation shelters, Hospital EDs, MNS, NEHCs, and ACCs for: <input type="checkbox"/> Chronic Medical Conditions <input type="checkbox"/> Injuries <input type="checkbox"/> Mental Health Issues <input type="checkbox"/> Infectious/Communicable Diseases	Planning	IRT
<input type="checkbox"/>	Coordinate shelter resource needs to include shelter management personnel (DPH Nurses) with American Red Cross.	Operations/ (SHS/NHS Liaisons)	
<input type="checkbox"/>	Participate in unified command at State EOC; Send DPH Rep.	IC Staff	

Pre-Incident Phase Through Landfall +1

Implement 3 days (72 hours) prior to TS.


TS pattern may be unpredictable. Actions should be used as a guide only.

	ACTION REQUIRED	SHOC RESPONSIBILITES	PLAN REFERENCE
<input type="checkbox"/>	Coordinate with DSHS and DEMA on potential Public Health/healthcare issues that should be addressed in the State of Emergency declaration such as: <input type="checkbox"/> Standards of Care Regulation/Laws <input type="checkbox"/> Public Health Safety/Hazards <input type="checkbox"/> Volunteer Healthcare Provider Liability Protection	Legal/Safety	
<input type="checkbox"/>	Monitor status of area evacuation, evacuation routes and road closures through DEMA, Del DOT, DSP.	Operations	DEOP, SHOC
<input type="checkbox"/>	Coordinate patient movement through Healthcare System; send FRED alert and assist in the coordination of patient movement.	Operations/Logistics	
<input type="checkbox"/>	Contact/coordinate with state EOC/State/locals to monitor evacuation routes to assist in opening shelters; and review state evacuation shortfalls for potential public health mobilization in support of evacuation plans.	Operations	
<input type="checkbox"/>	Monitor special populations needs: <input type="checkbox"/> Evacuation/Transportation <input type="checkbox"/> Food <input type="checkbox"/> Medications/Equipment	Operations	ISS

Pre-Incident Phase Through Landfall +1

Implement 3 days (72 hours) prior to TS.


TS pattern may be unpredictable. Actions should be used as a guide only.

	ACTION REQUIRED	SHOC RESPONSIBILITIES	PLAN REFERENCE
<input type="checkbox"/>	Review/Update safety issues for SHOC personnel and ensure widest dissemination.	Safety Officer	
<input type="checkbox"/>	Emphasize safety procedures to all personnel.	Safety Officer/PIO	
<input type="checkbox"/>	Develop and maintain roster and organization charts for deployed personnel (if deployed).	Finance & Administration	
<input type="checkbox"/>	Coordinate strategic water and food plans for DPH facilities (ACC, SHOC).	Logistics	
<input type="checkbox"/>	Ensure all activated personnel, teams, and equipment have arrived at their designated forward operating and/or staging facilities.	Planning	
<input type="checkbox"/>	Assist in the identification and sourcing potential of sites for use as Base Camps for Federal Responders based on storm path. (On going through TS-24)	Logistics	
<input type="checkbox"/>	Ensure evacuation decisions of DPH personnel/facilities are completed prior to arrival of gale force winds (34knots/39 mph). Should be accomplished during daylight hours if possible.	Operations/Logistics	DEOP
<input type="checkbox"/>	Implement crisis-counseling plan (DSAMH).	SHOC/Operations	

Pre-Incident Phase Through Landfall +1

Implement 3 days (72 hours) prior to TS.


TS pattern may be unpredictable. Actions should be used as a guide only.

	ACTION REQUIRED	SHOC RESPONSIBILITES	PLAN REFERENCE
<input type="checkbox"/>	Maintain 800 MHz radio communications with state and local partners: <input type="checkbox"/> DPH <input type="checkbox"/> DEMA <input type="checkbox"/> Hospitals	Operations/Logistics/IT	
<input type="checkbox"/>	Evaluate evacuation of DPH Facilities/Staff based on possibility of a change of direction in hurricane.	IC Staff/Planning/ Operations/LTCF Managers	
<input type="checkbox"/>	Update/distribute SITREP.	Planning	SHOC

Pre-Incident Phase Through Landfall +1

Implement when a tropical storm or hurricane has formed and has the potential to threaten Delaware within 2 days (48 hours).


TS pattern may be unpredictable. Actions should be used as a guide only.

	ACTION REQUIRED	SHOC RESPONSIBILITIES	PLAN REFERENCE
<input type="checkbox"/>	Evaluate SHOC activation level to ensure coordination assessments and preparatory actions are advancing.	IC Staff	SHOC
<input type="checkbox"/>	Monitor National Hurricane Center and NWS information.	Planning, PHPS	
<input type="checkbox"/>	Review Hurricane Preparedness Guidelines and emergency plans.	All	SHOC
<input type="checkbox"/>	Review and consider actions provided in the previous phases and complete those actions not performed as appropriate.	All	
<input type="checkbox"/>	Continue to monitor status of area evacuation, evacuation routes, and road closures through DEMA, Del DOT, DSP.	Operations	DEOP, HS 10
<input type="checkbox"/>	Review FEMA Hurricane CONOPS.	IC Staff	DHS/FEMA Region III 2007 Hurricane Season CONOPS
<input type="checkbox"/>	Continue monitoring National Hurricane Center and NWS information.	Planning	
<input type="checkbox"/>	Update IAP.	Planning	SHOC

Pre-Incident Phase Through Landfall +1

Implement when a tropical storm or hurricane has formed and has the potential to threaten Delaware within 2 days (48 hours).


TS pattern may be unpredictable. Actions should be used as a guide only.

	ACTION REQUIRED	SHOC RESPONSIBILITIES	PLAN REFERENCE
<input type="checkbox"/>	Continue participation in FEMA-initiated Region/State conference calls.	IC Staff	
<input type="checkbox"/>	Participate in DEMA / NWS weather bridge calls (as scheduled). <input type="checkbox"/> Ensure information is distributed to state and local partners.	Operations	
<input type="checkbox"/>	Issue DHAN and FRED alerts as appropriate. <input type="checkbox"/> DHSS <input type="checkbox"/> DPH <input type="checkbox"/> Hospitals <input type="checkbox"/> Clinics	Public Affairs / Logistics / IT	
<input type="checkbox"/>	Ensure State EOC ESF-8 Liaison Reports to DEMA State EOC if activated.	Operations	SHOC, ESF 8
<input type="checkbox"/>	Participate in conference calls with the SHOC and State EOC and potentially affected states (as required).	Operations	
<input type="checkbox"/>	Review/Update safety issues for SHOC personnel and ensure widest dissemination.	Safety Officer	
<input type="checkbox"/>	Emphasize safety procedures to all personnel.	Safety Officer/PIO	
<input type="checkbox"/>	Adjust SHOC staffing (as required).	IC Staff	SHOC

Pre-Incident Phase Through Landfall +1

Implement when a tropical storm or hurricane has formed and has the potential to threaten Delaware within 2 days (48 hours).


TS pattern may be unpredictable. Actions should be used as a guide only.

