Department of Commerce ● National Oceanic & Atmospheric Administration ● National Weather Service

NATIONAL WEATHER SERVICE INSTRUCTION 10-512

APRIL 9, 2021

Operations and Services

Public Weather Services, NWSPD 10-5

NATIONAL SEVERE WEATHER PRODUCTS SPECIFICATION

NOTICE: This publication is available at: https://www.nws.noaa.gov/directives/

OPR: W/AFS21 (G. Schoor) **Certified by:** W/AFS21 (M. Hawkins)
Type of Issuance: Routine.

SUMMARY OF REVISIONS: This directive supersedes NWSI 10-512, dated October 9, 2017. The following changes were made to this instruction:

1) Updated the Convective Outlook products with the two new risk categories (Marginal and Enhanced) in sections 2.3.3, 2.3.4, 3.3.3, 5.3.3, Tables 1, 3, 4, and 5, and a new points product example (Figure 4).
2) Removed Watch Points Outline Message product from section 15.
3) Updated the format of the Public Watch Notification Messages in sections 12 and 13. Redefined use of "coastal waters" in sections 12.3.3 and 13.3.3.
4) Updated the issuance criteria for the Public Severe Weather Outlook in sections 7.2.2, 7.2.3, and 7.3.3.
5) Modified WMO Headers for each of the Day 1 Outlooks issuance for the NDFD forecast products in section 6.2 (Table 6).
6) Corrected the Forecast Hour Period for Day 3 and Days 4-8 in Tables 1, 2, and 5.
7) Added new Letter Case format text product examples throughout the various sections and in Appendix A and new graphical examples for many products throughout the various sections.

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Date

National Severe Weather Products Specification

Table of Contents: Page

1. **Introduction**. This procedural instruction describes the narrative and graphical severe weather products issued by the National Centers for Environmental Prediction's (NCEP) Storm Prediction Center (SPC) for the contiguous United States (CONUS).

2. Categorical Convective Outlook.

2.1 Mission Connection. SPC issues narrative and graphical Categorical Convective Outlooks to provide CONUS Weather Forecast Offices (WFOs), the public, media, and emergency managers with the potential for severe thunderstorms through Day 8 and general non-severe thunderstorms through Day 3.

2.2 Issuance Guidelines.

2.2.1 Creation Software. SPC will use the National Center's AWIPS (NAWIPS) and/or the SPC Product Generator (PRODGEN) for these products.

2.2.2 Issuance Criteria. Categorical Outlooks are a scheduled product in UTC time and calendar day.

2.2.3 Issuance Time. Products are issued at times listed in Table 1.

2.2.4 Valid Time. Product valid times are listed in Table 1.

2.2.5 Product Expiration Time. Product expiration time is 1200 UTC the next calendar day. See Table 1

SPC Convective Outlook Schedule

Issuance Time(UTC)	*Valid Time (UTC)*	*AWIPS Text Graphic*	*WMO Graphic Header*	*WMO Text Header*	*NDFD Header*	*WMO Points Product*
0600	1200 Day 1 to 1200 Day 2 (0-24 hour period)	SWODY1 94O	PGWE46	ACUS01 KWNS	LDIZ[11-17]*	WUUS01 PTSDY1
0600 (Daylight) 0700 (Standard)	1200 Day 2 to 1200 Day 3 (24-48 hour period)	SWODY2 98O	PGWI47	ACUS02 KWNS	LDIZ[21-27|]**|	WUUS02 PTSDY2
0730 (Daylight) 0830 (Standard)	1200 Day 3 to 1200 Day 4 (48-72 hour period)	SWODY3 99O	PGWK48	ACUS03 KWNS	LDIZ[37|40|41] cat|prob|sigprob	WUUS03 PTSDY3
0900 (Daylight) 1000 (Standard)	1200 Day 4 to 1200 Day 9 (72- 192 hour period)	SWOD48 [44, 55, 66, 77, 88]O	PGNW[49-53]***	ACUS48 KWNS	LDIZ[4-8]8	WUUS48 PTSD48

1300	1300 Day 1 to 1200 Day 2 (23 hour period)	SWODY1 94O	PGWE46	ACUS01 KWNS	LDIZ[11-17]*	WUUS01 PTSDY1
1630	1630 Day 1 to 1200 Day 2 (19.5 hour period)	SWODY1 94O	PGWE46	ACUS01 KWNS	LDIZ[11-17] *	WUUS01 PTSDY1
1730	1200 Day 2 to 1200 Day 3 (24-48 hour period)	SWODY2 98O	PGWI47	ACUS02 KWNS	LDIZ[21-27|]**|	WUUS02 PTSDY2
2000	2000 Day 1 to 1200 Day 2 (16 hour period)	SWODY1 94O	PGWE46	ACUS01 KWNS	LDIZ[11-17]*	WUUS01 PTSDY1
0100	0100 Day 1 to 1200 Day 2 (11 hour period)	SWODY1 94O	PGWE46	ACUS01 KWNS	LDIZ[11-17] *	WUUS01 PTSDY1

Table 1: Issuance time, valid time, product ID and content of SPC Convective Outlook products

Numbering conventions:
* 11 tornado, 12 hail, 13 wind, 14 sigtorn, 15 sighail, 16 sigwind, and 17 categorical
** 21 tornado, 22 hail, 23 wind, 24 sigtorn, 25 sighail, 26 sigwind, and 27 categorical
*** 49 Day 4, 50 Day 5, 51 Day 6, 52 Day 7, and 53 Day 8

2.3 Technical Description. Categorical outlooks should follow the format and content described in this section.

2.3.1 Mass News Disseminator Broadcast Line. None.

2.3.2 Mass News Disseminator Header. The SWO MND header is "DAY (1, 2, OR 3) CONVECTIVE OUTLOOK".

2.3.3 Content. The Categorical Convective Outlook defines areas of Marginal, Slight, Enhanced, Moderate, and/or High Risk of severe thunderstorms. Thunderstorms that are "severe", according to NWSI 10-511, produce hail that is one inch in diameter (quarter-size) or larger, and/or convective winds of 50 knots (58 mph) or greater. Severe thunderstorms can also produce tornadoes. A "convective day" is defined as a period that is 24-hours or less, beginning at 1200 UTC of one calendar day, or at a scheduled issuance time, and ending at 1200 UTC the next calendar day (i.e. 1200 UTC today to 1200 UTC tomorrow), also known as the current 24-hour period.

The Day 1, Day 2, and Day 3 Outlooks also define areas where there is a 10% or greater probability of (general) thunderstorms. The contour for "General Thunder" in the graphical forecast refers to a 10% or greater probability of non-severe convection. SPC may issue a Moderate or High Risk for the Day 2 Outlook and a Moderate Risk for the Day 3 Outlook, highlighting the possibility for significant severe weather events.

a. Writing Style:

1) Day 1, 2, and 3 Outlook narratives will be in Letter Case with the exception of narrative headline and "SUMMARY" section headers.
2) Narrative headlines will contain the relatively greatest categorical risk area(s). When geographically separated areas of equally greatest risk exist, these areas will be described within the same headline. When geographically separated areas of unequal greatest risk exist and are at least a Slight, the relative maximum of those respective areas will be described in separate headlines.
3) SUMMARY Section will contain a brief description of the highest severe weather risk for the Outlook period, including the what (severe hazards forecasted), where (geographic areas affected), and when (general timing).

2.3.4 Format.

```
ACUS0i (i=1,2,or 3) KWNS ddhhmm
SWODYn
SPC AC ddhhmm

DAY (1,2,3) CONVECTIVE OUTLOOK
NWS STORM PREDICTION CENTER NORMAN OK
time am/pm time_zone day mon dd yyyy

VALID DDHHMMZ - DDHHMMZ

...THERE IS A/AN (MARGINAL, SLIGHT, ENHANCED, MODERATE, HIGH) RISK OF
SEVERE THUNDERSTORMS <location>...
Only the relatively greatest categorical risk area(s) will be headlined.

...SUMMARY...
Brief sentence or two describing the highest risk potential, areas
affected, and general timing.

...Synopsis...
Broad narrative providing a technical discussion of the overall severe
weather pattern.

...Area of Concern #1 (Geographical Qualifiers)...
Areas of highest risk are discussed first (HIGH RISK, MODERATE RISK,
ENHANCED RISK, SLIGHT RISK). The forecast provides a narrative technical
discussion.

...Area of Concern #2 (Geographical Qualifiers)...
Narrative technical discussion.

..Forecaster(s) Name.. MM/DD/YYYY
```

Figure 1: Categorical Outlook Format

2.4 Updates, Amendments and Corrections. Updates are scheduled (see issuance times). SPC will correct outlooks for format and grammatical errors. SPC will amend Day 1 Outlooks when it is recognized that the current forecast does not or will not reflect the ongoing or future convective development. In rare instances when the SPC determines the ongoing forecast needs to be changed, an amendment can be made to the Day 2 and Day 3 Outlooks.

2.5 Graphics PGWE46, PGWI47 and PGWK48. These are the corresponding graphics to the text products and the formats of these products follow Redbook Graphic standards.

3. Probabilistic Convective Outlook.

3.1 Mission Connection. SPC issues probabilistic convective outlooks to provide CONUS WFOs, the public, media, and emergency managers with specific severe weather threats during the next 72 hours. SPC assigns each threat with a percent likelihood of occurrence.

3.2 Issuance Guidelines.

3.2.1 Creation Software. SPC will use the National Centers AWIPS (NAWIPS) and/or the SPC Product Generator (PRODGEN) for these products.

3.2.2 Issuance Criteria. Probabilistic Convective Outlooks are a scheduled product.

3.2.3 Issuance Time. See Table 2.

3.2.4 Valid Time. See Table 2.

SPC PROBABILISTIC FORECAST PRODUCTS
Redbook Graphics Format

Issuance Times (UTC)	*Valid Times (UTC)*	*AWIPS ID*	*WMO Redbook Graphics Header*	*Product Description*
0600	1200 Day 1 to 1200 Day 2	OH1	PENE00	Hail Probabilities
	(0-24 hour period)	OW1	PWNE00	Wind Probabilities
		OT1	PGNE00	Tornado Probabilities
0600	1200 Day 2 to 1200 Day 3			
(Daylight)	(24-48 hour period)	OH2	PENE02	Hail Probabilities
0700		OW2	PWNE02	Wind Probabilities
(Standard)		OT2	PGNE02	Tornado Probabilities
0730	1200 Day 3 to 1200 Day 4	OA3	PZNK00	All Severe Probabilities
(Daylight)	(48-72 hour period)			
0830				
(Standard)				
0900	1200 Day 4 to 1200 Day 9	44O	PGNW49	Day 4 Total Probability of Severe
(Daylight)	(72-192 hour period)	55O	PGNW50	Day 5 Total Probability of Severe
1000		66O	PGNW51	Day 6 Total Probability of Severe
(Standard)		77O	PGNW52	Day 7 Total Probability of Severe
		88O	PGNW53	Day 8 Total Probability of Severe
1300	1300 Day 1 to 1200 Day 2	OH1	PENE00	Hail Probabilities
	(23 hour period)	OW1	PWNE00	Wind Probabilities
		OT1	PGNE00	Tornado Probabilities
1630	1630 Day 1 to 1200 Day 2	OH1	PENE00	Hail Probabilities
	(19.5 hour period)	OW1	PWNE00	Wind Probabilities
		OT1	PGNE00	Tornado Probabilities
1730	1200 Day 2 to 1200 Day 3			
	(24-48 hour period)	OH2	PENE02	Hail Probabilities
		OW2	PWNE02	Wind Probabilities
		OT2	PGNE02	Tornado Probabilities

2000	2000 Day 1 to 1200 Day 2 (16 hour period)	OH1	PENE00	Hail Probabilities
		OW1	PWNE00	Wind Probabilities
		OT1	PGNE00	Tornado Probabilities
0100	0100 Day 1 to 1200 Day 2 (11 hour period)	OH1	PENE00	Hail Probabilities
		OW1	PWNE00	Wind Probabilities
		OT1	PGNE00	Tornado Probabilities

Table 2: SPC Probabilistic Outlook Issuance time, valid time, ID and content

3.2.5 Product Expiration Time. Product expiration time is 1200 UTC the next convective day. See Table 2.

3.3 Technical Description. Probabilistic outlooks should follow the format and content described in this section.

3.3.1 Mass News Disseminator Broadcast Line. Not applicable.

3.3.2 Mass News Disseminator Header. Not applicable.

3.3.3 Content. SPC will issue probabilistic convective outlooks in graphic format. The Day 1 and Day 2 Outlooks will consist of separate graphics for tornadoes, hail, and (convective) damaging winds. The Day 3 Outlook will have probabilities for all severe thunderstorm threats (tornado, large hail, and convective wind damage combined) in one graphic. These outlooks provide numerical probabilities of severe weather within 25 statute miles of any point within a given forecast area. The probability thresholds/contours in each graphic are as follows:

Day 1 and Day 2 Outlooks for tornadoes: 2%, 5%, 10%, 15%, 30%, 45% and 60%
Day 1 and Day 2 Outlooks for (convective) damaging winds: 5%, 15%, 30%, 45% and 60%
Day 1 and Day 2 Outlooks for severe hail: 5%, 15%, 30%, 45% and 60%

Day 3 Outlooks (combined events): 5%, 15%, 30% and 45%

SPC will include a hatched area (denoting a significant severe threat) on individual probabilistic graphical products indicating a 10% (or greater) chance of tornadoes that could produce EF2 or greater damage, two inch or greater diameter hail, and/or 65 knot or greater convective wind gusts within 25 miles of any one point of a forecast area. A hatched area on the Day 3 Outlook would indicate a 10% (or greater) probability for a significant wind, hail and/or tornado event.

SPC will issue a Public Severe Weather Outlook (PWO) for all High Risk issuances and for Moderate Risks that contain at least a 15% probability of tornadoes and 10% significant severe or a 45% probability of damaging wind gusts and 10% significant severe. When a 10% (or greater) probability of significant tornadoes (defined as EF2 or greater) is expected to occur between 0300 and 1200 UTC, a PWO is also issued following the issuance of a 2000 UTC and/or 0100 UTC Day 1 Outlook (refer to Section 7). Convective Outlook narratives will reference Public Severe Weather Outlooks when necessary. SPC should issue narrative and graphical forecasts at the same time.

Day 1 and 2 Probability to Categorical Outlook Conversion

Outlook Categories: Marginal (MRGL)-dark green, Slight (SLGT)-yellow, Enhanced (ENH)-orange, Moderate (MDT)-red, and High (HIGH)-magenta

Outlook Probability	TORNADO	WIND	HAIL
2%	MRGL	NOT USED	NOT USED
5%	SLGT	MRGL	MRGL
10%	ENH	NOT USED	NOT USED
10% with Significant Severe	ENH	NOT USED	NOT USED
15%	ENH	SLGT	SLGT
15% with Significant Severe	MDT	SLGT	SLGT
30%	MDT	ENH	ENH
30% with Significant Severe	HIGH	ENH	ENH
45%	HIGH	ENH	ENH
45% with Significant Severe	HIGH	MDT	MDT
60%	HIGH	MDT	MDT
60% with Significant Severe	HIGH	HIGH	MDT

Table 3: Day 1 and 2 Probability to Categorical Outlook Conversion

Day 3 Probability to Categorical Outlook Conversion

Outlook Categories: Marginal (MRGL)-dark green, Slight (SLGT)-yellow, Enhanced (ENH)-orange, Moderate (MDT)-red, and High (HIGH)-magenta

Outlook Probability	Combined TORNADO, WIND, and HAIL
5%	MRGL
15%	SLGT
15% with Significant Severe	SLGT
30%	ENH
30% with Significant Severe	ENH
45%	ENH
45% with Significant Severe	MDT

Table 4: Day 3 Probability to Categorical Outlook Conversion

3.3.4 Format.

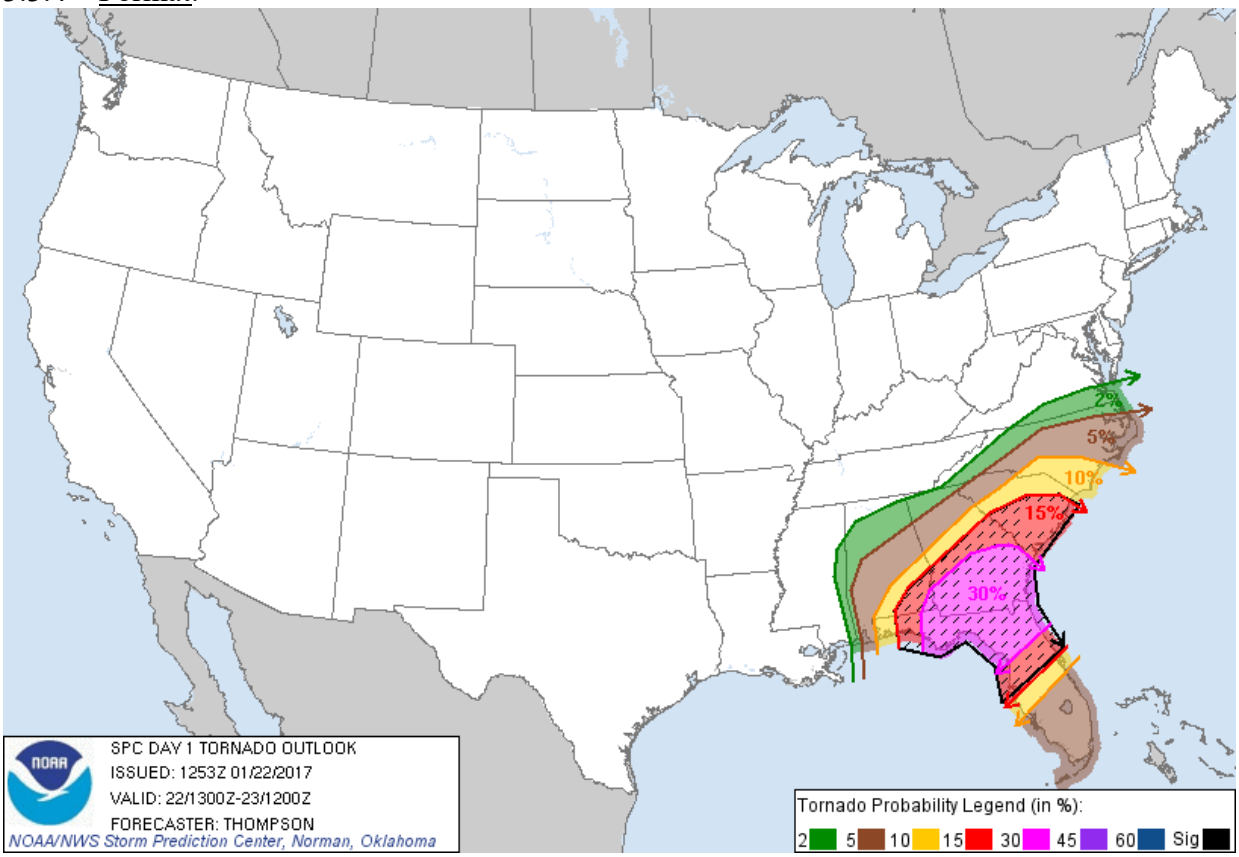

Figure 3: Day One Outlook -- Tornado Probabilities

3.4 Updates, Amendments and Corrections. Updates are scheduled (see issuance times). SPC will amend the Day 1 Outlook when it is recognized that the current forecast does not or will not reflect the ongoing or future convective development. In rare instances when the SPC determines the ongoing forecast needs to be changed, an amendment can be made to the Day 2 and Day 3 Outlooks.

4. Day 4 - 8 Severe Weather Outlook.

4.1 Mission Connection. SPC issues narrative and graphical Day 4-8 Severe Weather Outlook to provide CONUS Weather Forecast Offices (WFOs), the public, media, and emergency managers with the potential for severe convection during the 4-8 Day period. This product will help its users to adequately prepare several days in advance of an expected severe weather episode.

4.2 Issuance Guidelines.

4.2.1 Creation Software. SPC will use the National Center's AWIPS (NAWIPS) and/or the SPC Product Generator (PRODGEN) for these products.

4.2.2 Issuance Criteria. The Day 4-8 Convective Outlook is a scheduled product in UTC time and calendar day.

4.2.3 Issuance Time. Product is issued once daily at 1000 UTC during Standard time and 0900 UTC during Daylight Time. See Table 1.

