

***NATIONAL WEATHER SERVICE INSTRUCTION 10-517
AUGUST 9, 2010***

***Operations and Services
Public Weather Services, NWSPD 10-5***

MULTI-PURPOSE WEATHER PRODUCTS SPECIFICATION

NOTICE: This publication is available at: <http://www.nws.noaa.gov/directives/>

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Type of Issuance: Routine

SUMMARY OF REVISIONS: This directive supersedes NWSI 10-517, “Multi-Purpose Weather Products Specification”, dated October 4, 2005.

1. Short Term Forecast (NOW) issuance criteria changed from “should” to “may”
2. Special Weather Statement (SPS) content and format guidance changed to become a more flexible product addressing weather hazards at multiple time and space scales, and to allow for “significant weather advisory” terminology
3. SPS expiration time clarified for long-fuse vs. short-fuse forecast events
4. Hazardous Weather Outlook (HWO) issuance time changed to either daily or event-driven, based on local user needs
5. Local Storm Report (LSR) should be issued for any hail report at or above 0.75” diameter
6. Storm Prediction Center Mesoscale Discussion (MD) content types updated

-signed-

July 26, 2010

David B. Caldwell
Director, Office of Climate,
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Date

Multi Purpose Weather Products Specification

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1. Introduction. This procedural directive provides detailed information on routine short-term forecast products issued by Weather Forecast Offices (WFO) and multi-purpose products issued for severe, fire, marine, tropical, winter and/or non-precipitation weather and flooding hazards issued by WFOs and the Storm Prediction Center (SPC).

2. **Short Term Forecast (product category NOW)**.

2.1 Mission Connection. Short Term Forecasts provide the public with detailed weather information occurring within 6 hours of product issuance.

2.2 Issuance Guidelines.

2.2.1 Creation Software. WFOs should use Graphical Hazards Generation Editor (GHG) software to issue Short Term Forecasts.

2.2.2 Issuance Criteria. WFOs may issue Short Term Forecasts to discuss the evolution of convective and stratiform precipitation, winter weather, sea breezes, marine weather, fog, winds, and temperatures within their geographic area of responsibility. The NOW will not duplicate or contradict information contained in the SPS or other watch, warning, or advisory text products. At regional discretion, offices may issue graphical short term forecasts via WFO Internet pages that compliment or replace the NOW. If an office issues both a NOW and a graphical short term forecast, the forecasts will be consistent.

2.2.3 Issuance Time. Short Term Forecasts are non-scheduled, event-driven products.

2.2.4 Valid Time. Short Term Forecasts are valid from the time of issuance until the expiration time.

2.2.5 Product Expiration Time. The product expiration time is not more than 6 hours after the time of issuance.

2.3 Technical Description. Short Term Forecasts will follow the format and content described in this section.

2.3.1 UGC Type. NOWs will use the Zone (Z) code of the UGC.

2.3.2 Mass News Disseminator Header. The Short Term Forecast MND header is “SHORT TERM FORECAST.”

2.3.3 Content. WFOs will write Short Term Forecasts in non-technical terms. WFOs should write Short Term Forecasts in future tense, focusing on precipitation location, movement, intensity, amounts and duration. Short Term Forecasts should be concise. WFOs should segment Short Term Forecast into separate zone groupings based on common weather conditions. WFOs may include additional information as time permits.

2.3.4 Format.

```

FPaaii cccc ddhhmm
NOWccc

SHORT TERM FORECAST
NATIONAL WEATHER SERVICE CITY STATE
time am/pm time_zone day mon dd yyyy

STZ001-002-003-ddhhmm-
ZONE 1-ZONE 2-ZONE 3-
INCLUDING THE CITIES OF...TOWN A...TOWN B...TOWN C
time am/pm time_zone day mon dd yyyy

.NOW...
...OPTIONAL HEADLINE...

THIS SECTION CONTAINS A CONCISE NON-TECHNICAL FREE TEXT PARAGRAPH
DESCRIBING NON-HAZARDOUS WEATHER TIMING...DURATION...AND FORECAST
CONDITIONS.

$$

STZ004-005-006-ddhhmm-
ZONE 4-ZONE 5-ZONE 6-
INCLUDING THE CITIES OF...TOWN D...TOWN E...TOWN F
time am/pm time_zone day mon dd yyyy

OPTIONAL ADDITIONAL SEGMENT WITH SAME FORMAT AS THE FIRST SEGMENT.

$$

FORECASTER NAME/NUMBER (OPTIONAL)

```

Figure 1. Short Term Forecast Format

2.4 Updates, Amendments and Corrections. Short Term Forecasts are not updated or amended. WFOs will correct Short Term Forecasts for format and grammatical errors.

3. Special Weather Statement (product category SPS).

3.1 Mission Connection. Special Weather Statements (SPS) provide the public with information concerning ongoing or imminent weather hazards, occurring within 6 hours of product issuance, which may require a heightened level of awareness or action. The SPS may also be used to heighten the awareness of a major event forecast to occur beyond 6 hours.

3.2 Issuance Guidelines.

3.2.1 Creation Software. WFOs should use GHG or WarnGen to issue SPSs.

3.2.2 Issuance Criteria. The criteria are dependent on the situation for which the SPS is issued. Issuance criteria guidelines by weather hazard are as follows:

- a. Sub-Severe Thunderstorms. WFOs should issue an SPS for strong thunderstorms that approach, or are expected to approach, severe convective criteria. General criteria for a strong thunderstorm is considered to be one or a combination of the following events:
 - (1) Sustained winds or gusts of 40 to 57 mph (lower values may be used at forecaster's discretion)
 - (2) hail less than 1 inch in diameter
 - (3) frequent to continuous lightning
 - (4) funnel clouds not expected to become a tornado threat
- b. Downstream of Ongoing Hazardous Convective Weather. WFOs may issue SPSs to heighten public awareness about ongoing or imminent hazardous convective weather that may impact downstream counties and/or parishes.
- c. Other Short-term Hazards. WFOs may issue SPSs for high-impact events to supplement information contained in other hazardous weather products, providing high-resolution details when possible. Examples include but are not limited to:
 - (1) "black ice"
 - (2) short-duration heavy snow bands
 - (3) lake-effect snow bands that briefly reduce visibility
 - (4) heavy rainfall that is not expected to cause flooding
 - (5) heat indices or wind chill near "advisory" level for an hour or two
 - (6) local areas of blowing dust where wind is below advisory criteria
- d. Major Events Forecast to Occur Beyond 6 Hours. WFOs may issue SPSs to heighten awareness of major events forecast to occur beyond 6 hours. Priority should be given to ongoing or imminent events such as those listed above.

3.2.3 Issuance Time. SPSs are non-scheduled, event-driven products.

3.2.4 Valid Time. SPSs are valid from time of issuance until the expiration or update time.

3.2.5 Product Expiration Time. The product expiration time is not more than 6 hours after the time of issuance, except for an SPS covering an event forecast to occur beyond 12 hours, for which the product expiration time is not more than 12 hours after the time of issuance.

3.3 Technical Description. SPSs will follow the format and content described in this section.

3.3.1 UGC Type. SPSs will use the Zone (Z) code of the UGC.

3.3.2 Mass News Disseminator Header. The SPS MND header is "SPECIAL WEATHER STATEMENT."

3.3.3 Content. The SPS will be consistent with other hazardous weather products. WFOs should describe weather hazards in concise, non-technical terms.

3.3.4 Format. WFOs may use the term “SIGNIFICANT WEATHER ADVISORY” in the text and/or headline(s) of the SPS with Regional concurrence.

```

WWaa8i cccc ddhhmm
SPSccc

SPECIAL WEATHER STATEMENT
NATIONAL WEATHER SERVICE CITY STATE
time am/pm time_zone day mon dd yyyy

STZ001-002-003-ddhhmm-
ZONE 1-ZONE 2-ZONE 3-
INCLUDING THE CITIES OF TOWN A...TOWN B...TOWN C
time am/pm time_zone day mon dd yyyy

...OPTIONAL HEADLINE...

CONCISE FORECAST OF HAZARDOUS WEATHER CONDITIONS.

$$

STZ004-005-006-ddhhmm-
ZONE 4-ZONE 5-ZONE 6-
INCLUDING THE CITIES OF TOWN D...TOWN E...TOWN F
time am/pm time_zone day mon dd yyyy

OPTIONAL SECOND SEGMENT WITH THE SAME FORMAT AS THE FIRST SEGMENT.

$$

FORECASTER NAME/NUMBER (OPTIONAL)

```

Figure 2. Special Weather Statement Format

3.4 Updates, Amendments and Corrections. SPSs should be updated as needed. WFOs will correct SPSs for format and grammatical errors.

4. **Hazardous Weather Outlook (product category HWO).**

4.1 Mission Connection. WFOs issue Hazardous Weather Outlooks (HWO) to provide the public, media, and emergency managers with a single source of information regarding expected hazardous weather through the seven-day forecast period. The HWO is a brief description of the potential for hazardous weather. The HWO may include but is not limited to forecasts of winter weather, fire weather, non-precipitation, convective weather, tropical, marine and/or flood hazards.

4.2 Issuance Guidelines.

4.2.1 Creation Software. WFOs should use GHG to issue HWOs.

4.2.2 Issuance Criteria. The HWO is a dynamic product that should be updated whenever necessary to always depict the latest expected weather hazards for the seven day forecast period.

4.2.3 Issuance Time. HWOs should be issued as either a daily routine product or on an event-driven basis. In coordination with primary users, each WFO will determine which of these two HWO programs best meets their local needs. WFOs should issue HWOs between 5 am and 7 am local time, except where local users request a different issuance time.