	ACTION REQUIRED	SHOC RESPONSIBILITIES	PLAN REFERENCE
<input type="checkbox"/>	Develop and maintain roster and organization charts for deployed personnel (if deployed).	Finance & Administration	
<input type="checkbox"/>	Inventory SHOC essential supplies and re-stock for continued support of 24-hour operations for extended period / post disaster activation: <input type="checkbox"/> Water <input type="checkbox"/> Food <input type="checkbox"/> Cots <input type="checkbox"/> Blankets <input type="checkbox"/> Medical Supplies	Logistics	
<input type="checkbox"/>	Continue evacuation and shelter coordination with appropriate agencies. <input type="checkbox"/> ESF 1 <input type="checkbox"/> ESF 6 <input type="checkbox"/> DNG	Operations	
<input type="checkbox"/>	Establish a statewide active daily surveillance system for evacuation shelters, Hospital EDs, MNS, NEHCs, and ACCs for: <input type="checkbox"/> Chronic Medical Conditions <input type="checkbox"/> Injuries <input type="checkbox"/> Mental Health Issues <input type="checkbox"/> Infectious/Communicable Diseases	Planning	IRT

Pre-Incident Phase Through Landfall +1

Implement when a tropical storm or hurricane has formed and has the potential to threaten Delaware within 2 days (48 hours).


TS pattern may be unpredictable. Actions should be used as a guide only.

	ACTION REQUIRED	SHOC RESPONSIBILITIES	PLAN REFERENCE
<input type="checkbox"/>	Conduct human needs assessment: <input type="checkbox"/> Vaccines <input type="checkbox"/> Healthcare <input type="checkbox"/> Potable Water	Planning	NEHC
<input type="checkbox"/>	Determine needs for special populations: <input type="checkbox"/> Evacuation/Transportation <input type="checkbox"/> Food <input type="checkbox"/> Medications/Equipment	Operations/Logistics	
<input type="checkbox"/>	Coordinate shelter resource needs to include shelter management personnel (DPH Nurses) with American Red Cross.	Operations/ (SHS/NHS Liaisons)	
<input type="checkbox"/>	Confirm availability of all Staff (Primary/Alternates/Shifts) for activation and minimum of 72 hours of operation. Consider that first shift may need to stay beyond standard 12-hour shift. <input type="checkbox"/> Conduct DENS Notification <input type="checkbox"/> DHSS Disaster Coordinators <input type="checkbox"/> Medical Reserve Corps <input type="checkbox"/> Family Preparedness	Operations/Logistics/IT	Crisis & Risk Communication Health Communication Standard Operating Guideline ()

Pre-Incident Phase Through Landfall +1

Implement when a tropical storm or hurricane has formed and has the potential to threaten Delaware within 2 days (48 hours).


TS pattern may be unpredictable. Actions should be used as a guide only.

	ACTION REQUIRED	SHOC RESPONSIBILITES	PLAN REFERENCE
<input type="checkbox"/>	Assess and continue implementing State Evacuation support actions (as required) from affected area(s) [Tropical Storm winds will impact].	All	
<input type="checkbox"/>	Continue to provide resource(s) status at alternate care sites as they become operational (ongoing throughout Pre-Incident and Response).	Logistics	
<input type="checkbox"/>	Initiate developing contingency plan for long-term sheltering/temporary housing if the storm is projected to be category 3 or higher at landfall.	Operations/ESF 6 Liaison	
<input type="checkbox"/>	Identify potential post hurricane recovery Public Health issues. Develop incident action plans: <ul style="list-style-type: none"> <input type="checkbox"/> Safe Drinking Water – Disinfecting Water (Boil) <input type="checkbox"/> Water Test Kits <input type="checkbox"/> Food Safety <input type="checkbox"/> Power Outages <input type="checkbox"/> Sanitation <input type="checkbox"/> Special Populations <input type="checkbox"/> Mental Health Counseling 	Planning	

Pre-Incident Phase Through Landfall +1

Implement when a tropical storm or hurricane has formed and has the potential to threaten Delaware within 2 days (48 hours).

TS pattern may be unpredictable. Actions should be used as a guide only.

	ACTION REQUIRED	SHOC RESPONSIBILITIES	PLAN REFERENCE
	<input type="checkbox"/> Medical/LTC Facility Evacuation <input type="checkbox"/> Immunizations <input type="checkbox"/> Tetanus <input type="checkbox"/> Hepatitis A <input type="checkbox"/> Typhoid <input type="checkbox"/> CDC Recommendations <input type="checkbox"/> PPE Recommendations <input type="checkbox"/> Biological Building Contaminants <input type="checkbox"/> Mildew <input type="checkbox"/> Mold <input type="checkbox"/> Fungi <input type="checkbox"/> Asbestos <input type="checkbox"/> Mortuary Services <input type="checkbox"/> Vector/Mosquito Control <input type="checkbox"/> Other _____		
<input type="checkbox"/>	Assess all identified vulnerabilities to health and medical systems including requesting results from an overlay of surge model and critical facilities from DEMA. (GIS mapping)	Planning	
<input type="checkbox"/>	Confirm all pre-landfall (TS 120 to TS 72 hours) preparatory actions are complete.	IC Staff	
<input type="checkbox"/>	Update/distribute SITREP.	Planning	SHOC

Watch Phase

Implement when a hurricane threatens Delaware with the effects of gale force winds within 36 hours and/or no later than when the hurricane is 300 miles or greater from Delaware.

TS pattern may be unpredictable. Actions should be used as a guide only.

<input checked="" type="checkbox"/>	ACTION REQUIRED	SHOC RESPONSIBILITES	PLAN REFERENCE
<input type="checkbox"/>	Evaluate SHOC activation level to ensure coordination assessments and preparatory actions are advancing. Adjust staffing (as required).	IC Staff	SHOC
<input type="checkbox"/>	Review Hurricane Preparedness Guidelines and emergency plans.	All	SHOC
<input type="checkbox"/>	Review and consider actions provided in the previous phases and complete those actions not performed as appropriate.	All	
<input type="checkbox"/>	Monitor National Hurricane Center and NWS information.	Planning, PHPS	
<input type="checkbox"/>	Review FEMA Hurricane CONOPS.	IC Staff	
<input type="checkbox"/>	Continue participation in FEMA-initiated Region/State conference calls.	IC Staff	
<input type="checkbox"/>	Update IAP.	Planning	
<input type="checkbox"/>	Participate in DEMA / NWS weather bridge calls (as scheduled). <input type="checkbox"/> Ensure information is distributed to state and local partners.	Operations	
<input type="checkbox"/>	Issue DHAN and FRED alerts as appropriate. <input type="checkbox"/> DHSS <input type="checkbox"/> DPH <input type="checkbox"/> Hospitals <input type="checkbox"/> Clinics	Public Affairs / Logistics / IT	

Watch Phase

Implement when a hurricane threatens Delaware with the effects of gale force winds within 36 hours and/or no later than when the hurricane is 300 miles or greater from Delaware.

TS pattern may be unpredictable. Actions should be used as a guide only.

<input checked="" type="checkbox"/>	ACTION REQUIRED	SHOC RESPONSIBILITES	PLAN REFERENCE
<input type="checkbox"/>	Ensure State EOC ESF-8 Liaison Reports to DEMA State EOC if activated.	Operations	SHOC, ESF 8
<input type="checkbox"/>	Review/Update safety issues for SHOC personnel and ensure widest dissemination.	Safety Officer	
<input type="checkbox"/>	Emphasize safety procedures to all personnel.	Safety Officer/PIO	
<input type="checkbox"/>	Develop and maintain roster and organization charts for deployed personnel (if deployed).	Finance & Administration	
<input type="checkbox"/>	Coordinate shelter resource needs to include shelter management personnel (DPH Nurses) with American Red Cross.	Operations/ (SHS/NHS Liaisons)	
<input type="checkbox"/>	Issue Shelter-In-Place recommendation.	Public Affairs	
<input type="checkbox"/>	Maintain 800 MHz radio communications with state and local partners: <input type="checkbox"/> DPH <input type="checkbox"/> DEMA <input type="checkbox"/> Hospitals	Operations/Logistics/IT	
<input type="checkbox"/>	Monitor status of area evacuation, evacuation routes and road closures through DEMA, Del DOT, DSP.	Operations	DEOP, SHOC

Watch Phase

Implement when a hurricane threatens Delaware with the effects of gale force winds within 36 hours and/or no later than when the hurricane is 300 miles or greater from Delaware.

