

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

**NATIONAL WEATHER SERVICE INSTRUCTION 10-513**

**August 18, 2011**

**Operations and Services**

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

**WFO WINTER WEATHER PRODUCTS SPECIFICATION**

---

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

**OPR:** OS22 (P. Stokols)

**Certified by:** OS22 (E. Jacks)

**Type of Issuance:** Routine.

---

**SUMMARY OF REVISIONS:** This instruction supersedes NWSI 10-513, “WFO Winter Weather Products Specification,” effective December 24, 2008. The following revisions were made to this instruction:

- 1) Added Section 4 on Forecaster Judgment.
- 2) Combined redundant information in Watch, Warning, and Advisory Sections into one Section 6, which replaces old Sections 5, 6, and 7, respectively.
- 3) Added wording in Section 6.2.2.1 to extend watches beyond 48 hours when forecasters are highly confident.
- 4) Added bullet and CAP formats to all examples in main body and Appendix, including format template (Figure 1) in Section 6.3.5.

Signed

08/05/11

---

David B. Caldwell  
Director, Office of Climate,  
Water, and Weather Services

Date

Table of Contents

1. Introduction..... 4

2. Winter Weather Event and Definitions..... 4

    2.1. Winter Weather Event..... 4

    2.2. Winter Weather Event Beginning Time..... 4

    2.3. Winter Weather Event Ending Time..... 4

3. Introduction..... 4

    3.1. Outlook ..... 4

    3.2. Watch ..... 4

    3.3. Warning/Advisory..... 4

4. Forecaster Judgment. .... 5

5. Winter Storm Outlook (product category HWO)..... 5

    5.1. Mission Connection ..... 5

    5.2. Issuance Guidelines..... 5

    5.3. Technical Description ..... 5

6. Winter Weather Watches, Warnings and Advisories (product category WSW) ..... 5

    6.1. Mission Connection ..... 5

    6.2. Issuance Guidelines..... 5

        6.2.1 Creation Software ..... 5

        6.2.2 Issuance Criteria..... 6

            6.2.2.1 Winter Weather Watches Issuance Criteria ..... 6

            6.2.2.2 Winter Weather Warning and Advisory Criteria ..... 6

            6.2.2.3 Impact Criteria ..... 6

            6.2.2.4 Winter Weather Products ..... 6

            6.2.2.5 Multiple Segments ..... 8

            6.2.2.6 Forecast Snowfall Criteria ..... 8

        6.2.3 Issuance Time ..... 9

            6.2.3.1 Winter Storm Watch Issuance Time ..... 9

            6.2.3.2 Winter Weather Warning/Advisory Issuance Time ..... 9

        6.2.4 Valid Time ..... 9

            6.2.4.1 Event Beginning Time ..... 9

            6.2.4.2 Event Ending Time ..... 10

        6.2.5 Product Expiration Time..... 10

            6.2.5.1 Winter Weather Watch Expiration Time ..... 10

            6.2.5.2 Winter Weather Warning or Advisory Expiration Time ..... 10

    6.3 Technical Description ..... 10

        6.3.1 Universal Geographic Code Type..... 10

        6.3.2 Mass News Disseminator Broadcast Instruction Line ..... 10

        6.3.3 Mass News Disseminator Product Type Line..... 10

        6.3.4 WSW Content ..... 10

6.3.4.1.	Overview Section.....	10
6.3.4.1.1	Overview Headline .....	11
6.3.4.1.2	Overview Text .....	11
6.3.4.2.	Segmented Forecast Information .....	11
6.3.4.2.1	Watch, Warning, Advisory Headline .....	11
6.3.4.2.3	Order of Segments .....	15
6.3.4.2.4	Order of Headlines .....	16
6.3.5.	Format .....	16
6.4	Updates, Cancellations and Corrections .....	18
6.4.1.	Minimum Watch Update Time Frame .....	18
6.4.2.	Minimum Warning/Advisory Update Times Frame .....	18
6.5	Upgrades .....	18
6.5.1	Upgrade Watch to Warning or Advisory .....	18
6.5.1.1	Upgrade Watch to Warning Example .....	18
6.5.2	Upgrade Advisory to Warning .....	19
6.5.2.1	Upgrade Advisory to Warning Segment Example.....	19
6.6	Replacing Warning or Advisories.....	20
6.6.1	Replacing Warning with a Warning.....	20
6.6.1.2	Replace Ice Storm Warning with Winter Storm Warning Segment .....	20
6.6.2	Replace Advisory with Advisory .....	21
6.6.2.2	Replace Freezing Rain Advisory with Winter Weather Advisory .....	21
APPENDIX A	Winter Weather Product Examples .....	A-1
APPENDIX B	Winter Weather Definitions .....	B-1
APPENDIX C	Headline Time Phrases.....	C-1

1. Introduction. This procedural directive describes the winter weather products issued by National Weather Service (NWS) Weather Forecast Offices (WFOs), guidelines associated with these products, and detailed content and format for each product type.

2. Winter Weather Event and Definitions.

2.1. Winter Weather Event. A winter weather event is a meteorological phenomenon that impacts public safety, transportation, and/or commerce, and typically occurs during the climatological winter season.

2.2. Winter Weather Event Beginning Time. A winter weather event begins either when public safety, transportation and/or commerce are adversely affected as a direct result of the expected or occurring meteorological conditions.

2.3. Winter Weather Event Ending Time. A winter weather event ends when meteorological conditions no longer pose a threat to public safety, transportation and/or commerce, or when such conditions are forecast to end.

3. Multitiered Concept. The NWS winter weather warning program will use, when appropriate, the multi-tiered concept to increase public awareness and promote a proper response to the impending hazardous winter weather event. Generically, the multi-tiered concept is:

3.1. Outlook. An outlook is used to indicate that a hazardous winter weather event may develop. It is intended to provide information to those who need considerable lead time to prepare for the event.

3.2. Watch. A watch is used when the risk of a hazardous winter weather event has increased, but its occurrence, location, and/or timing is still uncertain. It is intended to provide enough lead time so those who need to set their plans in motion can do so.

3.3. Warning/Advisory. These products are issued when a hazardous winter weather event is occurring, is imminent, or has a very high probability of occurrence. A warning is used for conditions posing a threat to life or property. An advisory is for less serious conditions that cause significant inconvenience and, if caution is not exercised, could lead to situations that may threaten life and/or property.

To properly apply the multi-tiered concept, it is important to have agreement between the forecast staff and other affected WFOs to reach a forecast consensus. This will reduce the on-again, off-again syndrome and geographical/time discontinuities, especially for the longer duration products like outlooks and watches. Proper coordination will enable the NWS to speak with one voice when alerting users to the potential for such an event.

4. Forecaster Judgment. Written instructions cannot address every operational situation. All WFO personnel exercise initiative and professional judgment to minimize risk to public safety and property, constraint of travel and commerce, and needs of users in situations not explicitly covered by written instructions. Protection of life and property takes precedence in these decision making processes. As such, criteria for winter storm warnings are considered guidance only, not strict thresholds. Forecasters may issue warnings and advisories based upon lower criteria if the event in question poses a significant threat to life due to timing or other circumstances. For example, an advisory or warning may be appropriate for a minor snowfall event that takes place near rush hour, even if the amount may not meet strict criteria

5. Winter Storm Outlook (product category HWO).

5.1. Mission Connection. Winter storm outlooks provide our users and partners three to seven (3-7) day advance notice of a hazardous winter weather event which has the potential to threaten life or property. The primary goal of this product is to provide information to those who need considerable lead time to prepare for the event.