4.2.4 Valid Time. An outlook is valid from the time of issuance until the next scheduled issuance or update, unless the HWO is issued on an event-driven basis.

4.2.5 Product Expiration Time. The product expiration time is 24 hours from the routine issuance time, including updated or corrected HWOs, unless issued on an event-driven basis.

4.3 Technical Description. HWOs will follow the format and content described in this section.

4.3.1 UGC Type. HWOs will use the Zone (Z) code of the UGC.

4.3.2 Mass News Disseminator Header. The HWO MND header is “HAZARDOUS WEATHER OUTLOOK.”

4.3.3 Content. Hazardous weather outlooks will describe in concise non-technical terms the specific weather hazards of concern for the first and second forecast periods. HWOs should also briefly discuss in non-technical terms any weather hazards in the Day Two through Seven time period. A weather hazard is considered to be any weather phenomenon that may require the issuance of a watch, warning, or advisory. WFOs should include a general time and location for the hazardous weather event, possible impact, and degree of uncertainty. The HWO will not be updated to address specific short-fuse warning and advisory products (Tornado Warning, Severe Thunderstorm Warning, Flash Flood Warning, Special Marine Warning, etc.). The HWO may reference readers to other long-fuse WFO watch, warning, or advisory products rather than duplicating the information therein.

- a. Headlines. WFOs may include headlines for watches, warnings, advisories and significant weather hazards. If the HWO includes headlines, the WFO should issue an update to the HWO any time those headlines change.
- b. Geographic Locations. The HWO should include a short description of the geographical area covered. HWOs may be written to include the entirety of any WFO’s geographic area of responsibility in one or more segments to cover specific weather hazards and/or geographic areas. If the HWO contains more than one

segment, these segments should add up to cover all of a WFO's geographic area of responsibility each time the outlook is issued.

- c. Days of Week. WFOs may include actual days of the week such as "TODAY" after ".DAY ONE..." and "SATURDAY THROUGH THURSDAY" after ".DAYS TWO THROUGH SEVEN..."
- d. Content Guidelines By Weather Hazard.
 - (1) Convective Weather. WFOs will discuss convective weather hazards such as large hail, damaging winds, and tornadoes for all or portions of their geographic area of responsibility. WFOs should include Storm Prediction Center Categorical Convective Outlook information for Day 1, Day 2, and Day 3 Risks (Slight, Moderate and High) of organized severe convective weather. WFOs may include information on strong (less than severe) convection.
 - (2) Winter Weather. WFOs will discuss winter weather hazards such as wind chill, freezing fog, significant snow, freezing rain, sleet, or a mixture of these weather phenomena for all or portions of their geographic area of responsibility. WFOs should mention winter weather hazards in the Day 3 through Day 7 time period when there is a 30 percent or greater chance of these types of weather events meeting or exceeding local warning or advisory criteria. WFOs should mention active winter weather watches, warnings, and advisories for Days 1 and 2 in the HWO.
 - (3) Non Precipitation. WFOs will discuss non-precipitation weather hazards such as strong winds, excessive heat, extreme cold, blowing dust/sand, freezing temperatures during the growing season, and dense fog for all or portions of their geographic area of responsibility. WFOs should mention active non-precipitation watches, warnings, and advisories for Days 1 and 2 in the HWO. WFOs should mention non-precipitation weather hazards in the Day 3 through Day 7 time period when there is a 30 percent or greater chance of these types of weather events meeting or exceeding local warning or advisory criteria.
 - (4) Fire Weather. WFOs will discuss fire weather hazards such as extremely dry conditions, strong gusty winds, and dry thunderstorms for all or portions of their geographic area of responsibility. WFOs should mention active Fire Weather Watches and Red Flag Warnings for Days 1 and 2 in the HWO. WFOs may include SPC Fire Weather Outlook (Day 1 and Day 2) information in the HWO.
 - (5) Flooding. WFOs will discuss flood hazards for all or portions of their geographic area of responsibility. WFOs may include information on small

stream flood situations and life threatening flood prone areas such as narrow canyons.

- (6) Marine. WFOs will discuss the following marine hazards: high winds, high seas, high surf, coastal flooding, and waterspouts for all or portions of their area of responsibility. Rip currents may be discussed following the rip current guidance in NWSI 10-310, Section 3.6. WFOs routinely providing rip current information will include this information in the Day 1 portion of the HWO when forecasting a high risk of rip currents. Marine hazards that do not directly affect the coastline/lakeshore, such as those associated with Small Craft Advisories and Gale Warnings, may be omitted from the HWO based on local user needs.
 - (7) Tropical. WFOs will headline the Day 1 Tropical Cyclone Watches and Warnings issued by the National Hurricane Center (NHC), Central Pacific Hurricane Center (CPHC), or Joint Typhoon Warning Center (JTWC). The HWO should urge users to consult Hurricane Local Statements issued by the WFO to obtain detailed information concerning potential hazards such as strong winds, storm surge, and excessive rainfall. WFOs should be consistent with official guidance and products issued by the NHC/HPC in the Days 2 through 7 time period of the HWO. If a WFO forecasts a potential impact to all or portions of its geographic area of responsibility in Days 2 through 5, WFOs may use the following statement in the HWO: “CONSULT THE LATEST GUIDANCE AND INFORMATION FROM THE NATIONAL HURRICANE CENTER CONCERNING THE POSSIBLE EFFECTS OF (HURRICANE OR TROPICAL STORM) xxxx” where (xxxx is the name of the storm). WFOs will not reference tropical cyclone activity beyond the time period addressed by official tropical cyclone products (currently 5 days).
- e. “Nil” Statement. If the HWO is a routine product and no weather hazards are expected, WFOs will include one of the following statements in the Day One and/or Days Two through Seven sections:
- “NO HAZARDOUS WEATHER IS EXPECTED AT THIS TIME” or
“THE PROBABILITY FOR WIDESPREAD HAZARDOUS WEATHER IS LOW”
- The HWO should not contain “nil” statements for specific types of weather hazards.
- f. Spotter Instructions. HWOs should include instructions to spotters and emergency managers for any time during the seven day forecast period.
 - g. Grids and Graphics. WFOs may produce information supplemental to the text HWO in the form of grids or graphics with Regional concurrence. Any supplemental grids or graphics will be consistent with the text HWO.