TS pattern may be unpredictable. Actions should be used as a guide only.

<input checked="" type="checkbox"/>	ACTION REQUIRED	SHOC RESPONSIBILITES	PLAN REFERENCE
<input type="checkbox"/>	Update/distribute SITREP.	Planning	SHOC

Warning Phase

Implement when a hurricane threatens Delaware with the effects of gale force winds within 24 hours and/or no later than when the hurricane is approximately 200 miles or greater from Delaware.

TS pattern may be unpredictable. Actions should be used as a guide only.

<input checked="" type="checkbox"/>	ACTION REQUIRED	SHOC RESPONSIBILITES	PLAN REFERENCE
<input type="checkbox"/>	Evaluate SHOC activation level to ensure coordination assessments and preparatory actions are advancing. Adjust staffing (as required).	IC Staff	SHOC
<input type="checkbox"/>	Review Hurricane Preparedness Guidelines and emergency plans.	All	SHOC
<input type="checkbox"/>	Review and consider actions provided in the previous phases and complete those actions not performed as appropriate.	All	

Warning Phase

Implement when a hurricane threatens Delaware with the effects of gale force winds within 24 hours and/or no later than when the hurricane is approximately 200 miles or greater from Delaware.

TS pattern may be unpredictable. Actions should be used as a guide only.

<input checked="" type="checkbox"/>	ACTION REQUIRED	SHOC RESPONSIBILITIES	PLAN REFERENCE
<input type="checkbox"/>	Review FEMA Hurricane CONOPS.	IC Staff	
<input type="checkbox"/>	Monitor National Hurricane Center and NWS information.	Planning, PHPS	
<input type="checkbox"/>	Pre-position equipment / vehicles (as necessary).	Logistics	
<input type="checkbox"/>	Update IAP.	Planning	SHOC
<input type="checkbox"/>	Continue participation in FEMA-initiated Region/State conference calls (as scheduled).	IC Staff	
<input type="checkbox"/>	Participate in DEMA / NWS weather bridge calls (as scheduled). <input type="checkbox"/> Review/Update e-mail distribution groups (as necessary). <input type="checkbox"/> Ensure information is distributed to state and local partners.	Operations	
<input type="checkbox"/>	Issue DHAN and FRED alerts as appropriate. <input type="checkbox"/> DHSS <input type="checkbox"/> DPH <input type="checkbox"/> Hospitals <input type="checkbox"/> Clinics	Public Affairs / Logistics / IT	
<input type="checkbox"/>	Determine if alternate SHOC location will be necessary based on possibility of change of direction in hurricane.	IC Staff	SHOC

Warning Phase

Implement when a hurricane threatens Delaware with the effects of gale force winds within 24 hours and/or no later than when the hurricane is approximately 200 miles or greater from Delaware.

TS pattern may be unpredictable. Actions should be used as a guide only.

<input checked="" type="checkbox"/>	ACTION REQUIRED	SHOC RESPONSIBILITES	PLAN REFERENCE
<input type="checkbox"/>	Ensure State EOC ESF-8 Liaison Reports to DEMA State EOC if activated.	Operations	SHOC, ESF 8
<input type="checkbox"/>	Review/Update safety issues for SHOC personnel and ensure widest dissemination.	Safety Officer	
<input type="checkbox"/>	Develop and maintain roster and organization charts for deployed personnel (if deployed).	Finance & Administration	
<input type="checkbox"/>	Re-evaluate evacuation of DPH Facilities/Staff based on possibility of change of direction in hurricane.	Planning	
<input type="checkbox"/>	Emphasize safety procedures to all personnel.	Safety Officer/PIO	
<input type="checkbox"/>	Coordinate shelter resource needs to include shelter management personnel (DPH Nurses) with American Red Cross.	Operations/ (SHS/NHS Liaisons)	
<input type="checkbox"/>	Ensure evacuation decisions are based upon completion prior to arrival of gale force winds (34 knots/39 mph). Should be accomplished during daylight hours if possible.	IC Staff	

Warning Phase

Implement when a hurricane threatens Delaware with the effects of gale force winds within 24 hours and/or no later than when the hurricane is approximately 200 miles or greater from Delaware.


TS pattern may be unpredictable. Actions should be used as a guide only.

<input checked="" type="checkbox"/>	ACTION REQUIRED	SHOC RESPONSIBILITIES	PLAN REFERENCE
<input type="checkbox"/>	Maintain 800 MHz radio communications with state authorities and local partners: <input type="checkbox"/> DPH <input type="checkbox"/> DEMA <input type="checkbox"/> Hospitals	Logistics	
<input type="checkbox"/>	Update situational awareness of hospital and healthcare infrastructure facilities (including power, water, and debris). Report to ESF 8 at EOC.	Operations	
<input type="checkbox"/>	Assess all identified vulnerabilities to health and medical systems including requesting results from an overlay of surge model and critical facilities from DEMA (GIS mapping).	Planning	
<input type="checkbox"/>	Coordinate additional equipment at medical treatment facilities and shelters and ensure necessary logistics actions are initiated.	Operations/Logistics	
<input type="checkbox"/>	Update/distribute SITREP.	Planning	SHOC

Landfall Phase (Day 1)

Actions to consider after the arrival of gale force winds and all pre-event actions are terminated

TS pattern may be unpredictable. Actions should be used as a guide only.

	ACTION REQUIRED	SHOC RESPONSIBILITES	PLAN REFERENCE
<input type="checkbox"/>	Continue to monitor local weather conditions to determine when it is safe to proceed outside.	Planning	
<input type="checkbox"/>	Continue participation in FEMA-initiated Region/State conference calls.	IC Staff	
<input type="checkbox"/>	Issue updates via DHAN and FRED (as required).	Public Affairs/Operations/ Logistics/IT	Crisis & Risk Communication
<input type="checkbox"/>	Adjust SHOC staffing (as required).	All	SHOC
<input type="checkbox"/>	Maintain 800 MHz radio communications with state and local partners: <input type="checkbox"/> DPH <input type="checkbox"/> DEMA <input type="checkbox"/> Hospitals	Operations	


Landfall Phase (Day 1)

**Actions to consider after the arrival of gale force winds and all pre-event actions are terminated
TS pattern may be unpredictable. Actions should be used as a guide only.**

<input checked="" type="checkbox"/>	ACTION REQUIRED	SHOC RESPONSIBILITES	PLAN REFERENCE
<input type="checkbox"/>	Finalize human needs assessment: <input type="checkbox"/> Vaccines <input type="checkbox"/> Healthcare <input type="checkbox"/> Potable Water	Planning	NEHC
<input type="checkbox"/>	Identify and prepare staff to participate in: <input type="checkbox"/> Damage Assessment (DA) Teams <input type="checkbox"/> Individual Assessment (IA) Teams <input type="checkbox"/> Disaster Recovery Centers <input type="checkbox"/> Distribution of: <input type="checkbox"/> Educational Material <input type="checkbox"/> Water Test Kits <input type="checkbox"/> Investigative Response Teams (IRT) <input type="checkbox"/> Other	Planning/Operations	DEOP
<input type="checkbox"/>	Develop plan of action for damage assessment of DPH facilities.	Planning	DEOP
<input type="checkbox"/>	Establish plan of action for re-entry and recovery procedures.	Planning	SHOC, ESF 8


Landfall Phase (Day 1)

**Actions to consider after the arrival of gale force winds and all pre-event actions are terminated
TS pattern may be unpredictable. Actions should be used as a guide only.**

	ACTION REQUIRED	SHOC RESPONSIBILITES	PLAN REFERENCE
<input type="checkbox"/>	Review and consider actions provided in the previous phases and complete those actions not performed as appropriate.	All	SHOC
<input type="checkbox"/>	Update IAP.	Planning	
<input type="checkbox"/>	Emphasize safety procedures to all personnel.	Safety Officer/PIO	
<input type="checkbox"/>	Update/distribute SITREP.	Planning	SHOC


Landfall +1 Day

Implement when the winds have subsided below gale force, after storm passage.