5.2. Issuance Guidelines. WFOs should use the Hazardous Weather Outlook (HWO) to issue winter storm outlooks. The HWO has replaced the Special Weather Statement (SPS) as the tool to issue information about potentially hazardous winter weather expected within the next (3-7) days. Winter weather outlooks should follow the issuance guidelines described in NWS Instruction (NWSI) 10-517, section 4.2.

*Exception: Based on local user requirements for major winter storms, some WFOs may issue a winter storm outlook under the product category SPS in addition to the HWO.*

5.3. Technical Description. Winter storm outlooks should follow the format and content described in NWSI 10-517, section 4.3.

6. Winter Weather Watches, Warnings and Advisories (product category WSW).

6.1. Mission Connection. Winter weather watches, warnings and advisories provide our users and partners with advance notice of a hazardous winter weather event which has the potential to threaten life or property. The primary goal of these products is to provide users and partners enough lead time to take appropriate action, and to describe the severity, location, timing and evolution of hazardous winter weather events occurring or forecast to occur.

6.2. Issuance Guidelines.

6.2.1. Creation Software. WFOs will use the Advanced Weather Interactive Processing System (AWIPS) Graphical Hazard Generator (GHG) as the primary software to create and issue WSWs.

6.2.2. Issuance Criteria.

6.2.2.1. Winter Weather Watches Issuance Criteria. WFOs will issue a winter weather watch when conditions are favorable for a hazardous winter weather event to develop over part or all of the forecast area, but the occurrence is uncertain. WFOs should issue winter weather watches with as much lead time as possible when there is a 50 percent or greater chance of a hazardous winter weather event meeting or exceeding local warning and/or impact criteria. Watches are typically issued with lead times of 36 to 48 hours, and are encouraged to be issued with longer lead times in the three to four day time period when confidence is high. Care should be taken to balance the need to inform the public of impending hazardous weather with the need to avoid reducing the effectiveness of watches by issuing too many false alarms.

6.2.2.2. Winter Weather Warning and Advisory Criteria. WFOs will issue winter weather warnings or advisories when hazardous winter weather is occurring, imminent, or has a high probability of occurrence over part or all of the forecast area. WFOs should issue winter weather warnings and advisories with as much lead time as possible for the first, second, or occasionally third forecast periods (fourth period on rare occasions), when there is an 80 percent or greater chance of a hazardous winter weather event meeting or exceeding local warning, advisory and/or impact criteria

6.2.2.3 Impact Criteria. The following is an example of impact vs strict criteria: Winter Storm is forecasted but accumulations will not meet traditional criteria. However, if it is early in the season or during a critical time of day such as rush hour when the impact will likely be high, then a Winter Storm Warning might be warranted. The forecaster has the discretion and should not be held back from issuing what best describes the impending winter hazard even if traditional criteria may not be met in the strictest sense. WFOs will coordinate with adjacent WFOs regarding the warning type.

6.2.2.4 Winter Weather Products. WFOs will issue the following winter weather products:

<b>Watch Product Name</b>	<b>Description</b>
Blizzard Watch	Conditions are favorable for a blizzard event to meet or exceed Blizzard Warning criteria
Lake Effect Snow Watch	Conditions are favorable for a lake effect snow event to meet or exceed <u>local</u> Lake Effect Snow Warning criteria
Wind Chill Watch	Conditions are favorable for wind chill temperatures to meet or exceed <u>local</u> Wind Chill Warning criteria
Winter Storm Watch	Conditions are favorable for a winter storm event (Heavy Sleet, Heavy Snow, Ice Storm, Heavy Snow and Blowing Snow or a combination of events) to meet or exceed <u>local</u> Winter Storm Warning criteria.
<b>Warning Product Name</b>	<b>Description</b>
Blizzard Warning	Sustained wind or frequent gusts greater than or equal to 35 mph accompanied by falling and/or blowing snow, frequently reducing visibility to less than 1/4 mile for three hours or more.
Lake Effect Snow Warning	Widespread or localized lake induced snow squalls or heavy showers which produce snowfall accumulation meeting or exceeding locally defined warning criteria. Lake Effect Snow usually develops in narrow bands and impacts a limited area within a zone(s).
Ice Storm Warning	Ice accumulation meeting or exceeding locally defined warning criteria (typical value is 1/4 inch or more).
Wind Chill Warning	Wind chill temperatures reaching or exceeding locally defined warning criteria (typical value is -18°F or colder).
Winter Storm Warning	Winter weather event including 1) snow, ice, or sleet meeting or exceeding locally defined 12 and/or 24 hour warning criteria; or 2) a combination of snow, ice, or sleet and blowing snow with at least one of the precipitation elements meeting or exceeding locally defined 12 and/or 24 hour warning criteria.
<b>Advisory Product Name</b>	<b>Description</b>
Freezing Rain Advisory	Light ice accumulation (freezing rain and/or freezing drizzle) meeting or exceeding locally defined advisory criteria, but remaining below warning criteria.
Lake Effect Snow Advisory	Widespread or localized lake effect snowfall accumulation (and blowing snow as appropriate) reaching or exceeding locally

	defined advisory criteria, but remaining below warning criteria.
Wind Chill Advisory	Wind chill temperatures reaching or exceeding locally defined advisory criteria, but remaining below warning criteria.
Winter Weather Advisory	Winter weather event having one or more hazards (i.e., snow, snow and blowing snow, snow and ice, snow and sleet, or snow, ice and sleet) meeting or exceeding locally defined 12 and/or 24 hour advisory criteria for at least one of the precipitation elements, but remaining below warning criteria.

**Table 1.** Winter weather products. NOTE: These are guidance values only, criteria are set locally in conjunction with key partners, and considers factors such as public impact, storm timing, and snowfall rate in addition to standard accumulation criteria.

6.2.2.5 Multiple Segments. If there is a high level of confidence that more than one discernable winter weather event (e.g. Winter Storm Warning and Ice Storm Warning) will occur within a WFO’s warning area, or if the timing and/or accumulation is different, then the forecast team will issue separate WSW segments for each warning event.

Example: A winter storm is expected to produce a band of heavy snow across the northern sections of the local warning area (Zones 001-005), an area of mixed snow, sleet and freezing rain in the central portion of the warning area (Zones 006-010), and an area of mostly ice accumulation of more than ½ inch in the southern portion of the warning area (Zones 011-016).

This scenario would require three separate warnings designated by three segments in one WSW. The three warnings would be as follows:

- 1) Winter Storm Warning for Zones 001 to 005
- 2) Winter Storm Warning for Zones 006 to 010
- 3) Ice Storm Warning for Zones 011 to 016

Note: The forecaster will addend the attribution line to say “WINTER STORM WARNING FOR HEAVY SNOW in case 1 and “WINTER STORM FOR HEAVY SNOW...SLEET...AND FREEZING RAIN in case 2. See examples in Section 6.3.4.2.

6.2.2.6 Forecast Snowfall Criteria. Winter Storm Warnings and Winter Weather Advisories are based on an average value (rounded up to the nearest inch) of the forecast snowfall or sleet range. The forecast average value must meet or exceed the 12 and/or 24 hour local criteria depending on the duration of the event. The event duration is from the time winter weather precipitation begins to when it ends.