4.2.4 Valid Time. Product is valid from 1200 UTC on Day 4 to 1200 UTC on Day 9.

4.2.5 Product Expiration Time. Product expiration time is 1200 UTC the next calendar day.

4.3 Technical Description. Day 4-8 outlooks should follow the format and content described in this section.

4.3.1 Mass News Disseminator Broadcast Line. None

4.3.2 Mass News Disseminator Header. The SWO MND header is "DAY 4-8 CONVECTIVE OUTLOOK".

4.3.3 Content.
The Day 4-8 Convective Outlook product will consist of five graphics with an area (s) where severe weather is anticipated during the given forecast day. The severe weather threat area (s) will be depicted with one or two set (s) of closed line (s) and a label (s) indicating 15% and 30% or higher probabilities for severe thunderstorms within 25 miles of a point, respectively, for the given day. A concise text discussion is included daily with each Outlook issuance, even if a severe weather area is not included on the graphic. The Day 4-8 Severe Weather Outlook text will include a standardized headline (see Figure 3) to clearly highlight whenever a severe weather outbreak is forecast. PREDICTABILITY TOO LOW in upper case is placed on the graphic for a given day to indicate severe storms may be possible based on some model scenarios. However, the location or occurrence of severe storms are in doubt due to: 1) large differences in the deterministic model solutions, 2) large spread in the ensemble guidance, and/or 3) minimal run-to-run continuity. POTENTIAL TOO LOW in upper case letters placed on the graphic for a given day indicates the threat for a regional area of organized severe storms appears unlikely (i.e., less than 15% probability within 25 miles of a point) for the forecast day.

a. Writing Style:
    1) The Day 4-8 Outlook narrative will be in Letter Case with the exception of the "Discussion" section header and the optional "Severe Weather Outbreak Possible on DX/day" header.

4.3.4 Format.

```
ACUS48 KWNS ddhhmm
SWOD48
SPC AC ddhhmm

Day 4-8 Convective Outlook
NWS Storm Prediction Center Norman OK
time AM/PM TIME_ZONE Day Mon dd yyyy
```

```
Valid DDHHMMZ - DDHHMMZ

...SEVERE WEATHER OUTBREAK POSSIBLE ON DX/day...
Used for whenever a severe weather outbreak is forecast, where X is the day
number and day is the three-letter abbreviation of the day of the week.
This can include multiple days when necessary.

...DISCUSSION...
A concise text discussion is included daily with each Outlook issuance,
even if a severe weather area is not included on the graphic.

..Forecaster(s) Name.. MM/DD/YYYY
```

Figure 2: Day 4-8 Convective Outlook Text Product Format

4.4 Updates, Amendments and Corrections. SPC will correct outlooks for format and grammatical errors. SPC will typically not amend the Day 4-8 Convective Outlook. However, in rare instances when the SPC determines modifications are needed to the current forecast, an amendment can be issued.

5. SPC Points Product.

5.1 Mission Connection. SPC issues the Points Product to provide CONUS WFOs, the public, media, and emergency managers with the latitude and longitude locations of the points that make up the SPC Categorical and Probabilistic Convective Outlook areas.

5.2 Issuance Guidelines.

5.2.1 Creation Software. SPC uses automated software.

5.2.2 Issuance Criteria. Points Products are scheduled products.

5.2.3 Issuance Time. See Table 5.

5.2.4 Valid Time. See Table 5.

5.2.5 Product Expiration Time. Product expiration time is 1200 UTC the next day.

SPC POINTS FORECAST PRODUCTS

Issuance Times (UTC)	*Valid Times (UTC)*	*AWIPS ID*	*WMO Text Header*	*Product Description*
0600	1200 Day 1 to 1200 Day 2 (0-24 hour period)	PTSDY1	WUUS01 KWNS	Text provides latitude/longitude for each point creating the convective categorical and probabilistic graphics for Day 1. Includes list of anchor points with range/azimuth in statute miles relative to a point

0600 (Daylight) 0700 (Standard)	1200 Day 2 to 1200 Day 3 (24-48 hour period)	PTSDY2	WUUS02 KWNS	Text provides latitude/longitude for each point creating the convective categorical and probabilistic graphics for Day 2. Includes list of anchor points with range/azimuth in statute miles relative to a point
0730 (Daylight) 0830 (Standard)	1200 Day 3 to 1200 Day 4 (48-72 hour period)	PTSDY3	WUUS03 KWNS	Text provides latitude/longitude for each point creating the convective categorical and probabilistic graphics for Day 3. Includes list of anchor points with range/azimuth in statute miles relative to a point
0900 (Daylight) 1000 (Standard)	1200 Day 4 to 1200 Day 9 (72-192 hour period)	PTSD48	WUUS48 KWNS	Text provides latitude/longitude for each point creating an area or areas as discussed in the day 4-8 Convective Outlook Product. Each day is listed separately or combined (multiple days are listed last). If the potential or predictability for severe thunderstorms is too low for a given day. No outline is listed for that day.
1300	1300 Day 1 to 1200 Day 2 (23 hour period)	PTSDY1	WUUS01 KWNS	Text provides latitude/longitude for each point creating the convective categorical and probabilistic graphics for Day 1. Includes list of anchor points with range/azimuth in statute miles relative to a point
1630	1630 Day 1 to 1200 Day 2 (19.5 hour period)	PTSDY1	WUUS01 KWNS	Text provides latitude/longitude for each point creating the convective categorical and probabilistic graphics for Day 1. Includes list of anchor points with range/azimuth in statute miles relative to a point
1730	1200 Day 2 to 1200 Day 3 (24-48 hour period)	PTSDY2	WUUS02 KWNS	Text provides latitude/longitude for each point creating the convective categorical and probabilistic graphics for Day 2. Includes list of anchor points with range/azimuth in statute miles relative to a point
2000	2000 Day 1 to 1200 Day 2 (16 hour period)	PTSDY1	WUUS01 KWNS	Text provides latitude/longitude for each point creating the convective categorical and probabilistic graphics for Day 1. Includes list of anchor points with range/azimuth in statute miles relative to a point
0100	0100 Day 1 to 1200 Day 2 (11 hour period)	PTSDY1	WUUS01 KWNS	Text provides latitude/longitude for each point creating the convective categorical and probabilistic graphics for Day 1. Includes list of anchor points with range/azimuth in statute miles relative to a point

Table 5: Issuance time, valid time, product ID and content of SPC Points Forecast products

5.3 Technical Description. The SPC Points Product should follow the format and content described in this section.

5.3.1 Mass News Disseminator Broadcast Line. Not applicable.

5.3.2 Mass News Disseminator Header. DAY (1, 2, 3, or 4-8) CONVECTIVE OUTLOOK AREAL OUTLINE

5.3.3 Content. SPC will issue separate products for the Day 1, Day 2, Day 3, and Day 4-8 outlooks. The Day 1 and 2 products provides the points for the Probabilistic Outlooks for tornado, large hail and damaging winds, and the associated Categorical Outlooks. The Day 2, 3,

and 4-8 products list the points for the Probabilistic Outlook for all severe (tornadoes, large hail, and convective damaging winds combined) weather events and the associated Categorical Outlook (Day 3 only). Points for areas of significant events (Day 1, 2 and 3) are also part of this product.
Possible values in the product include:

Probability:	0.05, 0.15, 0.30, 0.45, 0.60, also 0.02 and 0.10 for tornado probability.
Significant Severe:	SIGN
Categorical:	TSTM, MRGL, SLGT, ENH, MDT, HIGH

Lat/lon values themselves are in decimal degrees, for example: 29450281 is 29.45N and -102.81W. 99999999 is an indicator that the previous point connects to the following point. For example:

```
0.05  29450281 32590195 35550068 37480057 38290123 38480333
      39070480 40250518 42580209 46060143 48050263 49150265
      99999999 48729380 46749177 42609035 41508994 36608550
      35208574 33688795 33509118 33249404 27990024
```

0.05 is the 5% probability line, described by the following lat/lon points.
29450281 is 29.45N and -102.81W and is the first point in this line
49150265 99999999 48729380 is 49.15N -102.65W connects to 48.72N -93.80W
27990024 is 27.99N and -100.24W and is the last point in the series.

On the Day 4-8 Convective Outlook Areal Outline, each day is listed separately (D4, D5, etc.) and combined days are listed last. In the example below Day 8 is not listed since the potential or predictability for severe thunderstorms is too low on Day 8:

```
D6    43738110 41628135 39388310 38558585 38499110 39439365
      40109439 41409470 43099400 45318996 46248525
D7    45377505 43397287 41357249 39727395 38537638 37688426
      38198516 40098507 42068280 43278023
```

5.3.4 Format.

```
WUUS01 KWNS 281959
PTSDY1

DAY 1 CONVECTIVE OUTLOOK AREAL OUTLINE
NWS STORM PREDICTION CENTER NORMAN OK
0258 PM CDT WED OCT 28 2020

VALID TIME 282000Z - 291200Z

PROBABILISTIC OUTLOOK POINTS DAY 1

... TORNADO ...

0.02   28339128 29399112 31009020 32698785 34178598 34478465
       34538292 33968253 32418424 30548468 28998459
```

```
0.05   28519071 29289065 29959049 30778988 32178793 32398640
       32008577 31328544 30438546 29208535
&&

... HAIL ...

&&

... WIND ...

0.05   29708815 30818863 31458848 32808674 33538528 33748394
       33168348 32398427 31098457 29338573
&&

CATEGORICAL OUTLOOK POINTS DAY 1

... CATEGORICAL ...

SLGT   28409076 29299072 29959049 30798995 31778863 32228796
       32288639 32018577 31318545 30418547 29208534
MRGL   28509128 29339116 29889093 30949030 32888763 34198591
       34478470 34538290 33978254 32418422 30558469 29028462
TSTM   28269475 29149534 29669555 30489579 32749658 34169709
       35269885 35270044 35520144 35840189 36740230 37130223
       37780178 38130038 38079897 38029732 38029620 38209486
       38419188 38828895 38798648 38398465 38068342 37608237
       36978127 36198101 34868117 33688182 32858283 32048351
       31228354 30758340 30228312 29098222 27818174 26638148
       25768218

&&
THERE IS A SLGT RISK OF SVR TSTMS TO THE RIGHT OF A LINE FROM 80 S
HUM 20 S HUM 15 WSW MSY 30 NNW ASD 40 S MEI 45 E MEI MGM 15 ENE TOI
DHN 20 NE PFN 40 SSW AAF.

THERE IS A MRGL RISK OF SVR TSTMS TO THE RIGHT OF A LINE FROM 80 SSW
HUM 35 WSW HUM 25 NW HUM 20 SSE MCB 25 S TCL 20 NNE GAD 30 ENE RMG
10 WNW AND 40 SSE AND 40 WSW MCN 25 WNW TLH 55 SSE AAF.

GEN TSTMS ARE FCST TO THE RIGHT OF A LINE FROM 75 SE LBX 10 E LBX 15
W HOU 25 SW UTS 15 ESE DAL 10 SSW ADM 20 ESE CSM 60 N CDS 10 S BGD
30 WNW BGD 30 SW EHA 20 WNW EHA 55 ESE LAA 25 NE GCK 55 S RSL 25 NNE
ICT 20 S EMP 45 S OJC 20 NNW VIH 10 N SLO 25 SSE BMG 25 N LEX 35 N
JKL 55 S HTS 25 S BLF 40 NNE HKY 25 SSW CLT 25 NNE AGS 50 ENE MCN 45
S MCN 20 ENE MGR VLD 40 SSE VLD OCF 30 WNW AGR 25 E FMY 35 SW APF.
```

Figure 3: Day 1 SPC Points Product Format

5.4 Updates, Amendments and Corrections. Updates are scheduled (see issuance times). SPC will correct outlooks for format errors. SPC will amend the Day 1 Points Product when it is recognized that the current forecast does not or will not reflect the ongoing or future convective development. In rare instances when the SPC determines the ongoing forecast needs to be changed, an amendment can be made to the Day 2, Day 3, and Day 4-8 Points Products.

6. SPC NDFD Forecast Products.

6.1 Mission Connection. SPC issues the NDFD Forecast Product to provide CONUS WFOs, partners, and users with the graphical display that make up the SPC Categorical and Probabilistic Convective Outlook areas.

6.2 Issuance Guidelines.

SPC NDFD FORECAST PRODUCTS

Issuance Times (UTC)	*Valid Times (UTC)*	*WMO Header (grib2)*	*Product Description*
0600	1200 Day 1 to 1200 Day 2 (0-24 hour period)	LDIZ11 KWNS	Tornado Probabilities
		LDIZ12 KWNS	Hail Probabilities
		LDIZ13KWNS	Dmg Wind Probabilities
		LDIZ14KWNS	Sig Tor Probabilities
		LDIZ15 KWNS	Sig Hail Probabilities
		LDIZ16 KWNS	Sig Dmg Wind Probabilities
		LDIZ17 KWNS	Categorical Outlook
0600 (Daylight) 0700 (Standard)	1200 Day 2 to 1200 Day 3 (24-48 hour period)	LDIZ21 KWNS	Tornado Probabilities
		LDIZ22 KWNS	Hail Probabilities
		LDIZ23 KWNS	Dmg Wind Probabilities
		LDIZ24 KWNS	Sig Tor Probabilities
		LDIZ25 KWNS	Sig Hail Probabilities
		LDIZ26 KWNS	Sig Dmg Wind Probabilities
		LDIZ27 KWNS	Categorical Outlook
0730 (Daylight) 0830 (Standard)	1200 Day 3 to 1200 Day 4 (48-72 hour period)	LDIZ40 KWNS	Total Prob. of Severe Thunderstorms
		LDIZ41 KWNS	Total Prob. of Extreme Severe Thunderstorms
		LDIZ37 KWNS	Categorical Outlook
0900 (Daylight) 1000 (Standard)	1200 Day 4 to 1200 Day 9 (72-192 hour period)	LDIZ48 KWNS	Day 4 Total Prob. of Severe Thunderstorms
		LDIZ58 KWNS	Day 5 Total Prob. of Severe Thunderstorms
		LDIZ68 KWNS	Day 6 Total Prob. of Severe Thunderstorms
		LDIZ78 KWNS	Day 7 Total Porb. of Severe Thunderstorms
		LDIZ88 KWNS	Day 8 Total Prob. of Severe Thunderstorms
1300	1300 Day 1 to 1200 Day 2 (23 hour period)	LDIZ11KWNS	Tornado Probabilities
		LDIZ12KWNS	Hail Probabilities
		LDIZ13KWNS	Dmg Wind Probabilities
		LDIZ14KWNS	Sig Tor Probabilities
		LDIZ15KWNS	Sig Hail Probabilities
		LDIZ16KWNS	Sig Dmg Wind Probabilities
		LDIZ17KWNS	Categorical Outlook
1630	1630 Day 1 to 1200 Day 2 (19.5 hour period)	LDIZ11KWNS	Tornado Probabilities
		LDIZ12KWNS	Hail Probabilities
		LDIZ13KWNS	Dmg Wind Probabilities
		LDIZ14KWNS	Sig Tor Probabilities
		LDIZ15 KWNS	Sig Hail Probabilities
		LDIZ16 KWNS	Sig Dmg Wind Probabilities
		LDIZ17 KWNS	Categorical Outlook

1730	1200 Day 2 to 1200 Day 3 (24-48 hour period)	LDIZ21 KWNS	Tornado ProbabilitiesCategorical Outlook
		LDIZ22 KWNS	Hail Probabilities
		LDIZ23 KWNS	Dmg Wind Probabilities
		LDIZ24 KWNS	Sig Tor Probabilities
		LDIZ25 KWNS	Sig Hail Probabilities
		LDIZ26 KWNS	Sig Dmg Wind Probabilities
		LDIZ27 KWNS	Categorical Outlook
2000	2000 Day 1 to 1200 Day 2 (16 hour period)	LDIZ11KWNS	Tornado Probabilities
		LDIZ12KWNS	Hail Probabilities
		LDIZ13KWNS	Dmg Wind Probabilities
		LDIZ14KWNS	Sig Tor Probabilities
		LDIZ15KWNS	Sig Hail Probabilities
		LDIZ16KWNS	Sig Dmg Wind Probabilities
		LDIZ17 KWNS	Categorical Outlook
0100	0100 Day 1 to 1200 Day 2 (11 hour period)	LDIZ11KWNS	Tornado Probabilities
		LDIZ12 KWNS	Hail Probabilities
		LDIZ13 KWNS	Dmg Wind Probabilities
		LDIZ14 KWNS	Sig Tor Probabilities
		LDIZ15 KWNS	Sig Hail Probabilities
		LDIZ16 KWNS	Sig Dmg Wind Probabilities
		LDIZ17 KWNS	Categorical Outlook

Table 6: Issuance time, valid time, product ID and content of SPC NDFD Forecast products (only entire CONUS Grid (U) listed).

6.2.1 Creation Software. SPC uses automated software.

6.2.2 Issuance Criteria. SPC NDFD Forecast Products are scheduled products.

6.2.3 Issuance Time. See Table 6.

6.2.4 Valid Time. See Table 6.

6.2.5 Product Expiration Time. Product expiration time is 1200 UTC the next day.

6.3 Technical Description.

6.3.1 Mass News Disseminator Broadcast Line. Not applicable.

6.3.2 Mass News Disseminator Header. Not applicable.

6.3.3 Content. SPC will issue three separate products for the Day 1, Day 2, and Day 3 outlooks. The Day 1 and 2 products provides the NDFD graphical products for the Probabilistic Outlooks for tornado, large hail and damaging winds, and the associated Categorical Outlooks. The Day 3 product provides the NDFD graphical products for the Probabilistic Outlook for all severe (tornadoes, large hail, and convective damaging winds combined) weather events and the associated Categorical Outlook. NDFD graphics for areas of significant severe events are also part of this product.

6.4 Updates, Amendments and Corrections. Updates are scheduled (see issuance times). SPC will correct outlooks for format errors. SPC will amend the Day 1 NDFD Forecast Products when it is recognized that the current forecast does not or will not reflect the ongoing or future convective development. In rare instances when the SPC determines the ongoing forecast needs to be changed, an amendment can be made to the Day 2 and Day 3 NDFD Forecast Products.

7. Public Severe Weather Outlook (WMO header WOUS40, AWIPS ID PWOSPC).

7.1 Mission Connection. Public Severe Weather Outlooks (PWOs) narrative and graphic alert the CONUS WFOs, public, media, and emergency managers to a potentially significant or widespread severe weather outbreak. These outlooks also define the threat area and provide information on the timing of the outbreak.

7.2 Issuance Guidelines.

7.2.1 Creation Software. SPC will use SPC Product Generator (PRODGEN) for these products.

7.2.2 Issuance Criteria. When a potential exists for a significant or widespread convective outbreak, which is implied with tornado and/or damaging wind probabilities indicative of a High Risk or a Moderate Risk that contains at least a 15% probability of tornadoes and 10% significant severe or a 45% probability of damaging wind gusts and 10% significant severe, a PWO will be issued. Also, when a 10% (or greater) probability of significant tornadoes is expected to occur between 0300 and 1200 UTC, a PWO is issued following the issuance of a 2000 UTC and/or 0100 UTC Day 1 Outlook.

7.2.3 Issuance Time. The PWO is an event driven product (see 7.3.3 for more details). The PWO is issued by1100 UTC if the 0600 UTC Day 1 Outlook initiates a HIGH Risk or a MODERATE Risk that contains at least a 15% probability of tornadoes and 10% significant severe or a 45% probability of damaging wind gusts and 10% significant severe, and by 1400 UTC if the 1300 UTC Day 1 Outlook initiates a HIGH Risk or a MODERATE Risk with the above criteria. The PWO is then updated by 1800 UTC following the issuance of the 1630 UTC Day 1 Outlook. The PWO may be written by 2100 UTC if the 2000 UTC Day 1 Outlook is upgraded to HIGH Risk. The PWO is issued by 2100 UTC and/or 0200 UTC for nighttime significant tornadoes as defined in section 7.2.2. The PWO is not issued for a “hail only” MODERATE Risk.

7.2.4 Valid Time. The valid time is from the time of issuance to expiration.

7.2.5 Product Expiration Time. The product expiration time will be the time of the next PWO issuance or 0200 UTC if no other issuances are expected. A PWO issued at 0100 UTC expires at 1200 UTC.

7.3 Technical Description. Public Weather Outlooks should follow the format and content described in this section.

7.3.1 Mass News Disseminator Broadcast Line. None.

7.3.2 Mass News Disseminator Header. The PWO MND header is "PUBLIC SEVERE WEATHER OUTLOOK."

7.3.3 Content. SPC will issue a Public Severe Weather Outlook when it forecasts any of the following conditions in the Day 1 Outlook:

a) A High Risk of severe storms;
b) A Moderate Risk of severe storms that contains at least a 15% probability of tornadoes and 10% significant severe, or a 45% probability of (convective) damaging winds and 10% significant severe;
c) A 10% (or greater) probability of nighttime significant tornadoes.