4.3.4 Format.

```

FLaa4i cccc ddhhmm
HWOccc

HAZARDOUS WEATHER OUTLOOK
NATIONAL WEATHER SERVICE city state
time am/pm time_zone day mon dd yyyy

STZ001-002-003-ddhhmm-
ZONE 1-ZONE 2-ZONE 3-
time am/pm time_zone day mon dd yyyy

...HEADLINE FOR ACTIVE WATCHES, WARNINGS, ADVISORIES OR SIGNIFICANT
WEATHER HAZARDS... (OPTIONAL)

THIS HAZARDOUS WEATHER OUTLOOK IS FOR PORTION OF STATE(S).

.DAY ONE...ACTUAL DAY OF THE WEEK (Optional - SUCH AS TODAY OR THIS
AFTERNOON)

WFOS WILL DISCUSS IN CONCISE NON-TECHNICAL TERMS EACH HAZARD'S IMPACT
IN A FREE TEXT FORMAT FOR THE FIRST AND SECOND FORECAST PERIODS.
WFOS MAY REFERENCE SUPPORTING WARNINGS, WATCHES, ADVISORIES, AND
STATEMENTS.

.DAYS TWO THROUGH SEVEN...ACTUAL DAYS OF THE WEEK (Optional - SUCH AS
MONDAY THROUGH SATURDAY)

WFOS SHOULD DISCUSS IN CONCISE NON-TECHNICAL TERMS EACH HAZARD'S
IMPACT IN A FREE TEXT FORMAT FOR DAYS TWO THROUGH SEVEN. WFOS MAY
REFERENCE SUPPORTING WARNINGS, WATCHES, ADVISORIES, AND STATEMENTS.
THIS SECTION IS A "HEADS UP" FOR PLANNING PURPOSES.

.SPOTTER INFORMATION STATEMENT...

INSTRUCTIONS TO SPOTTERS OR EMERGENCY MANAGERS. WFOS MAY OMIT THIS
SECTION IF NO HAZARDOUS WEATHER IS EXPECTED IN BOTH THE DAY ONE AND
DAYS TWO THROUGH SEVEN TIME PERIODS.

$$

STZ004-005-006-ddhhmm-
ZONE 4-ZONE 5-ZONE 6-
time am/pm time_zone day mon dd yyyy

OPTIONAL SECOND SEGMENT WITH THE SAME FORMAT AS THE FIRST SEGMENT.

$$

FORECASTER NAME/NUMBER (OPTIONAL)

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Figure 3. Hazardous Weather Outlook Format

4.4 Updates, Amendments and Corrections. WFOs should update the HWO if the forecast for hazardous weather changes. WFOs will place higher priority on updating the relevant watch, warning, and advisory products. WFOs will correct outlooks for format and grammatical errors.

5. **Preliminary Local Storm Report (product category LSR).**

5.1 Mission Connection. Preliminary Local Storm Reports provide the Storm Prediction Center (SPC), adjacent WFOs, the public, media and emergency managers with reported observations of hazardous weather events. Preliminary Local Storm Reports also serve as the primary basis for the official monthly publication *Storm Data*.

5.2 Issuance Guidelines.

5.2.1 Creation Software. WFOs should use the AWIPS LSR generation software for reports. Other LSR generation software may be used with Regional concurrence.

5.2.2 Issuance Criteria. WFOs will issue LSRs for severe weather events such as tornadoes, waterspouts, large hail, thunderstorm/marine wind gusts and flash floods. WFOs should issue LSRs for other events listed in Appendix B. LSRs should be issued for events that meet or exceed applicable warning criteria. WFOs should issue LSRs for hail reports equal to or larger than 0.75 inches in diameter. WFOs may issue LSRs for other hazardous weather events that do not exceed applicable warning criteria. LSRs should be issued as close to real time as possible. WFOs should issue LSRs to “summarize” a list of reports during and/or at the end of an event (e.g. severe weather outbreak, winter storm). Events reported more than seven days after occurrence will be included in monthly *Storm Data* reports instead of LSRs.

5.2.3 Issuance Time. LSRs are non-scheduled, event-driven products.

5.2.4 Valid Time. LSRs are valid upon issuance.

5.2.5 Product Expiration Time. Not applicable.

5.3 Technical Description. LSRs will follow the format and content described in this section.

5.3.1 UGC Type. Not applicable.

5.3.2 Mass News Disseminator Header. The LSR MND header is “PRELIMINARY LOCAL STORM REPORT.”

5.3.3 Content. LSRs will follow a national standard format. WFOs should denote whether the magnitude of a report was measured, estimated or of unknown origin for thunderstorm or non-thunderstorm wind gusts, marine thunderstorm wind gusts, downburst winds, high sustained winds, ice accumulation associated with freezing rain, sleet accumulation, snow accumulation, hail size, and visibility restrictions due to fog or dense fog. Many users decode the LSR and the SPC decodes the report to produce national hourly and daily reports. All fields of data will begin at the prescribed column of the page. The report should include type of phenomenon, date/time of occurrence, location of event (including state, county, direction, distance from a well known

site and Latitude/Longitude points), source of the report, damage, deaths, and/or injuries and remarks to convey other noteworthy information about the event. After all weather events listed in the LSR, WFOs may use a delimiter “&&” to provide a narrative summary of weather events in plain English sentences.

LSRs are preliminary in nature. The final report of verified weather events will be listed in monthly *Storm Data* reports in accordance with NWSI 10-1605. Please refer to the NDS procedural directives or associated regional supplements for warning threshold criteria for the following weather phenomena:

Marine Weather	NWSI 10-313 (Special Marine Warnings)
Severe Weather	NWSI 10-511 (WFO Severe Weather Products Specification)
Winter Weather	NWSI 10-513 (WFO Winter Weather Products Specification)
Non Precipitation	NWSI 10-515 (WFO Non-Precipitation Weather Products Specification)
Tropical Weather	NWSI 10-601 (Tropical Cyclone Products)
Flooding	NWSI 10-922 (WFO Hydrologic Products Specification)

Please refer to Appendix B for a list of event sources and weather event types.

5.3.4 Format.

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NWaa5i Kccc DDHHMM
LSRccc

PRELIMINARY LOCAL STORM REPORT
NATIONAL WEATHER SERVICE CITY STATE
time am/pm time_zone day mon dd yyyy

..TIME...    ...EVENT...    ...CITY LOCATION...    ...LAT.LON...
..DATE...    ....MAG....    ..COUNTY LOCATION..ST..    ...SOURCE....
..REMARKS..

hhmm qM|x|x|EVENT          |DIST DIR CITY          |LL.LLd LLL.LLd|x|
MM/DD/YYYY|EMAG UNIT      |xx|COUNTY              |ST|x|SOURCE            |
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXX|*** # FATAL, # INJ *** OR REMARKS
XXXXXXXXXXXX|REMARKS CONTINUED FOR UP TO 500 CHARACTERS TOTAL
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

&&

OPTIONAL FREE TEXT SUMMARY.

$$

FORECASTER NAME/NUMBER (OPTIONAL)

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Figure 4. Local Storm Report Format. The “x” and “|” symbols indicate blank spaces. See Table 1 for explanation of fields within individual reports.

<u>Item</u>	<u>Description</u>	<u>Example(s)</u>	<u>Line:Chars</u>	<u>Length</u>
-------------	--------------------	-------------------	-------------------	---------------

hhmm qM	time: hour and minute with am/pm qualifier, and preceding zero if necessary	0109 PM	1:1-7	7
EVENT	event type from the list in Appendix B	TORNADO TSTM WIND GST	1:13-28	16
DIST	distance from city	10	1:30-52	23
DIR	direction from city	NW		
CITY	City name (obtained from list)	NECHE		
LL.LLd	latitude to 2 decimal places and direction	38.31N	1:54-67	14
LLL.LLd	longitude to 2 decimal places and direction, no negative sign, no leading zero	104.92W		
MM/DD/YYYY	date: month / day / 4-digit year, no leading zero on month	8/22/2009	2:1-10	10
EMAG	event magnitude value, led by determination method designator (E/M/U) for those event types listed with an asterisk in Appendix B	E2.5 M59 U6.50 EF4	2:13-25	13
UNIT	units of the magnitude value	INCHES MPH		
COUNTY	county name	PEMBINA	2:30-47	18
ST	state 2-letter postal abbreviation	ND	2:49-50	2
SOURCE	source of the report from list in Appendix B	TRAINED SPOTTER	2:54-69	16
FATAL INJ	numbers of fatalities and injuries, surrounded by 3 asterisks, separated by a comma, with spaces in between, at the beginning of the remarks section	*** 1 FATAL, 2 INJ *** *** 4 INJ ***	4+:13-69	57 to 500

Table 1. Explanation of fields within individual reports in the LSR format described in Figure 4.

5.4 Updates, Amendments and Corrections. Updates and amendments are not applicable. WFOs will issue a new LSR if the office receives new reports of weather events which meet or exceed warning criteria or updated information on previously reported weather events. WFOs will correct statements for format and grammatical errors.

6. Mesoscale Discussion (product category MD).

6.1 Mission Connection. SPC issues Mesoscale Discussions (MD) to convey to CONUS WFOs, the public, media and emergency managers the current meteorological reasoning for short term hazardous weather concerns.

6.2 Issuance Guidelines.

6.2.1 Creation Software. SPC will use National Centers AWIPS text editor.

6.2.2 Issuance Criteria. MD issuance criteria depend on the type of weather hazard. Refer to Section 6.3.3 for details.

6.2.3 Issuance Time. MDs are non-scheduled, event-driven products.

6.2.4 Valid Time. The valid time is from the time of issuance until the next update time.

6.2.5 Product Expiration Time. The expiration time is the end of the valid time.

6.3 Technical Description. MDs will follow the format and content described in this section.

6.3.1 UGC Type. MDs will use the Zone (Z) code of the UGC.

6.3.2 Mass News Disseminator Header. The MD MND header is “MESOSCALE DISCUSSION nnnn”, where nnnn is a four-digit number reset to 0001 on 1 January at 0000 UTC.

6.3.3 Content. SPC uses the Mesoscale Discussion (MD) to alert WFOs and various users to different types of short term weather hazards. Types of MD by weather hazard are as follows:

- a. Severe Potential. SPC should issue a MD to discuss convective trends and severe thunderstorm potential as follows:
 - (1) Watch likely. This type of MD should be issued in an area where organized severe convection is expected, and should precede Severe Thunderstorm or Tornado Watch issuance by about 1 to 2 hours, allowing time for collaboration with the affected WFOs.
 - (2) Watch possible. This type of MD may be issued in an area where organized severe convection is possible, but it is unclear whether a Severe Thunderstorm or Tornado Watch will be needed in the next 1 to 2 hours.
 - (3) Watch unlikely. This type of MD may be issued in an area where isolated strong to severe convection is ongoing or expected, but is not expected to reach the severity or coverage criteria for a Severe Thunderstorm or Tornado Watch in the next 1 to 2 hours. SPC should also issue an MD for severe potential when it is monitoring an area for a potential convective watch or when thunderstorm development is potentially severe, but will not have enough areal coverage or duration that is expected to last long enough for a convective watch issuance.
- b. Watch Update. SPC should issue a MD at least once every 2 to 3 hours for each convective watch that is in effect and focus on mesoscale and storm scale features affecting the severe weather within the watch area. The text of the MD should begin “THE SEVERE WEATHER THREAT FOR (SEVERE THUNDERSTORM/TORNADO) WATCH nnnn CONTINUES.”
- c. Heavy Rainfall. SPC should issue a MD for localized areas of convective rainfall where rates equal to or greater than 3 inches per hour, or 2 or more inches are expected at any one location in one hour, or rainfall rates of 1.5 inches per hour are expected to occur for 3 hours or greater. SPC may issue a Convective Heavy Rain MD to forecast the end of a heavy rain event.
- d. Heavy Snow. SPC should issue a MD for snowfall accumulation rates of 1 inch per hour or greater for a period of 2 hours or greater at elevations below 4000 feet MSL (mean sea level) and accumulation rates of 2 inches per hour or greater for a period

of 2 hours or greater at elevations above 4000 feet MSL. Discussions may also address precipitation trends (increasing or decreasing rates), and climatologically rare events.

- e. Freezing Rain. SPC should issue a MD for freezing rain accumulations greater than .05 inch per hour for a period of 3 hours or greater. Discussions may also address where a precipitation type is forecast to change from liquid to freezing or from freezing to liquid.
- f. Blizzard. SPC should issue a MD for mesoscale blizzard conditions forecast to persist 3 hours or greater.
- g. Convective Outlook Upgrade. SPC should issue a MD when upgrading a Day 1 convective outlook risk category to “moderate” or “high” risk. SPC will issue this type of MD prior to the 1300, 1630, 2000, or 0100 UTC convective outlook issuance times, and briefly describe the area to be upgraded. This MD will refer to the ensuing outlook discussion.

6.3.4 Format.

