### Busy 2008

<table>
<thead>
<tr>
<th></th>
<th>2008</th>
<th>2007</th>
<th>2006</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Tornadoes</td>
<td>1296*</td>
<td>1074</td>
<td>1106</td>
<td>1264</td>
</tr>
<tr>
<td>Number of Tornado</td>
<td>123*</td>
<td>81</td>
<td>67</td>
<td>38</td>
</tr>
</tbody>
</table>

*Preliminary So Far This Year*

Greensburg, KS
Super Tuesday

• February 5 through 6, 2008:

82 tornadoes including 5 EF4s
57 fatalities; most since May 31st, 1985 and 13th all time
350+ injuries
> 400M in property damage
36 (63%) killed were in mobile homes
Most of the tornadoes occurred after dark
Super Tuesday

Even with advanced notice of the event and individual severe storms, there was still a large loss of life
Communication Prior to Outbreak

SPC Day 6 Severe Thunderstorm Outlook
Issued: Jan. 30, 2008
Valid: Feb 5-6, 2008

Tornado, Wind, Hail Reports

NWS began publicizing the potential for severe weather 6 days in advance of the outbreak.
Communication Prior to Outbreak

Day 1 Tornado Probability
Issued and Valid Tue, Feb 5

Day 3 Severe Thunderstorm Outlook
Issued: Sun (2am), Feb 3. Valid: Feb 5-6

NWS forecasts were further refined leading up to February 5, 2008
• NWS Weather Forecast Offices (WFOs) advertised the potential for severe thunderstorms, including tornadoes, in their Hazardous Weather Outlooks (HWOs) as early as Thursday, January 31, 2008.
  • Subsequent HWOs throughout the weekend refined the timing and magnitude of the threat.

• WFOs used conference calls, Go-To Meeting, email/text alerts, and graphical HWOs to provide situational awareness.

• WFOs used IEM Chat and 800MHz to communicate with media and emergency manager partners.
• **Performance:**
  
  • Average lead time for tornado warnings was 18 minutes (17 minutes for tornadoes causing fatalities)
What Happened?
What Happened?
Supercell and Tornado Tracks
Tuesday February 5th, 2008
Courtesy of the Storm Prediction Center, Norman, Oklahoma
Storm Based Warnings

Previously

County-Based Tornado Warnings
8 Counties under warning
Almost 1 million people warned

October 1, 2007

• More specific
• Increased clarity
• Supports new dissemination technology

Storm-Based Tornado Warnings
70% less area covered
~600,000 fewer people warned
Hurricane Season 2008

Tropical Storm Arthur
Hurricane Bertha
Tropical Storm Cristobal
Hurricane Dolly
Tropical Storm Edouard
Tropical Storm Fay
Hurricane Gustav
Hurricane Hanna
Hurricane Ike
Tropical Storm Josephine
Storm Surge

Bay St. Louis, MS
### Communicating Impacts

<table>
<thead>
<tr>
<th>Routine</th>
<th>Becomes</th>
<th>Extreme</th>
</tr>
</thead>
<tbody>
<tr>
<td>Text Products</td>
<td>Impact Statements</td>
<td></td>
</tr>
<tr>
<td>Graphical Products</td>
<td>Live Go-To Meetings</td>
<td></td>
</tr>
<tr>
<td>Statements</td>
<td>Briefings</td>
<td></td>
</tr>
<tr>
<td>Discussions</td>
<td>Press Conference</td>
<td></td>
</tr>
<tr>
<td>Stand-Alone</td>
<td>Stand-By</td>
<td></td>
</tr>
<tr>
<td>Daily Forecast</td>
<td>Life or Death</td>
<td></td>
</tr>
</tbody>
</table>
The following slides are the actual slides used during a situational awareness presentation.
Gustav estimate if ~ 10 knots stronger
Note that only 10 knots makes the difference between west bank communities dry or wet.
This plot does not display official storm information. Use for information purposes only.
DO NOT USE FOR LIFE AND DEATH DECISIONS!
**Communicating Impacts**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>0300</td>
<td>Internal Coordination</td>
</tr>
<tr>
<td>0700</td>
<td>Governor Briefing</td>
</tr>
<tr>
<td>0800</td>
<td>SE Parish Task Force</td>
</tr>
<tr>
<td>0900</td>
<td>Internal Coordination</td>
</tr>
<tr>
<td>1000</td>
<td>New Orleans FEB</td>
</tr>
<tr>
<td>1100</td>
<td>MS Counties Briefing</td>
</tr>
<tr>
<td>1500</td>
<td>Internal Coordination</td>
</tr>
<tr>
<td>1600</td>
<td>SE Parish Task Force</td>
</tr>
<tr>
<td>1700</td>
<td>New Orleans FEB</td>
</tr>
<tr>
<td>1800</td>
<td>Governor Briefing</td>
</tr>
</tbody>
</table>

*Does not include briefings on demand, press conferences, or media interviews*
Future Improvements

Improving Services for Future:

- **Radar Advancements**
  - Super Resolution Doppler Radar
  - Dual-Polarization Radars
  - Phased Array Radar
- **Warning Dissemination**
  - Common Alerting Protocol (CAP)
    - Cell Phone
    - Reverse 911
  - In Car Information
  - GIS
- **Storm Decision Aids**
  - Uncertainty Communication
Improving Services for Future:
• Hurricane Forecast Improvement Research
  • Intensity
  • Track
  • Storm Surge
Future Improvements

Advancements In Radar Technology

Phased Array compared to WSR-88D
Future Improvements

• Improved Social Science Integration
  • WAS*IS
  • Strong Emergency Management Ties
  • Target Those At Risk
• Continue Strong Partnerships Related to NOAA Weather Radio
  • Transmitters
  • Receivers
  • Weather Radio Improvement Project (WRIP)
Continue to Grow Our
All Hazards Partnership...

...Incident Support