	ACTIVITY / ACTION REQUIRED	SHOC RESPONSIBILITES	PLAN REFERENCE
<input type="checkbox"/>	Participate in Disaster Recovery Center and Damage Assessment Teams as directed by State EOC.	IC Staff	DEOP
<input type="checkbox"/>	Re-establish communications with all public health and hospital channels.	Logistics/Communications	


Landfall +1 Day

Implement when the winds have subsided below gale force, after storm passage.

	ACTIVITY / ACTION REQUIRED	SHOC RESPONSIBILITES	PLAN REFERENCE
<input type="checkbox"/>	Assess damage to healthcare facilities and systems.	IC Staff	DEOP
<input type="checkbox"/>	Activate additional MMES Sections as determined essential. (NEHC, ACC)	Operations	NEHC/SHOC/ACC/ESF8
<input type="checkbox"/>	Restore response equipment and facilities to “ready” status.	Logistics	SHOC/NEHC/ACC/DEOP
<input type="checkbox"/>	Issue DHAN and FRED (as required).	Operations	Crisis & Risk Communication
<input type="checkbox"/>	Coordinate recovery actions with State EOC ESF-8 liaison.	Operations	DEOP/SHOC
<input type="checkbox"/>	Provide updated information regarding safe drinking water, food spoilage, sanitation, and contamination, etc.	Public Affairs Officer / JIC Officer	Crisis & Risk Communication
<input type="checkbox"/>	Coordinate recovery actions with Regional III HHS / Federal Partners. (CDC) Determine need to request: <input type="checkbox"/> ISS <input type="checkbox"/> SNS	Operations	SNS/ISS/SHOC
<input type="checkbox"/>	Determine need to request personnel through Disaster Coordinators.	Operations	
<input type="checkbox"/>	Deploy Response Task Force (IRT) (as required).	Planning	IRT

Landfall +1 Day

Implement when the winds have subsided below gale force, after storm passage.

	ACTIVITY / ACTION REQUIRED	SHOC RESPONSIBILITES	PLAN REFERENCE
<input type="checkbox"/>	Monitor statewide active daily surveillance system in evacuation shelters, Hospital EDs, MNS, NEHCs, and ACCs for: <ul style="list-style-type: none"> <input type="checkbox"/> Chronic Medical Conditions <input type="checkbox"/> Injuries <input type="checkbox"/> Mental Health Issues <input type="checkbox"/> Infectious/Communicable Diseases 	Planning	IRT
<input type="checkbox"/>	Forward all incident-related documentation to the Planning Section for organization and preparation for reimbursement and archiving.	All	SHOC/ESF 8/DEOP
<input type="checkbox"/>	Forward personnel documentation/expenses to Finance & Administrations Section.	All	
<input type="checkbox"/>	Collect and provide documentation for After Action Report and reimbursement if federally declared disaster.	All	
<input type="checkbox"/>	Monitor DPH staff for stress disorders and activate mental health response teams or EAP (as necessary).	All	
<input type="checkbox"/>	Update IAP.	Planning	
<input type="checkbox"/>	Update/distribute SITREP.	Planning	SHOC

5.0 Weather Bridge Call Procedures

Order of Events	Responsible Person or Agency	Task	Completed
1.	DEMA	Collaborate with the National Weather Service of Mt. Holly, New Jersey, to initiate a Weather Bridge Call when it is determined that a significant storm may affect Delaware.	<input type="checkbox"/>
2.	DEMA	Issue a message via e-mail and fax regarding the exact time that the Weather Bridge Call will occur.	<input type="checkbox"/>
3.	DPH/PHPS Representative	Research http://www.nhc.noaa.gov/ and http://www.noaa.gov/ to gather information about the impending storm.	<input type="checkbox"/>
4.	DPH/PHPS Representative	Begin drafting the Weather Bridge Call e-mail based on the following: <ul style="list-style-type: none"> ▪ Subject ▪ Date ▪ Conference Call Time ▪ Weather Conditions 	<input type="checkbox"/>

		<ul style="list-style-type: none"> ▪ Advisories, Watches and Warnings ▪ Other Agency Activities ▪ Follow-up Conference Call Time 	
5.	DPH/PHPS Representative	Call DEMA at the appropriate time to connect to the weather bridge call.	<input type="checkbox"/>
6.	DPH/PHPS Representative	<p>Upon completion of the Weather Bridge Call, complete the Weather Bridge Call e-mail and send it to DHSS management and hospitals throughout the state.</p> <p>See example of a Weather Bridge Call e-mail and example of advisories, Watches and Warnings below.</p>	<input type="checkbox"/>

Figure 1 – Weather Bridge Call E-mail (Example)

Hi Everyone,

Below is a summary of the conference call held on Wednesday, March 7, 2007, at 0900 hours (9 a.m.) concerning the approaching snow conditions and information from the National Weather Service.

Conference Calls

- **Conference Call**

A conference call was conducted at 0900 hours on March 7, 2007, concerning the weather conditions that could be caused by approaching snow.

- **Follow Up Conference Call**

Another conference call will be scheduled on an as needed basis.

Weather

National Weather Service

- There is a weak low pressure system over the Mississippi Valley. The snow is expected to be off coast by tonight. Light snow is expected to come into area with the possibility of heavier snow forming occurring the late morning to mid afternoon.
- The snow will be over by 1600 hours (4 P.M.). A bulk of the snow will fall in three to four period, 1100 hours (11 A.M.) to 1500 hours (3 P.M.). The expected snowfalls are 1 inch to 2 inches over New Castle County and 2 inches to 4 inches over Kent County and Sussex County.
- Temperatures should be in the mid to high 20's in the northern part of the state and in the low 30's in the southern part of the state. Some indirect sunshine might help to warm roads. Temperatures on Thursday should be in the mid to high 30's, and it should be mostly sunny.

- Not much wind is expected to occur today. With tomorrow's surge of cold air out of northwest, winds of 25 mph to-30 mph could occur. Snow may blow as a result of these winds.

Advisories, Watches, and Warning

Other Agencies

Delaware State Police (DSP)—In New Castle County, there has been 63 crashes, mostly on I-95. This has caused alternate routes to be clogged. In Kent County and Sussex County, there have been no weather related incidents.

DELDOT—Roads were treated with brine yesterday. Staff is standing by in all the counties.