```

ACUS11 KWNS ddhhmm
SWOMCD
SPC MCD ddhhmm
STZ000-STZ000-ddhhmm-

MESOSCALE DISCUSSION nnnn
NWS STORM PREDICTION CENTER NORMAN OK
time am/pm time_zone day mon dd yyyy

AREAS AFFECTED...(PORTION OF STATES OR GEOGRAPHICAL AREAS)...

CONCERNING...(TYPE OF MD)

VALID DDHHMMZ - DDHHMMZ

DISCUSSION TO CONVEY METEOROLOGICAL REASONING FOR MESOSCALE
DISCUSSION.

..FORECASTER NAME.. mm/dd/yyyy

...PLEASE SEE WWW.SPC.NOAA.GOV FOR GRAPHICAL PRODUCT...

ATTN...WFO A...WFO B... (affected WFOs)

LAT...LON AAaaBBbb AAaaBBbb AAaaBBbb AAaaBBbb AAaaBBbb AAaaBBbb
AAaaBBbb AAaaBBbb (corner points for MD graphic)

```

Figure 5. Mesoscale Discussion format, where AAaa=Latitude north in degrees to two decimal places (without decimal point), BBbb=Longitude west in degrees to two decimal places (without decimal point and without leading 1 west of 100 degrees west).

6.4 Updates, Amendments and Corrections. SPC will issue MDs as needed and there are no updates. SPC will correct messages for format and grammatical errors.

APPENDIX A - Product Examples

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1. Introduction. This appendix provides product examples for the WFOs, SPC and the public.
2. Short Term Forecast.

(Non-segmented version)

FPUS73 KDDC 172338
NOWDDC

SHORT TERM FORECAST
NATIONAL WEATHER SERVICE DODGE CITY KS
537 PM CST THU DEC 17 2009

KSZ076>078-080-087>089-180100-
CLARK-COMANCHE-FORD-GRAY-HASKELL-KIOWA-MEADE-
INCLUDING THE CITIES OF...ASHLAND...CIMARRON...COLDWATER...DODGE
CITY...GREENSBURG...MEADE...SUBLETTE...
537 PM CST THU DEC 17 2009

.NOW...
SCATTERED LIGHT RAIN SHOWERS WILL MOVE SOUTHEAST AT 40 MPH FROM THE
SUBLETTE...MONTEZUMA AND DODGE CITY AREAS TO AROUND GREENSBURG...
ASHLAND AND MEADE BY 7 PM. NO SIGNIFICANT RAINFALL IS EXPECTED.

\$\$

(Segmented version with headlines)

FPUS71 KILN 152210
NOWILN

SHORT TERM FORECAST
NATIONAL WEATHER SERVICE WILMINGTON OH
510 PM EST TUE DEC 15 2009

INZ050-058-059-OHZ026-034-035-042>044-051>053-060>062-160000-
AUGLAIZE-CHAMPAIGN-CLARK-DARKE-FAYETTE IN-GREENE-HARDIN-LOGAN-MERCER-
MIAMI-MONTGOMERY-PREBLE-SHELBY-UNION IN-WAYNE-
510 PM EST TUE DEC 15 2009

.NOW...
...LIGHT SNOW ENDING...
LIGHT SNOW SHOWERS WILL MOVE EAST AT 30 MPH OUT OF SOUTHWEST OHIO
THROUGH 7 PM. NO ADDITIONAL ACCUMULATION IS EXPECTED.

\$\$

OHZ045-046-054>056-063>065-073-074-160000-
DELAWARE-FAIRFIELD-FAYETTE OH-FRANKLIN OH-HOCKING-LICKING-MADISON-
PICKAWAY-ROSS-UNION OH-
510 PM EST TUE DEC 15 2009

.NOW...
...SNOW CONTINUES...
LIGHT TO MODERATE SNOW SHOWERS WILL CONTINUE TO MOVE EAST AT 30 MPH

ACROSS CENTRAL OHIO INCLUDING THE COLUMBUS METRO AREA THROUGH 7 PM.
UP TO ONE INCH OF ADDITIONAL ACCUMULATION IS EXPECTED.

\$\$

(Segmented version broken down by time periods)

FPUS74 KTSA 122156
NOWTSA

SHORT TERM FORECAST
NATIONAL WEATHER SERVICE TULSA OK
356 PM CST SAT DEC 12 2009

OKZ060-130400-
TULSA-
INCLUDING THE CITIES OF...TULSA...
356 PM CST SAT DEC 12 2009

THROUGH 6 PM...INCREASING CLOUDS. WINDY. TEMPERATURES 65 TO 68.
SOUTHEAST WINDS 15 TO 25 MPH WITH GUSTS TO 40 MPH.

6 PM TO 8 PM...CLOUDY WITH A FEW SHOWERS DEVELOPING. TEMPERATURES 64
TO 66. SOUTH WINDS SHIFTING TO WEST 10 TO 20 MPH.

8 PM TO 10 PM...CLOUDY AND WINDY. RAIN...HEAVY AT TIMES. TEMPERATURES
FALLING TO AROUND 50. WINDS BECOMING NORTHWEST AT 25 TO 30 MPH.

\$\$

ARZ019-029-130400-
CRAWFORD-SEBASTIAN-
INCLUDING THE CITIES OF...FORT SMITH...VAN BUREN...
356 PM CST SAT DEC 12 2009

THROUGH 6 PM...CLEAR. TEMPERATURES 55 TO 60. EAST WINDS 10 TO 15 MPH.

6 PM TO 8 PM...INCREASING CLOUDS. TEMPERATURES 53 TO 58. SOUTHEAST 15
TO 20 MPH.

8 PM TO 10 PM...CLOUDY WITH SHOWERS AND THUNDERSTORMS INCREASING.
TEMPERATURES 52 TO 57. SOUTHEAST WINDS 15 TO 25 MPH.

\$\$

3. Special Weather Statement.

(Sub-severe thunderstorm with optional headline)

WWUS84 KJAN 141948
SPSJAN

SPECIAL WEATHER STATEMENT
NATIONAL WEATHER SERVICE JACKSON MS

148 PM CST MON DEC 14 2009

MSZ050-051-142015-
NEWTON MS-SCOTT MS-
148 PM CST MON DEC 14 2009

...SIGNIFICANT WEATHER ADVISORY...

A STRONG THUNDERSTORM WITH NICKEL SIZE HAIL AND GUSTY WINDS TO 45 MPH WILL MOVE EAST AT 40 MPH ACROSS THE LAWRENCE...NEWTON AREA BY 215 PM. VERY HEAVY RAIN AND FREQUENT LIGHTNING CAN ALSO BE EXPECTED WITH THIS STORM. PEOPLE IN SOUTHEASTERN SCOTT AND NEWTON COUNTIES SHOULD CLOSELY MONITOR THIS STRONG THUNDERSTORM.

\$\$

(Severe thunderstorms approaching the area)

WWUS83 KLOT 142103
SPSLOT

SPECIAL WEATHER STATEMENT
NATIONAL WEATHER SERVICE CHICAGO IL
403 PM CDT THU MAY 14 2009

ILZ006-013-014-022-142200-
COOK-DUPAGE-LAKE IL-WILL-
INCLUDING THE CITIES OF...CHICAGO...JOLIET...WAUKEGAN...WHEATON...
403 PM CDT THU MAY 14 2009

A LINE OF SEVERE THUNDERSTORMS WITH A HISTORY OF PRODUCING WIND DAMAGE IS MOVING EAST AT 50 MPH TOWARD THE AREA. THESE STORMS WILL REACH THE WESTERN SUBURBS OF CHICAGO AROUND 530 PM AND THE LAKEFRONT AROUND 600 PM. PEOPLE IN CHICAGOLAND SHOULD BE PREPARED FOR SEVERE WEATHER INCLUDING STRONG WINDS...FREQUENT LIGHTNING...AND VERY HEAVY RAIN DURING THE EVENING RUSH HOUR.