Local Criteria (Inches)	Forecast Range (Inches)	Mid Point Value (Inches)	Issue Advisory/Warning?
4	3 to 5	4	Yes
	2 to 4	3	No
6	4 to 8	6	Yes
	3 to 6	4.5	No
8	5 to 10	7.5	Yes (round up to 8)
	4 to 8	6	No
12	10 to 14	12	Yes
	6 to 12	9	No

**Table 2.** Example of minimum snowfall/sleet forecast criteria for Winter Storm Warning and Winter Weather Advisory.

6.2.3. Issuance Time. Winter weather watches, warnings and advisories are event-driven products.

6.2.3.1. Winter Storm Watch Issuance Time. WFOs should issue the initial watch as soon as confidence is high enough that an event may occur. However, a watch should not be issued within 12 hours of the event start time – by this time a decision should be made to either cancel or upgrade to a warning or advisory. Subsequent updates are issued at least once every 12 hours until a warning or advisory is issued or the watch is cancelled.

6.2.3.2. Winter Weather Warning/Advisory Issuance Time. A WFO should initially issue a winter weather warning or advisory when a hazardous winter weather event is expected to meet or exceed local warning/advisory and/or impact criteria. WFOs should issue updated warnings or advisories at least once every six to eight hours until the event ends or is cancelled.

6.2.4. Valid Time. A winter weather watch, warning or advisory is valid for the appropriate time period for which impacts will be experienced during the event. The valid time (event start and end time) is placed in the P-VTEC line and described in the watch headline. One can have multiple start times of the same event across a CWA, especially if the precipitation is spreading slowly across the CWA.

6.2.4.1. Event Beginning Time. The event beginning time is when the hazardous event is expected to begin as defined in Section 2.2.

The event beginning time is placed in the P-VTEC line when issuance time is prior to the event beginning time. Otherwise, the event beginning time is zeroed out to indicate the event has begun (e.g., 000000T0000Z).

The event beginning time is also described in the watch, warning or advisory headline. If the issuance time is three or more hours prior to the event beginning time, the event beginning time is placed in the warning or advisory headline (e.g., WINTER STORM WARNING IN EFFECT FROM **10 PM THIS EVENING** TO 9 AM EST MONDAY). Otherwise, the event beginning time is omitted (e.g., WINTER STORM WARNING IN EFFECT UNTIL 9 AM EST MONDAY).

6.2.4.2. Event Ending Time. The event ending time is when the hazardous event is expected to end. The event ending time is placed in the P-VTEC line and described in the watch, warning, or advisory headline. The event ending time can match the product expiration time if the warning or advisory is in effect for eight hours or less.

6.2.5. Product Expiration Time. The product expiration time is the time when users can expect to receive an updated WSW.

6.2.5.1. Winter Weather Watch Expiration Time. The watch product expiration time is generally 12 hours after the issuance time and is placed at the end of the Universal Geographic Code (UGC) string.

6.2.5.2. Winter Weather Warning or Advisory Expiration Time. The warning/advisory product expiration time is generally 6 to 8 hours after the issuance time and should coincide with the next expected update or when the event is forecast to end. The product expiration time is placed in the UGC line.

6.3. Technical Description. Winter Storm Watches, Warnings and Advisories will follow the format and content described in this section.

6.3.1. Universal Geographic Code Type. WSWs will use the zone (Z) form of the UGC.

6.3.2. Mass News Disseminator Broadcast Instruction Line. Not applicable.

6.3.3. Mass News Disseminator Product Type Line. The WSW MND line is “URGENT-WINTER WEATHER MESSAGE.”

6.3.4. WSW Content. The WSW may contain an overview section, but will include segmented forecast information.

6.3.4.1. Overview Section. The WSW overview section is optional. If included, it should contain at least one of the following items:

6.3.4.1.1. Overview Headline. A general headline statement that summarizes the hazardous weather threat, area affected and expected time of development. The overview headline will begin and end with three periods (...). For example:

...ANOTHER MAJOR WINTER STORM TO IMPACT THE PACIFIC NORTHWEST ON MONDAY AND TUESDAY...

... ICE STORM WARNINGS ISSUED FOR CENTRAL PENNSYLVANIA TODAY...

6.3.4.1.2. Overview Text. The body of the overview section should contain a brief, non-technical description of the developing winter storm event. The description may include the location and movement of large scale weather features (e.g., fronts, low pressure systems). Precede the first line of this descriptive information by a period (.).

6.3.4.2. Segmented Forecast Information. Each segment of the WSW product will include a watch headline followed by text describing the reason(s) the WSW product was issued. Each segment describes a hazardous winter weather event(s) for the same geographical area.

6.3.4.2.1. Watch, Warning, Advisory Headline. The headline will include the following elements in the order shown:

- Leading ellipsis (...)
- Valid WSW product name listed in Table 1.
- Event action phrase defined in Table 2.
- Event beginning day and time phrase defined in Appendix C (when applicable)
- Event ending day and time phrase defined in Appendix C (when applicable)
- Trailing ellipsis (...)

*Exception: When necessary (e.g., mountainous terrain), areal descriptive terms and elevation indicators are permitted after the ending day and time phrase and before the trailing ellipsis.*

Generic Headline Format:

Used when watch, warning or advisory product is in effect:

**...<watch product name> <event action phrase> FROM <event beginning date and time phrase> TO <event ending date and time phrase>...**

Used when a warning or advisory product issuance time equals event beginning time:

**...<warning product name> <event action phrase> UNTIL <event ending date and time phrase>...**

Used to cancel a watch, warning or advisory prior to event beginning date and time:

...<watch product name> <event action phrase>...

Event Action Phrase. The event action phrase in the headline corresponds with the VTEC action code. Only the following event action phrases in Table 2 will be used in WSW headlines:

VTEC Action Code	Description	Required Event Action Phrase	Include Time/Date ?
NEW	Initial watch, warning, advisory issuance	IN EFFECT	Yes
EXA	Expansion of watch /warning/advisory area	IN EFFECT	Yes
EXB	Expansion of advisory area and change to advisory valid time	IN EFFECT	Yes
CON	Continuation or update of watch/warning/advisory	REMAINS IN EFFECT	Yes
EXT	Extend/shorten advisory start and/or ending date/time	NOW IN EFFECT	Yes
CAN	Watch/warning/advisory cancelled prior to event end time	IS CANCELLED	No
EXP	Warning/Advisory approaching the expiration time. Used up to 30 minutes prior to advisory end time. *Note: Not valid for Watches	WILL EXPIRE AT	Yes
	Warning/Advisory has expired. Used up to 30 minutes after advisory expiration has passed. *Note: Not valid for Watches	HAS EXPIRED	No
UPG	Upgrade watch to warning/advisory or advisory to warning. No headline. *Note: Warnings cannot be upgraded.		

**Table 3.** Event action phrases for WSW headlines.

WSW Headline Examples:

(1) Initial issuance:

...WINTER STORM WATCH IN EFFECT FROM SUNDAY MORNING THROUGH MONDAY MORNING...

...BLIZZARD WARNING IN EFFECT FROM 7 AM THIS MORNING TO 11 AM EST WEDNESDAY...

(2) Update:

...WINTER STORM WATCH REMAINS IN EFFECT FROM SUNDAY MORNING THROUGH MONDAY MORNING...

...BLIZZARD WARNING REMAINS IN EFFECT UNTIL 11 AM EST WEDNESDAY...

(3) Extended event end time:

...WINTER STORM WATCH NOW IN EFFECT FROM SUNDAY MORNING THROUGH MONDAY AFTERNOON...

(4) Shortened event end time:

...BLIZZARD WARNING REMAINS IN EFFECT UNTIL 5 PM EST WEDNESDAY...

