

# Societal Response to the 2014 Atlanta/Birmingham Snowstorm

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ATLANTA



# Birmingham



# The Weather Enterprise

- Emergency managers
- Broadcast meteorologists
- Weather forecasters
- Emergency planners
- Decision makers



# The Study



Public survey

Weather enterprise interviews

Participant observation

An aerial photograph of a multi-lane highway with a significant traffic jam. The vehicles are packed closely together, and a large, white, cloud-like graphic is superimposed over the right side of the road, partially obscuring the traffic. The surrounding area includes trees and some buildings.

# Awareness

Most people aware of the winter weather forecast.

-Primarily through TV news and social media.

Less than a third took it seriously.

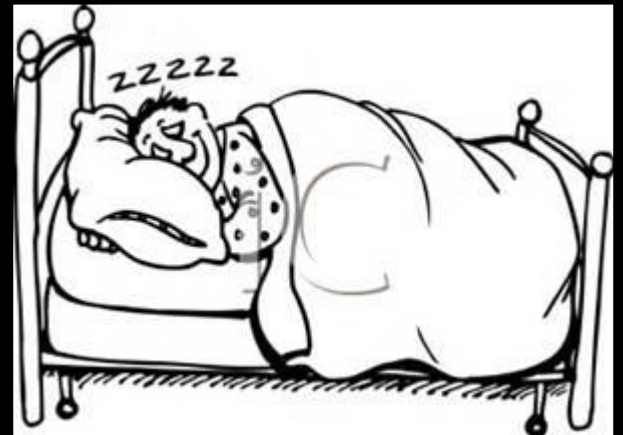
# Threat Adjustment

- Jan. 27<sup>th</sup>: not a very serious event
  - Perceptions changed morning of 28<sup>th</sup> with changes in forecast, warnings, and onset.



# Threat Adjustment

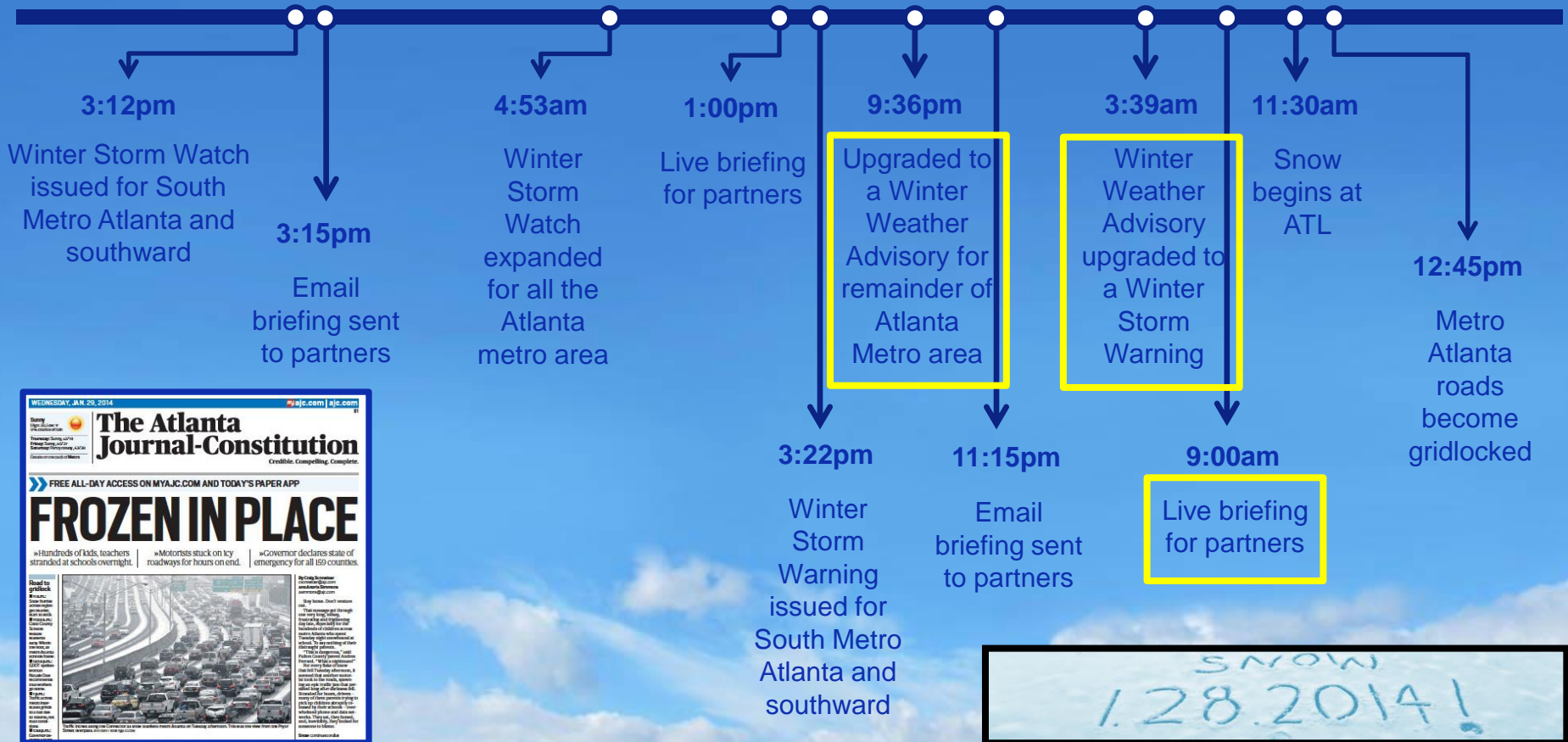
- Relied on the forecast from day/night before.
- Some understood uncertainty of event.
- Others did not understand or did not want to adjust.





