



STATE OF GEORGIA
OFFICE OF THE GOVERNOR
ATLANTA 30334-0900

Nathan Deal
GOVERNOR

February 2014

To: The Honorable Nathan Deal, Governor

**From: Bart Gobeil, Chief Operating Officer; and
Assigned State Agency Heads**

In response to your request for an Internal Review and Action Plan by state agency heads involved in the state's emergency response to the inclement weather events of January 26-30, 2014, I am pleased to submit the attached report for your review.

State agency heads from the Georgia Emergency Management Agency, Department of Public Safety, Department of Natural Resources, Department of Defense and Department of Transportation met to carefully examine the events of January 26-30, 2014. This report documents a review of the emergency event and provides specific insights and recommendations, some of which are already being used or considered for implementation. It will be further reviewed by your appointed Severe Winter Weather Warning and Preparedness Task Force. Let me briefly list some of the key recommendations in this report:

- Full implementation of an immediate Action Plan; relating to weather alert notifications to cell phones, consultation with area meteorologists, email updates to school superintendents, and improvements to the "Ready Georgia" mobile app to be engaged during times of weather emergencies.
- Legislation to change laws regarding commercial vehicles and emergency equipment used.
- The creation of Strike Teams to provide rapid response in future weather emergencies.
- Significant improvements to GDOT's ability with regard to equipment, storage, supply needs and enhancements, such as weather monitoring pavement sensors around the metro area.
- A number of operational and procedural enhancements that have small incremental costs but allow state and local government officials, schools, businesses and citizens to make informed decisions on a timely basis.

Thank you for your leadership as we have worked through this series of inclement weather events.

Internal Review and Action Plan

Winter Storm Event

January 26-30, 2014



As Requested By:
Governor Nathan Deal

February 2014

Internal Review Report- Winter Storm Event of January 26-30, 2014

On February 3, 2014, Governor Deal issued a statement related to the weather events of January 26-30. The announcement called for the creation of the Governor's Severe Winter Weather Warning and Preparedness Task Force, which would deliver within 60 days a report reviewing the storm of January 26-30, 2014. In addition, the Governor also called for an internal review and interim report by agency heads involved in the emergency response. These individuals would deliver a report and action plan to the Governor prior to the 60 day report of the Task Force. The following is that report, which includes:

- A. A narrative summary of events and actions related to the efforts by various agencies (GEMA, DOT, DPS, DNR, DOD)**
- B. An immediate action plan going forward for future weather related events**
- C. Summary recommendations from state agency heads**

INTRODUCTION

Early Tuesday morning, January 28, and into Wednesday, January 29, 2014, a winter storm delivered a long swath of snow and ice from parts of Texas to the coastal Southeast, coastal Mid-Atlantic and Northeast.

According to the National Weather Service in Peachtree City, GA, the winter weather circumstances that affected the Atlanta metro area on these dates were extremely unusual and rare. Since the beginning of official snow records for Atlanta in 1929, there have been only 13 occasions where the maximum temperature was less than or equal to 30 degrees that also coincided with snowfall. Of those 13 occasions, only four occurred during the day with the remainder occurring during the overnight hours. The maximum temperature on January 28, 2014, was 27 degrees, which occurred at 11:00 a.m. right as the snow began to fall. Temperatures fell throughout the afternoon into the mid and lower 20s with snow continuing to fall. The most recent event similar to January 28 was in January 1982, but on that occasion the snow began to fall later in the afternoon and it was a lighter snowfall at the beginning of the event. In addition, January 2014 was the 12th coldest January on record and the coldest January since 1985. In more recent years, 1998-2010, there has been only one other occurrence when the maximum temperature was less than or equal to 30 degrees in Atlanta.