(5) Expansion of area and shortened event start and end time:

...WINTER STORM WATCH IN EFFECT FROM SATURDAY EVENING THROUGH SUNDAY EVENING...

(7) Cancellation prior to event end time/date:

...WINTER STORM WATCH CANCELLED...

...BLIZZARD WARNING CANCELLED...

(8) Expiration statement up to 30 minutes prior to event end time:

...BLIZZARD WARNING WILL EXPIRE AT 5 PM EST WEDNESDAY...

(9) Expiration statement up to 30 minutes after event end time:

...BLIZZARD WARNING HAS EXPIRED...

6.3.4.2.2. Descriptive Text. This section will provide the following watch information:

(1) National Weather Service attribution line. For the **initial** watch, warning and advisory issued for the event, include the following phrase to begin the descriptive text:

**THE NATIONAL WEATHER SERVICE IN [WFO NAME or LOCATION] HAS ISSUED A (BLIZZARD/LAKE EFFECT SNOW/WIND CHILL/etc.) (WATCH/WARNING/ADVISORY).**

The attribution line is optional, though highly recommended for subsequent issuances. If the attribution line is not included (not recommended) the body text will not be carried forward to subsequent issuances.

Special Attribution Instructions for Warnings and Advisories:

- a. For first issuances of Winter Storm Warnings or Winter Weather Advisories (WS.W or WS.Y), forecasters will specify the expected event-specific phenomena directly in the attribution line. This will be done for all segments of the warning. Specific guidance on the library of acceptable phrases to be used in the attribution line for this first issuance is contained in Table 4. For example, forecasters will edit the attribution line as shown in bold italic text for a WW.W where heavy snow is expected: “THE NATIONAL WEATHER SERVICE IN (WFO\_NAME) HAS ISSUED A WINTER STORM WARNING ***FOR HEAVY SNOW***”
- b. For follow-up issuances to WS.W or WS.Y where changes occur in the event-specific phenomena prompting updates, forecasters will specify the expected event-specific phenomena directly in the attribution line. This will be done for all segments of the warning. Specific guidance on the library of acceptable phrases to be used in the attribution line for this first issuance is contained in Table 3. For example, forecasters will edit the attribution line as shown in bold italic text for a WW.W where snow and sleet are expected: “A WINTER STORM WARNING ***FOR HEAVY SNOW AND SLEET*** “ IS IN EFFECT
- c. For follow up issuances to WS.W or WS.Y where the event-specific phenomena remains the same (e.g., snow still the driving factor), forecasters will - at their discretion – do one of the following: (a) edit the attribution line as described for 1 and 2 above (the suggested “Best Practice”), or (b) use clear writing techniques to either ensure existing language within the body text still conveys the event-specific reasoning, or to update the text if needed. Your Region may provide further guidance as to their preferred option.

<b>Warning Event</b>	<b>Phenomena (based on warning criteria)</b>
Blizzard Warning	Blizzard conditions
Ice Storm Warning	Significant Icing
Lake Effect Snow Warning	Heavy Lake Effect Snow Heavy Lake Effect Snow and Blowing Snow
Wind Chill Warning	n/a*
Winter Storm Warning	Heavy Snow, Sleet, and/or Ice (at least one meets criteria) Heavy Snow and Blowing Snow (wind below blizzard criteria)
<b>Advisory Event</b>	<b>Phenomena (based on advisory criteria)</b>
Freezing Rain Advisory	Light Icing
Lake Effect Snow Advisory	Lake Effect Snow Lake Effect Snow and Blowing Snow

Wind Chill Advisory	n/a*
Winter Weather Advisory	Snow, Sleet, and/or Ice (at least one meets criteria) Snow and Blowing Snow

**Table 4.** WSW Warning and Advisory Attribution Phrasing. \*An attribution phrase is not necessary for Wind Chill Warnings and Advisories.

(2) Reason warning was issued. Include winter weather element(s) prompting the watch, warning or advisory.

(3) Quantitative wind chill values, snowfall amounts or ice accumulations.

Watch statements should include *generalized* values/impacts/amounts (e.g., wind chill values to 30 below zero possible, greater than 6 inches of snow possible, the potential exists for more than one quarter inch of ice accumulation)

Warning and advisory statements should include *specific* values/impacts/amounts (e.g., 3 to 6 inches, 8 to 12 inches, one quarter to one half inch of ice accumulation, reduction of visibility in blowing snow to a quarter of a mile or less).

(4) Definition of a watch, warning or advisory and uncertainty/confidence involved. Include one of the following phrases, as appropriate, to define a winter weather watch, warning or advisory:

**REMEMBER...A (BLIZZARD/LAKE EFFECT SNOW/WIND CHILL/ WINTER STORM) WATCH MEANS CONDITIONS ARE FAVORABLE FOR A HAZARDOUS (BLIZZARD/LAKE EFFECT SNOW/WIND CHILL/WINTER WEATHER) EVENT IN AND CLOSE TO THE WATCH AREA.**

**REMEMBER...A (BLIZZARD/WINTER STORM/ICE STORM/LAKE EFFECT SNOW/WIND CHILL) WARNING MEANS SEVERE WINTER WEATHER CONDITIONS ARE IMMINENT OR HIGHLY LIKELY.**

(5) Brief (potential) impact or Call To Action (CTA) statements, safety rules. CTAs can be effective in reminding people what actions to take in preparing themselves for the potential hazardous winter weather event.

6.3.4.2.3. Order of Segments. In the case of multiple segments, segments will follow the order below. This order was designed to place the most important and/or time sensitive information near the beginning of the message. The order of segments is:

- (1) Cancellation
- (2) Warnings
- (3) Advisories

(4) Watches

6.3.4.2.4. Order of Headlines. More than one headline is required in a segment when two or more winter weather events (e.g., Ice Storm Warning today and Winter Storm Watch tomorrow) are forecast to occur for the same UGC or geographical area.

The order of headlines will follow the order of segments.

Examples:

(1) Ice Storm Warning and Winter Storm Watch in effect for the same geographical area.

...ICE STORM WARNING IN EFFECT UNTIL 7 PM EST THIS EVENING...  
...WINTER STORM WATCH IN EFFECT FROM THURSDAY MORNING TO FRIDAY MORNING...

(2) Winter Storm Warning, Winter Weather Advisory, and Winter Storm Watch in effect for the same mountain zone(s).

...WINTER STORM WARNING IN EFFECT UNTIL 11 AM PST WEDNESDAY ABOVE 5000 FT...  
...WINTER WEATHER ADVISORY IN EFFECT UNTIL 11 AM PST WEDNESDAY AT OR BELOW 5000 FT...  
...WINTER STORM WATCH IN EFFECT FROM THURSDAY MORNING TO FRIDAY MORNING...