7.3.4 Format. Following a narrative headline, the Public Severe Weather Outlook uses a bulleted format to describe locations, hazards, and a summary of the expected evolution of the severe-weather threat. There are three bullets; each preceded by a left justified asterisk and a single space. The bullets provide:

- LOCATIONS
- HAZARDS based on Day 1 Convective Outlook Probabilities (see Section 3.3.3)
- SUMMARY

All other text in the bulleted area will be preceded by two spaces.

Call-To-Action (CTA) statements are preceded by the marker "Preparedness actions..." and end with the && character strings. The "Preparedness actions..." and && character strings will be left justified with no other characters on the same line of text.

See Figure 5 for an example of the Public Severe Weather Outlook format.

```
WOUS40 KWNS ddhhmm
PWOSPC
STZ000>099-CWZ000>099-ddhhmm-

PUBLIC SEVERE WEATHER OUTLOOK
NWS STORM PREDICTION CENTER NORMAN OK
time am/pm time_zone day mon dd yyyy

...Narrative headline (location and timing)...

* LOCATIONS...
  Portion(s) of State

* HAZARDS...
  Plain-language description of the expected hazards based on the Day 1
Convective Outlook Probabilities (listed in order of greater threat).
  Several tornadoes, a few intense
  Widespread large hail, some baseball size
  Widespread damaging winds

* SUMMARY...
```

```
  Brief sentence or two describing the greatest risk potential, areas
affected, and general timing.

Preparedness actions...

Call-to-action statements that vary based on the hazards and timing of the
expected threat.

&&


..FORECASTER NAME.. MM/DD/YYYY
```

Figure 4: Public Severe Weather Outlook Format

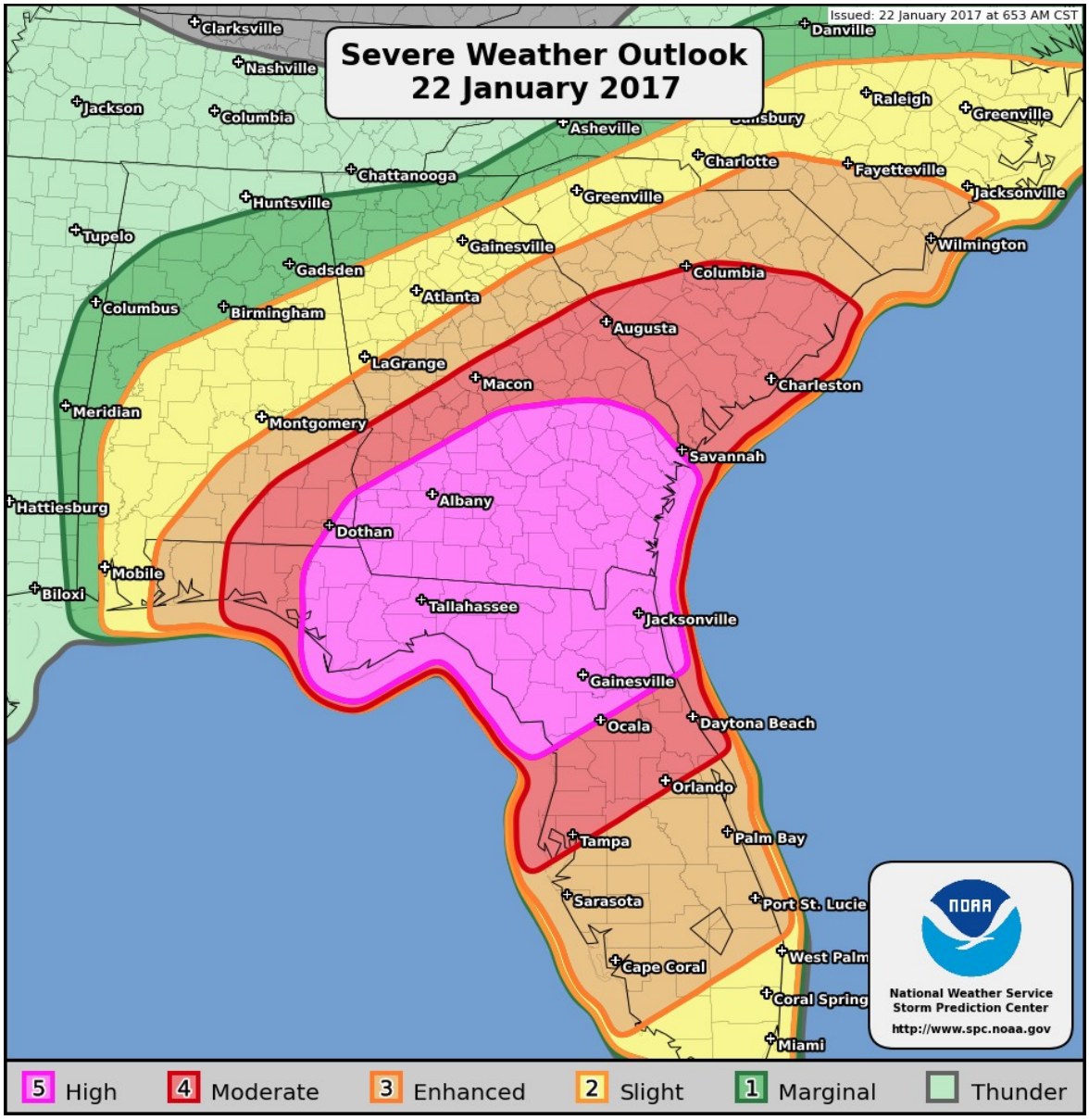

Figure 6. Public Severe Weather Outlook Graphic (Web-based).

7.4 Updates, Amendments and Corrections. Updates are scheduled (see issuance times). SPC will correct outlooks for format and grammatical errors. PWOs will not be amended.

8. SPC Thunderstorm Outlook (Web-based Graphic).

8.1 Mission Connection. Forecasts of thunderstorms are critical for the protection of life and property since every thunderstorm contains lightning that is a potential killer. The high temporal and spatial resolution of the SPC Thunderstorm Outlook will aid both NWS forecasters and NWS Partners in time sensitive decisions related to thunderstorms, and ultimately provide greater safety for the continental United States public.

8.2 Issuance Guidelines.

8.2.1 Creation Software. SPC will use SPC Product Generator (PRODGEN) for these products.

8.2.2 Issuance Criteria. SPC Thunderstorm Outlooks are scheduled products.

8.2.3 Issuance Time. See Table 7.

8.2.4 Valid Time. See Table 7.

SPC Thunderstorm Outlooks	
Issuance Time (UTC)	**Valid Periods (UTC)**
0600	1200-1600, 1600-2000, 2000-0000
1300	1600-2000, 2000-0000, 0000-0400
1700	2000-0000, 0000-0400, 0400-1200
2100	0000-0400, 0400-1200
0130	0400-1200

Table 8: SPC Thunderstorm Outlooks Issuance Time and Valid Time

8.2.5 Product Expiration Time. The product expiration time will be the time of the next Thunderstorm Outlook issuance.

8.3 Technical Description. The SPC Thunderstorm Outlook should follow the format and content described in this section.

8.3.1 Mass News Disseminator Broadcast Line. None

8.3.2 Mass News Disseminator Header. None

8.3.3 Content. The SPC Thunderstorm Outlook depicts the expected geographic areas of thunderstorms including 10, 40, and 70% probabilities in 4 or 8 hour time periods. A 40% probability means that given similar environmental conditions, a thunderstorm would be observed at any one location (in either a county or city) within the 40% thunder probability area four times out of ten, or 40% of the time.

8.3.4 Format. The SPC Thunderstorm Outlook is a web-based graphic online at: https://www.spc.noaa.gov/products/exper/enhtstm/

8.4 Updates, Amendments and Corrections. Updates are scheduled (see issuance times). SPC will correct outlooks for format errors. SPC Thunderstorm Outlooks will not be amended.

9. Watch County List (WMO header NWUS64, AWIPS ID WCL [A-J]).

9.1 Mission Connection. SPC issues Watch County Lists to collaborate with CONUS WFOs on proposed counties, parishes, independent cities and/or adjacent coastal water marine zones to be included in a convective watch. The AWIPS Message Handling System is used to keep the Watch County List product internal to the NWS.

9.2 Issuance Guidelines.

9.2.1 Creation Software. SPC will use the National Centers AWIPS (NAWIPS) and/or the SPC Product Generator (PRODGEN) for these products.

9.2.2 Issuance Criteria. SPC forecasts weather conditions expected to approach or exceed Severe Thunderstorm or Tornado Watch issuance criteria (see Sections 12.2.2 or 13.2.2, respectively).

9.2.3 Issuance Time. Watch County Lists are non-scheduled, event driven products.

9.2.4 Valid Time. Not applicable. Watch County Lists are an internal product.

9.2.5 Product Expiration Time. Not applicable.

9.3 Technical Description. Watch county lists will follow the format and content described in this section.

9.3.1 Mass News Disseminator Broadcast Line. Not applicable.

9.3.2 Mass News Disseminator Header. Not applicable.

9.3.3 Content. CONUS WFOs and SPC are partners in the convective watch process. In the spirit of partnership, WFOs, and SPC work toward a consensus convective watch area and duration before, during and at the end of convective watches.

SPC uses the Watch County List (WCL) to alert affected WFOs to a proposed convective watch. WFOs may call the SPC and propose a new watch area. SPC will provide the watch type and proposed counties or parishes and independent cities segmented by state and coastal water marine zones and a proposed expiration time. SPC will include the term "coastal waters" when the watch affects coastal waters within 20 nautical miles of the Pacific, Atlantic, or Gulf of Mexico coast, and for outer marine zones when requested for inclusion in the watch by a WFO. An "outer marine zone" is a WFO's responsibility located between 20-60 nautical miles for oceans and Gulf of Mexico. All U.S. Great Lakes marine zones may be included in proposed convective watches.

SPC generates and sends the list through AWIPS to the affected WFOs. SPC will list WFOs in the proposed watch in the ATTN Line. AWIPS software decodes this list into a graphical display of counties and independent cities in each WFO's County Warning Area (CWA). The list and graphical display on AWIPS serve as the basis for a mandatory collaboration conference call between SPC and the affected WFOs prior to a watch issuance. SPC will attempt to individually contact affected WFO(s) which were unable to participate in the collaboration conference call. The affected WFOs and SPC will collaborate on the watch type, the final list of proposed counties or parishes, independent cities and marine zones to be included in the initial convective watch area. If a consensus cannot be reached through collaboration or SPC is unable to contact an affected WFO(s) during the collaboration call or individually, SPC will decide on the final list of counties or parishes, independent cities and marine zones for all affected WFOs for the initial convective watch area.

9.3.4 Format.

```
NWUS64 KWNS ddhhmm
WCLx

.(TORNADO OR SEVERE THUNDERSTORM) WATCH x
COORDINATION COUNTY LIST FROM THE NWS STORM PREDICTION CENTER EFFECTIVE
UNTIL HHMM UTC.

STC001-003-ddhhmm-

ST
.    STATE 1 COUNTIES INCLUDED ARE

LIST OF COUNTIES

STATE 1  INDEPENDENT CITIES INCLUDED ARE

LIST OF INDEPENDENT CITIES
$$

STC001-003-ddhhmm-

ST
.    STATE 2 COUNTIES INCLUDED ARE

LIST OF COUNTIES

STATE 2  INDEPENDENT CITIES INCLUDED ARE
```

```
LIST OF INDEPENDENT CITIES
$$

CW
.   ADJACENT COASTAL WATERS INCLUDED ARE

LIST OF MARINE ZONES
$$

ATTN...WFO...CCC...CCC...CCC... (WFOS AFFECTED BY THE PROPOSED WATCH).
```

Figure 7: Watch County List Format

9.4 Updates, Amendments and Corrections. Updates are not applicable. SPC will correct lists for format errors. WCLs will not be amended.

10. Watch Outline Update Message (WMO header WOUS64, AWIPS ID WOU#).

10.1 Mission Connection. SPC issues Watch Outline Update Messages (WOU) to provide CONUS WFOs, emergency managers, the media, and the general public with the names of all counties or parishes, independent cities and marine zones in a convective watch area. The WOU product defines the initial list of counties in a watch. The Aviation Watch Notification (SAW) and Public Watch Notification (SEL) products describe an approximation of the watch area via a parallelogram. The SAW and SEL refer to the WOU product for the watch area.

10.2 Issuance Guidelines.

10.2.1 Creation Software. SPC will use the National Centers AWIPS (NAWIPS) and/or the SPC Product Generator (PRODGEN) for these products.

10.2.2 Issuance Criteria. SPC will issue an initial WOU for every CONUS convective watch. SPC will issue updated WOUs as needed when changes are made to Watch County Notification (WCN) messages issued by WFOs to update counties within active convective watches. SPC will issue a final WOU to notify users that a watch has been cancelled or allowed to expire. The cancellation WOU message is issued when all WFOs in the affected watch issue WCNs that cancel the counties within their respective CWAs.

10.2.3 Issuance Time. SPC will issue initial WOUs at the same time the Aviation Watch Notification Message is issued. SPC will issue updated WOUs as needed for active convective watches when WCNs are received from WFOs. SPC will issue final WOUs at the watch expiration time, or when all counties are cleared through the WCN product issued by the WFOs.

10.2.4 Valid Time. WOUs are valid until the product is updated, cancelled or expires.

10.2.5 Product Expiration Time. The product expiration time is the watch expiration time.

10.3 Technical Description. WOUs will follow the format and content described in this section.

10.3.1 MND Broadcast Line. SPC will use "BULLETIN - IMMEDIATE BROADCAST REQUESTED" in WOUs only for the initial issuance of this watch product. The term "BULLETIN" is used when information is sufficiently urgent to warrant breaking into a normal broadcast.

10.3.2 MND Header. The WOU MND header is "TORNADO (or SEVERE THUNDERSTORM) WATCH OUTLINE UPDATE FOR W(S or T) nnnn" where "nnnn" is the watch number. The watch number will be a consecutive number beginning with number 1 at the start of each calendar year.

10.3.3 Content. SPC will issue WOUs for the time zone(s) in the defined watch area. WOUs will be segmented by states and associated marine areas. WOUs will include all counties or parishes, independent cities and adjacent coastal water marine zones in a watch area (including nearshore zones out to 20 nautical miles and outer zones from 20-60 nautical miles). All Great Lakes marine zones within the United States will be included in convective watches. The initial WOU automatically generates the initial Watch County Notification Messages (WCN) for the affected WFOs. As a result of a collaboration call with those WFOs for which their CWA is included within a proposed convective watch, the counties or parishes, independent cities and marine zones listed in the initial WOU will match those listed in the initial WCNs issued by the affected WFOs.

The content of the WOU updates are collected from the latest WCNs issued by the WFOs and issued as needed. WOU updates will include all counties or parishes, independent cities and marine zones which remain in or have been added to the watch area since the initial issuance or update. SPC will issue a final WOU when all counties are cleared through a WFO WCN to inform national and regional partners and users that the convective watch is no longer in effect for any portion of the watch area. SPC and affected WFOs will collaborate when counties or parishes, independent cities, or marine zones are transferred from an existing convective watch to a new watch (e.g., watch replacement), or added to an ongoing watch. Per collaboration between the SPC and all WFOs within a watch, a watch can be extended in time and/or area. Watch extensions should generally be confined to those situations where another watch is not likely to be issued beyond the current issuance and the ongoing threat is best covered by a small extension in time (up to 2 hours) and/or area (typically less than 8000 square miles).

10.3.4 Format.

```
WOUS64 KWNS ddhhmm
WOUn
BULLETIN - IMMEDIATE BROADCAST REQUESTED (Initial Issuance Only)
TORNADO (or SEVERE THUNDERSTORM) WATCH OUTLINE UPDATE FOR W(S or T) nnnn
NWS STORM PREDICTION CENTER NORMAN OK
time am/pm time_zone day mon dd yyyy

TORNADO (or SEVERE THUNDERSTORM) WATCH nnnn IS IN (or REMAINS IN) EFFECT
UNTIL hhmm AM/PM XDT FOR THE FOLLOWING LOCATIONS:

STC001-003-ddhhmm-
/k.aaa.cccc.pp.s.####.yymmddThhnnZB-yymmddThhnnZE/
```

```
ST
.    STATE 1 COUNTIES INCLUDED ARE

LIST OF COUNTIES

STATE 1  INDEPENDENT CITIES INCLUDED ARE

LIST OF CITIES
$$

nMZ001-003-ddhhmm-
/k.aaa.cccc.pp.s.####.yymmddThhnnZB-yymmddThhnnZE/

CW
.   ADJACENT COASTAL WATERS INCLUDED ARE

LIST OF MARINE ZONES
$$
ATTN...WFO...CCC...CCC...CCC... (WFOS AFFECTED BY THE WATCH).
```

Figure 8: Watch Outline Update Message

(Watch No Longer in Effect- Final Update)

```
WOUS64 KWNS ddhhmm
WOUn

TORNADO (or SEVERE THUNDERSTORM) WATCH OUTLINE UPDATE FOR W(S or T) nnnn
NWS STORM PREDICTION CENTER NORMAN OK
time am/pm time_zone day mon dd yyyy

TORNADO (or SEVERE THUNDERSTORM) WATCH nnnn IS NO LONGER IN EFFECT.

STZ000-nMZ000-ddhhmm-
/k.aaa.cccc.pp.s.####.yymmddThhnnZB-yymmddThhnnZE/

NO COUNTIES (OR PARISHES, INDEPENDENT CITIES) REMAIN IN THE WATCH.

NO MARINE ZONES REMAIN IN THE WATCH (if Marine Zones were in the original
watch area)
$$

ATTN...WFO...CCC...CCC...CCC... (ALARM/ALERT INFORMATION, WFOS ORIGINALLY
AFFECTED BY THE WATCH).
```

Figure 9: Example of an updated Watch Outline Update

10.4 Updates, Amendments and Corrections. When appropriate, SPC may correct WOUs for areal omissions and expiration time. WOUs are updated as-needed and at least every 30 minutes around :03 and :33 minutes after the top of each hour.

11. Aviation Watch Notification Message (WMO header WWUS30, AWIPS ID SAW#)

11.1 Mission Connection. SPC issues Aviation Watch Notification Messages to provide an area threat alert for the aviation meteorology community to forecast organized severe

thunderstorms that may produce tornadoes, large hail, and/or convective damaging winds as indicated in Public Watch Notification Messages. The SAW product is an approximation of the area in a watch, for the official area covered by a watch see the corresponding WOU product.

11.2 Issuance Guidelines.

11.2.1 Creation Software. SPC will use the National Centers AWIPS (NAWIPS) and/or the SPC Product Generator (PRODGEN) for these products.

11.2.2 Issuance Criteria. A convective watch is in effect.

11.2.3 Issuance Time. Aviation Watch Notification Messages are non-scheduled, event driven products.

11.2.4 Valid Time. The valid time is from the time of issuance to expiration or cancellation time.

11.2.5 Product Expiration Time. The expiration time is at the end of the watch valid time.

11.3 Technical Description. Aviation Watch Notification Messages will follow the format and content described in this section.

11.3.1 Mass News Disseminator Broadcast Line. Not applicable.

11.3.2 Mass News Disseminator Header. Not applicable.

11.3.3 Content. SPC will issue the SAW after the proposed convective watch area has been collaborated with the affected WFO CWAs defining the approximate areal outline of the watch. SPC forecasters may define the area as a rectangle or parallelogram (X miles either side of line from point A to point B), or (X miles north and south or east and west of line from point A to point B). Distances of the axis coordinates should be in statute miles. The aviation coordinates reference navigational aid VHF Omni-Directional Range (VOR) locations and state distances will be in nautical miles. SPC will provide valid times in UTC. The watch half width will be in statute miles. The Aviation Watch Notification Message will contain hail size in inches (omitted at forecaster discretion when hail is not anticipated) surface and aloft, surface convective wind gusts in knots, maximum cloud tops, and the Mean Storm Motion Vector, and replacement information, if necessary.