The complexity of the event was such that normal preparations for storm-related preparedness actions were made more difficult by the weather's unique aspects. The result was a less than timely and appropriate early response, which would have allowed state and local governments, schools,

businesses and other entities to quickly respond and react in a more effective manner. This situation caused Atlanta and the metro area to experience a significant shutdown. Schools, government offices and private businesses closed once it became apparent that the storm's impact was more severe than originally anticipated, resulting in a massive influx of traffic on the roadways within a very short period of time.

The traffic volume, in conjunction with deteriorating weather conditions and considerable ice forming on roadways, caused highways and surface roads to become impassible in many areas of metro Atlanta. As a result, thousands of motorists were stranded for up to 24 hours in certain areas. Many students and teachers were unable to leave schools and were forced to shelter in-place at their locations.

A. Summary of Events

Summary of weather events and the State's response: January 26 through January 30, 2014

At 3:12 p.m. on the afternoon of Sunday, January 26, 2014, the National Weather Service published a Winter Storm Watch for portions of central Georgia, including parts of south metro Atlanta. This watch was to extend from Tuesday morning until Wednesday afternoon and predicted a mix of snow and sleet, with accumulations of two or more inches of snow and half an inch or more of sleet. These sleet accumulations were projected to be along a Columbus-to-Macon line.

This forecast stated that the wintry precipitation was expected to begin as early as mid-morning Tuesday and last through early Wednesday afternoon, with the heaviest precipitation between 10 p.m. Tuesday and 5 a.m. Wednesday. The impact of roads covered in snow and sleet was predicted to make travel more difficult or even impossible for Tuesday night and early Wednesday. Temperatures Tuesday afternoon were predicted to fall into the lower 30s. Minimum temperatures Tuesday night would fall into the lower and middle 20s, with temperatures on Wednesday reaching the middle 30s. The National Weather Service stated that the Winter Storm Watch meant there was a potential for significant snow, sleet or ice accumulations that might impact travel. (see Figure 1)

At 9:06 p.m. the Georgia Department of Transportation (GDOT) provided this weather information to its various district supervisors.

At 4:53 a.m. on Monday, the National Weather Service updated the Winter Storm Watch to include metro Atlanta areas, including Paulding, Cobb, North Fulton, South Fulton, Gwinnett, DeKalb and Douglas Counties. This Winter Storm Watch was to be in effect from Tuesday morning through Wednesday afternoon, predicting snow accumulations from ½ to 2 inches beginning as early as mid-morning Tuesday and lasting into Tuesday night. As of Sunday, the National Weather Service stated that the Winter Storm Watch meant there was a potential for significant snow, sleet or ice accumulations that might impact travel. (see Figure 2)

At 6:22 a.m. the Georgia Emergency Management Agency (GEMA) received this information, briefed their executive staff and created a “winter weather incident” in the GEMA Crisis Management System.

At 3:22 p.m. Monday the National Weather Service upgraded the weather forecast for central and north central Georgia from a watch to a Winter Storm Warning, with the same snow and sleet impacts. This warning was to be in effect from 10 a.m. Tuesday until 1 p.m. Wednesday. While the northern part of this warning included areas to the east and west of Atlanta, such as Newnan, Conyers, Fayetteville, Covington and Athens, Atlanta itself was not a part of this Winter Storm Warning. The Winter Storm Watch remained in effect for much of metro Atlanta. (see Figure 3)

That afternoon, GEMA’s State Operations Center (SOC) sent emails to appropriate state partners who would be present in the SOC and notified state agency heads of the State Inclement Weather Policy. At about the same time, GDOT notified its District Maintenance Engineers that the GDOT Emergency Operations Center would open at noon on Tuesday.

At 9:36 p.m. on Monday night the National Weather Service upgraded the Winter Storm Watch for the Atlanta Metro to a Winter Weather Advisory. Their forecast stated that a slight shift in moisture could require an upgrade to a Winter Storm Warning during the overnight hours. The prediction for metro Atlanta was for ½ to 1 inch of snow. The forecast stated that snow covered roads would make travel difficult from midday Tuesday into Wednesday. Later that evening, GDOT updated their field engineers with this new forecast.