# January 28, 2015 Timeline

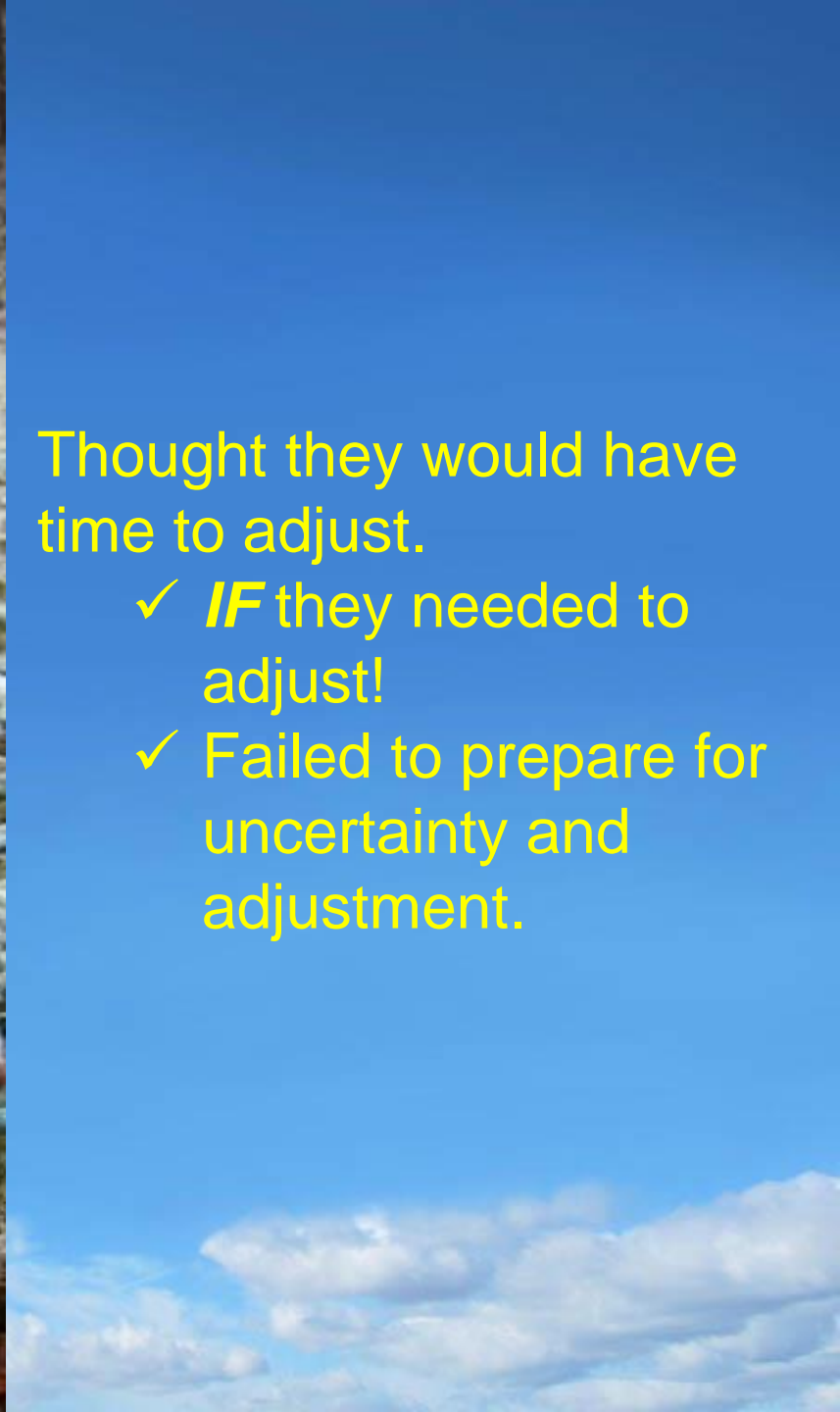
**Sunday** 1/26/2014 | **Monday** 1/27/2014 | **Tuesday** 1/28/2014