6.3.5. Format



<u>Product Format</u>	<u>Description of Entry</u>
WWaaii cccc ddhhmm	(WMO Heading)
WSWxxx	(AWIPS ID)
URGENT - WINTER WEATHER MESSAGE	(Product Name or MND)
NATIONAL WEATHER SERVICE city state	(Issuing Office)
time am/pm time_zone day mon dd yyyy	(Issuance time/date)
...<Overview headline statement>...	(Optional)
.<General weather synopsis of developing winter storm>	(Optional - one to three paragraphs)
stZ001-005>015-ddhhmm-	(UGC: <u>Z</u> & expiration time)
/k.aaa.cccc.pp.s.####.yymmddThhnnZ <sub>B</sub> -yymmddThhnnZ <sub>E</sub> /	(P-VTEC Line(s))
zone st-zone st-zone st-	(Zone Names)
INCLUDING <THE CITIES OF> location...location	(City/Location - optional)
time am/pm time_zone day mon dd yyyy	(Issuance time/date)
...WATCH, WARNING, ADVISORY HEADLINE (S)...	
<Descriptive Text>	
NWS attribution line	(Optional after initial issuance)
* Bullet1	Type, Order, and Number of bullets may be locally or regionally set. (*see note below)
* Bullet2	
* Bullet3	
* Etc.	
PRECAUTIONARY/PREPAREDNESS ACTIONS...	CTA Begin Marker
(Call to Action (CTA) statements-Use blank lines between multiple CTAs)	
&&	CTA End Marker
\$\$	(UGC Delimiter)
Name/Initials/Forecaster ID	(Optional after last segment)

**Figure 1.** Generic format for a WSW.

\*Note: Bullets should be one or two sentences and used to present critical information for a winter weather event. Bullets can be locally or regionally defined in order to meet users' needs

but generally consist of some or all of the following: Impact, PTYPE/Hazard, Accumulation, Timing, Location, Uncertainty, Temperatures, Winds, or others as appropriate.

6.4. Updates, Cancellations and Corrections. WFOs will issue correction statements for format or grammatical errors as required. To reduce format or grammatical errors, forecasters should proofread the product before transmission.

WFOs will cancel the WSWs when the weather threat has diminished before the valid time expires or the forecaster believes the threat for hazardous weather will not develop.

WSWs will be updated when there is a change in timing, areal extent or expected conditions or within the minimum time frames designated below. All WSWs should be update before the product expiration time is reached.

6.4.1. Minimum Watch Update Time Frame: At least once every 12 hours. Winter storm watches are either upgraded into warnings or advisories, or cancelled.

6.4.2. Minimum Warning/Advisory Update Times Frame: At least once every six to eight hours until the event ends or is cancelled. The frequent updates will keep our users and partners informed on the current and short term aspects of the event.

Since AWIPS Build 8.2, Graphical Forecast Editor Graphical Hazards Generator (GFE GHG) software provides the capability for forecasters to edit the headlines by “unlocking” them (Note, the default setting keeps headlines “locked”). A description of best practices for editing headlines is maintained at: <http://www.weather.gov/os/vtec/pdfs/headlines.pdf>.

6.5. Upgrades.

6.5.1. Upgrade Watch to Warning or Advisory. When a winter weather watch is upgraded to a winter storm warning or winter weather advisory for the same geographical area, the WSW segment will contain one headline and two P-VTEC lines. The headline will list the new warning or advisory only. The first P-VTEC line will use the UPG action code to show the old winter storm watch is being upgraded. The second P-VTEC line will use the NEW action code to start the new winter weather warning or advisory.

6.5.1.1. Upgrade Watch to Warning Example .

OKZ006>008-011>024-033>036-TXZ083-281100-

/O.UPG.KOUN.WS.A.0004.080128T0500Z-080129T0000Z/ (P-VTEC line 1)

/O.NEW.KOUN.IS.W.0003.080128T0500Z-080129T0000Z/ (P-VTEC line 2)

ALFALFA OK-BECKHAM OK-BLAINE OK-CADDO OK-CANADIAN OK-CUSTER OK-  
DEWEY OK-GARFIELD OK-GRANT OK-GREER OK-HARDEMAN TX-HARMON OK-  
JACKSON OK- KAY OK-KINGFISHER OK- KIOWA OK- LOGAN OK-MAJOR  
OK-NOBLE OK-PAYNE OK-ROGER MILLS OK-WASHITA OK-

INCLUDING THE CITIES OF...ALTUS OK...CLINTON/WEATHERFORD OK...ELK CITY  
OK...EL RENO OK...ENID OK...GUTHRIE OK...HOBART OK...PONCA CITY OK...  
STILLWATER OK

1100 PM CST THU JAN 27 2008

**...ICE STORM WARNING IN EFFECT UNTIL 6 PM CST MONDAY...**

*(Only one headline used - lists active winter weather warning)*

<descriptive text>

\$\$

6.5.2. Upgrade Advisory to Warning. When a winter weather advisory is upgraded to a winter weather warning for the same geographical area, the WSW segment will contain one headline and two P-VTEC lines. The headline will list the new warning only. The first P-VTEC line will use the UPG action code to show the old advisory being upgraded. The second P-VTEC line will use the NEW action code to start the new winter weather warning.

6.5.2.1. Upgrade Advisory to Warning Segment Example:

OKZ006>008-011>024-033>036-TXZ083-281600-

/O.UPG.KOUN.WW.Y.0004.000000T0000Z-070129T0000Z/ (P-VTEC line 1)

/O.NEW.KOUN.WS.W.0003.050128T1000Z-070129T0000Z/ (P-VTEC line 2)

ALFALFA OK-BECKHAM OK-BLAINE OK-CADDO OK-CANADIAN OK-CUSTER OK-  
DEWEY OK-GARFIELD OK-GRANT OK-GREER OK-HARDEMAN TX-HARMON OK-  
JACKSON OK- KAY OK-KINGFISHER OK- KIOWA OK- LOGAN OK-MAJOR  
OK-NOBLE OK-PAYNE OK-ROGER MILLS OK-WASHITA OK-

INCLUDING THE CITIES OF...ALTUS OK...CLINTON/WEATHERFORD OK...ELK CITY  
OK...EL RENO OK...ENID OK...GUTHRIE OK...HOBART OK...PONCA CITY OK...  
STILLWATER OK

400 AM CST SUN JAN 28 2007

**..WINTER STORM WARNING IN EFFECT UNTIL 6 PM CST SUNDAY...**  
*(One headline used - lists new warning only for upgrades)*

<descriptive text>

\$\$

6.6. Replacing Warning or Advisories.

- 6.6.1. Replacing Warning with a Warning. When a winter weather warning is replaced with another winter weather warning for the same geographical area, the WSW segment will contain two headlines and two P-VTEC lines. The first headline and P-VTEC line are used to cancel the old warning, and the second headline and P-VTEC line are used to start the new warning. However, at regional discretion, WFOS that unlock headlines will consolidate the two headlines into a single one (see Sec. 6.4.2).

6.6.1.2. Replace Ice Storm Warning with Winter Storm Warning Segment

OKZ006>008-011>024-033>036-TXZ083-281800-

**/O.CAN.KOUN.IS.W.0005.00000T0000Z-010129T0000Z/** (P-VTEC line 1)

**/O.NEW.KOUN.WS.W.0005.010128T1030Z-010129T0000Z/** (P-VTEC line 2)

ALFALFA OK-BECKHAM OK-BLAINE OK-CADDO OK-CANADIAN OK-CUSTER OK-  
DEWEY OK-GARFIELD OK-GRANT OK-GREER OK-HARDEMAN TX-HARMON OK-  
JACKSON OK- KAY OK-KINGFISHER OK- KIOWA OK- LOGAN OK-MAJOR  
OK-NOBLE OK-PAYNE OK-ROGER MILLS OK-WASHITA OK-

INCLUDING THE CITIES OF...ALTUS OK...CLINTON/WEATHERFORD OK...ELK CITY  
OK...EL RENO OK...ENID OK...GUTHRIE OK...HOBART OK...PONCA CITY OK...  
STILLWATER OK

430 AM CST SUN JAN 28 2001

**...ICE STORM WARNING IS CANCELLED...**

**...WINTER STORM WARNING IN EFFECT UNTIL 6 PM CST SUNDAY...**

*(Two headlines used - lists cancelled warning, then new warning)*

*Or consolidated headline where headlines are unlocked*

**...ICE STORM WARNING REPLACED BY WINTER STORM WARNING...IN  
EFFECT UNTIL 6 PM CST SUNDAY...**

<descriptive text>

\$\$

6.6.2. Replace Advisory with Advisory. When a winter weather advisory is replaced with another winter weather advisory for the same geographical area, the WSW segment will contain two headlines and two P-VTEC lines. The first headline and P-VTEC line are used to cancel the old advisory, and the second headline and P-VTEC line are used to start the new advisory.