A key event occurred at 3:39 a.m. on Tuesday, when the National Weather Service upgraded the status for metro Atlanta from a Winter Weather Advisory to a Winter Storm Warning, to be in effect from 9 a.m. Tuesday until 7 a.m. Wednesday. This warning predicted 1 to 2 inches of snow and included north central and central Georgia. (see Figure 4)

Since metro-area schools need to make early morning decisions (usually by 5:00 a.m.) regarding school closings, the timing of this warning was such that leaders of school systems faced a very compressed timeframe in which to make their decisions. Based on the historical record of very few of these types of storms during daylight hours in metro Atlanta, this may have led to school systems opting to proceed with the normal school day.

By 6:00 a.m. Tuesday, January 28, the GEMA Director of Operations received an update by telephone from the National Weather Service and at 7:06 a.m. briefed the GEMA Director on updated data. Also that morning, GDOT moved up the opening of their Emergency Operations Center (EOC) and notified their various field directors that the storm was moving faster than expected. Pretreatment of roads began at 9:00 a.m. using 47 trucks with spreaders. Unfortunately, metro Atlanta drivers were still in the middle of rush hour traffic, and it was impossible to get the equipment and road treatment product where it needed to be at 9:00 a.m. due to normal traffic conditions.

At approximately 10:00 a.m., the Governor signed an Executive Order giving state agency heads liberal discretion to release their employees and close state offices. This order was distributed by

GEMA to state agency heads at 10:25 a.m. Before noon the Georgia State Patrol transmitted weather road condition updates to GEMA and GDOT.

By 11:07 a.m. the National Weather Service repeated the Winter Storm Warning for metro Atlanta and other parts of central and north central Georgia, with the warning remaining in effect until 7 a.m. Wednesday. They predicted accumulations of 1 to 2 inches of snow mixing with sleet, making travel hazardous through Wednesday morning.

Just after noon, the GDOT commissioner emailed copies of the state law requiring chains on trucks to appropriate parties. However, by 12:45 p.m. heavy congestion had already occurred on the metro highways and surface streets. At about the same time, the National Weather Service updated their forecast for the state with a Winter Storm Warning from central Georgia northward until 7 a.m. Wednesday morning.

During the afternoon on Tuesday, GEMA coordinated with Hartsfield-Jackson International Airport and requested that GDOT adjust the Variable Message Signs to warn commercial traffic to avoid Atlanta. At 5:15 p.m. the Governor's Declaration of a State of Emergency was received by GEMA.

By mid to late afternoon on Tuesday, people were trying to get home in some of the worst traffic gridlock imaginable. By that time road conditions had deteriorated to the point that motorists, school children, parents and citizens had already started abandoning vehicles that could not move due to these conditions.

Over the course of the January 28-29 event, approximately 260 DPS troopers and 80 motor carrier officers responded in both operational and command-level capacities. DPS state troopers assisted 1,185 motorists and were dispatched to investigate 1,521 crashes, which resulted in 184 injuries and 1 weather-related fatality. DPS personnel distributed 10,000 bottles of water, 1,200 blankets, 2,400 MRE's (meals ready to eat) and 4,000 snack food items to stranded motorists. In addition, the GSP Aviation Division landed a helicopter on I-285 to distribute food and water to motorists. DPS also deployed troopers to 95 schools to provide protection for staff, students and parents who sheltered in-place during the night of January 28. DPS personnel continually monitored road conditions, provided information to GDOT, and provided security and transportation to citizens needing to reunite with their abandoned vehicles.