Tab A Glossary of Terms

A

ACC - Acute Care Center

AARs - After Action Reports

ARC - American Red Cross

B

Blizzard - A blizzard means that the following conditions are expected to prevail for a period of three hours or longer. a. Sustained wind or frequent gusts to 35 miles an hour or greater; and b. Considerable falling and/or blowing snow (i.e., reducing visibility frequently to less than 1/4 mile).

Blizzard Warning - These warnings are issued when sustained wind speed of at least 35 miles per hour are accompanied by considerable falling and/or blowing snow. Visibility is dangerously restricted.

C

Community Shelter – An evacuation shelter for the general population, pets and individuals with non-typical functional needs.

Children in State Care – Children who are temporarily or permanently separated from their parents, custodians, or legal guardians and reside at a state operated facility.

D

DEMA - Delaware Emergency Management Agency

DENS - Delaware Emergency Notification System

DHAN - Delaware Health Alert Network

DMRC - Delaware Medical Reserve Corps

DRC – Disaster Recovery Center

DSP - Delaware State Police

DSCYF - Department of Services for Children, Youth and their Families

Disaster – A situation that creates an actual or imminent serious threat to the health and safety of persons, or a situation that has resulted in or is likely to result in catastrophic loss to property or the environment, and for which traditional sources of relief and assistance within the affected area are unable to repair or prevent the injury or loss.

DMAT – Disaster Medical Assistance Team

A DMAT is a volunteer group of medical and non-medical individuals, usually from the same State or region of a State, who have formed a response team under the guidance of the National Disaster Medical System, or under similar State or local auspices.

TYPE I = fully operational; Type II = operational; Type III = augmentation/local team; Type IV = developmental.

Personnel include a mix of physicians, nurses (RN), nurse practitioners (NP), physicians' assistants (PA), pharmacists (RPh), emergency medical technicians (EMT), other allied health professionals, and support staff.

DMORT – Disaster Mortuary Operational Response Team

A DMORT is a volunteer group of medical and forensic personnel, usually from the same geographic region, who have formed a response team under the guidance of the National Disaster Medical System (or State or local auspices), and whose personnel have specific training/skills in victim identification, mortuary services, and forensic pathology and anthropology methods.

DMORTs usually includes a mix of medical examiners, coroners, pathologists, forensic anthropologists, medical records technicians, fingerprint technicians, forensic odontologists, dental assistants, radiologists, funeral directors, mental health professionals, and support personnel.

DMORTs are mission tailored on an ad hoc basis, and usually deploy only with personnel and equipment specifically required for current mission. There are currently two Portable Morgue Units within National Disaster Medical System.

DCSE - Division of Child Support Enforcement

DDDS - Division of Developmental Disabilities Services

DLTCRP - Division of Long Term Care Residents Protection

DMS - Division of Management Services

DMMA - Division of Medicaid & Medical Assistance

DPH - Division of Public Health

DSAAPD - Division of Services for Aging and Adults with Physical Disabilities

DSS - Division of Social Services

DSSC - Division of State Service Centers

DSAMH - Division of Substance Abuse and Mental Health

DVI - Division for the Visually Impaired

Drought – A prolonged period of dry weather during which there is an inadequate supply of water to meet demands. It may occur at any time of the year, though summer droughts have more of an impact due to the higher demand for water during the hot months.

Drought Advisory Guidelines – The following guideline may be declared by the Governor pursuant to 20 Del. C. § 3116(a)(5):

Drought Watch: The potential for drought suggests that voluntary water demand reductions, be requested.

E

Earthquake – A sudden motion or trembling in the earth caused by the abrupt release of slowly accumulated strain along subterranean ground faults.

Emergency – A sudden crisis requiring urgent attention.

Emergency Operations Center – The physical location at which the coordination of information and resources to support incident management activities normally takes place. An EOC may be a temporary facility or may be located in a more central or permanently established facility, perhaps at a higher level of organization within a jurisdiction. EOCs may be organized by major functional disciplines (e.g., fire, law enforcement, and medical services), by jurisdiction (e.g., Federal, State, regional, county, city, tribal), or by some combination thereof.

ESF - Emergency Support Function, as defined in the National Response Plan refers to a group of capabilities of Federal departments and agencies to provide the support, resources, program implementation, and services that are most likely to be needed to save lives, protect property, restore essential services and critical infrastructure, and help victims return to normal following an incident.

EMAC - The Emergency Management Assistance Compact is a congressionally ratified organization that provides form and structure to interstate mutual aid. Through EMAC, a disaster impacted state can request and receive assistance from other member states quickly and efficiently, resolving two key issues upfront: liability and reimbursement.

F

FRED - Facility Resource Emergency Database

FEMA - Federal Emergency Management Agency

Flash Flood – The NWS definition of a flash flood implies the swiftness with which it can occur. Occurs in any season of the year, but most take place in the spring and summer months in connection with sudden intense thunderstorms.

Flash Flood Statement – Follow-up information regarding a flash flood/flood event.

Flash Flood Warning – Flash flooding or flooding has been reported or is imminent – take necessary precautions at once.

Flash Flood Watch – Flash flooding or flooding is possible within the designated WATCH area – be alert.

G

H

HVA – A Hazard Vulnerability Analysis is a systematic approach to identifying all hazards that may affect an organization, assessing the risk (probability of hazard occurrence and the consequences for the organization) associated with each hazard and analyzing findings to create a prioritization comparison of hazard vulnerabilities.

HSPS - Health System Protection Section

Heavy Snow - This generally means:

- a. Snowfall accumulating to four inches or more in depth in 12 hours or less; or
- b. Snowfall accumulating to six inches or more in depth in 24 hours or less.

Heavy Snow Warning - This generally indicates that snowfalls of at least four inches in 12 hours or six inches in 24 hours are expected.

I

Ice Storm - An ice storm is used to describe occasions when damaging accumulations of ice are expected during freezing rain situations.

Incident Action Plan – An oral or written plan containing general objectives reflecting the overall strategy for managing an incident. It may include the identification of operational resources and assignments. It may also include attachments that provide direction and important information for management of the incident during one or more operational periods.

IRT - Investigative Response Task Force

I

J

K

L

M

Major Disaster – Any natural catastrophe (including any hurricane, tornado, storm, flooding, earthquake, snowstorm, or drought) or regardless of cause, any fire, flood, or explosion which causes damage of sufficient severity and magnitude to warrant major disaster assistance to supplement the efforts and available resources of the State, local governments, and/or disaster relief organizations in alleviating the damage, loss, hardship, or suffering caused thereby.

MNS - Medical Needs Shelter

Medical Surge Capacity – Medical surge capacity refers to the ability to evaluate and care for a markedly increased volume of patients – one that challenges or exceeds normal operating capacity. The surge requirements may extend beyond direct patient care to include such tasks as extensive laboratory studies or epidemiological investigations.

MMES - Modular Medical expansion System

Mutual Aid Agreement – Written agreement between agencies, organizations, and/or jurisdictions that they will assist one another on request by furnishing personnel, equipment, and/or expertise in a specified manner.

N

NDMS – National Disaster Medical System

NWS - National Weather Service

NEHC - Neighborhood Emergency Help Center

Non-Typical Functional Needs – Individuals with non-typical functional needs are individuals who have medical conditions or needs that prevent them from performing normal physical and/or emotional functions.

O

ODW - Office of Drinking Water

OCME - Office of the Chief Medical Examiner

Out-of-Home Care – A child is considered living in out-of-home care when the child is not living with a parent, custodian or legal guardian and the Department of Services for Children, Youth and Their Families has a legal responsibility to plan for the child through custody awarded by Family Court.