6.6.2.2. Replace Freezing Rain Advisory with Winter Weather Advisory.

ILZ033-039-INZ010-011-019-230330-

/O.CAN.KOUN.ZR.Y.0003.000000T0000Z-070223T0330Z/ (P-VTEC line 1)

/O.NEW.KOUN.WW.Y.0006.030222T2130Z-070223T0330Z/ (P-VTEC line 2)

BENTON IN-FORD IL-IROQUOIS IL-JASPER IN-NEWTON IN-  
330 PM CST THU FEB 22 2007

**...FREEZING RAIN ADVISORY IS CANCELLED...**

**...WINTER WEATHER ADVISORY IN EFFECT UNTIL 930 PM CST /1030 PM EST/  
THIS EVENING...**

*(Two headlines used - lists cancelled advisory, then new advisory)*

*Or consolidated headline where headlines are unlocked*

**...FREEZING RAIN ADVISORY REPLACED BY WINTER WEATHER  
ADVISORY...IN EFFECT UNTIL 6 PM CST SUNDAY...**

<descriptive text>

\$\$

**APPENDIX A - Winter Weather Product Examples**

<u>Table of Contents:</u>		<u>Page</u>
1	Introduction.....	A-1
2	Winter Storm Watch .....	A-1
3	Winter Storm Warning.....	A-3
4	Winter Weather Advisory .....	A-5
5	Combination of winter weather events .....	A-6

**1. Introduction**

This section contains guidelines and examples of winter weather products.

**2. Winter Storm Watch**

An example of a late third period Winter Storm Watch. NWS attribution line is mandatory.

WWUS45 KBOU 232105  
WSWBOU

URGENT - WINTER WEATHER MESSAGE  
NATIONAL WEATHER SERVICE DENVER CO  
205 PM MST WED FEB 23 2011

...POTENTIAL FOR HEAVY SNOW IN THE NORTHERN COLORADO MOUNTAINS FOR THURSDAY NIGHT THROUGH FRIDAY NIGHT...

.A STORM SYSTEM DEVELOPING ACROSS NORTHERN CALIFORNIA WILL SPREAD MOISTURE AND SNOWFALL OVER PORTIONS OF THE NORTHERN COLORADO MOUNTAINS FROM THURSDAY NIGHT AND CONTINUING THROUGH FRIDAY NIGHT.

THE SNOW WILL GRADUALLY DIMINISH ON SATURDAY.

COZ031-033-240515-  
/O.NEW.KBOU.WS.A.0004.110225T0100Z-110226T1300Z/  
WEST JACKSON AND WEST GRAND COUNTIES ABOVE 9000 FEET-  
SOUTH AND EAST JACKSON/LARIMER/NORTH AND NORTHEAST GRAND/  
NORTHWEST BOULDER COUNTIES ABOVE 9000 FEET-

INCLUDING THE CITIES OF...  
EAST SLOPES PARK AND NORTHERN GORE RANGES...GORE PASS...  
RABBIT EARS PASS...CAMERON PASS...  
LARAMIE AND MEDICINE BOW MOUNTAINS...RABBIT EARS RANGE...  
ROCKY MOUNTAIN NATIONAL PARK...WILLOW CREEK PASS  
205 PM MST WED FEB 23 2011

...WINTER STORM WATCH IN EFFECT FROM THURSDAY EVENING THROUGH  
LATE FRIDAY NIGHT...

THE NATIONAL WEATHER SERVICE IN DENVER HAS ISSUED A WINTER STORM  
WATCH...WHICH IS IN EFFECT FROM THURSDAY EVENING THROUGH LATE  
FRIDAY NIGHT.

- \* TIMING...SNOW WILL SPREAD OVER THE NORTHERN MOUNTAINS ON  
THURSDAY NIGHT AND CONTINUE THROUGH FRIDAY NIGHT.
- \* ACCUMULATION...SNOW ACCUMULATIONS OF 7 TO 15 INCHES ARE  
POSSIBLE BY LATE FRIDAY NIGHT...WITH LOCAL HIGHER AMOUNTS ON  
WEST FACING SLOPES.
- \* WIND...WEST TO SOUTHWEST WINDS OF 15 TO 30 MPH WITH  
GUSTS TO 45 MPH WILL CREATE SOME BLOWING AND DRIFTING SNOW OVER  
THE MOUNTAIN PASSES.
- \* MAIN IMPACT...MOUNTAIN PASSES WILL LIKELY BECOME ICY AND  
SNOWPACKED WITH WINTER DRIVING CONDITIONS EXPECTED. WITH WINDS  
AND SNOW WILL CREATE BLOWING SNOW AND POOR VISIBILITIES AT  
TIMES.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

REMEMBER...A WINTER STORM WATCH MEANS THERE IS A POTENTIAL FOR A  
HAZARDOUS WINTER WEATHER EVENT IN AND CLOSE TO THE WATCH AREA.  
SIGNIFICANT SNOW ACCUMULATIONS MAY OCCUR THAT COULD IMPACT  
TRAVEL. STAY TUNED TO THE NATIONAL WEATHER SERVICE OR YOUR LOCAL  
NEWS MEDIA FOR THE LATEST UPDATES AND POSSIBLE WARNING CONCERNING  
THIS POTENTIAL WINTER STORM.

&&

\$\$

**3. Winter Storm Warning**

An example of an initial issuance of a Winter Storm Warning: In this initial warning issuance, the NWS attribution line is mandatory. The attribution line contains the warning and precipitation type(s).

WWUSXX KLZK 080300  
WSWLZK

URGENT - WINTER WEATHER MESSAGE  
NATIONAL WEATHER SERVICE LITTLE ROCK AR  
1000 PM CST MON DEC 7 2009

...DEVELOPING WINTER STORM EXPECTED TO IMPACT TRAVEL ACROSS  
ARKANSAS TUESDAY AFTERNOON AND EVENING...

.STORM INFORMATION...A DEVELOPING WINTER STORM OVER THE TEXAS  
PANHANDLE IS EXPECTED TO MOVE EAST AND BEGIN TO SPREAD  
ACCUMULATING...HEAVY WET SNOW ACROSS WESTERN AND CENTRAL  
ARKANSAS BY EARLY TUESDAY AFTERNOON. TRAVEL ACROSS WESTERN AND  
CENTRAL ARKANSAS WILL BEGIN TO DETERIORATE TUESDAY AFTERNOON AND  
BECOME HAZARDOUS AS THE SNOW CONTINUES TO ACCUMULATE ACROSS THE  
STATE THROUGH LATE TUESDAY EVENING.

ARZ037>044-054-081100-  
/O.NEW.KLZK.WS.W.0001.091208T1700Z-091209T0200Z/  
GARLAND-HOT SPRING-MONTGOMERY-PERRY-POLK-PULASKI-SALINE-SCOTT-  
YELL-  
1000 PM CST MON DEC 7 2009

...WINTER STORM WARNING IN EFFECT FROM NOON TUESDAY UNTIL 8 PM CST  
TUESDAY...