Based on weather conditions, the Georgia National Guard (NG) began mobilizing vehicles and personnel for potential missions. The Joint Forces Headquarters (JFHQ) in Marietta had issued guidance to units in armories in the metro Atlanta area to be prepared to move at the direction of the Governor. During the evening of January 28, the Governor activated the Georgia NG in an effort to assist local and state authorities dealing with issues such as stranded school buses of children and citizens in need of help on icy streets. The Georgia NG mobilized 50 Humvees and 2 cargo trucks with 203 personnel who were on state active duty. GEMA assigned the Georgia NG 10 separate missions that involved assisting motorists with movement to shelters, providing blankets, water, food and fuel to stranded motorists, providing logistics transport for medical supplies, clearing travel lanes, conducting reconnaissance of routes around the area, and providing a presence to augment local

authorities. Over the next few days, the Georgia NG continued to conduct these missions and to provide assistance to local and state authorities and private citizens.

The Georgia Department of Natural Resources was also actively engaged during the event in responding to the impact of the storm on Georgia's citizens. DNR directed their Law Enforcement Division Captains to offer assistance to sheriffs, local EMAs, and local police departments, as needed, as early as Monday. The State Parks Division assigned some of their law enforcement trained personnel to be on standby for a possible response as well.

In the first 24 hours of the event, DNR responded to metro interstates and assisted stranded motorists by delivering food, water and blankets, while also opening two state parks as temporary shelters for these motorists. DNR assisted with the security of schools that were sheltering students and helped remove students stranded on school buses. They also provided food and drinks to these students. DNR further assisted other agencies, such as the Georgia Forestry Commission, as their joint staffs coordinated on the dispersal of food, water, and blankets, delivery of critical medical supplies to area hospitals, and providing assistance to local Law Enforcement agencies. In addition, the department assisted by clearing roadways, towing stuck vehicles and providing the search and rescue of a dementia patient. 65 DNR Rangers checked 886 vehicles and 11 school buses and assisted 56 children. One hundred eighty vehicles either were towed or their occupants transported to shelter. In all, 845.5 staff hours were worked by the department.

At 11:00 p.m. Tuesday evening, the Governor held a news conference on the storm and the state's response. Participants in the news conference included GDOT Commissioner Keith Golden, DPS Commissioner Colonel Mark McDonough, DOD Deputy Adjutant General Joe Garrard and GEMA Director Charley English. Also attending and participating was Atlanta Mayor Kasim Reed. This was followed up with another news conference on Wednesday at 11:30 a.m. with these same key leaders.

At 12:52 p.m. on Wednesday the National Weather Service announced that the Winter Storm Warning would expire at 1:00 p.m. that day statewide. However, the State of Emergency remained in effect for all of Georgia. GEMA requested that travel be limited to emergencies during this time. On Wednesday, 16 trucks/spreaders and 2 mechanics arrived from various GDOT districts to work in metro Atlanta.

On Thursday, January 30 at 1:30 p.m. another news conference was held by the Governor to continue updating the public on the state's response to the severe weather. It included GDOT Commissioner Keith Golden, DPS Commissioner Colonel Mark McDonough, DOD Adjutant General Jim Butterworth, DNR Commissioner Mark Williams and GEMA Director Charley English.

On February 3 a news conference was held by the Governor to announce the formation of the Severe Winter Weather Warning and Preparedness Task Force, calling for a report within 60 days reviewing the events of the storm of January 26-30. He called for recommendations for future storm preparedness, as well as an internal review of the state's action during the most recent weather event.

B. Action Plan

During the week of February 3, Governor Deal convened a number of meetings with agency heads involved in emergency planning and execution. As a result of those meetings, an Action Plan has been completed that is being readied for full implementation.

1. Weather Alert System: Similar to the current Amber Alert system, a weather alert system will send messages regarding severe weather conditions to the public via cell phone. GEMA has an existing contract with the Emergency Management Network (EMNet), a procured hardware and software solution that has the capability to transmit messages similar to the Amber Alert process. GEMA is in full compliance with and has been issued a digital certificate to gain access to the Integrated Public Alert and Warning Systems Open Platform for Emergency Networks. This capacity has been tested and a careful analysis conducted by the vendor to be certain it provides the state of Georgia the necessary capabilities needed in times of emergency. This was successfully demonstrated by multiple wireless emergency alerts sent to cell phones in impacted counties during the most recent winter storm event on February 12 and 13.