\$\$

(Local dense fog)

WWUS81 KPHI 140947
SPSPHI

SPECIAL WEATHER STATEMENT
NATIONAL WEATHER SERVICE MOUNT HOLLY NJ
447 AM EST MON DEC 14 2009

DEZ002-003-MDZ012-015-019-020-141400-
KENT-INLAND SUSSEX-KENT MD-QUEEN ANNES-TALBOT-CAROLINE-
INCLUDING THE CITIES OF...DOVER...GEORGETOWN...CHESTERTOWN...
CENTREVILLE...EASTON...DENTON...
447 AM EST MON DEC 14 2009

PATCHY FOG WILL CONTINUE DEVELOPING OVER SOUTHERN AND CENTRAL DELAWARE AND THE ADJACENT MARYLAND EASTERN SHORE. VISIBILITY WILL BE

REDUCED TO ONE-QUARTER MILE IN A FEW AREAS. THE FOG IS EXPECTED TO LINGER THROUGH THE MORNING COMMUTE.

\$\$

(Snow squall with optional headline)

WWUS81 KCTP 171037
SPSCTP

SPECIAL WEATHER STATEMENT
NATIONAL WEATHER SERVICE STATE COLLEGE PA
537 AM EST THU DEC 17 2009

PAZ037-171115-
TIOGA PA-
537 AM EST THU DEC 17 2009

...HEAVY SNOW SQUALL AFFECTING TIOGA COUNTY...

A HEAVY SNOW SQUALL WILL MOVE SOUTHEAST AT 10 MPH ACROSS THE TIOGA AND WELLSBORO AREAS BY 6 AM. VISIBILITY IN THE SQUALL WILL RAPIDLY DROP TO LESS THAN A MILE WITH A QUICK COATING OF SNOW...CAUSING SUDDEN HAZARDOUS DRIVING CONDITIONS. THE SQUALL WILL MOVE INTO THE MANSFIELD AND BLOSSBURG AREAS SHORTLY AFTER 6 AM.

\$\$

(Long-range hazardous weather)

WWUS86 KEKA 132200
SPSEKA

SPECIAL WEATHER STATEMENT
NATIONAL WEATHER SERVICE EUREKA CA
200 PM PST SUN DEC 13 2009

CAZ001>004-076-140400-
REDWOOD COAST-MENDOCINO COAST-NORTH COAST INTERIOR-
UPPER TRINITY RIVER-MENDOCINO INTERIOR-
200 PM PST SUN DEC 13 2009

...PERIODS OF MODERATE TO HEAVY RAIN EXPECTED MONDAY NIGHT THROUGH WEDNESDAY...

A STRONG PACIFIC STORM WILL BRING PERIODS OF MODERATE TO HEAVY RAIN STARTING MONDAY EVENING AND CONTINUING THROUGH WEDNESDAY MORNING. TOTAL RAINFALL AMOUNTS OF 2 TO 3 INCHES WILL BE POSSIBLE OVER A WIDESPREAD AREA. THE KING RANGE AND SOUTH FORK WILL LIKELY RECEIVE GREATER AMOUNTS.

LOCALIZED MINOR FLOODING WILL BE POSSIBLE...ESPECIALLY IN LOW LYING AREAS. WATER WILL POND ON THE ROADWAYS AND VISIBILITY WILL BE REDUCED...CAUSING HAZARDOUS DRIVING CONDITIONS.

SNOW OR A MIX OF RAIN AND SNOW IS EXPECTED MONDAY NIGHT THROUGH WEDNESDAY MORNING ABOVE 5000 FEET. SEVERAL INCHES OF SNOW ACCUMULATION AND GUSTY WINDS ARE EXPECTED ABOVE 6000 FEET.

\$\$

4. Hazardous Weather Outlook.

(Severe Convective Weather and other hazards, with optional headline)

FLUS44 KOUN 181000
HWOOUN

HAZARDOUS WEATHER OUTLOOK
NATIONAL WEATHER SERVICE NORMAN OK
500 AM CDT THU JUN 18 2009

OKZ004>048-050>052-TXZ083>090-191000-
HARPER-WOODS-ALFALFA-GRANT-KAY-ELLIS-WOODWARD-MAJOR-GARFIELD-NOBLE-
ROGER MILLS-DEWEY-CUSTER-BLAINE-KINGFISHER-LOGAN-PAYNE-BECKHAM-
WASHITA-CADDO-CANADIAN-OKLAHOMA-LINCOLN-GRADY-MCCLAIN-CLEVELAND-
POTTAWATOMIE-SEMINOLE-HUGHES-HARMON-GREER-KIOWA-JACKSON-TILLMAN-
COMANCHE-STEPHENS-GARVIN-MURRAY-PONTOTOC-COAL-COTTON-JEFFERSON-
CARTER-JOHNSTON-ATOKA-LOVE-MARSHALL-BRYAN-HARDEMAN-FOARD-WILBARGER-
WICHITA-KNOX-BAYLOR-ARCHER-CLAY-
500 AM CDT THU JUN 18 2009

...SEVERE WEATHER OUTBREAK TODAY...

THIS HAZARDOUS WEATHER OUTLOOK COVERS NORTHERN...WESTERN...
CENTRAL...AND SOUTHERN OKLAHOMA...AND WESTERN NORTH TEXAS.

.DAY ONE...THIS AFTERNOON AND TONIGHT...

THUNDERSTORM OUTLOOK...THERE IS A MODERATE RISK OF SEVERE
THUNDERSTORMS ACROSS NORTHERN AND WESTERN OKLAHOMA...MAINLY WEST OF A
LINE FROM PONCA CITY TO ALTUS. THERE IS A SLIGHT RISK OF SEVERE
THUNDERSTORMS ACROSS THE REST OF CENTRAL AND SOUTHERN OKLAHOMA...AND
WESTERN NORTH TEXAS.

TIMING...THE GREATEST RISK OF SEVERE THUNDERSTORMS IN WESTERN
OKLAHOMA AND WESTERN NORTH TEXAS WILL BE FROM 2 PM UNTIL 9 PM. THE
GREATEST RISK ALONG AND EAST OF THE INTERSTATE 35 CORRIDOR WILL BE
FROM 5 PM UNTIL 2 AM.

IMPACTS...A FEW TORNADOES...DESTRUCTIVE HAIL TO THE SIZE OF BASEBALLS
OR LARGER...DAMAGING THUNDERSTORM WIND GUSTS TO 80 MPH...AND FREQUENT
LIGHTNING CAN BE EXPECTED. BRIEF LOCAL FLOODING IS POSSIBLE.

OTHER HAZARDOUS WEATHER...GUSTY SOUTHERLY WINDS TO 50 MPH CAN BE
EXPECTED THROUGHOUT THE DAY IN ADVANCE OF THE APPROACHING STORM
SYSTEM. THIS WILL CAUSE HAZARDOUS DRIVING CONDITIONS ALONG EAST-WEST
ROADWAYS. BLOWING DUST AND ELEVATED GRASS FIRE DANGER CAN BE EXPECTED
BEHIND THE DRYLINE ACROSS FAR WESTERN OKLAHOMA AND WESTERN NORTH
TEXAS AFTER 5 PM.

.DAYS TWO THROUGH SEVEN...FRIDAY THROUGH WEDNESDAY...

NO HAZARDOUS WEATHER IS EXPECTED AT THIS TIME.

.SPOTTER INFORMATION STATEMENT...

STORM SPOTTER NETWORK ACTIVATION IS LIKELY THIS AFTERNOON AND EVENING ACROSS WESTERN OKLAHOMA AND WESTERN NORTH TEXAS. SPOTTERS WILL LIKELY BE ACTIVATED THIS EVENING AND OVERNIGHT ALONG AND EAST OF THE INTERSTATE 35 CORRIDOR.

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(Flooding and high winds)

FLUS45 KTWC 181400
HWOTWC

HAZARDOUS WEATHER OUTLOOK
NATIONAL WEATHER SERVICE TUCSON AZ
700 AM MST FRI SEP 18 2009

AZZ019-029>035-191400-
NORTHERN GREENLEE COUNTY-SOUTHEAST PINAL COUNTY-UPPER GILA RIVER
VALLEY-WESTERN PIMA COUNTY-TOHONO-ODHAM NATION-TUCSON
METRO/MARANA/GREEN VALLEY-SANTA CRUZ COUNTY-COCHISE COUNTY-