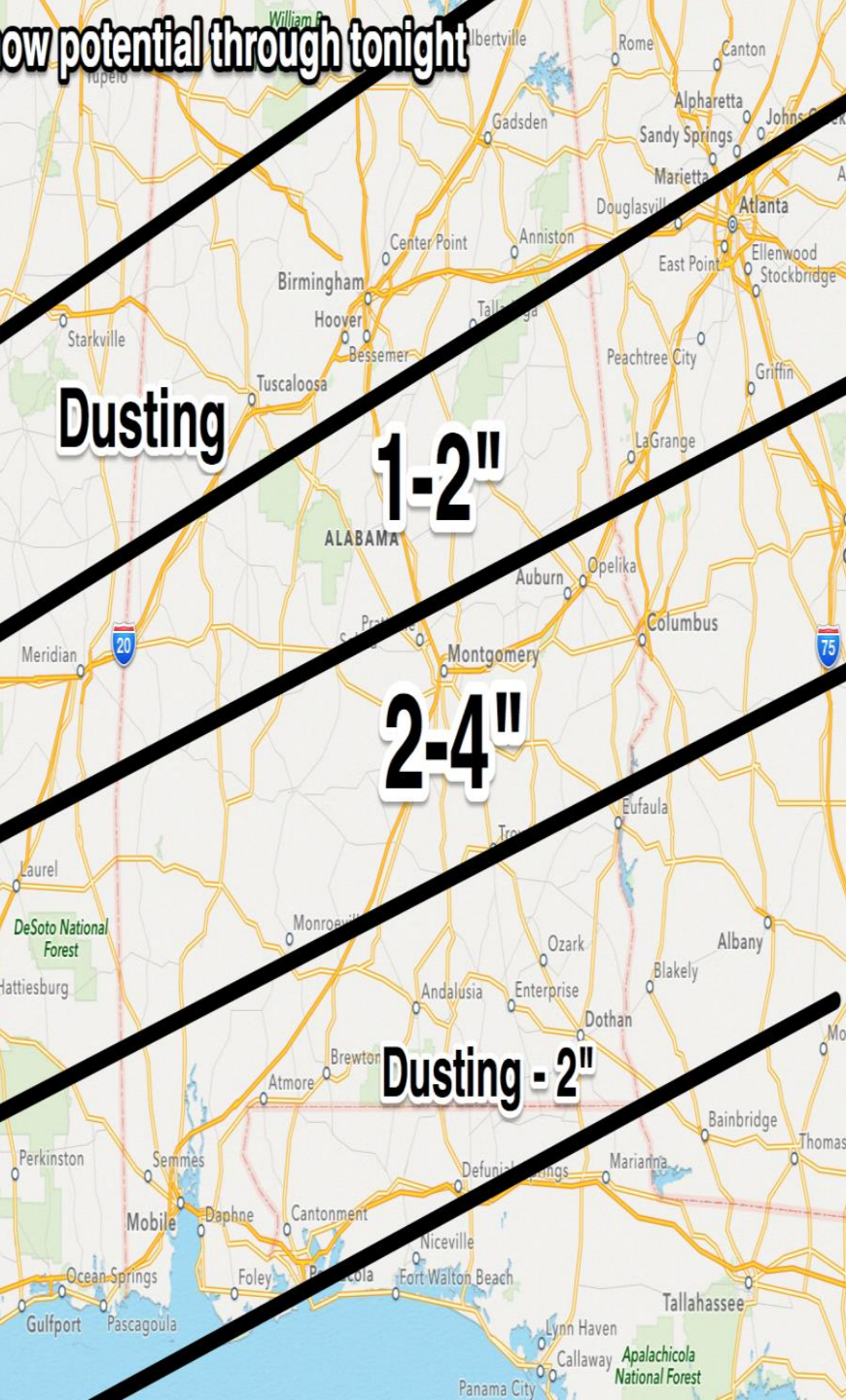


Thought they would have time to adjust.

- ✓ ***IF*** they needed to adjust!
- ✓ Failed to prepare for uncertainty and adjustment.



Low potential through tonight



# Seriousness of the **Threat**

- Wording
- Winter weather perceptions
- Timing