2. Weather Advisory Group: Consultation between meteorologists from Atlanta's four major network affiliates and the National Weather Service will help officials make the most informed and timely decisions during storm events. Contact information has been provided to GEMA by these meteorologists (including their alternates) so they can be reached to schedule conference calls in the event of expected severe weather. The Weather Advisory Group was activated before the severe winter weather event of February 10-13, and consulted with GEMA throughout the storm to discuss the most current weather models and predictions. GEMA will consult continuously with these local meteorologists on evolving weather forecasts.

3. Notification of School Superintendents: A key concern and high priority is the safety and security of Georgia's school children. Georgia's Action Plan will include a fail-safe measure to ensure early communication with school superintendents and their staff. In coordination with the Georgia School Superintendents Association (GSSA), GEMA completed an email database of all 180 Georgia school superintendents. An example of how this valuable database was used occurred on February 5, when GEMA sent an email to superintendents in affected counties notifying them of a "fast evolving weather event." It is critical that GEMA continues to coordinate with the GSSA, the Weather Advisory Group, and other subject matter experts to ensure superintendents receive the most up-to-date weather forecast information as they determine the need for school closings.

4. The Ready Georgia Application: The *Ready Georgia* mobile app, created by the Georgia Emergency Management Agency and the Georgia Department of Public Health, is an interactive tool that assists Georgians in preparing for emergencies. The state will update the app with available shelters, alternative transportation routes and other emergency-related information. To expand the app's capability, GEMA has consulted with the *Ready Georgia* app

contractor as well as Georgia Tech and the Weather Channel. This effort will also include a strong marketing campaign so that the app will be of use to as many citizens as possible.

C. Summary Recommendations from Agency Heads:

Since the storm event of January 26-30, Governor Deal, his executive team and the key agency heads (GEMA, DPS, GDOT, DOD, DNR and several other agencies) have compiled both short-term and long-term recommendations for needed actions, including the Action Plan (**Paragraph B**) which is continuing to be developed for full implementation.

The following is a narrative summary of these recommendations, some of which have already been used during the storm event which occurred on February 10-13. These include:

1) Legislative changes to:

- (a) Strengthen enforcement and punishment of violators of the current state law regarding commercial vehicles being equipped with tire chains or other equipment during a declared State of Emergency during inclement weather (OCGA 40-6-51)
- (b) Codify in state law GDOT Board rules governing truck traffic on metro Atlanta highways during times of inclement weather

2) It is recommended that Strike Teams be used in future inclement weather conditions. Each Strike Team would be comprised of 7 vehicles per team, and there would be 35 teams in the metro Atlanta area staged at strategic locations.

Each team would be comprised of one each of the following:

- Georgia Forestry Commission Spreader/Scraper
- Georgia Forestry Commission Pickup Truck with sand and gravel
- DOD LMV (Light multi-role vehicle)
- DNR Pickup Truck and All-Terrain Vehicle
- Motor Carrier Compliance Division Officer
- State Trooper
- DOD Hummer

Pre-positioned Strike Teams could be mobilized around specifically assigned metro areas, keeping them clear, and would provide the necessary vehicles and tow trucks to release bottlenecks on an emergency need basis.