700 AM MST FRI SEP 18 2009

THIS HAZARDOUS WEATHER OUTLOOK IS FOR SOUTHEAST ARIZONA

.DAY ONE...TODAY...

THE REMNANTS OF HURRICANE ERIK WILL BRING HEAVY RAIN AND GUSTY WINDS ACROSS THE AREA THIS AFTERNOON AND TONIGHT. NORMALLY DRY WASHES WILL FLOOD QUICKLY AFTER THE HEAVY RAIN BEGINS. URBAN FLOODING IS ALSO LIKELY. DAMAGING WIND GUSTS ARE POSSIBLE AT ELEVATIONS ABOVE 5000 FEET BETWEEN 3 PM AND 9 PM.

.DAYS TWO THROUGH SEVEN...SATURDAY THROUGH THURSDAY...

ISOLATED STRONG THUNDERSTORMS ARE POSSIBLE MONDAY AFTERNOON AND EVENING AS A STORM SYSTEM MOVES ACROSS THE AREA. OTHERWISE NO HAZARDOUS WEATHER IS EXPECTED AT THIS TIME.

.SPOTTER INFORMATION STATEMENT...

SKYWARN SPOTTER ACTIVATION WILL BE NEEDED THIS AFTERNOON AND EVENING.

\$\$

(Marine/heavy snow threats, discussion of uncertainty, segmented example)

FLUS41 KBOX 171100
HWOBOX

HAZARDOUS WEATHER OUTLOOK
NATIONAL WEATHER SERVICE TAUNTON MA
600 AM EST THU DEC 17 2009

CTZ002>004-MAZ002>024-026-NHZ011-012-015-RIZ001>008-181100-
HARTFORD CT-TOLLAND CT-WINDHAM CT-WESTERN FRANKLIN MA-
EASTERN FRANKLIN MA-NORTHERN WORCESTER MA-CENTRAL MIDDLESEX MA-
WESTERN ESSEX MA-EASTERN ESSEX MA-WESTERN HAMPSHIRE MA-
WESTERN HAMPDEN MA-EASTERN HAMPSHIRE MA-EASTERN HAMPDEN MA-
SOUTHERN WORCESTER MA-WESTERN NORFOLK MA-SOUTHEAST MIDDLESEX MA-
SUFFOLK MA-EASTERN NORFOLK MA-NORTHERN BRISTOL MA-
WESTERN PLYMOUTH MA-EASTERN PLYMOUTH MA-SOUTHERN BRISTOL MA-
SOUTHERN PLYMOUTH MA-BARNSTABLE MA-DUKES MA-NANTUCKET MA-
NORTHERN MIDDLESEX MA-CHESHIRE NH-EASTERN HILLSBOROUGH NH-
WESTERN AND CENTRAL HILLSBOROUGH NH-NORTHWEST PROVIDENCE RI-
SOUTHEAST PROVIDENCE RI-WESTERN KENT RI-EASTERN KENT RI-BRISTOL RI-
WASHINGTON RI-NEWPORT RI-BLOCK ISLAND RI-
600 AM EST THU DEC 17 2009

THIS HAZARDOUS WEATHER OUTLOOK IS FOR NORTHERN
CONNECTICUT...CENTRAL MASSACHUSETTS...EASTERN
MASSACHUSETTS...NORTHEASTERN MASSACHUSETTS...SOUTHEASTERN
MASSACHUSETTS...WESTERN MASSACHUSETTS...SOUTHERN NEW
HAMPSHIRE...NORTHERN RHODE ISLAND AND SOUTHERN RHODE ISLAND.

.DAY ONE...THIS AFTERNOON AND TONIGHT.

NO HAZARDOUS WEATHER IS EXPECTED AT THIS TIME.

.DAYS TWO THROUGH SEVEN...FRIDAY THROUGH WEDNESDAY.

A COASTAL STORM MAY BRING ACCUMULATING SNOW TO MUCH OF SOUTHERN NEW
ENGLAND LATE SATURDAY INTO SUNDAY. THE MOST LIKELY SCENARIO WOULD
BRING MODERATE SNOWFALL OF 2 TO 6 INCHES TO NORTHEAST
CONNECTICUT...RHODE ISLAND AND EASTERN MASSACHUSETTS...FROM BOSTON TO
CAPE COD AND THE ISLANDS. STRONG NORTHEAST WINDS ARE POSSIBLE ALONG
THE COAST.

THERE IS UNCERTAINTY AS TO THE TRACK OF THIS STORM. IF IT PASSES
CLOSER TO NANTUCKET...IT WOULD BRING HIGHER ACCUMULATIONS AND AFFECT
MORE OF SOUTHERN NEW ENGLAND. IF IT PASSES FARTHER OUT TO SEA...LESSER
IMPACTS CAN BE EXPECTED ON LAND.

.SPOTTER INFORMATION STATEMENT...

SPOTTER ACTIVATION IS NOT EXPECTED AT THIS TIME.

\$\$

ANZ230>237-250-251-254>256-181100-
BOSTON HARBOR-CAPE COD BAY-NANTUCKET SOUND-VINEYARD SOUND-
BUZZARDS BAY-RHODE ISLAND SOUND-NARRAGANSETT BAY-BLOCK ISLAND SOUND-
COASTAL WATERS EAST OF IPSWICH BAY AND THE STELLWAGEN BANK NATIONAL
MARINE SANCTUARY-MASSACHUSETTS BAY AND IPSWICH BAY-COASTAL WATERS
FROM PROVINCETOWN MA TO CHATHAM MA TO NANTUCKET MA OUT 20 NM-COASTAL
WATERS EXTENDING OUT TO 25 NM SOUTH OF MARTHAS VINEYARD AND
NANTUCKET- COASTAL WATERS FROM MONTAUK NY TO MARTHAS VINEYARD

EXTENDING OUT TO 20 NM SOUTH OF BLOCK ISLAND-
600 AM EST THU DEC 17 2009

THIS HAZARDOUS WEATHER OUTLOOK IS FOR MASSACHUSETTS COASTAL WATERS
AND RHODE ISLAND COASTAL WATERS.

.DAY ONE...THIS AFTERNOON AND TONIGHT.

NO HAZARDOUS WEATHER IS EXPECTED AT THIS TIME.

.DAYS TWO THROUGH SEVEN...FRIDAY THROUGH WEDNESDAY.

HEAVY SNOW AND GALE FORCE NORTH TO NORTHEAST WINDS ARE POSSIBLE
SATURDAY NIGHT INTO SUNDAY AS A COASTAL STORM TRACKS SOUTHEAST OF
NANTUCKET.

.SPOTTER INFORMATION STATEMENT...

SPOTTER ACTIVATION IS NOT EXPECTED AT THIS TIME.

\$\$

(No Hazardous Weather)

FLUS44 KLZK 181100
HWOLZK

HAZARDOUS WEATHER OUTLOOK
NATIONAL WEATHER SERVICE LITTLE ROCK AR
500 AM CST FRI DEC 18 2009

ARZ003>007-012>016-021>025-030>034-037>047-052>057-062>069-191100-
ARKANSAS-BAXTER-BOONE-BRADLEY-CALHOUN-CLARK-CLEBURNE-CLEVELAND- CONWAY-
DALLAS-DESHA-DREW-FAULKNER-FULTON-GARLAND-GRANT-HOT SPRING-
INDEPENDENCE-IZARD-JACKSON-JEFFERSON-JOHNSON-LINCOLN-LOGAN-LONOKE-
MARION-MONROE-MONTGOMERY-NEWTON-OUACHITA-PERRY-PIKE-POLK-POPE-
PRAIRIE-PULASKI-SALINE-SCOTT-SEARCY-SHARP-STONE-VAN BUREN-WHITE-
WOODRUFF-YELL-
500 AM CST FRI DEC 18 2009

THIS HAZARDOUS WEATHER OUTLOOK IS FOR A LARGE PART OF ARKANSAS.

.DAY ONE...TODAY AND TONIGHT...

NO HAZARDOUS WEATHER IS EXPECTED AT THIS TIME.

.DAYS TWO THROUGH SEVEN...SATURDAY THROUGH THURSDAY...

THE PROBABILITY FOR WIDESPREAD HAZARDOUS WEATHER IS LOW.

.SPOTTER INFORMATION STATEMENT...

SPOTTER ACTIVATION IS NOT ANTICIPATED.

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5. Preliminary Local Storm Report.

(Winter storm with optional free-text remarks)

NWUS55 KPIH 161810
LSRPIH

PRELIMINARY LOCAL STORM REPORT...SUMMARY