- Winter weather products
- The weather enterprise

# Understanding the Warning

Warning-74%

Watch-19%

Advisory-32%

Watch=Advisory-55%



# Stress



# Children in School

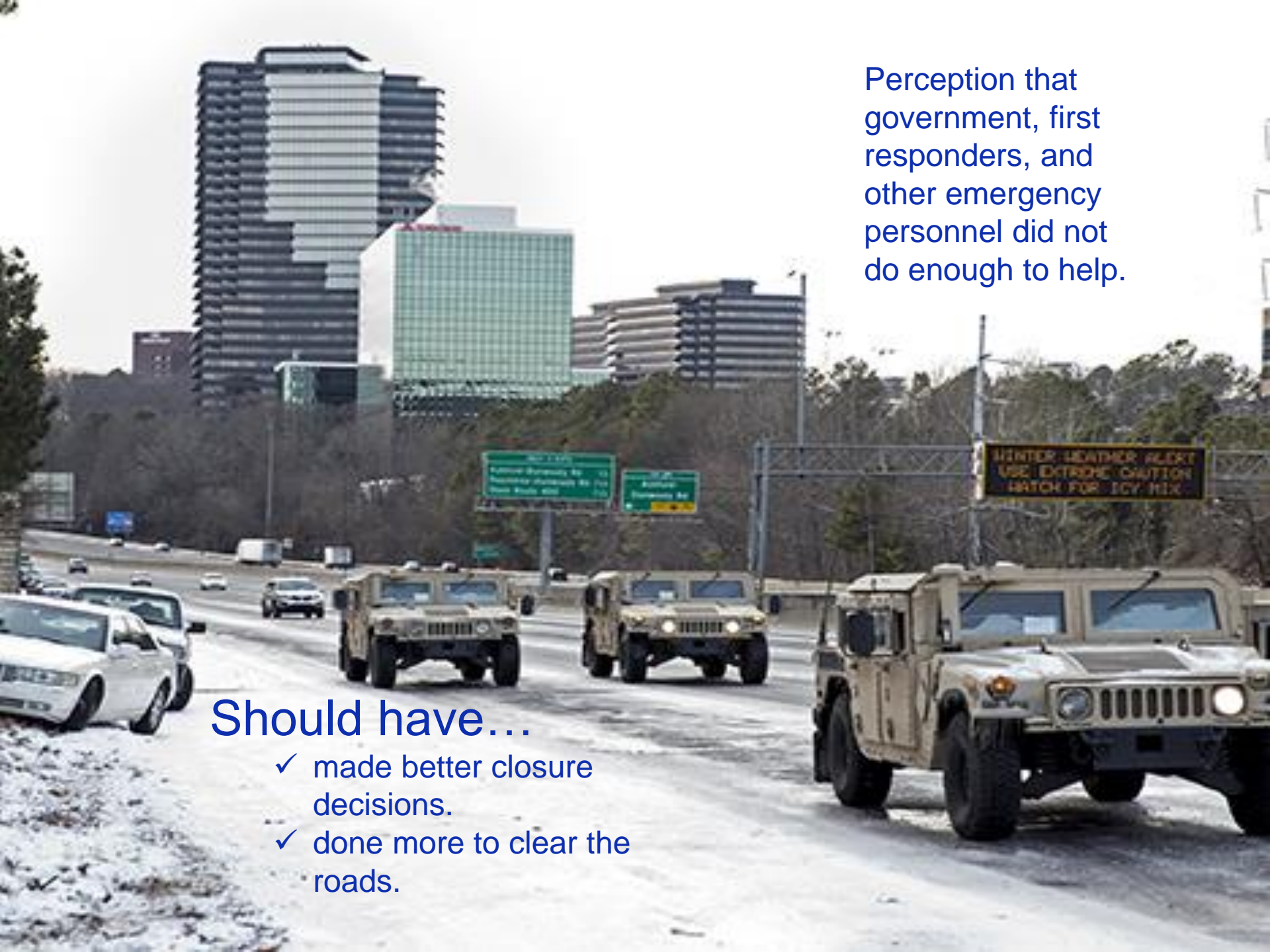
37% had children in school  
95% able to get to home or shelter  
5% stayed at school overnight