11.3.4 Format.

```
WWUS30 KWNS ddhhmm
SAWn
SPC AWW ddhhmm
WWnnnn SEVERE TSTM ST LO DDHHMMZ - DDHHMMZ
AXIS...XX STATUTE MILES EITHER SIDE (or North and South, or East and West)
OF A LINE
XXDIR CCC/LOCATION ST/ - XXDIR CCC/LOCATION ST
..AVIATION COORD.. XX NM EITHER SIDE /XXDIR CCC - XXDIR CCC
```

```
HAIL SURFACE AND ALOFT..X X/X.X INCHES/INCH (can be omitted when hail is
not anticipated). WIND GUSTS..XX KNOTS.
MAX TOPS TO XXX. MEAN STORM MOTION VECTOR DIR/SPEED.

LAT...LON

THIS IS AN APPROXIMATION TO THE WATCH AREA. FOR A COMPLETE DEPICTION OF THE
WATCH SEE WOUS64 KWNS FOR WOUn.
```

Figure 10: Aviation Severe Weather Watch Notification Message Format

11.4 Updates, Amendments and Corrections. Updates and amendments are not applicable. SPC will correct watches for format and grammatical errors.

12. Public Severe Thunderstorm Watch Notification Message (WMO header WWUS20, AWIPS ID SEL#).

12.1 Mission Connection. SPC issues Public Severe Thunderstorm Watch Notification Messages to alert CONUS WFOs, the public, media and emergency managers to organized thunderstorms forecast to produce six or more hail events of one inch (quarter-size) diameter and/or greater or convective damaging winds of 50 knots (58 mph) or greater. The SEL product is an approximation of the area in a watch, for the official area covered by a watch see the corresponding WOU product.

12.2 Issuance Guidelines.

12.2.1 Creation Software. SPC will use the National Centers AWIPS (NAWIPS) and/or the SPC Product Generator (PRODGEN) for these products.

12.2.2 Issuance Criteria. SPC should issue a Public Severe Thunderstorm Watch Notification Message when there is a forecast of six or more hail events of one inch (quarter-size) diameter or greater or convective damaging winds of 50 knots (58 mph) or greater. The forecast event minimum thresholds should be at least 2 hours over an area at least 8,000 square miles. Below these thresholds, SPC in collaboration with affected WFO CWAs may issue for smaller areas and for shorter periods of time when conditions warrant, and for convective watches along coastlines, and near the Canadian and Mexican borders.

12.2.3 Issuance Time. Public Severe Thunderstorm Watch Notification Messages are non-scheduled, event driven products.

12.2.4 Valid Time. The valid time is from the time of issuance to expiration or cancellation.

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

12.3 Technical Description. Public Severe Thunderstorm Watch Notification Messages will follow the format and content described in this section.

12.3.1 Mass News Disseminator Broadcast Line. Public Severe Thunderstorm Watch Notification Messages will include the broadcast line "URGENT – IMMEDIATE BROADCAST REQUESTED". The term "URGENT" is used when the information may wait until a "stop-set" (break in the broadcast routine).

12.3.2 Mass News Disseminator Header. The Public Severe Thunderstorm Watch Notification Message MND header is "Severe Thunderstorm Watch Number nnnn."

12.3.3 Content. A Public Severe Thunderstorm Watch Notification Message will contain the approximate area description and axis, effective time of the watch, a list of primary threats including hail size and thunderstorm wind gusts expected, a brief summary describing the evolution of the severe weather threat, the definition of a watch, a call to action statement, a list of other valid watches, a list of watches cancelled/replaced by a new watch, and a brief description of the severe weather threat to the aviation community.

SPC will include the term "coastal waters" when the watch affects coastal waters within 20 nm of the Pacific, Atlantic, or Gulf of Mexico coast, and for outer marine zones when requested for inclusion in the watch by a WFO. An "outer marine zone" is a WFO's responsibility located between 20-60 nautical miles for oceans and Gulf of Mexico. If a Great Lake is included in a watch, then the Lake (such as, Northern Lake Michigan) is included in the listing of states or Great Lakes within the United States.

SPC will coordinate with affected WFOs to determine which counties or parishes, independent cities, and/or marine zones are in the initial watch and meteorological reasoning prior to a watch being issued. SPC will issue a watch cancellation message (under SEL, SAW, and WOU products) when there are no counties or parishes, independent cities and/or marine zones remaining in the watch area prior to the expiration time, after WFOs have cleared all counties via WCNs. The text of the message will specify the number and area of the cancelled watch.

SPC will enhance a Public Severe Thunderstorm Watch Notification Message by using the words, "THIS IS A PARTICULARLY DANGEROUS SITUATION" when conditions are favorable for widespread significant non-tornadic severe weather events (convective winds at least 75 mph). An example is a well-defined large bow echo with destructive convective winds occurring at the surface, and downstream conditions suggest the bow echo will be maintained or intensify for the duration of the watch.

12.3.4 Format. The Public Severe Thunderstorm Watch Notification Message uses a bulleted format that includes primary threat information statements. There are three bullets; each proceeded by a left justified asterisk and a single space. The bullets provide:

- Watch type and an area description
- Watch effective time
- List of primary threats in order of importance based on Watch Hazard Probabilities (see Section 14.3.3)

All other text in the bulleted area will be preceded by two spaces.

The Public Severe Thunderstorm Watch Notification Message includes "...THIS IS A PARTICULARLY DANGEROUS SITUATION..." between the second and third bullet when conditions are favorable for widespread significant non-tornadic severe weather events (convective winds at least 75 mph) in a severe thunderstorm watch.

Following the three bullets will be a summary consisting of two to three sentences describing the expected evolution of the severe-weather threat, including timing, storm mode, and type of severe-weather risk.
The summary text is preceded on the same line by the marker "SUMMARY…".
The "SUMMARY…" will be left justified.

Following the SUMMARY will be a paragraph with a general area description including the axis of the watch.

Call-To-Action (CTA) statements are preceded by the marker "PRECAUTIONARY/PREPAREDNESS ACTIONS... " and end with the && character strings. The "PRECAUTIONARY/PREPAREDNESS ACTIONS... " and && character strings will be left justified with no other characters on the same line of text.

Following the CTA will be the following two sections:

- OTHER WATCH INFORMATION...
- AVIATION...

The watch will end with:
…Forecaster Last name

See Figure 11 for an example of the Public Severe Thunderstorm Watch Notification Message format.

```
WWUS20 KWNS ddhhmm
SELn
SPC WW ddhhmm
STZ000>099-CWZ000>099-ddhhmm-

URGENT - IMMEDIATE BROADCAST REQUESTED
Severe Thunderstorm Watch Number nnnn
NWS Storm Prediction Center Norman OK
hhmm AM/PM TIME_ZONE Day Mon dd yyyy

THE NWS Storm Prediction Center has issued a

* Severe Thunderstorm Watch for portions of
  Portion(s) of State

* Effective (Time period) from hhmm AM/PM until hhmm AM/PM TIME_ZONE.

...THIS IS A PARTICULARLY DANGEROUS SITUATION (if necessary)...

* Primary threats include...
```

```
  Scattered damaging wind gusts to NNN mph possible
  Isolated large hail events to N.N inches in diameter possible

SUMMARY... Two to three sentences describing the expected evolution of the
severe-weather threat, including timing, storm mode, and type of severe-
weather risk.

Narrative description of approximate watch area using a line and anchor
points. Distances to either side of the line will be in statue miles. This
section indicates the watch area is an approximation and "For a complete
depiction of the watch see the associated watch outline update (WOUS64 KWNS
WOUn)."

PRECAUTIONARY/PREPAREDNESS ACTIONS...

REMEMBER...A Severe Thunderstorm Watch means conditions are
favorable for severe thunderstorms in and close to the watch area.
Persons in these areas should be on the lookout for threatening
weather conditions and listen for later statements and possible
warnings. Severe thunderstorms can and occasionally do produce
tornadoes.

&&

OTHER WATCH INFORMATION...CONTINUE...WW nnnn...WW nnnn...

AVIATION...Brief description of severe weather threat to the aviation
community. Hail size will be given in inches and wind gusts in knots.
Maximum storm tops and a mean storm motion vector will also be given.

...Forecaster Last name
```

Figure 11: Public Watch Notification Message Format (For Severe Thunderstorms)

12.4 Updates, Amendments and Corrections. Updates are not applicable. SPC will correct watches for format and grammatical errors.

13. Public Tornado Watch Notification Message (WMO header WWUS20, AWIPS ID SEL#).

13.1 Mission Connection. SPC issues Public Tornado Watch Notification Messages to alert CONUS WFOs, the public, media, and emergency managers to organized thunderstorms forecast to produce two or more tornadoes or any tornado which could produce EF2 or greater damage. The SEL product is an approximation of the area in a watch, for the official area covered by a watch see the corresponding WOU product.

13.2 Issuance Guidelines.

13.2.1 Creation Software. SPC will use the National Centers AWIPS (NAWIPS) and/or the SPC Product Generator (PRODGEN) for these products.

13.2.2 Issuance Criteria. SPC should issue a Public Tornado Watch Notification Message when there is a forecast of multiple weak tornadoes or any tornado which could produce EF2 or greater damage. The forecast event minimum thresholds should be at least 2 hours over an area at least 8,000 square miles. Below these thresholds, SPC in collaboration with affected WFOs and their CWAs may issue for smaller areas and for shorter periods of time when conditions warrant, and for convective watches along coastlines, and near the Canadian and Mexican borders.

13.2.3 Issuance Time. Public Tornado Watch Notification Messages are non-scheduled, event driven products.

13.2.4 Valid Time. The valid time is from the time of issuance to expiration or cancellation time.

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

13.3 Technical Description. Public Tornado Watch Notification Messages will follow the format and content described in this section.

13.3.1 Mass News Disseminator Broadcast Line. Public Tornado Watch Notification Messages will include the broadcast line "URGENT - IMMEDIATE BROADCAST REQUESTED." The term "URGENT" is used when the information may wait until a "stop-set" (break in the broadcast routine).

13.3.2 Mass News Disseminator Header. The Public Tornado Watch Notification Message MND header is "Tornado Watch Number nnnn."

13.3.3 Content. A Public Tornado Watch Notification Message will contain the area description and axis, effective time of the watch, a list of primary threats including the largest hail size and strongest thunderstorm wind gusts, a brief summary describing the evolution of the severe weather threat, the definition of a watch, a call to action statement, a list of other valid watches, a list of watches cancelled or replaced by new watches, and a brief description of the severe weather threat to the aviation community (see Figure 12). Mention of hail size associated with tropical cyclones is optional.

SPC will include the term "coastal waters" when the watch affects coastal waters within 20 nm of the Pacific, Atlantic, or Gulf of Mexico coast, and for outer marine zones when requested for inclusion in the watch by a WFO. An "outer marine zone" is a WFO's responsibility located between 20-60 nautical miles for oceans and Gulf of Mexico. If a Great Lake is included in a watch, the Lake (such as, Northern Lake Michigan) is included in the listing of states or Great Lakes within the United States.

SPC will coordinate with affected WFOs to determine which counties or parishes, independent cities and/or marine zones are in the initial watch and meteorological reasoning prior to a watch being issued. SPC will issue a watch cancellation message (under SEL, SAW and WOU products) whenever a watch is cancelled prior to the expiration time. The text of the message will specify the number and area of the cancelled watch. SPC may enhance a Public Tornado

Watch Notification Message by using the words "THIS IS A PARTICULARLY DANGEROUS SITUATION" when there is a likelihood of multiple strong (damage of EF2 or EF3) or violent (damage of EF4 or EF5) tornadoes.

13.3.4 Format. The Public Tornado Watch Notification Message uses a bulleted format that includes primary threat information statements. There are three bullets; each preceded by a left justified asterisk and a single space. The bullets provide:

- Watch type and an area description
- Watch effective time
- List of primary threats in order of importance based on Watch Hazard Probabilities (see Section 14.3.3)

All other text in the bulleted area will be preceded by two spaces.

The Public Tornado Watch Notification Message includes "...THIS IS A PARTICULARLY DANGEROUS SITUATION..." between the second and third bullet when there is a likelihood of multiple strong or violent (EF2 - EF5) tornadoes in a tornado watch.

Following the three bullets will be a summary consisting of two to three sentences describing the expected evolution of the severe-weather threat, including timing, storm mode, and type of severe-weather risk.
The summary text is preceded on the same line by the marker "SUMMARY…".
The "SUMMARY…" will be left justified.

Following the SUMMARY will be a paragraph with a general area description including the axis of the watch.

Call-To-Action (CTA) statements are preceded by the marker "PRECAUTIONARY/PREPAREDNESS ACTIONS... " and end with the && character strings. The "PRECAUTIONARY/PREPAREDNESS ACTIONS... " and && character strings will be left justified with no other characters on the same line of text.

Following the CTA will be the following two sections:

- OTHER WATCH INFORMATION...
- AVIATION...

The watch will end with:
…Forecaster Last name

See Figure 12 for an example of the Public Tornado Watch Notification Message format.

```
WWUS20 KWNS ddhhmm
SELn
SPC WW ddhhmm
STZ000>099-CWZ000>099-ddhhmm-

URGENT - IMMEDIATE BROADCAST REQUESTED
Tornado Watch Number nnnn
```

```
NWS Storm Prediction Center Norman OK
hhmm AM/PM TIME_ZONE Day Mon dd yyyy

THE NWS Storm Prediction Center has issued a

* Tornado Watch for portions of
  Portion(s) of State

* Effective (Time period) from hhmm AM/PM until hhmm AM/PM TIME_ZONE.

...THIS IS A PARTICULARLY DANGEROUS SITUATION (IF NECESSARY)...

* Primary threats include...
  Numerous tornadoes and several intense tornadoes expected
  Widespread damaging winds and scattered significant gusts to NNN mph
    expected
  Widespread large hail and scattered very large hail events to N.N
    inches in diameter expected

SUMMARY... Two to three sentences describing the expected evolution of the
severe-weather threat, including timing, storm mode, and type of severe-
weather risk.

Narrative description of approximate watch area using a line and anchor
points. Distances to either side of the line will be in statue miles.  This
section indicates the watch area is an approximation and "For a complete
depiction of the watch see the associated watch outline update (WOUS64 KWNS
WOUn)."

PRECAUTIONARY/PREPAREDNESS ACTIONS...

REMEMBER...A Tornado Watch means conditions are favorable for
tornadoes and severe thunderstorms in and close to the watch
area. Persons in these areas should be on the lookout for
threatening weather conditions and listen for later statements
and possible warnings.

&&

OTHER WATCH INFORMATION...CONTINUE...WW nnnn...WW nnnn...

AVIATION...Brief description of severe weather threat to the aviation
community. Hail size will be given in inches and wind gusts in knots.
Maximum storm tops and a mean storm vector will also be given.

...Forecaster Last name
```

Figure 12: Public Watch Notification Message Format (for Tornadoes)

13.4 Updates, Amendments and Corrections. Updates are not applicable. SPC will correct Public Watch Notification Messages for format and grammatical errors.

14. Watch Hazard Probabilities (WMO header WWUS40, AWIPS ID WWP).

14.1 Mission Connection. SPC issues Watch Hazard Probabilities to provide affected users with probabilities of tornado and severe weather events for all active convective watches.

14.2 Issuance Guidelines.

14.2.1 Creation Software. SPC uses automated software.

14.2.2 Issuance Criteria. A convective watch is in effect.

14.2.3 Issuance Time. Watch Hazard Probabilities are non-scheduled, event driven products.

14.2.4 Valid Time. The valid time is listed in the products (WOU, SAW, or SEL).

14.2.5 Product Expiration Time. The expiration time is listed in the product (WOU, SAW, or SEL).

14.3 Technical Description. Watch Hazard Probabilities will follow the format and content described in this section.

14.3.1 Mass News Disseminator Broadcast Line. Not applicable.

14.3.2 Mass News Disseminator Header. Not applicable.

14.3.3 Content. SPC will issue Watch Hazard Probabilities to provide CONUS WFOs, the public, media and emergency managers with a set of seven severe weather probabilities for all issued convective watches.

The minimum tornado watch probability of two or more tornadoes is 30%. When "THIS IS A PARTICULARLY DANGEROUS SITUATION" is contained in the Public Tornado Watch Notification Message (see section 13.3.3), the minimum probability of one or more EF2 to EF5 tornadoes is 80%.

The minimum severe thunderstorm watch probability of six or more severe weather events is 40%. However, if a WFO requests a severe thunderstorm watch, or if the probability of one or more wind events greater than or equal to 75 mph and/or the probability of one or more events of hail greater than two inches in diameter is 30% or greater, a 30% probability is permissible for watch issuance. When "THIS IS A PARTICULARLY DANGEROUS SITUATION" is contained in the Public Severe Thunderstorm Watch Notification Message (see section 12.3.3), the minimum probability of one or more convective wind events of 75 mph or greater is 80%. When a severe thunderstorm watch is not a "PARTICULARLY DANGEROUS SITUATION", the maximum probability of two or more tornadoes and one or more EF2 to EF5 tornadoes is 20%.

14.3.4 Format.

```
WWUS40 KWNS 101848
WWP0

TORNADO WATCH PROBABILITIES FOR WT 0090
NWS STORM PREDICTION CENTER NORMAN OK
0148 PM CDT WED APR 10 2013

WT 0090
PROBABILITY TABLE:
PROB OF 2 OR MORE TORNADOES                          :  70%
PROB OF 1 OR MORE STRONG /EF2-EF5/ TORNADOES         :  40%
PROB OF 10 OR MORE SEVERE WIND EVENTS                :  50%
PROB OF 1 OR MORE WIND EVENTS >= 65 KNOTS            :  30%
PROB OF 10 OR MORE SEVERE HAIL EVENTS                :  60%
PROB OF 1 OR MORE HAIL EVENTS >= 2 INCHES            :  50%
PROB OF 6 OR MORE COMBINED SEVERE HAIL/WIND EVENTS : >95%

&&
ATTRIBUTE TABLE:
MAX HAIL /INCHES/                              : 2.5
MAX WIND GUSTS SURFACE /KNOTS/                 : 60
MAX TOPS /X 100 FEET/                          : 550
MEAN STORM MOTION VECTOR /DEGREES AND KNOTS/ : 23040
PARTICULARLY DANGEROUS SITUATION               : NO

&&
FOR A COMPLETE GEOGRAPHICAL DEPICTION OF THE WATCH AND
WATCH EXPIRATION INFORMATION SEE WOUS64 FOR WOU0.

$$
```

Figure 5: Example Watch Hazards Probabilities Product

14.4 Updates, Amendments and Corrections. Updates are not applicable. SPC will correct Watch Hazard Probabilites for format and grammatical errors.

15. Watch Status Message (WMO header WOUS20, AWIPS ID WWASPC).

15.1 Mission Connection. SPC issues Watch Status Messages to provide CONUS WFOs, media, emergency managers and the public with an assessment of the severe weather threat within each active convective watch area.

15.2 Issuance Guidelines.

15.2.1 Creation Software. SPC uses the National Centers AWIPS (NAWIPS) and/or the SPC Product Generator (PRODGEN) for these products.

15.2.2 Issuance Criteria. A convective watch is in effect.

15.2.3 Issuance Time. SPC should issue a Watch Status Message at approximately 30 minutes past the hour for each active convective watch area.

15.2.4 Valid Time. The status message is valid for one hour.

15.2.5 Product Expiration Time. The expiration time is one hour after the issuance time.

15.3 Technical Description. Watch status messages will follow the format and content described in this section.

15.3.1 Mass News Disseminator Broadcast Line. Not applicable.

15.3.2 Mass News Disseminator Header. Not applicable.

15.3.3 Content. SPC uses the Watch Status Message to help CONUS WFOs, media, emergency management, and the public determine portions of a convective watch where the threat of severe weather continues. This message will include a recommended list of what counties or parishes, independent cities and marine zones should remain in the watch area, and a geographical linear description of the continued severe weather hazard using known points. SPC should refer users to related mesoscale convective discussions (product SWOMCD) for additional information on mesoscale features related to the severe weather hazard, and local convective watch products for the official list of counties, parishes, independent cities and marine zones cleared from the watch area.

The second segment of the product, following the "&&" begins with: "STATUS REPORT W(S or T) #", where # is the watch number (e.g. 1, 21, 321, 1021). The WS or WT depicts if the watch is a Severe Thunderstorm or Tornado watch respectively. The remainder of this product is formatted similar to the WOU product, i.e., UGC for each state with a county listing segmented by "$$", except for a lack of VTEC. Marine zones will be included as applicable.