3) It is critical that GDOT prepare now for future weather emergencies, and this will involve some significant investments to keep them in a state of readiness. The following is a summary of the most needed types of equipment and facilities:

- 5 brine production units

- 5,000 gallon steel tanker trailers
- 5,000 gallon brine storage tanks
- more salt barns/salt storage facilities
- Ice control-sprayers
- Tow plow with equipped trucks
- Bulk salt storage shed
- Ground monitoring pavement sensors
- Additional phone capacity into the Transportation Management Center

- 4) The state of Georgia should pursue a program of installing ground monitors at key locations to monitor road and air temperatures in an effort to determine if ice is or will be forming. These monitors would provide significant and helpful information at key locations and therefore deserve further refinement and funding. Such data would be invaluable, not only to state entities such as GDOT, but also to local officials and businesses as leaders in our communities must decide to close schools or delay openings. GDOT is also currently refining necessary technical specifications and costs associated with approximately 30 sensors that could be distributed throughout the metro Atlanta highway system.
- 5) During inclement weather, coordinate with the Georgia Motor Coach Operators Association, Georgia Motor Trucking Association and the American Trucking Association to assist in message delivery to commercial vehicle operators in the region.
- 6) During threatening weather, the state should maximize its efforts to establish a Joint Information Center (JIC) with representatives from participating state agencies. This will allow for the development and broadcasting of consistent, coordinated messages to the public across both commercial and social media platforms, including Facebook, Twitter and Instagram.
- 7) Work closely with the Outdoor Advertising Association of Georgia to use electronic billboards to advise the driving public during weather watches, advisories and warnings and to ensure the most effective communication throughout.
- 8) Contact Georgia's counterparts in Nashville, Birmingham and Dallas/Fort Worth to learn from their experiences with comparable weather and similar demographics.
- 9) To enable emergency personnel to gain access when needed, explore the possibility of installing small (15 feet) sections of removable barriers in place of existing concrete walls at certain points along the interstate system.
- 10) Evaluate the use and efficiency of CB radio transceivers with linear amplifiers being installed at DPS headquarters and metro area weigh stations to communicate with vehicle operators during inclement weather.

- 11) Evaluate the purchase of low power AM transmitters to be installed at DPS headquarters and metro area weigh stations to provide vehicle operators with information during inclement weather.
- 12) Pre-record PSAs to be broadcast over AM transmitters and CB radios to advise vehicle operators of road closures and limited access.
- 13) Coordinate with GDOT to ensure that traffic advisory signs provide relevant information to vehicle operators during inclement weather. Additionally, request the installation of signs notifying motorists to tune in to designated AM radio frequencies for instructions during inclement weather.
- 14) During the winter season, prepare for pretreatment by keeping steel tankers full of fresh product that is ready for use.
- 15) The Motor Carrier Compliance Division of DPS should undertake periodic, concentrated patrols to enforce commercial vehicle travel restrictions inside the I-285 Perimeter.
- 16) The DPS should maintain its own Command Center to provide an area for their command personnel, housing of equipment and supplies, and a staging area for law enforcement operational personnel.
- 17) Personnel from outside the metro area may require accommodations during protracted weather events. In-house facilities need to be designated or arrangements made with vendors so that accommodations will be available for personnel in times of storm events.
- 18) In coordination with GEMA, DPS and DOD need to maintain a stockpile of water, MREs, snack foods, blankets, etc., for issuance as needed. Perishable items need to be rotated prior to expiration.
- 19) The state, coordinated by GEMA, should work with local governments to identify and inventory potential large distribution centers to serve as staging areas for resources, vehicles and personnel. Furthermore, the state should work with the American Red Cross and local governments to identify additional facilities that could shelter individuals, which should include police stations, fire stations, recreation centers and libraries, among others.
- 20) All agencies should review their roles found in the Snow and Ice Plan created in 2011.
- 21) Continue regularly scheduled meetings with local EMA directors. Exercises will be valuable training experiences for all participants.