Perception that government, first responders, and other emergency personnel did not do enough to help.

## Should have...

- ✓ made better closure decisions.
- ✓ done more to clear the roads.



# Trusted Sources

- Some criticism of the NWS, The Weather Channel, and local TV mets.
- A majority were satisfied with...
  - Forecasting.
  - Response to uncertainty.
  - Evolution of the event.
- Clear that evolution of event was documented and addressed very quickly.



# Broadcast Mets

- Messaging was critical.
- Consistency as message changed.
- Keeping people updated.
- Impacts for high population areas will be worse than for other places.

# Impacts



# Response

- Schools were the key.
  - Everyone else would have followed.
    - Previously closed for cold in Atlanta.
- Watches, warnings, and advisories: confusion.
  - Warning only thing that has meaning.
- Impacts have meaning.
- Media focused on impacts.
  - Stay off roads.
  - Too late.....
  - This was not an ice storm

# Knowledge and Perceptions

- People understand ice impacts.
- But what was this frozen precipitation????
- Schools closing for advisories???
- It was a temperature issue...
- Needed to convey the uncertainty better.
- Timing of onset was a problem.

# Triggers

- Has to be snowing the night before or when they get up for schools to close.
  - They take chances.
  - Claim the media is always wrong.
  - Have to see it to believe it.
- Waited too long.
  - Panic occurred.



# Communication

- Watches, warnings, and advisories all the same to people...even some news people.
  - Not a winter weather culture.
- Enterprise did not analyze threat correctly.
- Advisory was perceived as “backing off.”
- Communication issue.



# Solutions

- Checklist
  - Communication standards
  - Unambiguous format
  - Conveys the threat
  - Message cannot be mechanical
  - Attach colors
  - Use the word “threat.”
  - 4:30 pm press conferences

# Art Versus Science



***WINTER WEATHER***  
**ALERT**

Art is the solution, not just science.  
Communication!!!  
Need marketers to develop this art.



# Solutions

- Stress uncertainty of event more.
- Calls to action.
- Convey seriousness.
- Recognize the overnight tendency to go with the last information before bed.
- Focus more on impacts!!!!
- Better risk communication
  - Educate the public
  - Winter weather awareness week

# Education!

- Define winter weather terms.
  - What is an advisory?
- Cone of uncertainty????