15.3.4 Format.

```
WOUS20 KWNS ddhhmm
WWASPC
SPC WW-A ddhhmm
STZ000-STZ000-STZ000-ddhhmm

STATUS REPORT ON WT (or WS) nnnn

SEVERE WEATHER THREAT CONTINUES TO THE RIGHT OF A LINE FROM XX DIR CCC...XX
DIR CCC...XX DIR CCC.

THE SEVERE WEATHER THREAT CONTINUES FOR THE FOLLOWING AREAS

&&

STC001-003-ddhhmm-

ST
.    STATE 1 COUNTIES INCLUDED ARE
```

```
LIST OF COUNTIES

STATE 1  INDEPENDENT CITIES INCLUDED ARE

LIST OF CITIES

$$

MZ001-003-ddhhmm-

CW
.   ADJACENT COASTAL WATERS INCLUDED ARE

LIST OF MARINE ZONES

$$

FOR ADDITIONAL INFORMATION...SEE MESOSCALE DISCUSSION XXX.

THE WATCH STATUS MESSAGE IS FOR GUIDANCE PURPOSES ONLY. PLEASE REFER TO
LOCAL SPECIAL WEATHER STATEMENTS FOR OFFICIAL INFORMATION ON
COUNTIES...INDEPENDENT CITIES AND MARINE ZONES CLEARED FROM SEVERE
THUNDERSTORM AND TORNADO WATCHES.
$$
```

Figure 6: Watch Status Message Format

15.4 Updates, Amendments and Corrections. Updates should be issued approximately 30 minutes past the hour. When appropriate, SPC may correct messages for format and grammatical errors.

16. Hourly Severe Weather Report Log (WMO headers NWUS22, PMNA00, AWIPS ID STAHRY).

16.1 Mission Connection. SPC issues Hourly Severe Weather Report Logs to provide WFOs, the public, media, and emergency managers with hourly text and graphical reports of severe weather events within the CONUS.

16.2 Issuance Guidelines.

16.2.1 Creation Software. SPC uses automated software.

16.2.2 Issuance Criteria. WFOs issue new Preliminary Local Storm Reports (LSR) since the last hourly report.

16.2.3 Issuance Time. SPC will issue a report log each hour.

16.2.4 Valid Time. Report logs are valid upon issuance.

16.2.5 Product Expiration Time. Not applicable.

16.3 Technical Description. Hourly reports will follow the format and content described in this section.

16.3.1 Mass News Disseminator Broadcast Line. None.

16.3.2 Mass News Disseminator Header. The Hourly Report MND header is "SPC HOURLY TORNADO AND SEVERE THUNDERSTORM REPORTS."

16.3.3 Content. SPC issues hourly report logs to inform the public, the media and emergency managers to severe weather events on a national scale. SPC updates this log on an hourly basis and lists all events since 1200 UTC. Severe weather events reported in Preliminary Storm Reports (LSR) are automatically included in hourly report logs. Events reported in other products, such as the Severe Weather Statement (SVS), or other sources may be manually inserted into hourly report logs. These reports are considered preliminary information. Final severe weather event information is found in monthly Storm Data reports (see NWSI 10-1605 "Storm Data Preparation") filed by each WFO and published by the National Centers for Environmental Information (NCEI).

16.3.4 Format.

```
NWUS22 KWNS 081806
STAHRY

                    SPC TORNADO AND SEVERE THUNDERSTORM REPORTS
               UNOFFICIAL - FOR OFFICIAL REPORTS, SEE PUBLICATION 'STORM DATA'
                    FOR 06CST SAT AUG  8 2020 THRU 12CST SAT AUG 8  2020

     EVENT    LOCATION                        REMARKS                (CST)TIME

  .....TORNADO REPORTS..........TORNADO REPORTS..........TORNADO REPORTS.....


     NONE REPORTED



 .......LRG HAIL/STRONG WIND RPTS.............LRG HAIL/STRONG WIND RPTS......

   9  G 57  3 N HERREID SD      (29 NE MBG)                                 8/0639
                                                                ABR/LSR   458710007
   1  A150  5 S WILTON MN      (6 SSW BJI)                                 8/0955
                                                                FGF/LSR   4743 9499
   6  A150  2 ENE LAKE GEORGE MN      (21 S BJI)                          8/1111
           VARIABLE FROM SMALL MARBLE TO A FEW PING PONG  FGF/LSR   4721 9495
                    BALL SIZED. EVENT ONGO
   8  WNDG  CANBY MN      (38 NE BKX)                                     8/1142
           LARGE TREES DOWN... UPROOTED.                  MPX/LSR   4471 9628


 .........OTHER SEVERE REPORTS..................OTHER SEVERE REPORTS.........

   2  A100  5 SSW BEMIDJI MN      (6 S BJI)                               8/1007
           NEAR LAKE PLANTAGENET.                         FGF/LSR   4742 9492
   3  A100  NARY MN      (11 SSE BJI)                                    8/1008
           HAIL NEAR LAKE PLANTAGENET. NEAR THE BELTRAMI  FGF/LSR   4737 9482
```

```
                    COUNTY LINE.
  4 A100 5 WNW NARY MN        (8 S BJI)                                  8/1008
           HAIL NEAR LAKE PLANTAGENET. NEAR THE BELTRAMI   FGF/LSR   4739 9492
                    COUNTY LINE.
  5  A100  2 N LAKE GEORGE MN      (20 S BJI)                           8/1052
           NICKEL TO QUARTER SIZED HAIL FOR A COUPLE OF    FGF/LSR   4723 9499
                    MINUTES.
  7  A100  4 SSE LAKE GEORGE MN      (25 S BJI)                        8/1133
           NICKEL TO QUARTER SIZED HAIL.                   FGF/LSR   4715 9496
```

Figure 7: Hourly Report Log Example

16.4 Updates, Amendments and Corrections. This product is issued hourly and is not updated. SPC will correct logs for format and grammatical errors.

17. **Daily Severe Weather Report Log (WMO headers NWUS20, PMNE00, AWIPS ID STADTS)**.

17.1 Mission Connection. SPC issues Daily Severe Weather Report Logs to provide CONUS WFOs, the public, media, and emergency managers with text and graphical reports of severe weather events on a national scale for the previous day.

17.2 Issuance Guidelines.

17.2.1 Creation Software. SPC uses automated software.

17.2.2 Issuance Criteria. SPC issues this report log daily at 1200 UTC.

17.2.3 Issuance Time. The issuance time will be 1200 UTC. SPC will issue an update at 1800 UTC.

17.2.4 Valid Time. Report logs are valid upon issuance.

17.2.5 Product Expiration Time. Not applicable.

17.3 Technical Description. Daily report logs will follow the format and content described in this section.

17.3.1 Mass News Disseminator Broadcast Line. None.

17.3.2 Mass News Disseminator Header. The Daily Report MND header is “SPC DAILY TORNADO AND SEVERE THUNDERSTORM REPORTS.”

17.3.3 Content. SPC issues daily report logs in a text and graphical format to display all severe weather reports across the CONUS for use by the media and emergency managers. These reports are considered preliminary information. Final severe weather event information is found in monthly Storm Data reports (see NWSI 10-1605 “Storm Data Preparation”) filed by each WFO and published by the National Centers for Environmental Information (NCEI).

17.3.4 Format.

```
NWUS20 KWNS 081755
STADTS

                      SPC TORNADO AND SEVERE THUNDERSTORM REPORTS
                 UNOFFICIAL - FOR OFFICIAL REPORTS, SEE PUBLICATION 'STORM DATA'
                      FOR 06CST FRI AUG  7 2020 THRU 06CST SAT AUG 8  2020

      EVENT    LOCATION                          REMARKS                 (CST)TIME

  .....TORNADO REPORTS..........TORNADO REPORTS..........TORNADO REPORTS.....

   1 *TORN  1 NNW PARK RAPIDS MN      (38 E DTL)                             7/1830
            POSSIBLE TORNADO TOUCHDOWN WEST SIDE OF        FGF/LSR   4693 9507
                    FISHHOOK LAKE NEAR HWY


 .......LRG HAIL/STRONG WIND RPTS.............LRG HAIL/STRONG WIND RPTS......

  14  WNDG  1 ENE RIVERSIDE PA      (25 SE IPT)                             7/0730
            MULTIPLE LARGE TREES DOWN ON AVE F.            CTP/LSR   4095 7663
  15  WNDG  3 W CATAWISSA PA      (29 SE IPT)                              7/0742
            TREES DOWN ON ROAD REPORTED AT 300 BLOCK LEGIONCTP/LSR   4095 7651
                    RD MONTOUR COUNTY.
  16  WNDG  2 SSE WASHINGTONVILLE PA      (20 SE IPT)                      7/0755
            MULTIPLE TREES AND WIRES DOWN. REPORTED AT     CTP/LSR   4103 7666
                    MOUNTOUR AND COLUMBIA
  17  WNDG  2 ENE NORTHUMBERLAND PA      (24 SSE IPT)                     7/0800
            POINT TOWNSHIP DRIVE-IN THEATER SCREEN BLEW    CTP/LSR   4091 7676
                    OVER REPORTED AT POINT
  18  WNDG  2 NE NUMIDIA PA      (36 SE IPT)                              7/0814
            TREES DOWN ON WIRES ON OLD READING ROAD AND    CTP/LSR   4092 7638
                    CREEK ROAD.
  19  WNDG  5 NW RINGTOWN PA      (39 SE IPT)                             7/0818
            TREES DOWN ON WIRES.                           CTP/LSR   4090 7631
  20  WNDG  1 N SHARPSBURG MD      (13 ENE MRB)                           7/1221
            TREES DOWN ON MD-65 SHARPSBURG PIKE NEAR DUNKERLWX/LSR   3947 7775
                    CHURCH ROAD.
  21      WNDG  FAIRPLAY MD   (11 S HGR)                                  7/1240
            WIRES DOWN ON TILGHMANTON RD                   LWX/LSR   3954 7774
  22  WNDG  2 SE MYERSVILLE MD      (17 SE HGR)                           7/1252
            MULTIPLE TREES DOWN ON US-40 BALTIMORE NATIONALLWX/LSR   3949 7753
                    PIKE NEAR HARMONY ROAD
  23  WNDG  1 NW BOLIVAR MD      (16 SSE HGR)                             7/1254
            TREE DOWN ON THE 1700 BLOCK OF OLD NATIONAL    LWX/LSR   3948 7761
                    PIKE
  24  WNDG  2 SE MYERSVILLE MD      (17 SSE HGR)                          7/1304
            TREE DOWN NEAR THE INTERSECTION OF MYERSVILLE  LWX/LSR   3948 7754
                    ROAD AND BIDLE HILL CO
  25  WNDG  2 SE MYERSVILLE MD      (17 SE HGR)                           7/1311
            TREE DOWN NEAR THE OVERPASS OF HARMONY ROAD ANDLWX/LSR   3949 7753
                    ROUTE 40
  26  WNDG  7 ENE RIDGEWAY SC      (33 NNE CAE)                            7/1420
            STEEPLE BLOW OFF AND SHINGLES RIPPED OFF       CAE/LSR   3436 8085
                    LONGTOWN PRESBYTERIAN
  27  WNDG  RIDGELEY WV      (45 WNW MRB)                                 7/1422
            A TREE WAS DOWN ALONG VETERANS MEMORIAL HIGHWAYLWX/LSR   3964 7877
                    IN RIDGELEY.
  28  WNDG  CUMBERLAND MD      (45 WNW MRB)                               7/1427
            REPORT OF TREE DAMAGE ON PRIVATE PROPERTY NEAR LWX/LSR   3965 7876
                    THE RAILROAD TRACKS IN
  29  WNDG  2 NNW SADSBURYVILLE PA      (27 NW ILG)                        7/1502
```

```
            DOWN TREE IN WIRES ON OLD WILMINGTON ROAD AND  PHI/LSR   4000 7591
                    OAK STREET. TIME ESTIM
 30  WNDG   MOUNT VERNON PA      (24 WNW ILG)                          7/1503
            DOWNED TREE INTO WIRES ON PA 472 NEAR OXFORD.  PHI/LSR   3981 7602
                    TIME ESTIMATED FROM RA
 31  WNDG   COCHRANVILLE PA      (22 NW ILG)                           7/1505
            TREE BLOWN DOWN BLOCKING SOUTHBOUND LANE AT THEPHI/LSR   3989 7592
                    INTERSECTION OF LIMEST
 32  WNDG   1 NE LONDONDERRY TWP PA      (19 NW ILG)                   7/1508
            SEVERAL TREES DOWN ALONG PORTIONS OF ROUTE 41. PHI/LSR   3987 7588
                    TIME ESTIMATED FROM RA
 33  WNDG   1 SSW EAST BRANDYWINE T PA      (25 NNW ILG)               7/1512
            SEVERAL TREES AND POLES DOWN JUST NORTH OF     PHI/LSR   4002 7577
                    FISHERVILLE ROAD. TIME
 34  WNDG   4 S STAUNTON ARPT VA      (4 S SHD)                        7/1517
            NUMEROUS TREES DOWN... SOME ON CARS... ON      LWX/LSR   3821 7890
                    VA-608 BATTLEFIELD ROA
 35  WNDG   4 S GROTTOES VA      (5 SE SHD)                           7/1523
            NUMEROUS TREES AND WIRES DOWN INCLUDING ON CARSLWX/LSR   3822 7883
                    ON US-340 EASTSIDE HIG
 36  WNDG   HOCKESSIN DE      (8 NNW ILG)                             7/1538
            SOME TREES DOWN IN HOCKESSIN. TIME ESTIMATED   PHI/LSR   3979 7569
                    FROM RADAR.
 37  WNDG   1 ESE TWIN CITY GA      (29 NNE VDI)                      7/1540
            A TREE WAS REPORTED DOWN NEAR THE INTERSECTION FFC/LSR   3257 8214
                    OF BEAGLE RD AND GEORG
 38  WNDG   1 SE WEST GOSHEN PA      (17 WNW PHL)                     7/1540
            DOWNED TREE IN WIRES ON WESTTOWN THORNTON ROAD PHI/LSR   3996 7556
                    AND FIVE POINTS ROAD.
 39  WNDG   2 SE EAST NANTMEAL TWP PA      (28 NW PHL)               7/1550
            TREE REPORTED DOWN AT BLACK HORSE RD IN WEST   PHI/LSR   4011 7569
                    VINCENT TOWNSHIP. TIME
 40  WNDG   WEST HAVEN DE      (5 N ILG)                             7/1550
            NUMEROUS TREES DOWN OR SNAPPED WITH SOME ONTO  PHI/LSR   3976 7559
                    HOMES. TIME ESTIMATED
 41  WNDG   1 N MONTCHANIN DE      (8 N ILG)                         7/1550
            TREES AND WIRES DOWN ALONG MONTCHANIN RD NORTH PHI/LSR   3980 7559
                    OF WILMINTON. TIME EST
 42  WNDG   GREENVILLE DE      (6 N ILG)                             7/1550
            TREES DOWN IN GREENVILLE. TIME ESTIMATED BY    PHI/LSR   3978 7560
                    RADAR.
 43  WNDG   1 NE WOODDALE DE      (6 N ILG)                          7/1550
            SEVERAL TREES DOWN ALONG CENTERVILLE ROAD IN   PHI/LSR   3978 7562
                    WESTERN GREENVILLE. TI
 44  WNDG   GREENVILLE MANOR DE      (6 N ILG)                        7/1552
            TREES AND POWER POLES DOWN IN GREENVILLE. TIME PHI/LSR   3978 7560
                    ESTIMATED FROM RADAR.
 45  WNDG   WILMINGTON DE      (5 NNE ILG)                           7/1555
            SEVERAL REPORTS OF TREES DOWN IN WILMINGTON.   PHI/LSR   3975 7556
                    TIME ESTIMATED FROM RA
 46  WNDG   PHILLIPS HEIGHTS DE      (7 NE ILG)                       7/1555
            TREE DOWN ONTO POWER LINES AT WILMINGTON       PHI/LSR   3977 7551
                    WASHINGTON STREET EXTE
 47  WNDG   WILMINGTON DE      (5 NNE ILG)                           7/1555
            TREES DOWN OR SNAPPED ON NORTH MADISON STREET  PHI/LSR   3975 7555
                    BETWEEN WEST 9TH AND W
 48  WNDG   ROCK MANOR DE      (6 NNE ILG)                           7/1555
            LARGE TREE UPROOTED AND BLOCKING SCHOOL ROAD INPHI/LSR   3977 7555
                    ALAPOCAS. TIME ESTIMAT
 49  WNDG   4 S GROTTOES VA      (5 SE SHD)                           7/1557
            NUMEROUS TREES AND WIRES DOWN INCLUDING ON CARSLWX/LSR   3822 7883
                    ON US-340 EASTSIDE HIG
```

```
 50  WNDG  EDGEMOOR GARDENS DE      (7 NE ILG)                          7/1557
           TREE ONTO A HOUSE WITH PEOPLE TRAPPED IN       PHI/LSR   3976 7550
                  EDGEMOOR GARDENS. POWE
 51  WNDG  2 WNW BYNUM MD      (30 NNE BWI)                             7/1558
           TREE DOWN ACROSS ROADWAY NEAR 711 W            LWX/LSR   3958 7641
                  JARRETTSVILLE RD.
 52  WNDG  WINTERTHUR DE      (8 N ILG)                                 7/1609
           TREES AND WIRES DOWN AT KENNETT PIKE AND OLD   PHI/LSR   3980 7561
                  KENNETT ROAD.
 53  WNDG  2 NNW KINGSVILLE MD      (23 NNE BWI)                       7/1610
           LARGE TREE DOWN BLOCKING THE ROADWAY ON PARK   LWX/LSR   3947 7644
                  FORREST LANE.
 54  WNDG  1 NNE KINGSVILLE MD      (24 NE BWI)                        7/1614
           TREES DOWN ON US-1 BELAIR ROAD NEAR NEW CUT    LWX/LSR   3947 7641
                  ROAD. TREES DOWN ON MD
 55  WNDG  MEDIA PA      (8 WNW PHL)                                   7/1615
           SEVERAL TREES DOWN ACROSS THE SOUTHERN PORTION PHI/LSR   3992 7539
                  OF DELAWARE COUNTY. TI
 56  WNDG  1 SE ABERDEEN MD      (32 WSW ILG)                          7/1618
           TREE ACROSS WIRES NEAR 12 CHESAPEAKE CT.       LWX/LSR   3950 7616
 57  WNDG  1 NW HARMONY GA      (33 S AHN)                             7/1631
           MULTIPLE TREES REPORTED DOWN NEAR THE          FFC/LSR   3347 8336
                  INTERSECTION OF COCHRA
  4  A175  3 N ROCHFORD SD      (34 WNW RAP)                          7/1635
                                                         UNR/LSR   441710372
 58  WNDG  YARDLEY PA      (2 SSW TTN)                                7/1650
           SEVERAL TREES AND WIRES REPORTED DOWN IN THE   PHI/LSR   4024 7484
                  AREA OF YARDLEY AND WO
 59  WNDG  WOODSTOWN NJ      (14 E ILG)                               7/1650
           SOME TREES DOWN IN THE WOODSTOWN AREA. TIME    PHI/LSR   3966 7533
                  ESTIMATED FROM RADAR.
 60  WNDG  3 NNE JOPPA MD      (26 NE BWI)                            7/1658
           TREE DOWN ACROSS ROADWAY AT THE INTERSECTION OFLWX/LSR   3947 7634
                  SINGER RD AND WINTERS
 61  WNDG  2 SW GLENDORA NJ      (9 ESE PHL)                          7/1700
           DOWNED TREE... POLE AND WIRES ON NJ 41 BOTH    PHI/LSR   3982 7509
                  DIRECTIONS NORTH OF GO
 62  WNDG  1 SW SWORDS GA      (28 S AHN)                             7/1703
           MULTIPLE TREES DOWN ALONG I-20 IN BETWEEN MILE FFC/LSR   3354 8331
                  MARKERS 123 AND 126 EA
 74  G 77  2 NNE SEABROOK FARMS NJ      (23 S PHL)                   7/1705
           RUTGERS AGRICULTURAL RESEARCH AND EXTENSION    PHI/LSR   3953 7520
                  CENTER AT UPPER DEERFI
 63  WNDG  1 ENE EDGEWOOD MD      (27 NE BWI)                        7/1708
           TREE LIMBS AND POWERLINES DOWN ON THE 300 BLOCKLWX/LSR   3943 7628
                  OF REGINA DRIVE
 64  WNDG  3 SSE STAUNTON VA      (12 SW SHD)                         7/1711
           TREE FELL ONTO POWER LINES ON PARTRIDGE CT.    LWX/LSR   3812 7904
 75  G 60  4 NNW SEABROOK FARMS NJ      (21 ESE ILG)                 7/1717
           69 MPH THUNDERSTORM WIND GUST MEASURED ON ROUTEPHI/LSR   3955 7524
                  77 AT MILE MARKER 9.
  7  A125  1 SSW BEULAH ND      (32 SSW N60)                          7/1720
                                                         BIS/LSR   472410178
  8  A150  BEULAH ND      (31 SSW N60)                               7/1725
           RELAYED VIA BROADCAST MEDIA.                   BIS/LSR   472610178
 65  WNDG  4 N BEMIDJI MN      (2 ENE BJI)                          7/1730
           TREES DOWN HWY 71 AND GLIDDEN RD               FGF/LSR   4754 9488
 66  WNDG  1 E JOPPA MD      (24 NE BWI)                            7/1738
           TREE DOWN IN THE 1100 BLOCK OF CLAYTON ROAD    LWX/LSR   3943 7634
 67        WNDG  3 WNW BYNUM MD(30 NNE BWI)                         7/1744
           TREE DOWN ON THE 900 BLOCK OF WEST             LWX/LSR   3958 7641
                  JARRETTSVILLE ROAD
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  68  WNDG  1 NW MINOTOLA NJ      (21 WNW ACY)                          7/1745
            TELEPHONE PONES SNAPPED IN HALF WITH WIRES DOWNPHI/LSR   3953 7496
                    ON BREWSTER AND FOREST
  69  WNDG  2 W PENNINGTON MN      (19 E BJI)                            7/1800
            TREES BLOCKING POWER DAM ROAD AND CONNOR ROAD  FGF/LSR   4748 9452
  70  WNDG  1 ENE STATHAM GA       (14 W AHN)                            7/1806
            A TREE WAS REPORTED DOWN ACROSS A DRIVEWAY     FFC/LSR   3397 8358
                    ALONG PROVIDENCE CIRCL
  11  A150  DORSET MN      (38 S BJI)                                    7/1850
                                                           FGF/LSR   4696 9495
  71  WNDG  1 ENE SEAVILLE NJ      (16 SSW ACY)                          7/1850
            CORRECTS PREVIOUS TSTM WND DMG REPORT FROM 1   PHI/LSR   3922 7468
                    ENE SEAVILLE. TREE DOW
  12  A175  NEVIS MN      (38 S BJI)                                    7/1910
            NEAR LAKE BELLE TAINE                          FGF/LSR   4697 9484
  72  WNDG  1 ENE SEAVILLE NJ      (16 SSW ACY)                          7/1918
            TREE DOWN ON GARDEN STATE PARKWAY NEAR MILE    PHI/LSR   3922 7468
                    MARKER 21.9.
  13  A125  CARSON ND      (44 NE Y22)                                   7/1950
                                                           BIS/LSR   464210156
  73  WNDG  7 SSW KELDRON SD      (15 ESE Y22)                          8/0430
            TREE BRANCHES BLOWN DOWN WHICH CAUSED POWER    ABR/LSR   458410187
                    OUTAGES.


.........OTHER SEVERE REPORTS..................OTHER SEVERE REPORTS.........

   2  A100  2 SSE MYERSVILLE MD      (17 SSE HGR)                          7/1256
                                                           LWX/LSR   3948 7756
   3  A100  2 ENE MIDDLETOWN MD      (20 SE HGR)                           7/1257
            MEASURED NEAR MILE-MARKER 46 ON I-70 NEAR      LWX/LSR   3946 7751
                    MIDDLETOWN ...MD
   5  A100  LAKE ITASCA MN      (22 SW BJI)                               7/1650
                                                           FGF/LSR   4725 9521
   6  A100  ROCHFORD SD      (33 W RAP)                                    7/1658
                                                           UNR/LSR   441210372
   9  A100  7 W NEW SALEM ND      (38 W BIS)                            7/1835
            HAIL WAS ACCOMPANIED BY STRONG WINDS THAT      BIS/LSR   468510156
                    DAMAGED WIND BREAKS. R
  10  A100  NEW SALEM ND      (31 W BIS)                                7/1845
            RELAYED FROM BROADCAST MEDIA.                  BIS/LSR   468510141
```