NATIONAL WEATHER SERVICE POCATELLO ID
1110 AM MST WED DEC 16 2009

..TIME...	...EVENT...	...CITY LOCATION...	...LAT.LON...
..DATE...	...MAG....	..COUNTY LOCATION..ST..	...SOURCE....
	..REMARKS..		
0800 AM 12/16/2009	SNOW M3.5 INCH	KETCHUM BLAINE	43.69N 114.38W ID CO-OP OBSERVER
	TOTAL IN THE LAST 24 HOURS WITH 5 INCHES ON THE GROUND.		
0800 AM 12/16/2009	SNOW M4.5 INCH	HAILEY BLAINE	43.51N 114.30W ID CO-OP OBSERVER
	TOTAL IN THE LAST 24 HOURS WITH 6 INCHES ON THE GROUND.		
0958 AM 12/16/2009	HEAVY SNOW M8.0 INCH	5 WSW GANNETT BLAINE	43.33N 114.27W ID TRAINED SPOTTER
	REPORT INCLUDES ENTIRE STORM ACCUMULATION.		
0958 AM 12/16/2009	HEAVY SNOW E10.0 INCH	3 WNW GALENA BLAINE	43.87N 114.66W ID TRAINED SPOTTER
	REPORT INCLUDES ENTIRE STORM TOTAL ACCUMULATION.		
1100 AM 12/16/2009	HEAVY SNOW U10.0 INCH	17 WSW OAKLEY CASSIA	42.15N 114.19W ID PARK/FOREST SRVC
	REPORTED AT BOSTETTER RANGER STATION AT 7500 FEET.		
1100 AM 12/16/2009	BLIZZARD E18.0 INCH	9 ENE BASIN CASSIA	42.30N 113.62W ID LAW ENFORCEMENT
	NEAR ZERO VISIBILITY ALONG OAKLEY ELBA ROAD ALL MORNING WITH DRIFTS TO 4 FEET AND TEMPERATURE NEAR 15.		
1100 AM 12/16/2009	HEAVY SNOW E7.5 INCH	16 WSW KETCHUM CAMAS	43.60N 114.67W ID MESONET
	REPORTED AT DOLLARHIDE SUMMIT AT 8420 FEET.		
1100 AM 12/16/2009	HEAVY SNOW E7.5 INCH	3 W GALENA BLAINE	43.87N 114.71W ID MESONET
	REPORTED AT GALENA SUMMIT AT 8780 FEET.		

&&

OUR THANKS TO NWS SKYWARN STORM SPOTTERS AND COOPERATIVE OBSERVERS FOR THEIR TIMELY REPORTS DURING THIS WINTER STORM.

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(Tornado with casualties)

NWUS53 KOAX 310117
LSROAX

PRELIMINARY LOCAL STORM REPORT
NATIONAL WEATHER SERVICE OMAHA NE
817 PM CDT SAT MAY 30 2009

..TIME...	...EVENT...	...CITY LOCATION...	...LAT.LON...
..DATE...	...MAG....	..COUNTY LOCATION..ST..	...SOURCE....
..REMARKS..			
0645 PM 05/30/2009	TORNADO	CASTANA MONANA	42.07N 95.91W IA EMERGENCY MNGR

*** 1 FATAL, 3 INJ ***
A LARGE TORNADO DESTROYED SEVERAL HOMES. A CAR WAS
OVERTURNED ON HIGHWAY 175 WITH 1 KILLED AND 3 INJURED.

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(Various events)

NWUS52 KTAE 142317
LSRTAE

PRELIMINARY LOCAL STORM REPORT
NATIONAL WEATHER SERVICE TALLAHASSEE FL
617 PM EST MON DEC 14 2009

..TIME...	...EVENT...	...CITY LOCATION...	...LAT.LON...
..DATE...	...MAG....	..COUNTY LOCATION..ST..	...SOURCE....
..REMARKS..			
0555 PM 12/14/2009	TORNADO	7 SW ARITON COFFEE	31.53N 85.80W AL STORM CHASER
A STORM CHASER REPORTED A TORNADO ON CR 51 MOVING EAST.			
0601 PM 12/14/2009	HAIL M0.75 INCH	3 SW ARITON COFFEE	31.55N 85.78W AL TRAINED SPOTTER
0605 PM 12/14/2009	HEAVY RAIN 2.65 INCH	ABBEVILLE HENRY	31.58N 85.23W AL TRAINED SPOTTER
RAINFALL TOTAL OVER THE PAST HOUR.			
0611 PM 12/14/2009	FLASH FLOOD	3 NE ABBEVILLE HENRY	31.60N 85.21W AL EMERGENCY MNGR

WATER REPORTED COVERING HIGHWAY 46 AT ABBIE CREEK.

0613 PM TSTM WND DMG 3 SW ABBEVILLE 31.54N 85.29W
12/14/2009 HENRY AL EMERGENCY MNGR

TREE REPORTED DOWN ON CAR ON STATE HIGHWAY 27.

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6. Mesoscale Discussion.

(Heavy Snow Discussion)

ACUS11 KWNS 181833
SWOMCD
SPC MCD 181832
VAZ000-NCZ000-WVZ000-TNZ000-SCZ000-182230-

MESOSCALE DISCUSSION 2257
NWS STORM PREDICTION CENTER NORMAN OK
1232 PM CST FRI DEC 18 2009

AREAS AFFECTED...SMOKY MTNS / PARTS OF WRN NC AND PIEDMONT /
ERN TN / SWRN VA / SERN WV

CONCERNING...HEAVY SNOW

VALID 181832Z - 182230Z

HEAVY SNOWFALL RATES AROUND 1 INCH PER HOUR WILL LIKELY COMMENCE FIRST ACROSS THE HIGHER ELEVATIONS OF THE SRN APPALACHIANS IN THE 18-21Z PERIOD WITH MIXED PRECIPITATION OCCURRING ACROSS WRN PORTIONS OF THE NC PIEDMONT. THE HEAVY SNOWFALL RATES WILL EXTEND NEWD INTO SWRN VA AND SERN WV 21-00Z. LOCALIZED RATES AROUND 2 INCHES PER HOUR WITH POTENTIALLY HEAVIER BURSTS ARE POSSIBLE OVER E FACING SLOPES IN WRN NC AND PERHAPS SW VA LATE THIS AFTERNOON INTO THE EVENING HOURS.

EARLY AFTERNOON SURFACE ANALYSIS PLACED A SURFACE WEDGE FRONT FROM PARTS OF SRN GA NEWD OVER THE ADJACENT SC/NC COASTAL WATERS. SURFACE TEMPS NEAR 32 DEG F ARE CONFINED MAINLY TO PORTIONS OF WRN NC AND SWRN VA. WET BULBING COOLING IN AREAS OF STRONG ASCENT WILL SUPPORT A TRANSITION TO WET SNOW ACROSS ALL AREAS W OF I-85.

RADAR MOSAIC HAS SHOWN A SLUG OF HEAVIER PRECIPITATION MOVING NWD ACROSS NRN GA THE PAST FEW HOURS WITH MEASURED RAINFALL RATES 0.20-0.30 INCH PER HOUR IN NRN GA AND WRN PART OF UPSTATE SC. AS A LEAD SHORTWAVE TROUGH LOCATED OVER AL/GA MOVES NEWD TOWARDS THE SRN APPALACHIANS...STRENGTHENING H8-H6 FRONTOGENESIS AND STRONG MID-LEVEL UVV/S SPREADING NEWD ACROSS THE REGION WITHIN THE DENDRITIC GROWTH LAYER IN THE MID-LATE AFTERNOON HOURS. WITH LITTLE EVIDENCE TO THE CONTRARY...ACCORDING TO RADAR MOSAIC EXTRAPOLATION

AND MODEL CONSENSUS 6 HOURLY QPF...SNOWFALL RATES AOA 1 INCH PER HOUR ARE LIKELY. RECENTLY DETECTED LIGHTNING OVER WRN NC INDICATES UPRIGHT CONVECTION EXISTS OVER A SMALL AREA EARLY THIS AFTERNOON. TOWARDS THIS EVENING...ETAKF/GFS FORECAST SOUNDINGS INDICATE THE POSSIBILITY FOR MORE WIDESPREAD UPRIGHT CONVECTION OVER THE E FACING SLOPES IN PARTS OF NWRN NC INTO SWRN VA. THIS MAY SUPPORT LOCALIZED SNOW BURSTS APPROACHING 3 INCHES PER HOUR NEAR OR AFTER 00Z THIS EVENING.