P

Preparedness – Preparedness encompasses actions designed to build organizational resiliency and/or organizational capacity and capabilities for response to and recovery from hazard impacts. Preparedness includes activities that establish, exercise, refine, and maintain systems used for emergency response and recovery.

Q

R

Resource Typing – Resource typing is the categorization and description of resources that are commonly exchanged in disasters via mutual aid, by capacity and/or capability.

S

Saffir/Simpson Scale - The Saffir-Simpson Hurricane Scale is a 1-5 rating based on the hurricane's present intensity. This is used to give an estimate of the potential property damage and flooding expected along the coast from a hurricane landfall. Wind speed is the determining factor in the scale, as storm surge values are highly dependent on the slope of the continental shelf and the shape of the coastline, in the landfall region. Note that all winds are using the U.S. 1-minute average.

SART - State Animal Response Team

SHOC - State Health Operations Center

SNS - Strategic National Stockpile

T

Tornado – A violently rotating column of air extending from a thunderstorm to the ground. In the winter and early spring, tornadoes are often associated with strong, frontal systems that form in the central states and move east. The most violent tornadoes are capable of tremendous destruction with wind speeds of 300 miles per hour or more. They are rated according to the Fujita Scale, commonly referred to as the F Scale. Damage paths can be in excess of one mile wide and 50 miles long.

Tornadoes may accompany tropical storms and hurricanes and are most common to the right and ahead of the path of the storm center as it comes onshore. Tornadoes occur anywhere and take many shapes and sizes. Generally, they are categorized into three groups.

Weak Tornadoes: last one to ten minutes; winds less than 110 mph; 69% of all tornadoes; less than five percent of all tornado deaths.

Strong Tornadoes: may last 20 minutes or longer; winds 110-205 mph; 29% of all tornadoes; nearly 25% of all tornado deaths.

Violent Tornadoes: may exceed one hour; winds greater than 205 mph; only two percent of all tornadoes; approximately 70% of all tornado deaths.

Warnings are issued to alert the public of an approaching tornado. The NWS will issue a:

Tornado Watch: when weather conditions are favorable and tornadoes are possible.

Tornado Warning: when a tornado has been sighted or is indicated by Doppler weather radar.

U

Unattended Children – Children who have become temporarily separated from their parents, custodians or legal guardians during emergencies and for whom the Department of Services for Children, Youth and Their Families is providing assessment, crisis intervention, case management, emergency shelter, and family reunification services.

V

Volunteer – Any individual accepted to perform services by an agency that has authority to accept volunteer services when the individual performs services without promise, expectation, or receipt of compensation for services performed.

W

Water Supply Drought – Impacts population centers. Fountains, displays, car washing, lawn watering and other activities using water may need to be curtailed, delayed, or postponed until normal or adequate water supplies are available. Water use restrictions may require residents to curtail or halt any unnecessary use of water.

Winter Storm Advisory/Warning: Issued when a hazardous winter weather condition is occurring, is imminent, or has a very high probability of occurring. A warning is used for conditions posing a threat to life or property. Advisories are for less serious conditions that could cause significant inconvenience and, if caution is not exercised, could lead to situations that may threaten life and/or property.

Winter Storm Emergency Statement: Issued at frequent intervals to amplify watches, warnings, and advisories by reinforcing the message, indicating what is expected, and outlining appropriate suggested response actions.

Winter Storm Outlook: Issued when winter storm conditions are forecast for the state within the next 12 hours.

Winter Storm Watch: Issued when the possibility of a hazardous winter weather event has increased significantly, but its occurrence, location, and/or timing is uncertain. It is intended to provide lead-time to set emergency plans into motion.

X

Y

Z

Tab B Natural Disaster SHOC Quick Reference Guide

There are many procedures that should be accomplished by SHOC that are applicable to most natural disasters i.e., hurricane, flooding, winter storm/hail, severe thunderstorm tornado and a major earthquake (however, excluding drought due to its limited impact). The information in this document outlines basic procedures that should be considered prior to, during and/or after a natural disaster. This document should be used as a quick reference only. It should not replace sound judgment or other more comprehensive guides, i.e. the Natural Disaster Standard Operating Guideline (SOG) and the Hurricane Preparedness SOG.

Type of Disaster	Action Required	Recommendation	Group Responsible
Hurricane, Flooding, Winter Storm/Hail	Consider/Confirm site selection and protective pre-positioning of the following: Alternate SHOC site, MMES components, Equipment Trailers and Vehicles.	Prior to Natural Disaster	Operations/ Logistics
Hurricane	Inventory the following essential supplies and stock to support NEHC, MNS and Emergency Response Teams: Safe Drinking Water, Food, Medical Supplies, and Medications.	Prior to Natural Disaster	Logistics
Hurricane, Winter Storm/Hail	Ensure all vehicles and back-up generators have sufficient fuel levels (ensure a minimum of 72 hours of fuel for generators).	Prior to Natural Disaster	Logistics
Hurricane, Flooding, Winter Storm/Hail	Determine the following needs for individuals with non-typical functional needs: Evacuation/Transportation, Food, and Medications/Equipment.	Prior to Natural Disaster	Operations/ Logistics

Type of Disaster	Action Required	Recommendation	Group Responsible
Hurricane, Flooding, Winter Storm/Hail	Prepare MMES equipment for deployment.	Prior to Natural Disaster	Operations/ Logistics
Hurricane, Flooding	Confirm transportation (acquisition of transportation resources and timeline) requirements for possible patient evacuation.	Prior to Natural Disaster	Logistics, ESFs 1, 5 and 6
Hurricane, Flooding, Winter Storm/Hail	Secure/safeguard the following equipment from potential weather related hazards: vehicles and equipment trailers.	Prior to Natural Disaster	Logistics
Hurricane, Flooding, Winter Storm/Hail, Tornado*, Earthquake**	Evaluate SHOC activation level to ensure coordination assessments and preparatory actions are advancing. Adjust staffing (as required).	Prior to, During and After Natural Disaster	IC Staff
Hurricane, Flooding, Winter Storm/Hail, Tornado*	Monitor National Hurricane Center and/or National Weather Service (NWS) information.	Prior to, During and After Natural Disaster	PHPS, Planning
Hurricane, Flooding, Winter Storm/Hail, Tornado*, Earthquake**	Prepare/Update/Distribute Situation Report (SITREP).	Prior to, During and After Natural Disaster	Operations

Type of Disaster	Action Required	Recommendation	Group Responsible
Hurricane, Flooding, Winter Storm/Hail, Tornado*, Earthquake**	Prepare/Update Incident Action Plan (IAP).	Prior to, During and After Natural Disaster	Planning
Hurricane, Flooding, Winter Storm/Hail, Tornado*, Earthquake**	Test and maintain emergency communication systems with state and other partners.	Prior to, During and After Natural Disaster	Logistics
Hurricane, Flooding, Winter Storm/Hail, Tornado*, Earthquake**	Review/Update safety issues for SHOC personnel and ensure widest dissemination.	Prior to, During and After Natural Disaster	Safety Officer
Hurricane, Flooding, Tornado*, Earthquake**	Coordinate shelter resource needs to include shelter management personnel (DPH Nurses) with American Red Cross.	Prior to, During and After Natural Disaster	Operations, SHS/NHS Liaisons
Hurricane, Tornado*, Earthquake**	Develop and maintain roster and organization charts for deployed personnel (if deployed).	Prior to, During and After Natural Disaster	Finance & Administration
Hurricane, Tornado*, Earthquake**	Implement statewide active daily surveillance system for evacuation shelters, Hospital EDs and MMES components for the following: Chronic Medical Conditions, Injuries, Mental Health Issues, and Infectious/Communicable Diseases.	Prior to, During and After Natural Disaster	Planning