Figure 8: Daily Report Log Example

How to read an SPC report log:

Event Number: 40 (in chronological order, the 40th severe event received during this 24 hour period).
Event: "WNDG" Wind Damage.
Location: “WEST HAVEN DE (5 N ILG)” Event occurred in West Haven, Delaware, or 5 statute miles north of Wilmington, Delaware (ILG).
Date/Time: 7/1550 Occurred on the 7th day of the month at 1550 CST.
Description (If included): NUMEROUS TREES DOWN OR SNAPPED WITH SOME ONTO HOMES. TIME ESTIMATED.
Source: “PHI/LSR. Preliminary Local Storm Report issued by the National Weather Service office at Mount Holly, New Jersey.

Latitude Longitude: 3976 7559 The latitude and longitude of the event not including decimal point or negative value for given hemisphere

17.4 Updates, Amendments and Corrections. SPC issues a scheduled update at 1800 UTC. SPC will rerun the program, at times, to add additional data from late LSRs into this report log.

18. Monthly Tornado Statistics (WMO header NWUS21, AWIPS ID STAMTS).

18.1 Mission Connection. SPC issues Monthly Tornado Summary to provide WFOs, the public, media, and emergency managers with a preliminary number of tornado reports on a national scale.

18.2 Issuance Guidelines.

18.2.1 Creation Software. SPC will use the National Centers AWIPS (NAWIPS) and/or the SPC Product Generator (PRODGEN) for these products.

18.2.2 Issuance Criteria. This summary is a non-scheduled, event-driven product.

18.2.3 Issuance Time. SPC will issue this summary when tornado numbers are updated and confirmed.

18.2.4 Valid Time. Summaries are valid upon issuance.

18.2.5 Product Expiration Time. Not applicable.

18.3 Technical Description. Summaries will follow the format and content described in this section.

18.3.1 Mass News Disseminator Broadcast Line. None.

18.3.2 MND Header. The Monthly Summary MND header is "TORNADO TOTALS AND RELATED DEATHS".

18.3.3 Content. This summary tabulates the preliminary number of tornado reports listed in WFO LSR(s) issued during the previous month. These numbers consist of reported and confirmed tornadoes. SPC will create the count of tornadoes when Storm Data is made available by the NWS Performance and Evaluation Branch (PEB). The National PEB Verification Program, the National Climatic Data Center, and SPC will confirm the total number of tornadoes, and provide the final update to the monthly summary.

The monthly summary will include final data from each of the last three years and a three year average. The summary will also include the number of killer tornadoes and number of deaths for the current year and average from the previous three years.

18.3.4 Format.

```
ZCZC STAMTS ALL
NWUS21 KWNS 021742

TORNADO TOTALS AND RELATED DEATHS...THROUGH 01 NOV 2020
NWS STORM PREDICTION CENTER NORMAN OK
1142 AM CST MON NOV 02 2020

     ...NUMBER OF TORNADOES...        NUMBER OF       KILLER
                                      TORNADO DEATHS  TORNADOES
     ..2020..  2019 2018 2017   3YR              3YR             3YR
    PREL  ACT   ACT  ACT  ACT    AV   20 19 18 17 AV  20 19 18 17 AV
----- ------ ============== ------ ------ -------   --- --- --- --- ---  --- --- --- --- ---
JAN   90     -    21   15  137    57    7  0  0 20  6   3  0  0  3  1
FEB   51     -    26   48   69    47    1  1  2  5  2   1  1  2  4  3
MAR  101     -   107   55  192   118   25 23  0  0  7   3  1  0  0  0
APR  351     -   272  130  214   205   40  7  1  8  5  14  4  1  5  3
MAY  140     -   506  170  291   322    1  7  1  2  3   1  4  1  2  2
JUN  109     -   172  155  146   157    0  0  0  0  0   0  0  0  0  0
JUL  116     -    99   92   81    90    1  0  1  0  0   1  0  1  0  0
AUG  169     -    73   81  119    91    3  0  0  0  0   2  0  0  0  0
SEP   37     -   87*  108   51   82*    0  0  1  0  0   0  0  1  0  0
OCT   19     -   66*  123   75   88*    0  0  0  0  0   0  0  0  0  0
NOV    0     -   19*   83   42   48*    -  0  3  0  1   -  0  2  0  0
DEC    -     -   72*   66   12   50*    -  3  1  0  1   -  2  1  0  1
----- ------ ============== ------ ------- -------   --- --- --- --- ---  --- --- --- --- ---
SUM 1183     - 1520* 1126 1429 1355*   78 41 10 35 25  25 12  9 14 10

*PRELIMINARY REPORTS.
^PRELIMINARY/INCOMPLETE VERSION OF FINAL COUNTS.

PREL = 2020 PRELIMINARY COUNT FROM ALL NWS LOCAL STORM REPORTS.
ACT  = ACTUAL TORNADO COUNT BASED ON NWS STORM DATA SUBMISSIONS.

COMPARISONS BETWEEN PRELIMINARY AND ACTUAL COUNTS SHOULD BE AVOIDED.

..MARSH..11/02/2020

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```

Figure 9: Monthly Tornado Statistics Example

The statistics are broken down by month and contain final data for the last three years. A "-" in a column means the data is missing or not yet available.

The SPC includes all reports of tornadoes, including "unconfirmed," "possible," "suspected" and duplicate reports from Local Storm Reports issued by WFOs. The "PREL" column lists the number of preliminary tornadoes from the Local Storm Reports.

When the digital Storm Data database arrives from the NWS Performance and Evaluation Branch, the actual tornado counts are entered in the column labeled "ACT".

Along the bottom of the report are totals for the columns. In the example, there were 1183

preliminary (PREL) tornadoes reported through November 2020.

18.4 Updates, Amendments and Corrections. SPC should update this report at least twice per month. SPC will correct reports for inaccurate statistical information, when possible.

19. Killer Tornado Statistics (WMO header NWUS23, AWIPS ID STATIJ).

19.1 Mission Connection. SPC issues Killer Tornado Statistics to provide WFOs, the public, media and emergency managers with a list of the dates, locations and number of deaths due to tornadoes since the start of the calendar year on a national scale.

19.2 Issuance Guidelines.

19.2.1 Creation Software. SPC will use the National Centers AWIPS (NAWIPS) and/or the SPC Product Generator (PRODGEN) for these products.

19.2.2 Issuance Criteria. SPC issues a new list of statistics following new killer tornado events.

19.2.3 Issuance Time. This list is non-scheduled, event driven.

19.2.4 Valid Time. Lists are valid upon issuance.

19.2.5 Product Expiration Time. Not applicable.

19.3 Technical Description. Lists will follow the format and content described in this section.

19.3.1 Mass News Disseminator Broadcast Line. None.

19.3.2 Mass News Disseminator Header. The Statistics MND header is "(YEAR) PRELIMINARY KILLER TORNADOES

19.3.3 Content. This summary will list the dates, times, locations, and number of deaths from killer tornadoes from Jan 1 of the current calendar year to the time of the latest report, whether the deaths occurred in a tornado or severe thunderstorm watch, near a watch, or with no watch in effect, the watch number where the death occurred, and the EF-scale damage, if available. The summary should list the circumstances in which each death occurred. The summary will also list the number of tornado deaths by state.

19.3.4 Format.

```
2020 PRELIMINARY KILLER  TORNADOES
NWS STORM PREDICTION CENTER NORMAN OK
0859 PM CDT MON AUG 31 2020

#    DATE TIME-CST  COUNTIES  STATE DEATHS  A B C D  WATCH EF LOCATION
---  ------ ----------- ------------  ------- --------  ---------- -------- --- -----------
01 JAN 10  2330  NACOGDOCHES     TX      1  1 - - -  WT005  1 01M
```

```
02 JAN 11  0145      BOSSIER     LA      3  3 - - -  WT005  2 03M
03 JAN 11  1115      PICKENS     AL      3  3 - - -  WT013  2 03M
04 FEB 06  0214      MARENGO     AL      1  1 - - -  WT025  1 01M
05 MAR 02  2310       BENTON     TN      1  - - 1 -  WT035  2 01M
06 MAR 03  0045    DAVIDSON/     TN      2  2 - - -  WT036  3 02O
           0100       WILSON     TN      3  3 - - -  WT036  3 02H 01P
07 MAR 03  0150       PUTNAM     TN     19 19 - - -  WT036  4 12H 05M
                                                              02P
08 APR 12  1500    WALTHALL/     MS      2  2 - - -  WT107  4 02U
                    LAWRENCE     MS      2  2 - - -  WT107  4 02M
09 APR 12  1520   JEFFERSON-
                       DAVIS/    MS      4  4 - - -  WT107  4 04P
                        JONES    MS      4  4 - - -  WT107  4 04U
10 APR 12  1950       MURRAY     GA      7  7 - - -  WT112  2 07M
11 APR 12  2120     HAMILTON     TN      3  - - 3 -  WT113  3 03U
12 APR 12  2315       BARTOW     GA      1  1 - - -  WT115  1 01H
13 APR 13  0120       OCONEE     SC      1  1 - - -  WT116  3 01U
14 APR 13  0345   ORANGEBURG     SC      2  2 - - -  WT117  3 02M
15 APR 13  0410      HAMPTON     SC      5  5 - - -  WT117  4 05M
16 APR 13  0450     COLLETON     SC      1  1 - - -  WT117  1 01U
17 APR 19  1830       MARION     MS      1  1 - - -  WT121  4 01M
18 APR 19  2245        HENRY     AL      1  1 - - -  WT125  2 01M
19 APR 22  1600     MARSHALL     OK      2  2 - - -  WT134  2 01V 01O
20 APR 22  1650         POLK     TX      3  3 - - -  WT133  3 03U
21 APR 22  2030      RAPIDES     LA      1  1 - - -  WT135  2 01M
22 MAY 17  1935       ACADIA     LA      1  - - - 1  -----  3 01M
23 JUL 08  1610   OTTER TAIL     MN      1  - 1 - -  WS344  4 01P
24 AUG 03  2315       BERTIE     NC      2  2 - - -  WT414  3 02M
25 AUG 30  1715         HAND     SD      1  - 1 - -  WS475  2 01V

                                                    _ _ _
TOTALS:                                        78 71 2 4 1

FATALITIES BY STATE: TN28 MS13 SC09 GA08 AL05 LA05 TX04 OK02 NC02
                     MN01 SD01
FATALITIES BY CIRCUMSTANCE/LOCATION: 36M 15H 08P 03O 02V 14U

A = IN TORNADO WATCH
B = IN SEVERE THUNDERSTORM WATCH
C = CLOSE TO THE WATCH /15 MINUTES OR 25 MILES/
D = NO WATCH IN EFFECT
H = HOUSE
M = MANUFACTURED/MOBILE HOME
O = OUTDOORS
P = PERMANENT BUILDING/STRUCTURE
V = VEHICLE
U = UNKNOWN
WS = SEVERE THUNDERSTORM WATCH /NUMBER/
WT = TORNADO WATCH /NUMBER/
EF = ENHANCED FUJITA SCALE RATING

MAP OF ANNUAL U.S. KILLER TORNADOES (LOWER CASE):
HTTP://WWW.SPC.NOAA.GOV/CLIMO/TORN/FATALMAP.PHP

..MARSH..09/01/2020

$$
```

Figure 10: Killer Tornado Statistics Example

The killer tornadoes are listed in the chronological order of occurrence, by DATE and CST TIME. LOCATION is the county or parish and state where the first tornado-related deaths occurred. Each event will be numbered according to the actual tornado rather than segment when crossing state borders. This list may be updated as Storm Data information is available through the NCDC. "DEATHS" is the number of deaths in the whole tornado path, not just the given location. The ABCD column letters represent the number of deaths:

A = In tornado watch
B = In severe thunderstorm watch
C = "Close" to the watch (15 minutes or 25 miles)
D = No watch in effect

If the tornado was in a watch, the watch type and number is given. For example, WT008 is Tornado Watch number 8. If known, the EF-scale damage rating of the tornado is listed; if not, a "?" mark is entered. The deaths are broken down by the following circumstances of the victims, if known:

H = House (permanent foundation)
M = Mobile home (a.k.a. "manufactured home")
O = Outdoors (not inside any vehicle, mobile home or permanent building)
P = Permanent structure (school, garage, factory, store, warehouse, etc.)
V = Vehicle (includes parked RVs)
? = Unknown

Information for the killer tornadoes list comes from Preliminary Local Storm Reports or Public Information Statements (PNS) issued by WFOs, supplemented by NWS event memorandums and media accounts and monthly Storm Data Reports filed by the WFOs. Since killer tornado information, especially death counts, circumstances and EF scale, may not be completely known until many days after an event, these numbers are subject to change as more information becomes available.

19.4 Updates, Amendments and Corrections. SPC will update this report as the information becomes available and is deemed reliable. SPC may also verify the information as Storm Data is updated through the NCEI.

20. Operations Administrative Message (WMO header NOUS74, AWIPS ID ADMSPC).

20.1 Mission Connection. SPC issues Operations Administrative Messages to inform WFOs of changes in SPC operational status (going to or from backup operations) or communications issues (i.e. advance notice of upcoming test convective watches).

21. Backup Operations.

21.1 Backup. Storm Prediction Center emergency backup operations are supported by the Air Force Weather Agency (AFWA) as specified within a Memorandum of Understanding (MOU) between the National Weather Service and the U. S. Air Force. When emergency backup operations are active, only select high priority products for protection of life and property are routinely disseminated. Transitions to (or from) emergency backup status or to a backup exercise are announced via an administrative message. Additional information on Storm Prediction Center backup can be found in NWSI 10-2201.

APPENDIX A – Examples

Table of Contents: Page

1. **Introduction.** This appendix provides WFOs and the public with examples of national severe weather products.

2. Categorical Convective Outlook (Graphic).

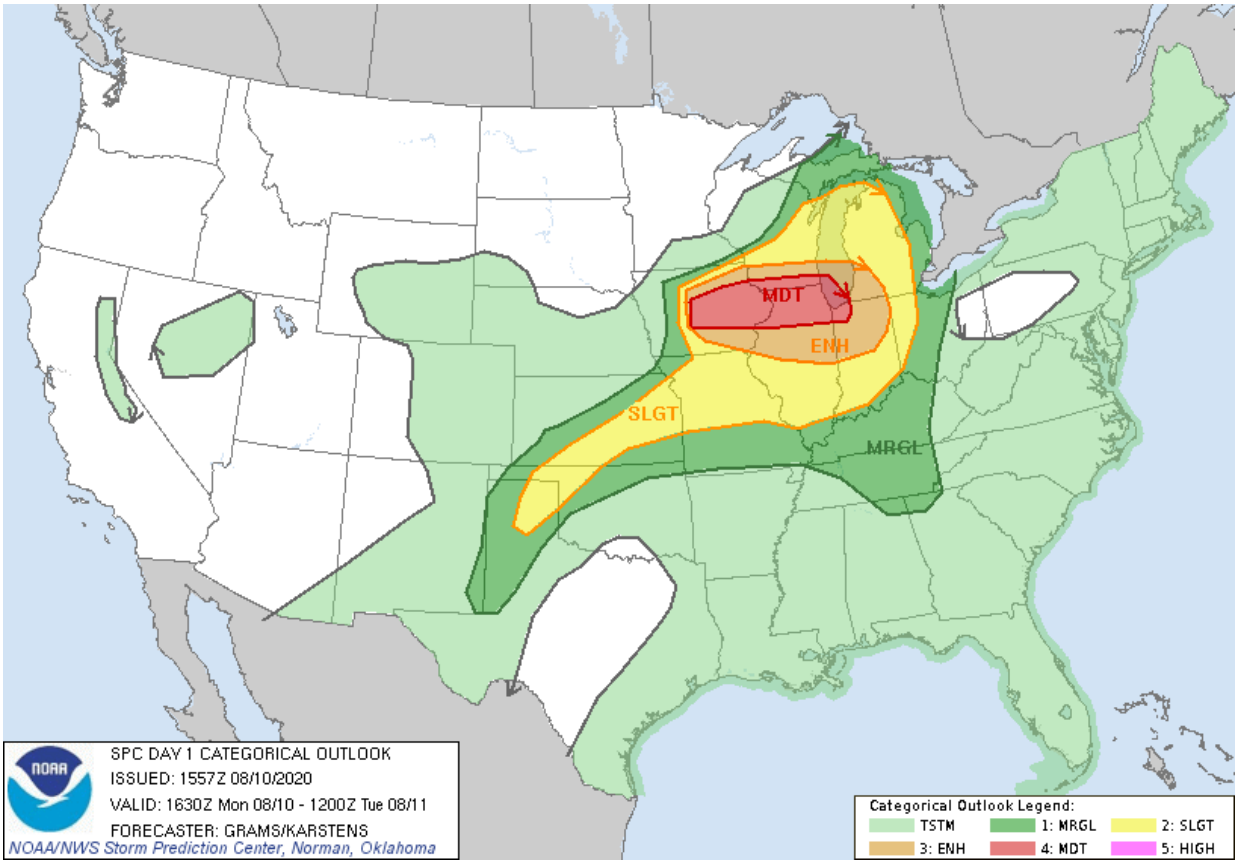

Figure 19: Day One Outlook – Categorical Graphic

3. Categorical Convective Outlook (Narrative).