Figure 1. Winter Storm Watch issued Sunday, January 26 at 3:12 PM



Figure 2. Winter Storm Watch issued Monday, January 27 at 4:53 AM

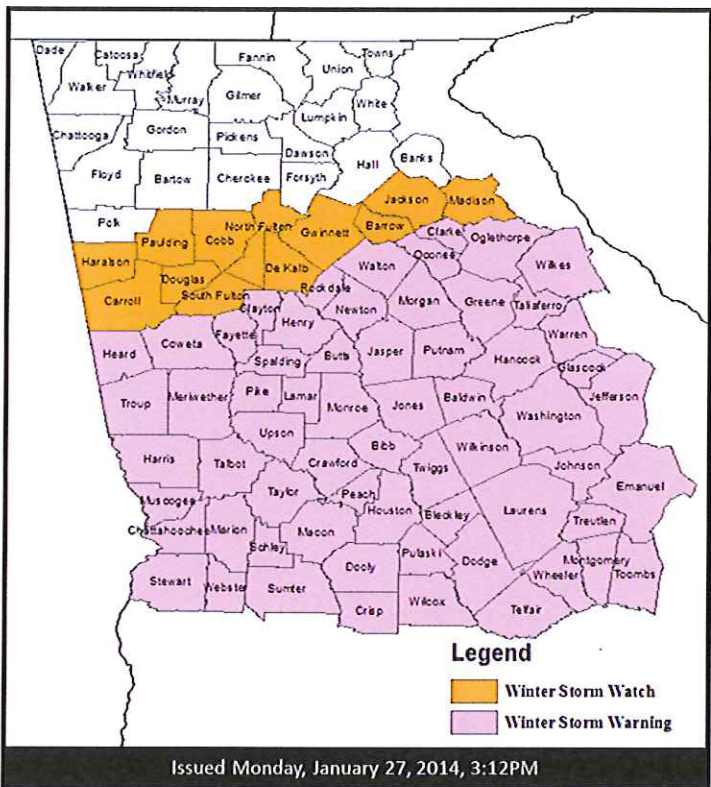


Figure 3. Winter Storm Watch/Warning issued Monday, January 27 at 3:12 PM

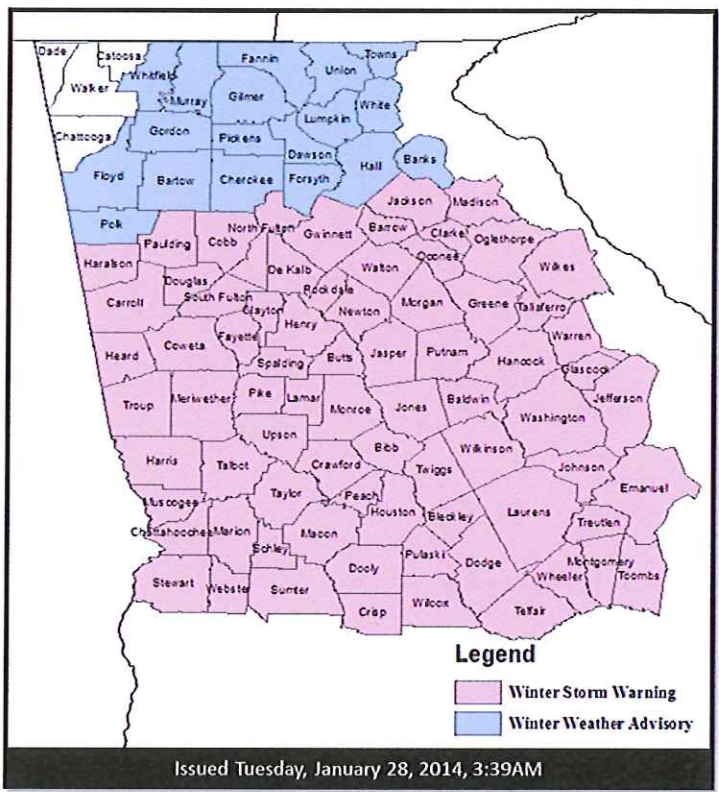


Figure 4. Winter Storm Warning/Winter Weather Advisory issued Tuesday, January 28 at 3:39 AM