THE NATIONAL WEATHER SERVICE IN LITTLE ROCK HAS ISSUED A WINTER  
STORM  
WARNING FOR HEAVY SNOW WHICH IS IN EFFECT FROM NOON TUESDAY UNTIL  
8 PM CST TUESDAY.



\* EVENT...4 TO 6 INCHES OF WET HEAVY SNOW IS EXPECTED TO ACCUMULATE ACROSS PORTIONS OF WESTERN AND CENTRAL ARKANSAS.

\* TIMING...SNOW SHOULD BEGIN ACROSS WESTERN PORTIONS OF ARKANSAS BY EARLY AFTERNOON AND RAPIDLY SPREAD ACROSS CENTRAL PORTIONS OF THE STATE BY LATE AFTERNOON. SNOW SHOULD TAPER OFF TO FLURRIES BY LATE TUESDAY EVENING.

\* IMPACT...ROADS ACROSS WESTERN AND CENTRAL ARKANSAS WILL BEGIN TO BECOME SNOW COVERED...SLIPPERY AND DANGEROUS WITH A SIGNIFICANT INCREASE IN TRAVEL TIMES EXPECTED ACROSS MOST ROADWAYS ON TUESDAY.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

A WINTER STORM WARNING FOR SNOW MEANS SEVERE WINTER WEATHER CONDITIONS ARE EXPECTED OR OCCURRING. AVOID TRAVEL IS POSSIBLE.

&&

\$\$

Example of Bulleted Watch Upgraded to Warning

MIZ038>040-044-045-120515-  
/O.UPG.KGRR.WS.A.0003.101212T0000Z-101213T0000Z/  
/O.NEW.KGRR.WS.W.0003.101212T0000Z-101213T1200Z/  
LAKE-OSCEOLA-CLARE-NEWAYGO-MECOSTA-  
INCLUDING THE CITIES OF...BALDWIN...REED CITY...CLARE...FREMONT...  
BIG RAPIDS  
404 PM EST SAT DEC 11 2010

...WINTER STORM WARNING IN EFFECT FROM 7 PM THIS EVENING TO 7 AM EST MONDAY...

THE NATIONAL WEATHER SERVICE IN GRAND RAPIDS HAS ISSUED A WINTER STORM WARNING FOR HEAVY SNOW AND BLOWING SNOW...WHICH IS IN EFFECT FROM 7 PM THIS EVENING TO 7 AM EST MONDAY. THE WINTER STORM

WATCH IS NO LONGER IN EFFECT.

IMPACTS...

- \* POOR DRIVING CONDITIONS DUE TO HEAVY SNOW AND BLOWING SNOW.
- \* SIGNIFICANTLY REDUCED VISIBILITIES AND SNOW COVERED ROADS.

HAZARDOUS WEATHER...

- \* 6 TO 10 INCHES OF TOTAL SNOW TONIGHT AND SUNDAY.
- \* BLOWING SNOW AND SUB ZERO WIND CHILLS DEVELOPING SUNDAY AND CONTINUING SUNDAY NIGHT. NORTH WINDS GUSTING TO 40 MPH SUNDAY INTO MONDAY.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

- \* A WINTER STORM WARNING FOR HEAVY SNOW MEANS SEVERE WINTER WEATHER CONDITIONS ARE EXPECTED OR OCCURRING. SIGNIFICANT AMOUNTS OF SNOW ARE FORECAST THAT WILL MAKE TRAVEL DANGEROUS. ONLY TRAVEL IN AN EMERGENCY. IF YOU MUST TRAVEL...KEEP AN EXTRA FLASHLIGHT...FOOD...AND WATER IN YOUR VEHICLE IN CASE OF AN EMERGENCY.

&&

\$\$

#### **4. Winter Weather Advisory**

An example of an updated Winter Weather Advisory. NWS attribution line is optional for updates and is included in this example.

Example of a "Bulleled" Advisory Product

URGENT - WINTER WEATHER MESSAGE

NATIONAL WEATHER SERVICE SALT LAKE CITY UT

245 AM MST FRI MAR 4 2011

UTZ007>009-041800-

/O.CON.KSLC.WW.Y.0011.000000T0000Z-110304T1800Z/

WASATCH MOUNTAINS I-80 NORTH-WASATCH MOUNTAINS SOUTH OF I-80-

WESTERN UINTA MOUNTAINS-

INCLUDING THE CITIES OF...WOODRUFF...RANDOLPH...ALTA...BRIGHTON...

MIRROR LAKE HIGHWAY

245 AM MST FRI MAR 4 2011

...WINTER WEATHER ADVISORY REMAINS IN EFFECT UNTIL 11 AM MST THIS MORNING...

A WINTER WEATHER ADVISORY FOR SNOW REMAINS IN EFFECT UNTIL 11 AM MST THIS MORNING.

- \* AFFECTED AREA: THE WASATCH AND WESTERN UINTA MOUNTAINS.
- \* SNOW ACCUMULATIONS: ADDITIONAL ACCUMULATION UP TO 2 INCHES CAN BE EXPECTED THIS MORNING.
- \* TIMING: OCCASIONAL SNOW SHOWERS ARE EXPECTED THROUGH THIS MORNING. SOME OF THESE WILL BE BRIEFLY HEAVY AND PRODUCE RAPID ACCUMULATION. THE SHOWERS WILL TAPER OFF BY MID MORNING.
- \* IMPACTS: WINTER DRIVING CONDITIONS WILL OCCASIONALLY DEVELOP ON HIGH ELEVATION ROADWAYS THIS MORNING.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

A WINTER WEATHER ADVISORY MEANS THAT SNOW ACCUMULATIONS WILL CAUSE PRIMARILY TRAVEL DIFFICULTIES. BE PREPARED FOR SNOW COVERED ROADS. USE CAUTION WHILE DRIVING.

FOR WINTER ROAD CONDITIONS FROM THE UTAH DEPARTMENT OF TRANSPORTATION VISIT...[HTTP://WWW.COMMUTERLINK.UTAH.GOV](http://www.commuterlink.utah.gov) OR DIAL 511.

&&

\$\$

## **5. Combination of winter weather events**

Example of a WSW one warning and multiple advisories. NWS attribution line is optional for updates and is not included in this example.

WWUS45 KBOI 190616  
WSWBOI

URGENT - WINTER WEATHER MESSAGE  
NATIONAL WEATHER SERVICE BOISE ID

1116 PM MST FRI FEB 18 2011

...SNOW SATURDAY AND SATURDAY NIGHT IN SOUTHEASTERN OREGON AND SOUTHWESTERN IDAHO...

DEEPENING LOW PRESSURE WILL MOVE FROM NORTHERN CALIFORNIA AND NEVADA INTO SOUTHEASTERN IDAHO SATURDAY SPREADING SNOW ACROSS MOST OF SOUTHEASTERN OREGON AND SOUTHWESTERN IDAHO. ELEVATIONS BELOW 3500 TO 4000 FEET IN SOUTHWESTERN IDAHO WILL BECOME WARM ENOUGH FOR RAIN SATURDAY BEFORE COLDER AIR MOVES IN FROM THE WEST SATURDAY NIGHT. SEVERAL INCHES OF SNOW WILL LIKELY ACCUMULATE IN THE TREASURE AND MAGIC VALLEYS SATURDAY NIGHT. ELSEWHERE A GENERAL 4 TO 8 INCH SNOWFALL IS EXPECTED. HIGHER MOUNTAINS MAY RECEIVE AS MUCH AS 15 INCHES. THE SNOW WILL BE ACCOMPANIED BY GUSTY EAST WINDS AHEAD OF THE APPROACHING LOW PRESSURE AREA...SHIFTING TO NORTHWEST BEHIND THE LOW. SNOW AND WIND WILL REDUCE VISIBILITY AND CAUSE TRAVEL PROBLEMS THROUGH SATURDAY NIGHT. CLEARING FROM THE NORTHWEST IS EXPECTED SUNDAY MORNING.