Type of Disaster	Action Required	Recommendation	Group Responsible
Hurricane, Flooding, Tornado*, Earthquake**	Monitor status of area evacuation, evacuation routes and road closures through DEMA, DelDOT and DSP.	Prior to, During and After Natural Disaster	Operations
Hurricane, Flooding, Winter Storm/Hail, Tornado*, Earthquake**	Emphasize safety procedures to all personnel.	Prior to, During and After Natural Disaster	Safety Officer, PIO
Hurricane, Flooding, Tornado*, Earthquake**	Prepare human needs assessment for vaccines, healthcare and potable water.	Prior to, During and After Natural Disaster	Planning
Hurricane, Flooding, Tornado*, Earthquake**	Develop plan of action for damage assessment of DPH facilities.	Prior to, During and After Natural Disaster	Planning
Hurricane, Flooding	Establish plan of action for re-entry and recovery procedures.	After Natural Disaster	Planning
Hurricane, Flooding, Winter Storm/Hail, Tornado*, Earthquake**	Coordinate and conduct teleconferences for the purpose of identifying potential Federal resource deployment requests (as needed). Contact CDC, FEMA, NDMS.	Prior to During and After Natural Disaster	IC Staff

Type of Disaster	Action Required	Recommendation	Group Responsible
Hurricane, Flooding, Winter Storm/Hail, Tornado*, Earthquake**	Coordinate and conduct teleconferences for the purpose of identifying potential resource shortfalls or issues for the following: Delaware Hospitals, LTC facilities, other medical facilities.	Prior to and After Natural Disaster	All SHOC Positions
Hurricane, Flooding, Tornado*, Earthquake**	Monitor evacuation and shelter coordination with appropriate agencies.	Prior to and After Natural Disaster	Operations
Hurricane, Tornado*, Earthquake**	Coordinate Emergency Pharmaceutical Assistance Program.	Prior to and After Natural Disaster	Planning
Hurricane, Flooding, Tornado*, Earthquake**	Coordinate patient movement through Healthcare System; send FRED alert and assist in coordination of patient movement.	Prior to and After Natural Disaster	Operations, Logistics
Hurricane, Flooding, Tornado*, Earthquake**	Coordinate strategic water and food plans for DPH facilities (SHOC, MNS, and other response facilities).	Prior to and After Natural Disaster	Logistics
Hurricane, Flooding, Tornado*	Continue to monitor local weather conditions to determine when it is safe to proceed outside.	During and After Natural Disaster	Planning
Hurricane, Flooding, Tornado*,	Identify and prepare staff to participate in the following: Damage Assessment Teams, Individual Assessment Teams, Disaster	During and After Natural Disaster	Planning, Operations

Type of Disaster	Action Required	Recommendation	Group Responsible
Earthquake**	Recovery Centers, Distribution of Educational Material, Water-Test Kits, and participation on IRTs.		
Hurricane, Flooding, Tornado*, Earthquake**	Finalize human needs assessment for vaccines, healthcare and potable water.	After Natural Disaster	Planning
Hurricane, Flooding, Tornado*, Earthquake**	Update situational awareness of hospital and healthcare infrastructure facilities (including power, water and debris). Report to ESF 8 at EOC.	After Natural Disaster	Operations
Hurricane, Flooding, Winter Storm/Hail, Tornado*, Earthquake**	Forward all incident-related documentation to the Planning Section for organization and preparation for reimbursement and archiving.	After Natural Disaster	All
Hurricane, Flooding, Winter Storm/Hail, Tornado*, Earthquake**	Forward personnel documentation/expenses to Finance & Administrations Section.	After Natural Disaster	All
Hurricane, Flooding, Tornado*, Earthquake**	Collect and provide documentation for After Action Report and reimbursement if federally declared disaster.	After Natural Disaster	All
Hurricane, Flooding, Tornado*, Earthquake**	Monitor DPH staff for stress disorders and activate mental health response teams or EAP (as necessary).	After Natural Disaster	All

Type of Disaster	Action Required	Recommendation	Group Responsible
Hurricane, Flooding, Winter Storm/Hail, Tornado*	Participate in DEMA/NWS weather bridge calls (as scheduled) Distribute information to state and local partners.	As Necessary	Operations
Hurricane, Flooding, Winter Storm/Hail, Tornado*, Earthquake**	Issue Delaware Health Alert Network (DHAN) and Facility Resource Emergency Database (FRED) alerts as appropriate.	As Necessary	Public Affairs, Logistics, IT
Hurricane, Flooding, Winter Storm/Hail, Tornado*, Earthquake**	Ensure that State EOC ESF-8 Liaison Reports to DEMA State EOC (if activated).	As Necessary	Operations
Hurricane, Flooding, Winter Storm/Hail, Tornado*, Earthquake**	Develop a timeline for receipt of Federal assets/resources (if federal assets have been requested or deployed).	As Necessary	IC Staff
Hurricane, Flooding, Tornado*, Earthquake**	Prepare the following necessary documentation and provide to DEMA for the Governor to declare a State of Emergency addressing Public Health actions: Standard of Care Regulations/Laws, Public Health Safety/Hazards, and Volunteer Healthcare Provider Liability Protection.	As Necessary	IC Staff, Legal, Safety

Type of Disaster	Action Required	Recommendation	Group Responsible
Hurricane, Flooding, Tornado*, Earthquake**	Confirm with DEMA the arrival of the ERT-A Teams in Delaware (if deployed).	As Necessary	Operations
Hurricane, Flooding, Tornado*, Earthquake**	Activate additional MMES.	As Necessary	Operations
Hurricane, Flooding, Tornado*, Earthquake**	Deploy IRTs.	As Necessary	Planning

* Tornadoes and Tornadoic conditions can be unpredictable and therefore hard to plan for. The Natural Disasters SOG has included Tornadoes in most planning stages (See “*Action Required*”). These actions may or may not be achievable during the recommended timeframe; however, they should be considered if weather conditions are favorable for tornado.

** Earthquakes are unpredictable and therefore very hard to plan for. Additionally, a Hazard Vulnerability Analysis on Delaware has concluded that the likelihood of a major earthquake impacting Delaware is low. The *Natural Disasters SOG* has included Earthquake in most planning stages. Due to the fact that earthquakes are unpredictable, all recommended actions should be considered after a major earthquake has impacted the state.

Tab C Weather Measurement Scales

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Scale 1 - Saffir/Simpson Scale for Hurricane

Hurricanes are a classification of tropical cyclones which are defined by the National Weather Service as non-frontal, low pressure, large scale systems that develop over tropical or subtropical waters and have a definite organized circulation. Hurricanes are classified using the Saffir/Simpson scale, which categorizes hurricanes based upon their intensity, and relates this intensity to damage potential.