```
SPC AC 101557

Day 1 Convective Outlook
NWS Storm Prediction Center Norman OK
1057 AM CDT Mon Aug 10 2020

Valid 101630Z - 111200Z

...THERE IS A MODERATE RISK OF SEVERE THUNDERSTORMS CENTRAL AND
EASTERN IOWA...NORTHERN ILLINOIS...FAR SOUTHERN WISCONSIN...AND FAR
NORTHWEST INDIANA...

...SUMMARY...
```

A derecho producing widespread damaging winds, some of which should be intense, is expected to persist and expand east from Iowa into parts of the Midwest through this evening.

...IA to the Midwest...
A pair of impulses embedded within a shortwave trough over the Upper Midwest will rapidly progress east. A 50+ kt jetlet should persist from eastern SD into southern WI through early evening. An intense MCS with a well-developed rear-inflow jet is ongoing to the south of the mid-level jet across central IA. Very steep mid-level lapse rates around 9 C/km per 12Z OAX and DVN soundings along with robust boundary-layer heating ahead of it should support maintenance of this MCS this afternoon. On the fringe of the stronger mid-level westerlies, a pronounced bow should sweep eastward across eastern IA and the northern IA vicinity. The MCS should enlarge as well as convection develops northeast along a surface front into southern WI. For more in-depth discussion of the short-term severe threat, please see MCD 1450.

Given large buoyancy and steep low to mid-level lapse rates within the gradient of moderate to strong mid-level westerlies, potential will exist for a derecho with intense severe gusts and widespread wind damage across parts of central to eastern IA into northern IL and far southern WI.

The MCS will likely persist east into Lower MI and IN while developing southwestward into a high MLCAPE environment to the southwest in central and southern IL. While deep-layer shear will drop off with southern extent and steeper lapse rates with eastern extent, a severe risk mainly in the form of damaging winds will probably continue on a more scattered basis this evening in the Midwest before eventual decay tonight.

...MO to the TX Panhandle..
Pockets of strong surface heating will result in a plume of large buoyancy ahead of a southward-moving cold front. Scattered late afternoon and evening multicell thunderstorms are expected to develop, with the strongest cells primarily capable of severe wind gusts.

..Grams/Karstens.. 08/10/2020

4. Day 4-8 Convective Outlook (Graphics; by Individual Days).

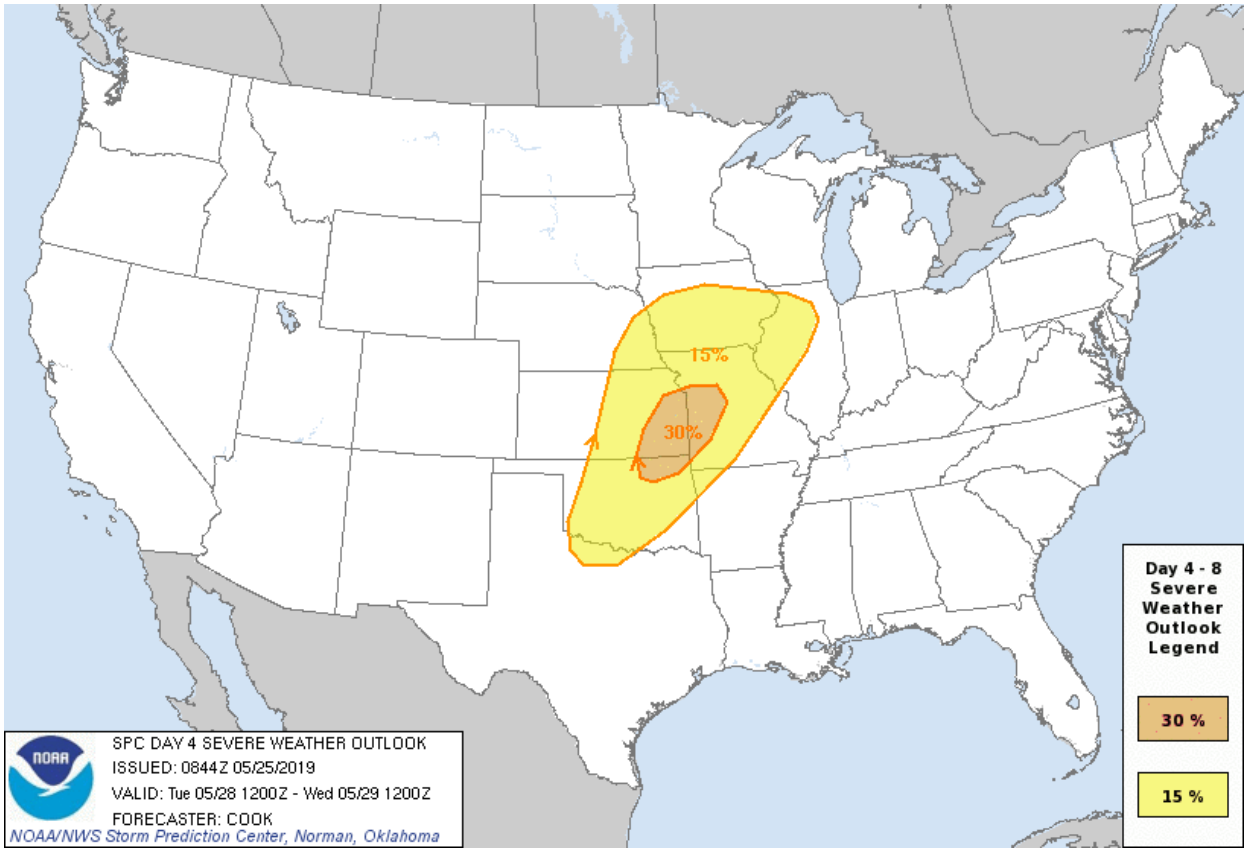

Figure 20a: Day 4 Convective Outlook Graphic

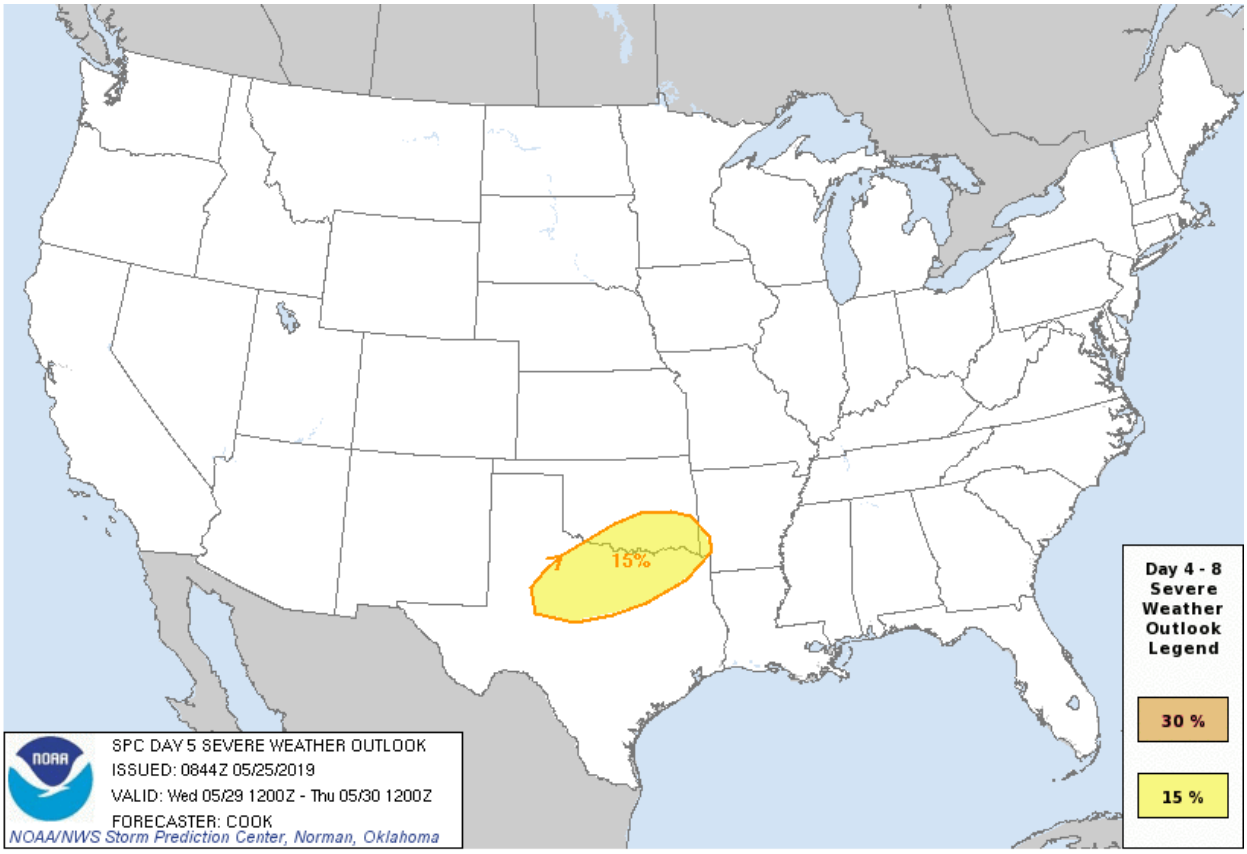

Figure 20b: Day 5 Convective Outlook Graphic

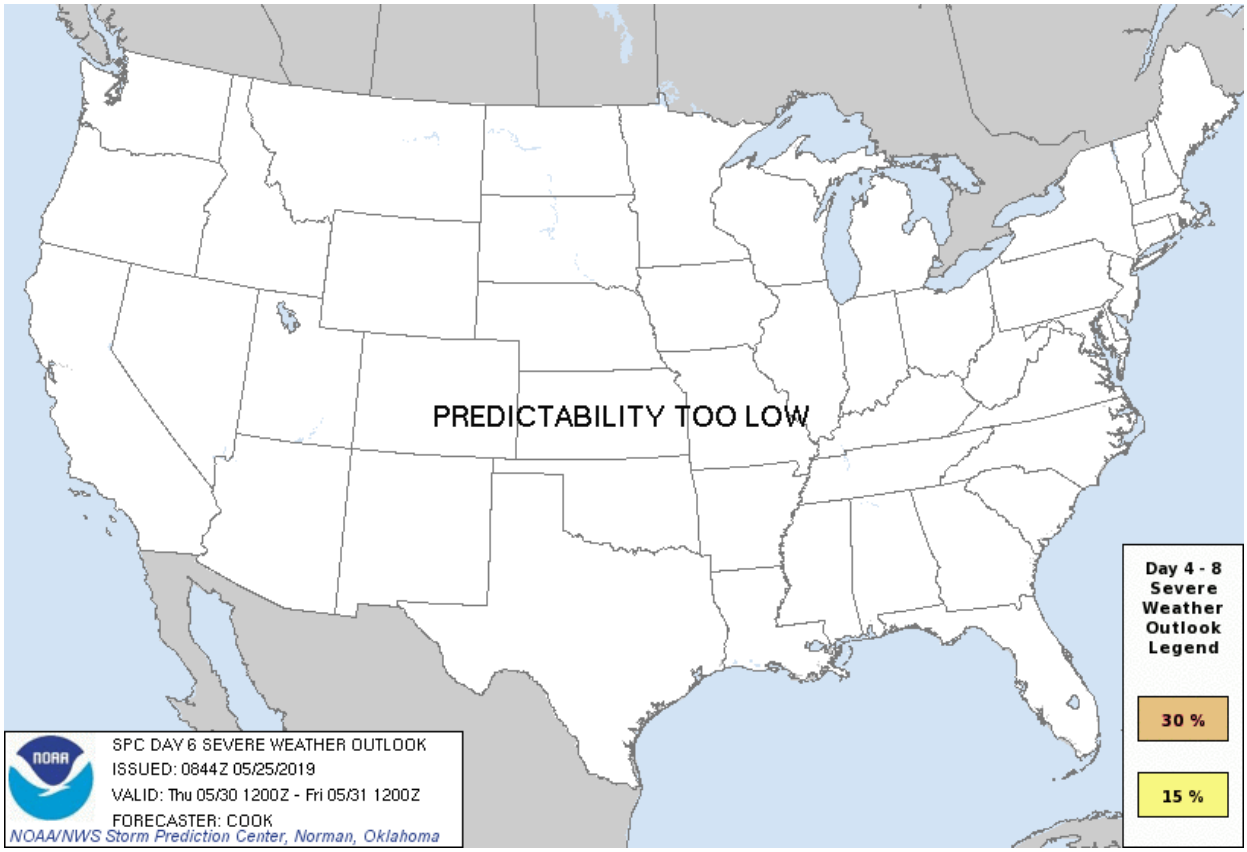

Figure 20c: Day 6 Convective Outlook Graphic

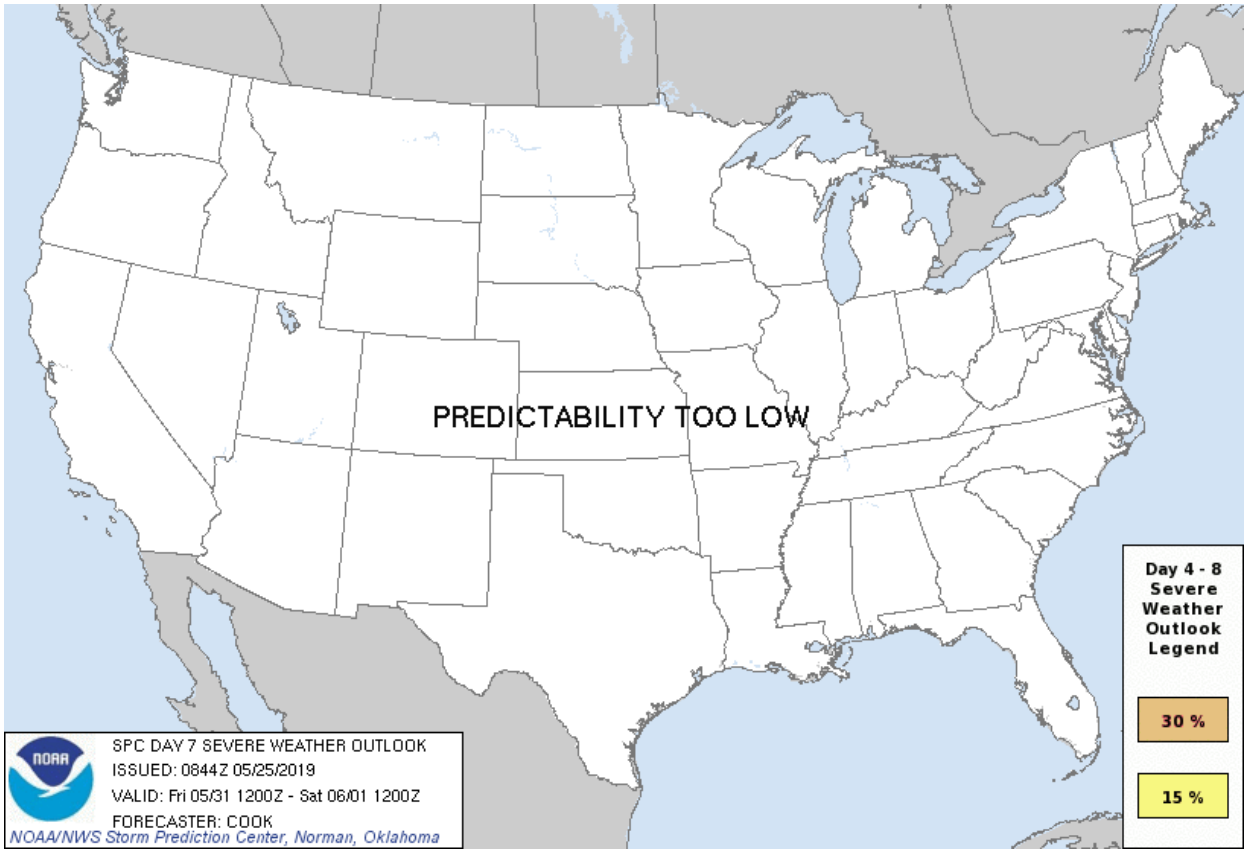

Figure 20d: Day 7 Convective Outlook Graphic

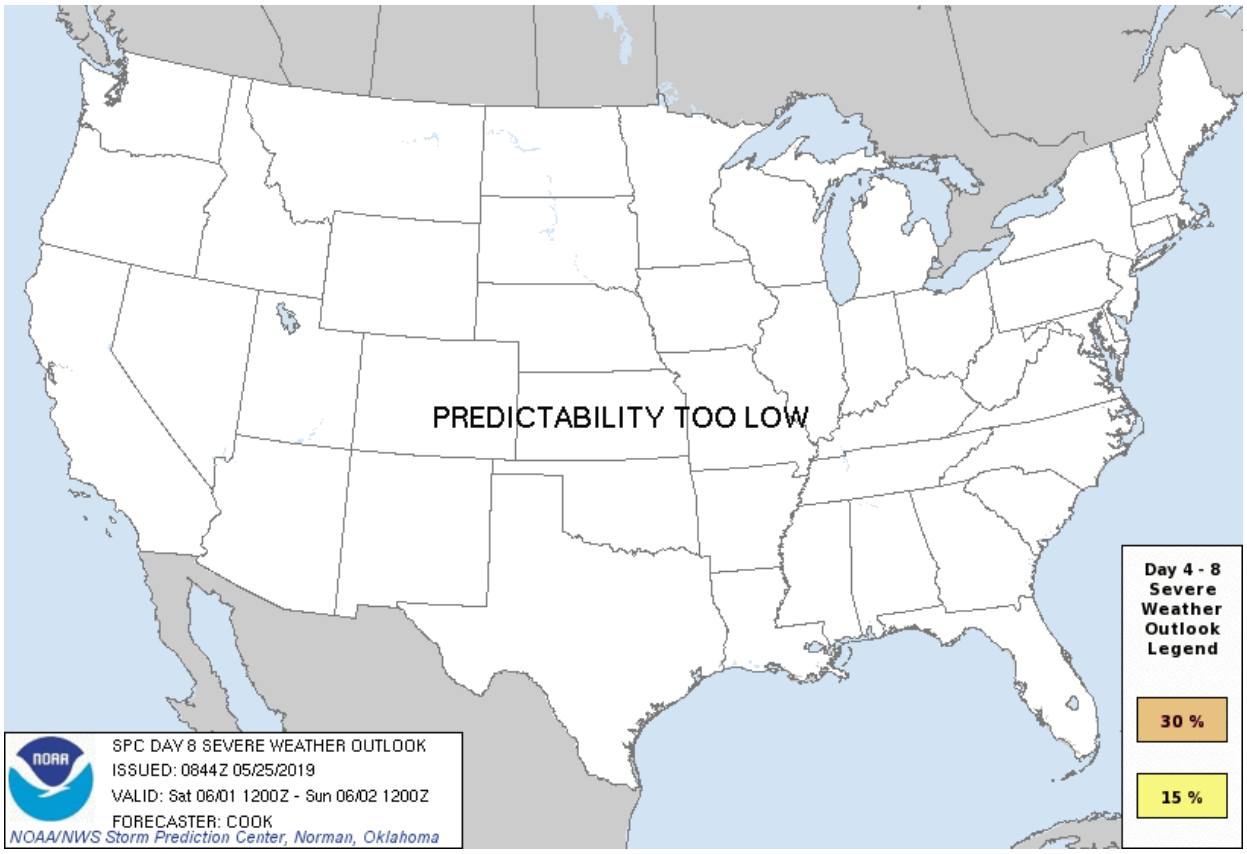

Figure 20e: Day 8 Convective Outlook Graphic

5. Day 4-8 Convective Outlook (Narrative).

