

# **NATIONAL WEATHER SERVICE SERVICE DESCRIPTION DOCUMENT (SDD)**

**TYPE: Enhancement to Official Product**

**DATE: October 7, 2010**

Enhanced Product – Addition of Forecast Maximum Wind and Hail Size  
Coding to Severe Thunderstorm Warnings and Associated Follow-up  
Severe Weather Statements  
Feedback Period Completed: October 1, 2010

## **Part 1 – Mission Connection**

### **1) Product Description**

The Severe Thunderstorm Warning (SVR) and Severe Weather Statement (SVS) are alphanumeric products providing short-fused warning information on hazardous conditions associated with thunderstorms which are expected to pose a threat to life and/or real property. These products are prepared by each National Weather Service (NWS) Weather Forecast Office (WFO) for their County Warning Area (CWA) of responsibility. The SVR is issued based on expectation of winds gusting to 58 mph or greater and/or hail of one (1) inch diameter or greater. The SVS is a “follow-up” statement which provides updated information as to the status of storms within a SVR or Tornado Warning. For the purpose of this enhancement, only follow up statements for SVRs are included. This product enhancement adds a short tag line at the footer of the SVR and SVS products to clarify expected thunderstorm-induced maximum wind gusts and hail size, primarily for the purpose of assisting emergency management decisions.

### **2) Purpose**

Adding this short tag to the bottom of SVR and SVS products enhances the ability of our partners to make threshold-based decisions on the information we provide in our severe weather products. Its format allows for software to easily parse out and integrate the information into decision support systems. It also facilitates quick, easy scanning of the product to assimilate the expected strength of wind and/or hail threats.

For example, during the experimental period of 2010, several events occurred in which emergency management officials approved and activated outdoor warning sirens for “high end” severe thunderstorm warnings, normally reserved for tornado warnings. This was accomplished without burdening busy dispatchers or others from retrieving the information which would otherwise be “buried” in the text of the warning. By pre-determining a threshold (e.g., 90 mph), the information in the wind-hail tag can either be immediately deciphered at a glance, or pre-programmed into software which then alerts decision makers that their threshold has been exceeded. Another application which was discussed in feedback was the capability for a private vendor to use the tag line data to automatically alert their customers who require notification for severe thunderstorm threats above a certain threshold. In all these cases, this short code at the end of the

product permitted easy retrieval of the data, whether manually or by an automated process. Additionally, a consensus outcome of the NWS Next Generation Warnings Workshop was that the NWS should focus warnings to cover “What”, “Where”, “When” and “Intensity” in a clearly delineated format. Each of these except “Intensity” is coded into the text of every warning. User feedback verified that this tag line served to meet that intensity coding gap.

### **3) Audience**

The target audience for the product includes: national, state and local emergency managers; media; the private weather enterprise; and government and military agencies.

### **4) Presentation Format**

This wind/hail tag can be found at the bottom of every SVR and SVR follow-up SVS statement originating from a NWS Central Region WFO.

### **5) Feedback Method**

We will continue to solicit user feedback regarding the value of this enhancement. Feedback will typically be collected via comments provided to the local office webmaster. Opportunities for face-to-face responses will occasionally occur in the context of emergency management meetings, media workshops, outreach events, etc.

## **Part II – Technical Description**

### **1) Format & Science Basis**

This tag would be found at the bottom of every SVR and appropriate SVS products after the double ampersand (&&) directly below the existing TIME...MOT...LOC line and before the double dollar sign (\$\$).

The format of the SVR wind/hail tag will be a 24-character line appended to SVR and appropriate follow-up SVS products, inserted after the double ampersand (&&) and immediately following the “LAT... LON...” and “TIME... MOT... LOC...” lines, as follows:

**WIND...HAIL xxxMPH y.yyIN**

**Where xxx represents the expected wind gusts in miles per hour, and y.yy represents the expected hail size in inches. For severe strength wind values under 100, the leading zero will be omitted.**

For example:

```
&&  
LAT...LON 3882 9418 3857 9414 3859 9458 3868 9460  
TIME...MOT...LOC 1556Z 259DEG 31KT 3866 9451  
WIND...HAIL 70MPH 2.75IN
```

\$\$

In this example, the hail/wind tag would represent a severe thunderstorm warning with expectations of 70 mph wind gusts and 2.75" (baseball size) hail.

The allowable estimated values for hail and wind will be coded and defined as follows:

**Hail** (local office flexibility to add other events in 1/4 inch increments with 0.75 being the lowest allowable value, other than "no hail" and "smaller than severe sized" values for offices who still use that as a threshold for severe thunderstorm warnings and 1.00 being the lowest allowable value, other than the "no hail" and "smaller than severe sized" values for offices who have adopted the 1 inch hail criteria)

0.00 Equates to no hail

<.75 Equates to hail smaller than severe sized

0.75 0.75 inch hail (for offices who use it as their lower bound of severe hail size)

1.00 1.00 inch hail (svr criteria for offices who use it as their lower bound of severe hail size)

1.75 1.75 Hail (golfball)

2.75 2.75 Hail (Baseball)

4.00 4.00 Hail (Softball) or larger and is the highest allowable value

**Wind** (local office flexibility to add other events in 5 mph increments)

<50 Wind gusts below severe criteria and lowest allowable value

60 60 mph peak wind gust and is the first allowable value above <50 (severe criteria)

75 75 mph peak wind gust (Hurricane force)

100 100 mph or higher peak wind gust and is the highest allowable value (significant structural damage)

## 2) Availability

This enhanced product is available through all distribution channels which disseminate SVR and SVS products.

## 3) Additional Information

None.