# Weather Enterprise Solutions

- NWS Chat very important in the evolution.
- Social media dissemination.
- Timing issue.
- Prepositioning of assets.
- DOT and road sensors



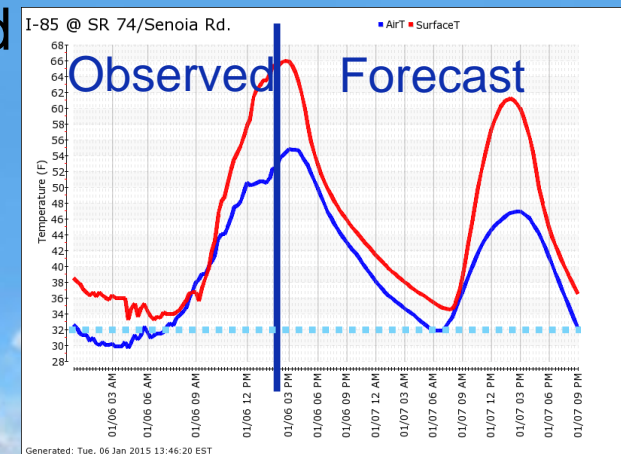
# Atlanta

## Challenges

- Confusion that going from the Watch to the Advisory was a downgrade
- Lack of action taken with Winter Storm Warning (upgrade and timing)

## Actions

- Installation of road sensors in the Atlanta metro area and use of internal road model
- Defined times for winter weather briefings
- Strengthened relationships
- Re-defined focus on impacts and innovative ways to communicate these impacts