..SMITH.. 12/18/2009

...PLEASE SEE WWW.SPC.NOAA.GOV FOR GRAPHIC PRODUCT...

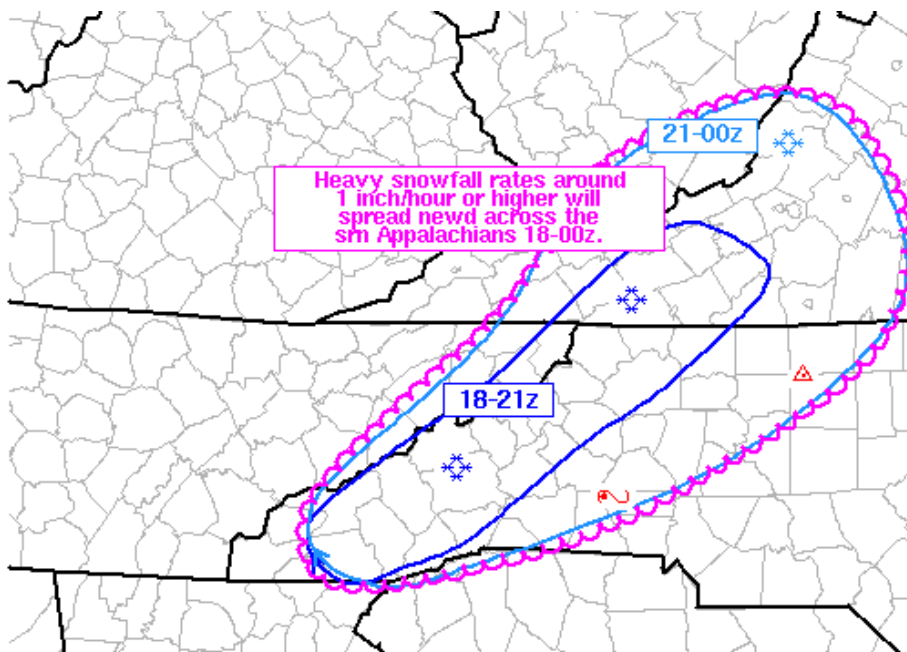
...NOTICE...

SPC WINTER WEATHER MESOSCALE DISCUSSIONS WILL BE ISSUED ON A SCHEDULED BASIS FROM DECEMBER 1 THROUGH FEBRUARY 28...FOUR TIMES A DAY...AROUND 00 UTC...06 UTC...12 UTC...AND 18 UTC FOR SIGNIFICANT SHORT RANGE WINTER WEATHER EVENTS.

ATTN...WFO...RAH...RNK...RLX...GSP...MRX...

LAT...LON 36317950 35488114 35128242 35008351 35438369 36078300
36528238 37078183 37588138 37968029 37847951 37077910
36317950

(Heavy Snow Graphic)



SPC MCD #2257

(Heavy Rainfall Discussion)

ACUS11 KWNS 141608
SWOMCD
SPC MCD 141608
ALZ000-FLZ000-MSZ000-LAZ000-141845-

MESOSCALE DISCUSSION 2248
NWS STORM PREDICTION CENTER NORMAN OK
1008 AM CST MON DEC 14 2009

AREAS AFFECTED...SRN PARTS OF LA...MS AND AL

CONCERNING...HEAVY RAINFALL

VALID 141608Z - 141845Z

THE POTENTIAL FOR LOCALLY EXCESSIVE RAINFALL IS EXPECTED TO INCREASE THROUGH THE DAY ACROSS DISCUSSION AREA. HOURLY RAIN RATES APPROACHING 1.0 TO 1.5 INCHES WILL BE POSSIBLE IN AREAS OF BACKBUILDING AND/OR TRAINING STORMS.

WARM FRONT ANALYZED FROM WEAK SURFACE LOW SE OF CRP NEWD THROUGH FAR SERN LA /N OF BVE/ INTO THE FL PNHDL AS OF 14Z IS FORECAST TO LIFT SLOWLY NWD TODAY IN RESPONSE TO EWD PROGRESSION OF MIDLEVEL TROUGH THROUGH THE OH VALLEY. DIRECT THERMAL CIRCULATION ATTENDANT TO ENTRANCE REGION OF UPPER-LEVEL JET STREAK /ACCOMPANYING MIDLEVEL IMPULSE/ SHOULD MAINTAIN A BROAD 25-35 KT SWLY LLJ ACROSS THE GULF COAST REGION...EFFECTIVELY ENHANCING THE NWD/NEWD FLUX OF AN INCREASINGLY MOIST AIR MASS WHERE PW VALUES WILL APPROACH 1.75 INCHES.

ISENTROPIC ASCENT/WEAK WAA JUST N OF RETREATING WARM FRONT IS EXPECTED TO SUPPORT A GRADUAL INCREASE IN STORM COVERAGE TODAY AS AMBIENT INFLOW AIR MASS DESTABILIZES. GIVEN THE LARGELY UNIDIRECTIONAL WIND FIELD /ESPECIALLY FOR SLIGHTLY ELEVATED PARCELS JUST N OF SURFACE FRONT/...SETUP WILL SUPPORT BACKBUILDING AND SUBSEQUENT TRAINING OF STORMS WITHIN LOW-LEVEL BAROCLINIC ZONE. LOCALLY HIGH RAIN RATES /APPROACHING 1.0-1.5 INCHES PER HOUR/ WILL BE POSSIBLE WITHIN THIS REGIME AS IT GRADUALLY DEVELOPS NWD THROUGH THE DAY.

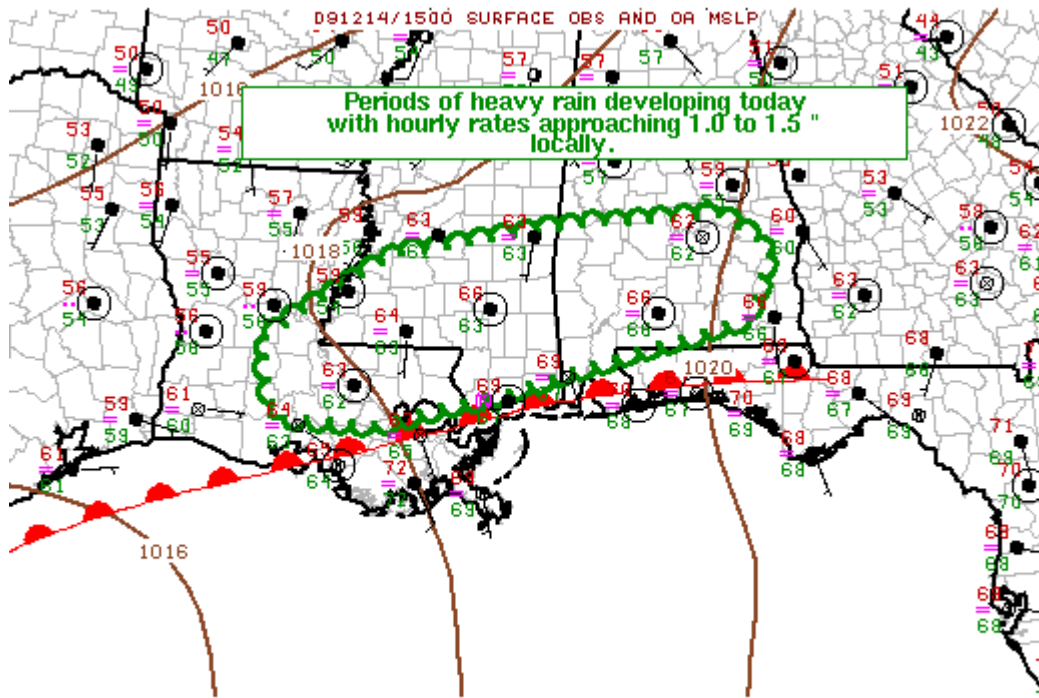
..MEAD.. 12/14/2009

...PLEASE SEE WWW.SPC.NOAA.GOV FOR GRAPHIC PRODUCT...

ATTN...WFO...TAE...BMX...MOB...JAN...LIX...LCH...

LAT...LON 30109084 30129219 31009244 32069070 32468811 32568614
32158545 31348578 30558894 30109084

(Heavy Rainfall Graphic)



SPC MCD #2248

(Watch Update Discussion)

ACUS11 KWNS 181617
SWOMCD
SPC MCD 181616
FLZ000-181715-

MESOSCALE DISCUSSION 2256
NWS STORM PREDICTION CENTER NORMAN OK
1016 AM CST FRI DEC 18 2009

AREAS AFFECTED...SOUTH FL

CONCERNING...TORNADO WATCH 804...

VALID 181616Z - 181715Z

THE SEVERE WEATHER THREAT FOR TORNADO WATCH 804 CONTINUES.

LATEST RADAR AND SATELLITE IMAGERY SUGGEST THE BACK EDGE OF A WEAK DISTURBANCE IS SHIFTING EAST ACROSS SOUTH FL. DATA ALSO STRONGLY SUGGEST AT LEAST TWO MCV-TYPE ROTATIONAL CLUSTERS ADVANCING STEADILY TOWARD THE EAST COAST...SERVING AS THE EFFECTIVE BACK EDGE OF THE SEVERE THREAT IN THE SHORT TERM. AHEAD OF THIS ORGANIZED ACTIVITY...NUMEROUS SUPERCELLS...POTENTIALLY TORNADIC...CONTINUE JUST OFF THE SE COAST WITH A FEW TRAILING SUPERCELLS INLAND OVER DADE COUNTY. A BREAK IN DEEP CONVECTION SHOULD OCCUR IN THE WAKE OF AFOREMENTIONED SEVERE THUNDERSTORMS BEFORE PRE-FRONTAL SEVERE

CONVECTION EVOLVES LATER THIS AFTERNOON.

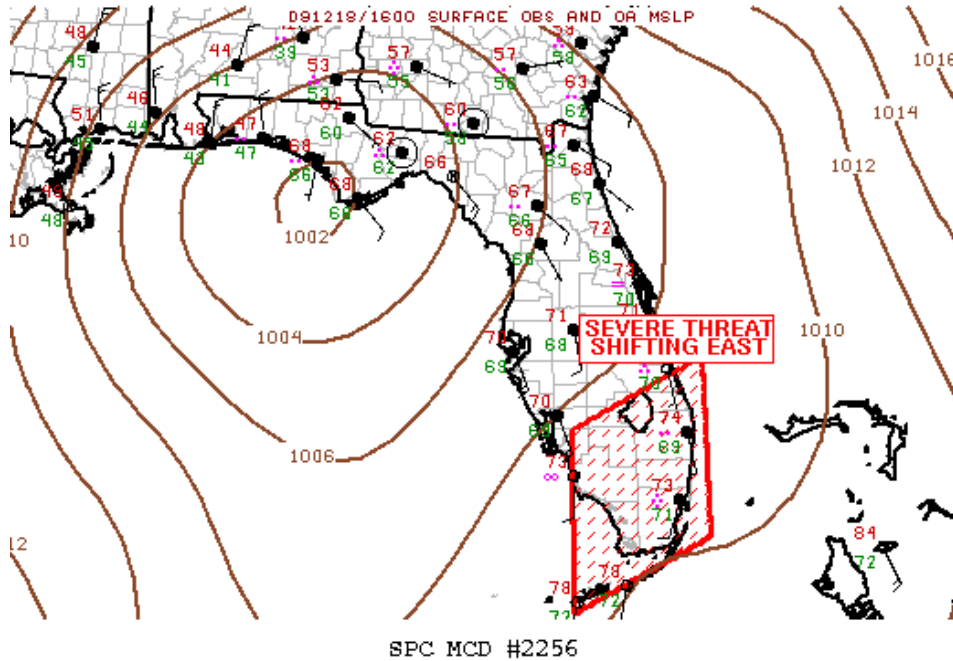
..DARROW.. 12/18/2009

...PLEASE SEE WWW.SPC.NOAA.GOV FOR GRAPHIC PRODUCT...

ATTN...WFO...MFL...MLB...KEY...TBW...

LAT...LON 24408177 26738177 27627987 25317986 24408177

(Watch Update Graphic)



APPENDIX B

<u>Table of Contents:</u>	<u>Page</u>
1. Preliminary Local Storm Report Event Sources and Types	B-2

PRELIMINARY LOCAL STORM REPORT EVENT SOURCES

AIRPLANE PILOT	MESONET
AMATEUR RADIO	NEWSPAPER
ASOS	NWS EMPLOYEE
AWOS	NWS STORM SURVEY
BROADCAST MEDIA	OFFICIAL NWS OBS
BUOY	OTHER FEDERAL
C-MAN STATION	PARK/FOREST SRVC
COAST GUARD	POST OFFICE
CO-OP OBSERVER	PUBLIC
COUNTY OFFICIAL	SHIP
DEPT OF HIGHWAYS	STORM CHASER
EMERGENCY MNGR	TRAINED SPOTTER
FIRE DEPT/RESCUE	UNKNOWN
INSURANCE CO	UTILITY COMPANY
LAW ENFORCEMENT	

PRELIMINARY LOCAL STORM REPORT WEATHER EVENT TYPES

AVALANCHE	*MARINE HAIL
BLIZZARD	*MARINE TSTM WIND
*DENSE FOG	NON-TSTM WND DMG
*DOWNBURST	*NON-TSTORM WND GST
DROUGHT	RIP CURRENTS
DUST STORM	SEICHE
EXCESSIVE HEAT	*SLEET
EXTREME COLD	*SNOW
EXTR WIND CHILL	STORM SURGE
FLASH FLOOD	TORNADO
FLOOD	TROPICAL STORM
FREEZE	TSTM WND DMG
*FREEZING RAIN	*TSTM WND GST
FUNNEL CLOUD	WATER SPOUT
*HAIL	WILDFIRE
HEAVY RAIN	
*HEAVY SNOW	
HIGH ASTR TIDES	
*HIGH SUST WINDS	
HURRICANE	
ICE STORM	

*Events which require an estimated (E), measured (M) or unknown origin (U) designation.

LIGHTNING