```
ZCZC SPCSWOD48 ALL
ACUS48 KWNS 250844
SPC AC 250844

Day 4-8 Convective Outlook
NWS Storm Prediction Center Norman OK
0344 AM CDT Sat May 25 2019

Valid 281200Z - 021200Z

...DISCUSSION...
The main wave associated with persistent long-wave troughing over
the West will finally begin to eject over the central Plains on
D4/Tuesday. This wave will result in a 70-knot mid-level jet
overspreading western portions of a strongly buoyant air mass that
should be mostly undisturbed from any prior convection.  An
expansive area of convection should evolve along and ahead of a
surface dryline located from western Oklahoma northward to
southeastern Nebraska and along a warm front extending from a
surface low in eastern Nebraska eastward to southern lower Michigan.
Although mesoscale details are still unclear at this timeframe, the
```

extent of convective coverage over the warm sector within a parameter space potentially supporting significant severe weather justifies introduction of a 30% area (equivalent to Enhanced Slight) in eastern Kansas, western Missouri, and northeastern Oklahoma within a broader area of 15% probabilities from the Oklahoma/Texas Red River northeastward to Iowa/Illinois. The specific locations of heightened risk may change with subsequent outlooks.

This wave will shift northeastward and weaken as the attendant surface front/dryline stalls or retreats slightly northwestward ahead of another disturbance that will eject from New Mexico into the southern and central Plains on D5/Wednesday. Models suggest that a cluster of storms will evolve in north Texas and vicinity in response to the wave, convergence along remaining surface boundaries, and strong warm-sector instability. A 15% area has been added to address this threat.

Later in the period (D7/Fri), a strong mid/upper disturbance will amplify while taking on a negative tilt over Ontario/Quebec. Strong mid/upper flow will overspread portions of the Northeast and Appalachians during this time. Meanwhile a cold front will migrate southeastward into an air mass that should be weakly to moderately unstable around peak heating hours barring any rainfall or prior widespread convective overturning. It appears that this pattern will support a severe risk in portions of the area, though convective coverage is not spatially focused in guidance to justify a 15% delineation at this time. This region will be monitored in future outlooks for a more consistent convective signal that would justify probabilities.

..Cook.. 05/25/2019

6. SPC Points Products.

```
DAY 1 CONVECTIVE OUTLOOK AREAL OUTLINE
NWS STORM PREDICTION CENTER NORMAN OK
0653 AM CST SUN JAN 22 2017

VALID TIME 221300Z - 231200Z

PROBABILISTIC OUTLOOK POINTS DAY 1

... TORNADO ...

0.02   29018865 30268857 32578890 33528864 34328774 34818593
       35058395 36508081 37067907 37257723 37177473
0.05   29088824 30338814 32048833 33038774 34088527 35558133
       36287935 36257712 35977462
0.10   29808760 31048757 32038671 34178298 34638166 35327982
       34997790 34067602 99999999 28497995 26678285
0.15   28908031 27338313 99999999 29928670 31188666 31888597
       33858222 34168068 33987926 33157835
0.30   29698583 30918572 31658520 32628331 32758225 32678177
       32518137 31568052 99999999 29798073 28508322
```

```
SIGN   28928044 27528316 28758323 29738411 29418522 29928670
       31158667 31798610 33838227 34178061 34007930 33467856
       31728090 30468105 28928044
&&

... HAIL ...

0.05   29168837 30778829 31998848 33328796 34928373 36637928
       36227463
0.15   29268808 30508801 32168822 33058768 34418439 35328129
       35717922 35397816 34227667
0.30   29818635 31018639 31758583 33268239 33148101 32178006
       99999999 29848063 29818064 28508320
&&

... WIND ...

0.05   28908867 30158854 32558892 33528864 34278780 34788607
       35088392 36568065 37037919 37257723 37177489
0.05   38522437 38512263 37362155 35712074 34412182
0.15   29058824 30408816 32048831 33028777 34098525 35558135
       36277937 36257718 35997472
0.30   29848719 31168718 31788665 32798493 34208212 34728032
       34517865 33797748 99999999 27217919 25488231
&&

CATEGORICAL OUTLOOK POINTS DAY 1

... CATEGORICAL ...

HIGH   29678580 30868575 31648522 32618331 32748214 32548141
       31698063 99999999 29828066 28508320
MDT    28918029 27328315 99999999 29908674 31118671 31778613
       33148361 33828219 34178059 33997935 33337836
ENH    29798759 31028757 32028671 34138306 34928085 35327983
       34967781 34147615 99999999 27187924 25468235
SLGT   29158823 30238817 32058831 33038776 34008542 34858320
       35788065 36257936 36277729 35977478
MRGL   29078864 30158856 32538890 33528865 34298776 34798598
       35068391 36558070 37017921 37247734 37187509
MRGL   38502397 38532267 37362153 35712075 34472177
TSTM   28719217 29519171 30779147 31799195 33959468 35119596
       36909626 37909554 38249437 38509281 38079131 37429013
       36448723 36028358 36388237 39267817 39597611 38837394
       99999999 46322475 45232410 42722386 40862332 39812250
       38612049 35801850 34401806 33751832 33151922

&&
THERE IS A HIGH RISK OF SVR TSTMS TO THE RIGHT OF A LINE FROM 40 S
PFN 35 W MAI 25 NNE DHN 20 ESE MCN 40 NNE VDI 30 NNW SAV 45 SE SAV
...CONT... 40 ESE SGJ 50 NW PIE.

THERE IS A MDT RISK OF SVR TSTMS TO THE RIGHT OF A LINE FROM 50 ESE
DAB 35 W SRQ ...CONT... 50 SSE PNS 25 NNW CEW 10 SW TOI 30 N MCN 35
NNW AGS 35 ENE CAE 25 ESE FLO 40 SE CRE.
```

```
THERE IS A ENH RISK OF SVR TSTMS TO THE RIGHT OF A LINE FROM 55 SSW
PNS 40 SW GZH 25 SW MGM 20 NE AHN 20 SSE CLT 25 WNW SOP 15 NW OAJ 80
SSW HSE ...CONT... 65 ENE PBI 60 SW APF.

THERE IS A SLGT RISK OF SVR TSTMS TO THE RIGHT OF A LINE FROM 70 E
BVE 30 S MOB 30 SE MEI 15 SSW TCL 30 SSW RMG 35 NW AND 40 E HKY 20 S
DAN 25 ESE RZZ 70 NE HSE.

THERE IS A MRGL RISK OF SVR TSTMS TO THE RIGHT OF A LINE FROM 50 ESE
BVE 35 ESE GPT 15 NNW MEI 15 SW CBM 35 SSW MSL 45 ENE HSV 55 S TYS
40 S PSK 20 S LYH 20 S RIC 55 SSE WAL.

THERE IS A MRGL RISK OF SVR TSTMS TO THE RIGHT OF A LINE FROM 60 SW
UKI 50 SE UKI 20 E SJC PRB 70 WSW VBG.

GEN TSTMS ARE FCST TO THE RIGHT OF A LINE FROM 75 S 7R4 30 SE 7R4 25
NW BTR 35 NE ESF 15 WSW DEQ 20 NNW MLC 15 NW BVO 15 N CNU 45 SSE OJC
35 W JEF 25 E VIH 30 SSE FAM 15 SE CKV 25 ENE TYS TRI 15 SW MRB 30
WSW ILG 55 SE ACY ...CONT... 45 WNW AST 45 N ONP 50 NNE 4BK 40 ESE
ACV 25 SSW RBL 35 SW TVL 40 NE BFL 15 S PMD 10 WSW LGB 75 S OXR.
```

(Day 4-8 Points Product)

```
DAY 4-8 CONVECTIVE OUTLOOK AREAL OUTLINE
NWS STORM PREDICTION CENTER NORMAN OK
0344 AM CDT SAT MAY 25 2019

VALID TIME 281200Z - 021200Z

SEVERE WEATHER OUTLOOK POINTS DAY 4

... ANY SEVERE ...

0.15   37799864 40689771 41809681 42519542 42779348 42228968
       41788868 41218845 40178918 36749271 34499585 33349789
       33389914 33879969 34889983 36219927 37799864
0.30   37049692 37999656 39079559 39369448 39349324 38759284
       37499370 36439511 36179628 36329675 37049692
&&

SEVERE WEATHER OUTLOOK POINTS DAY 5

... ANY SEVERE ...

0.15   33750009 34809792 35159679 35179554 34949471 34279405
       33729396 32829505 32089669 31749805 31509956 31790110
       32670134 33210078 33750009
&&

SEVERE WEATHER OUTLOOK POINTS DAY 6

... ANY SEVERE ...
```

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&&

SEVERE WEATHER OUTLOOK POINTS DAY 7

... ANY SEVERE ...

&&

SEVERE WEATHER OUTLOOK POINTS DAY 8

... ANY SEVERE ...

&&
```

7. Public Severe Weather Outlook.

```
ZCZC SPCPWOSPC ALL
   WOUS40 KWNS 221302
   ALZ000-FLZ000-GAZ000-221800-

   PUBLIC SEVERE WEATHER OUTLOOK
   NWS STORM PREDICTION CENTER NORMAN OK
   0702 AM CST SUN JAN 22 2017

   ...Outbreak of tornadoes and severe thunderstorms expected over
   parts of the north Florida and south Georgia today...

   * LOCATIONS...
     South Georgia
     North Florida
     Extreme southeast Alabama

   * HAZARDS...
     Numerous tornadoes, several intense and long track
     Scattered damaging winds
     Scattered large hail

   * SUMMARY...
     A severe thunderstorm and tornado outbreak is expected today
     across north Florida and south Georgia, with the significant
     severe threat also expected to extend southward into central
     Florida and northeastward into South Carolina this evening. A
     few long-track, strong tornadoes will be possible.

   Preparedness actions...

   Review your severe weather safety procedures for the possibility
   of dangerous weather today. Stay tuned to NOAA Weather Radio,
   weather.gov, or other media for watches and warnings. A tornado
   watch means that conditions are favorable for tornadoes to form
   during the next several hours. If a tornado warning is issued for
   your area, move to a place of safety, ideally in a basement or
   interior room on the lowest floor of a sturdy building.
```

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&&

..Thompson.. 01/22/2017

$$
```

8. Watch County List.

```
NWUS64 KWNS 281844
WCLA

.TORNADO WATCH A
COORDINATION COUNTY LIST FROM THE NWS STORM PREDICTION CENTER
EFFECTIVE UNTIL 0300 UTC.


KSC003-005-031-041-043-045-059-061-085-087-091-103-107-111-121-
127-139-143-149-177-197-209-290300-

KS
.     KANSAS COUNTIES INCLUDED ARE

ANDERSON          ATCHISON          COFFEY
DICKINSON         DONIPHAN          DOUGLAS
FRANKLIN          GEARY             JACKSON
JEFFERSON         JOHNSON           LEAVENWORTH
LINN              LYON              MIAMI
MORRIS            OSAGE             OTTAWA
POTTAWATOMIE      SHAWNEE           WABAUNSEE
WYANDOTTE
$$


MOC001-021-025-033-037-041-047-049-061-063-079-095-101-107-115-
117-121-165-175-177-195-211-290300-

MO
.     MISSOURI COUNTIES INCLUDED ARE

ADAIR             BUCHANAN          CALDWELL
CARROLL           CASS              CHARITON
CLAY              CLINTON           DAVIESS
DEKALB            GRUNDY            JACKSON
JOHNSON           LAFAYETTE         LINN
LIVINGSTON        MACON             PLATTE
RANDOLPH          RAY               SALINE
SULLIVAN
$$


ATTN...WFO...TOP...EAX...
```

9. Watch Outline Update Message.

(Initial Issuance)

```
WOUS64 KWNS 281854
WOU5

BULLETIN - IMMEDIATE BROADCAST REQUESTED
TORNADO WATCH OUTLINE UPDATE FOR WT 275
NWS STORM PREDICTION CENTER NORMAN OK
155 PM CDT TUE MAY 28 2019

TORNADO WATCH 275 IS IN EFFECT UNTIL 1000 PM CDT FOR THE
 FOLLOWING LOCATIONS

KSC003-005-027-031-041-043-045-059-061-085-087-091-103-107-111-
121-127-139-143-149-161-177-197-209-290300-
/O.NEW.KWNS.TO.A.0275.190528T1855Z-190529T0300Z/

KS
.    KANSAS COUNTIES INCLUDED ARE

ANDERSON             ATCHISON            CLAY
COFFEY               DICKINSON           DONIPHAN
DOUGLAS              FRANKLIN            GEARY
JACKSON              JEFFERSON           JOHNSON
LEAVENWORTH          LINN                LYON
MIAMI                MORRIS              OSAGE
OTTAWA               POTTAWATOMIE        RILEY
SHAWNEE              WABAUNSEE           WYANDOTTE
$$


MOC001-021-025-033-037-041-047-049-061-063-079-095-101-107-115-
117-121-165-175-177-195-211-290300-
/O.NEW.KWNS.TO.A.0275.190528T1855Z-190529T0300Z/

MO
.    MISSOURI COUNTIES INCLUDED ARE

ADAIR                BUCHANAN            CALDWELL
CARROLL              CASS                CHARITON
CLAY                 CLINTON             DAVIESS
DEKALB               GRUNDY              JACKSON
JOHNSON              LAFAYETTE           LINN
LIVINGSTON           MACON               PLATTE
RANDOLPH             RAY                 SALINE
SULLIVAN
$$


ATTN...WFO...TOP...EAX...
```

(Hourly Update)

```
WOUS64 KWNS 282123
WOU5

TORNADO WATCH OUTLINE UPDATE FOR WT 275
NWS STORM PREDICTION CENTER NORMAN OK
423 PM CDT TUE MAY 28 2019

TORNADO WATCH 275 REMAINS IN EFFECT UNTIL 1000 PM CDT FOR THE
FOLLOWING LOCATIONS

KSC003-005-027-031-041-043-045-059-061-085-087-091-103-107-111-
121-127-139-143-149-161-177-197-209-290300-
/O.CON.KWNS.TO.A.0275.000000T0000Z-190529T0300Z/

KS
.    KANSAS COUNTIES INCLUDED ARE

ANDERSON             ATCHISON            CLAY
COFFEY               DICKINSON           DONIPHAN
DOUGLAS              FRANKLIN            GEARY
JACKSON              JEFFERSON           JOHNSON
LEAVENWORTH          LINN                LYON
MIAMI                MORRIS              OSAGE
OTTAWA               POTTAWATOMIE        RILEY
SHAWNEE              WABAUNSEE           WYANDOTTE
$$


MOC001-021-025-033-037-041-047-049-061-063-079-095-101-107-115-
117-121-165-175-177-195-211-290300-
/O.CON.KWNS.TO.A.0275.000000T0000Z-190529T0300Z/

MO
.    MISSOURI COUNTIES INCLUDED ARE

ADAIR                BUCHANAN            CALDWELL
CARROLL              CASS                CHARITON
CLAY                 CLINTON             DAVIESS
DEKALB               GRUNDY              JACKSON
JOHNSON              LAFAYETTE           LINN
LIVINGSTON           MACON               PLATTE
RANDOLPH             RAY                 SALINE
SULLIVAN
$$


ATTN...WFO...TOP...EAX...
```

(Final)

```
WOUS64 KWNS 290304
WOU5

TORNADO WATCH OUTLINE UPDATE FOR WT 275
NWS STORM PREDICTION CENTER NORMAN OK
1003 PM CDT TUE MAY 28 2019

TORNADO WATCH 275 IS NO LONGER IN EFFECT.

KSZ000-MOZ000-290300-
/O.EXP.KWNS.TO.A.0275.000000T0000Z-190529T0300Z/

NO COUNTIES OR PARISHES REMAIN IN THE WATCH.

$$

ATTN...WFO...TOP...EAX...
```

10. Aviation Watch Notification Message.

```
WWUS30 KWNS 281854
SAW5
SPC AWW 281854
WW 275 TORNADO KS MO 281855Z - 290300Z
AXIS..50 STATUTE MILES NORTH AND SOUTH OF LINE..
35SSE IRK/KIRKSVILLE MO/ - 25SSW MHK/MANHATTAN KS/
..AVIATION COORDS.. 45NM N/S /33SSE IRK - 37ESE SLN/
HAIL SURFACE AND ALOFT..3 INCHES. WIND GUSTS..70 KNOTS.
MAX TOPS TO 550. MEAN STORM MOTION VECTOR 24035.

LAT...LON 38909230 38069684 39529684 40369230

THIS IS AN APPROXIMATION TO THE WATCH AREA.  FOR A
COMPLETE DEPICTION OF THE WATCH SEE WOUS64 KWNS
FOR WOU5.
```

11. Public Watch Notification Message (Tornado and Severe Thunderstorm).

```
WWUS20 KWNS 281854
SEL5
SPC WW 281854
KSZ000-MOZ000-290300-

URGENT - IMMEDIATE BROADCAST REQUESTED
Tornado Watch Number 275
NWS Storm Prediction Center Norman OK
155 PM CDT Tue May 28 2019

The NWS Storm Prediction Center has issued a
```

* Tornado Watch for portions of
  Northeastern Kansas
  Northwestern Missouri

* Effective this Tuesday afternoon and evening from 155 PM until
  1000 PM CDT.

* Primary threats include...
  A few tornadoes likely with a couple intense tornadoes possible
  Widespread large hail and scattered very large hail events to 3
    inches in diameter likely
  Widespread damaging winds and isolated significant gusts to 80
    mph likely

SUMMARY...Initially elevated storms could become rooted near the surface along a slow-moving front from northeastern Kansas into northern Missouri this afternoon. Additional storms are expected to form and spread northeastward into the watch area from the southwest by mid-late afternoon. Supercells are expected with very large hail and potentially a few tornadoes, especially with storms able move along the front. Upscale growth into a cluster is also possible late this afternoon/evening, with an increasing threat for damaging winds.

The tornado watch area is approximately along and 50 statute miles north and south of a line from 35 miles south southeast of Kirksville MO to 25 miles south southwest of Manhattan KS. For a complete depiction of the watch see the associated watch outline update (WOUS64 KWNS WOU5).

PRECAUTIONARY/PREPAREDNESS ACTIONS...

REMEMBER...A Tornado Watch means conditions are favorable for tornadoes and severe thunderstorms in and close to the watch area. Persons in these areas should be on the lookout for threatening weather conditions and listen for later statements and possible warnings.

&&

OTHER WATCH INFORMATION...CONTINUE...WW 272...WW 273...WW 274...

AVIATION...Tornadoes and a few severe thunderstorms with hail surface and aloft to 3 inches. Extreme turbulence and surface wind gusts to 70 knots. A few cumulonimbi with maximum tops to 550. Mean storm motion vector 24035.

...Thompson

12. Watch Status Message.

```
WOUS20 KWNS 282334
WWASPC
SPC WW-A 282335
KSZ000-MOZ000-290040-

STATUS REPORT ON WW 275

THE SEVERE WEATHER THREAT CONTINUES ACROSS THE ENTIRE WATCH AREA.

..KERR..05/28/19

ATTN...WFO...TOP...EAX...

&&

STATUS REPORT FOR WT 275

SEVERE WEATHER THREAT CONTINUES FOR THE FOLLOWING AREAS

KSC003-005-027-031-041-043-045-059-061-085-087-091-103-107-111-
121-127-139-143-149-161-177-197-209-290040-

KS
.    KANSAS COUNTIES INCLUDED ARE

ANDERSON             ATCHISON            CLAY
COFFEY               DICKINSON           DONIPHAN
DOUGLAS              FRANKLIN            GEARY
JACKSON              JEFFERSON           JOHNSON
LEAVENWORTH          LINN                LYON
MIAMI                MORRIS              OSAGE
OTTAWA               POTTAWATOMIE        RILEY
SHAWNEE              WABAUNSEE           WYANDOTTE
$$


MOC001-021-025-033-037-041-047-049-061-063-079-095-101-107-115-
117-121-165-175-177-195-211-290040-

MO
.    MISSOURI COUNTIES INCLUDED ARE

ADAIR                BUCHANAN            CALDWELL
CARROLL              CASS                CHARITON
CLAY                 CLINTON             DAVIESS
DEKALB               GRUNDY              JACKSON
JOHNSON              LAFAYETTE           LINN
LIVINGSTON           MACON               PLATTE
RANDOLPH             RAY                 SALINE
SULLIVAN
$$
```

THE WATCH STATUS MESSAGE IS FOR GUIDANCE PURPOSES ONLY. PLEASE
REFER TO WATCH COUNTY NOTIFICATION STATEMENTS FOR OFFICIAL
INFORMATION ON COUNTIES...INDEPENDENT CITIES AND MARINE ZONES
CLEARED FROM SEVERE THUNDERSTORM AND TORNADO WATCHES.

$$