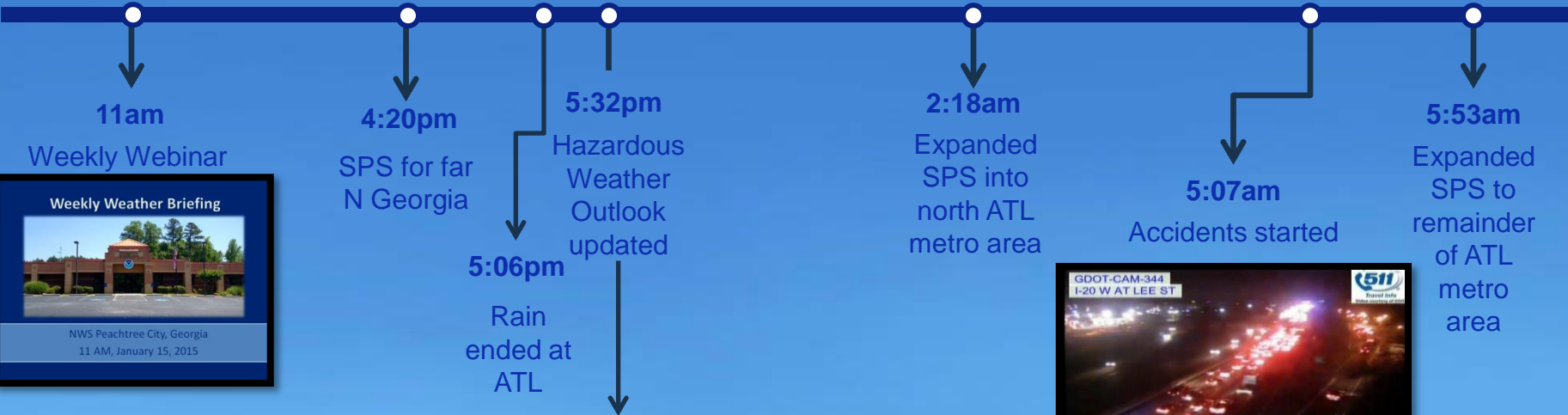




# Black Ice Timeline January 16, 2015



Thursday 1/15/2015 | Friday 1/16/2015



THIS **HAZARDOUS WEATHER OUTLOOK** IS FOR PORTIONS OF NORTH AND CENTRAL GEORGIA.  
 .DAY ONE...TONIGHT...  
 A SPECIAL WEATHER STATEMENT HAS BEEN ISSUED FOR PORTIONS OF NORTH GEORGIA FOR THE CONTINUED MIX OF LIGHT RAIN AND SNOW AND POTENTIAL FOR BLACK ICE TONIGHT. PLEASE REFER TO THE LATEST STATEMENT ON OUR WEBSITE FOR FURTHER DETAILS.  
 FOR THE REMAINDER OF NORTH AND WEST GEORGIA INCLUDING THE ATLANTA METRO...EXPECTING MAINLY RAIN FOR THE REMAINDER OF THE EVENING ALTHOUGH PERIODS OF SLEET MIXING IN IS POSSIBLE. WITH TEMPERATURES REMAINING WELL ABOVE FREEZING...NO ACCUMULATIONS ARE EXPECTED AND ROADS WILL REMAIN JUST WET THROUGH LATE EVENING. THE PRECIPITATION WILL END QUICKLY THEREAFTER WITH INCREASED WINDS HELPING TO DRY OUT THE ROADS. HOWEVER...WITH TEMPERATURES DROPPING QUICKLY TO BELOW FREEZING...THERE COULD BE SOME ISOLATED SLICK SPOTS ON ELEVATED SURFACES FOR THE MORNING RUSH HOUR.

# How do we best communicate the black ice threat?



- What **product** is the best way to communicate the black ice threat?
- At what point do we stop mentioning black ice?

## Hazardous Weather Outlook

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- Other options discussed:
- Civil Emergency Message
  - Traveler's Advisory

## Winter Weather Advisory

### Special Weather Statement

ALTHOUGH PRECIPITATION HAS ENDED ACROSS NORTH GEORGIA...THERE IS SOME RESIDUAL MOISTURE ON THE ROADWAYS. THIS...COMBINED WITH TEMPERATURES BELOW FREEZING...WILL ALLOW FOR SOME OF THIS TO FREEZE ON ROADWAYS...CAUSING PATCHY ICE ON ROADS AND ELEVATED SURFACES. TEMPERATURES ARE EXPECTED TO RISE ABOVE FREEZING AROUND 10AM THIS MORNING.

- ...WINTER WEATHER ADVISORY NOW IN EFFECT UNTIL 9 AM EST TUESDAY...
- \* LOCATIONS...MAINLY THE HIGHER ELEVATIONS ALONG AND NORTH OF A LINE FROM JASPER TO DAWSONVILLE AND CLEVELAND.
  - \* HAZARD TYPES...BLACK ICE ALONG WITH LIGHT SNOW ACCUMULATIONS.
  - \* ACCUMULATIONS...GENERALLY LESS THAN A TENTH OF AN INCH FOR THE HIGHER ELEVATIONS.
  - \* TIMING...BLACK ICE INCREASING IN AREAL COVERAGE THROUGH TUESDAY MORNING.
  - \* IMPACTS...PATCHES OF BLACK ICE WILL MAKE FOR SLICK SPOTS ON ROADWAYS.

# January 16, 2015

*"The single biggest problem in communication is the illusion that it has taken place."  
-George Bernard Shaw*



## Challenges

- How do we best communicate the black ice threat?
- Balancing partners needs and media interpretation
- Location of road sensors; road sensors being a new resource

## Looking Forward

- Form a relationship with all Public Information Officers from the agencies you coordinate with
- Additional road sensors? Look at past performance of road model

"It seems like 80 percent of the time when things don't go right, it's not that the forecast was bad, it's a communication issue," Nelson said.



# Evolutions

- 2014 and 2015 Winters were challenging but had some successes
  - Implementation of road sensors and road modeling
  - Impact based Winter Storm Warnings
- Relationships have been strengthened with partners, but still room for improvement in communication!







Ray White

JIM STEFKOVICH

Mary Ekins

David P.

John

# Conclusion

- A communication issue.
- A transportation disaster.
- Impact-based messaging.
- Uncertain and atypical situation.
- Discussion of solutions and strategies.

# Contact Information

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