- **Tropical Storm**
 - Winds 39-73 mph
- **Category 1 Hurricane** — winds 74-95 mph
 - No real damage to buildings. Damage to unanchored mobile homes. Some damage to poorly constructed signs. Also, some coastal flooding and minor pier damage.
- **Category 2 Hurricane** — winds 96-110 mph
 - Some damage to building roofs, doors and windows. Considerable damage to mobile homes. Flooding damages piers and small craft in unprotected moorings may break their moorings. Some trees blown down.
- **Category 3 Hurricane** — winds 111-130 mph
 - Some structural damage to small residences and utility buildings. Large trees blown down. Mobile homes and poorly built signs destroyed. Flooding near the coast destroys smaller structures with larger structures damaged by floating debris. Terrain may be flooded well inland.
- **Category 4 Hurricane** — winds 131-155 mph
 - More extensive curtainwall failures with some complete roof structure failure on small residences. Major erosion of beach areas. Terrain may be flooded well inland.
- **Category 5 Hurricane** — winds 156 mph and up

- Complete roof failure on many residences and industrial buildings. Some complete building failures with small utility buildings blown over or away. Flooding causes major damage to lower floors of all structures near the shoreline. Massive evacuation of residential areas may be required.

Scale 2 - Fujita Tornado Scale (F Scale)

(F0) Gale Tornado (40-72 mph) Light Damage

Some damage to chimneys; breaks branches off trees; pushes over shallow-rooted trees; damages sign boards.

(F1) Moderate Tornado (73-112 mph) Moderate Damage

Peels surface off roofs; mobile homes are pushed off foundations or overturned; moving autos are pushed off the roads.

(F2) Significant Tornado (113-157 mph) Considerable Damage

Roofs are torn off frame houses; mobile homes demolished; boxcars pushed over; large trees snapped or uprooted; light-object missiles generated.

(F3) Severe Tornado (158-206 mph) Severe Damage

Roofs and some walls torn off well-constructed houses; trains overturned; most trees in forest uprooted; heavy cars lifted off ground and thrown.

(F4) Devastating Tornado (207-260 mph) Devastating Damage

Well-constructed houses leveled; structures with weak foundation blown off some distance; cars thrown and large missiles generated.

(F5) Incredible Tornado (261-318 mph) Incredible Damage

Strong frame houses lifted off foundations and carried considerable distances to disintegrate; automobile-size missiles fly through the air in excess of 100 meters; trees debarked; incredible phenomena will occur.

Scale 3 – North East Snowfall Impact Scale (NESIS)

The National Oceanic and Atmospheric Administration (NOAA) have developed a snowfall rating system for snowfalls that affect the North East United States. The rating system is called the North East Snowfall Impact Scale (NESIS) and is similar to the formats used in the Saffir/Simpson scale, which is used for hurricanes and the Fujita scale, which is used for tornados. The scale is not a forecast tool, but rather a means to alert the public to the significance and impact of a major snowfall event, **after** it occurs. The NESIS is based on a mathematical formula combined with an automated Geographical Information System (GIS) that takes into account the area affected by the snow storm, the depth of the snow, and the number of people living in the affected regions.

Category 1 (Notable):

Category 1 storms (NESIS Value 1-2.499) produce widespread areas of 4 inches of snow and small scale areas of 10 inches of snow.

Category 2 (Significant):

Category 2 storms (NESIS Value 2.5-3.99) produce widespread areas of 10 inches of snow with small scale areas of 20 inches of snow.

Category 3 (Major):

Category 3 storms (NESIS Value 4.0-5.99) produce widespread areas of 10 inches with large areas of the North East covered with 20 inches of snow.

Category 4 (Crippling):

Category 4 storms (NESIS Value 6.0-9.99) produce widespread areas of 10 inches with significant portions of the North East covered with **at least** 20 inches of snow. The impact to the national economy and transportation system is readily observable.

Category 5 (Extreme):

Category 5 storms (NESIS Value > 10) produce the largest areas of at least 10 inch snowfalls with significant areas of 20 and 30 inch snowfalls.

Scale 4 - Modified Mercalli/Richter Intensity Scales for Earthquake

Mercalli Intensity	Richter Magnitude*	Effects
I – Instrumental	1.9	Not felt except by a very few under especially favorable conditions
II – Feeble	2.5	Felt only by a few persons at rest, especially on upper floors of buildings. Delicately suspended objects may swing.
III – Slight	3.1	Felt quite noticeably indoors, especially on upper floors of building but, many people do not recognize it as an earthquake. Standing motorcars may rock slightly. Vibration like passing of truck. Duration estimated.
IV – Noticeable	3.7	During the day, felt indoors by many, outdoors by few. At night some wakened. Dishes, windows, doors disturbed; walls make creaking sound. Sensation like heavy truck striking building. Standing motorcars rocked noticeably.
V – Moderate	4.3	Felt by nearly everyone, many awakened. Some dishes, windows, etc., broken: a few instances of cracked plaster, unstable objects overturned. Disturbances of trees, poles, and other tall objects sometimes noticed. Pendulum clocks may stop.
VI – Rather Strong	4.9	Felt by all, many frightened and run outdoors. Some heavy furniture moved; a few instances of fallen plaster or damaged chimneys. Damage slight.
VII – Strong	5.5	Everybody runs outdoors. Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable in poorly built or badly designed structures; some chimneys broken. Noticed by persons driving motorcars.
VIII – Very Strong	6.1	Damage slight in specially designed structures; considerable in ordinary substantial buildings, with partial collapse; great in poorly built structures. Panel walls thrown out of frame structures. Fall of chimneys,

		factory stacks, columns, monuments, and walls. Heavy furniture overturned. Sand and mud ejected in small amounts. Changes in well water. Persons driving motorcars disturbed.
IX – Destructive	6.7	Damage considerable in specially designed structures; well designed frame structures thrown out of plumb; great in substantial buildings, with partial collapse. Buildings shifted off foundations. Ground cracked conspicuously. Underground pipes broken.
X – Disastrous	7.3	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundation; ground badly cracked. Rails bent. Landslides considerable from riverbanks and steep slopes. Shifted sand and mud, water splashed (slopped) over banks.
XI – Ruinous	7.9	Few, if any (masonry) structures remain standing. Bridges destroyed. Broad fissures in ground. Underground pipelines completely out of service. Earth slumps and land slips in soft ground. Rails bent greatly.
XII - Catastrophic	8.5	Damage total. Waves seen on ground surfaces. Lines of sight and level distorted. Objects thrown upward into air.

Wording is that of Wood and Neumann. (1931) Effects on cars, trucks, and buildings built according to modern standards may be different.

* Although earthquakes of the same maximum (epicentral) intensity do not always have the same magnitudes, it is possible to estimate the magnitude with the formula; $magnitude = 1.3 + (0.6 \times \text{maximum intensity})$. Values in the table were obtained using this formula.

Reference: Wood, H.O., and Neumann, Frank, 1931, Modified Mercalli Scale of 1931: Seismological Society of America Bulletin, v.21, no.4, pp.277-283.

Scale 5 – Heat Index

The NWS has stepped up its efforts to provide an effective method of alerting the general public and appropriate authorities to the hazards of heat waves - those prolonged excessive heat/humidity episodes. The NWS has devised the “Heat Index” (HI), (sometimes referred to as the “apparent temperature”). The HI, given in degrees Fahrenheit, is an accurate measure of how hot it really feels when the relative humidity (RH) is combined with the actual air temperature. For example, if the air temperature is 95°F and the RH is 55%, the HI is 110°F. Since HI values were devised for shady, light wind conditions, exposure to full sunshine can increase HI values by up to 15°F.

To find the HI, look at the following Heat Index chart. The shaded area above 105°F corresponds to a level of HI that may cause increasingly severe heat disorders with prolonged exposure and/or physical activity. The chart relates ranges of HI with specific disorders, particularly for people in higher risk groups.