IDZ029-191215-

/O.CON.KBOI.WS.W.0001.110219T1200Z-110220T1200Z/

OWYHEE MOUNTAINS-

1116 PM MST FRI FEB 18 2011

...WINTER STORM WARNING REMAINS IN EFFECT FROM 5 AM SATURDAY TO 5 AM MST SUNDAY...

A WINTER STORM WARNING FOR HEAVY SNOW AND BLOWING SNOW IN THE OWYHEE MOUNTAINS REMAINS IN EFFECT FROM 5 AM SATURDAY TO 5 AM MST SUNDAY.

\* SNOW AMOUNTS...8 TO 12 INCHES...UP TO 15 INCHES ON HIGHER PEAKS.

\* SNOW LEVELS...RISING BRIEFLY TO 3500 FEET SATURDAY AFTERNOON...OTHERWISE ON THE VALLEY FLOORS.

\* WINDS...INITIALLY EAST OR NORTHEAST UP TO 25 MPH...THEN SHIFTING TO THE WEST UP TO 25 MPH SATURDAY AFTERNOON AND CONTINUING SATURDAY EVENING.

\* TIMING...BEGINNING MIDDAY SATURDAY AND CONTINUING THROUGH SATURDAY NIGHT.

\* IMPACTS...TRAVEL PROBLEMS DUE TO SNOW AND POOR VISIBILITY ON ALL ROADS.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

A WINTER STORM WARNING FOR HEAVY SNOW AND BLOWING SNOW MEANS THAT SIGNIFICANT AMOUNTS OF SNOW WILL MAKE TRAVEL DANGEROUS. GUSTY WINDS WILL ALSO CAUSE BLOWING AND DRIFTING OF SNOW...AND WILL LIMIT VISIBILITIES. ONLY TRAVEL IN AN EMERGENCY. IF YOU MUST TRAVEL...KEEP AN EXTRA FLASHLIGHT...FOOD...AND WATER IN YOUR VEHICLE IN CASE OF AN EMERGENCY.

&&

\$\$

ORZ061-063-191215-  
/O.CON.KBOI.WW.Y.0003.110219T1200Z-110220T0600Z/  
HARNEY COUNTY-MALHEUR COUNTY-  
1116 PM MST FRI FEB 18 2011 /1016 PM PST FRI FEB 18 2011/

...WINTER WEATHER ADVISORY REMAINS IN EFFECT FROM 5 AM MST /4 AM PST/ TO 11 PM MST /10 PM PST/ SATURDAY...

A WINTER WEATHER ADVISORY FOR SNOW IN HARNEY AND MALHEUR COUNTIES REMAINS IN EFFECT FROM 5 AM MST /4 AM PST/ TO 11 PM MST /10 PM PST/ SATURDAY.

\* SNOW AMOUNTS...3 TO 6 INCHES...LOCALLY 8 INCHES ON HIGHER PEAKS.

\* SNOW LEVELS...VALLEY FLOORS.

\* WINDS...WEST OR NORTHWEST 15 TO 25 MPH.

\* TIMING...PREDAWN HOURS SATURDAY MORNING THROUGH SATURDAY AFTERNOON.

\* IMPACTS...SNOW WILL CAUSE TRAVEL PROBLEMS ON ALL ROADS. WINDS WILL CAUSE REDUCED VISIBILITY AT TIMES.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

A WINTER WEATHER ADVISORY FOR SNOW MEANS THAT PERIODS OF SNOW WILL CAUSE PRIMARILY TRAVEL DIFFICULTIES. BE PREPARED FOR SNOW COVERED ROADS AND LIMITED VISIBILITIES...AND USE CAUTION WHILE DRIVING.

&&

\$\$

IDZ015-191215-  
/O.CON.KBOI.WW.Y.0003.110219T1200Z-110220T1200Z/  
SOUTHWEST HIGHLANDS-  
1116 PM MST FRI FEB 18 2011

...WINTER WEATHER ADVISORY REMAINS IN EFFECT FROM 5 AM SATURDAY TO 5 AM MST SUNDAY...

A WINTER WEATHER ADVISORY FOR SNOW IN THE SOUTHWEST HIGHLANDS REMAINS IN EFFECT FROM 5 AM SATURDAY TO 5 AM MST SUNDAY.

\* SNOW AMOUNTS...4 TO 8 INCHES WEST PORTION...3 TO 5 INCHES EAST PORTION. UP TO 12 INCHES ON HIGHER PEAKS.

\* SNOW LEVELS...RISING TO 4000 FEET SATURDAY AFTERNOON...THEN FALLING TO VALLEY FLOORS SATURDAY EVENING.

\* WINDS...INITIALLY EAST OR NORTHEAST UP TO 25 MPH...THEN SHIFTING TO THE WEST UP TO 25 MPH LATE SATURDAY AND CONTINUING SATURDAY EVENING.

\* TIMING...BEGINNING MIDDAY SATURDAY AND CONTINUING THROUGH SATURDAY NIGHT.

\* IMPACTS...TRAVEL PROBLEMS DUE TO SNOW AND POOR VISIBILITY ON ALL ROADS.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

A WINTER WEATHER ADVISORY FOR SNOW MEANS THAT PERIODS OF SNOW WILL CAUSE PRIMARILY TRAVEL DIFFICULTIES. BE PREPARED FOR SNOW

COVERED ROADS AND LIMITED VISIBILITIES...AND USE CAUTION WHILE DRIVING.

&&

\$\$

IDZ012-014-016-ORZ064-191215-  
/O.CON.KBOI.WW.Y.0003.110220T0400Z-110220T1200Z/  
LOWER TREASURE VALLEY ID-UPPER TREASURE VALLEY-  
WESTERN MAGIC VALLEY-LOWER TREASURE VALLEY OR-  
1116 PM MST FRI FEB 18 2011

...WINTER WEATHER ADVISORY REMAINS IN EFFECT FROM 9 PM SATURDAY TO 5 AM MST SUNDAY...

A WINTER WEATHER ADVISORY FOR SNOW IN THE LOWER AND UPPER TREASURE VALLEY AND WESTERN MAGIC VALLEY REMAINS IN EFFECT FROM 9 PM SATURDAY TO 5 AM MST SUNDAY.

\* SNOW AMOUNTS...2 TO 4 INCHES.

\* SNOW LEVELS...INITIALLY 3500 TO 4000 FEET THEN FALLING TO VALLEY FLOORS BY MIDNIGHT SATURDAY NIGHT.

\* WINDS...WEST OR NORTHWEST 15 TO 25 MPH.

\* TIMING...SATURDAY NIGHT.

\* IMPACTS...TRAVEL PROBLEMS AS ROADS BECOME SNOW-COVERED AND ICY.INTERSTATE 84 WILL BE AFFECTED AS WILL OTHER HIGHWAYS AND SECONDARY ROADS. WINDS WILL CAUSE REDUCED VISIBILITY AT TIMES.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

A WINTER WEATHER ADVISORY FOR SNOW MEANS THAT PERIODS OF SNOW WILL CAUSE PRIMARILY TRAVEL DIFFICULTIES. BE PREPARED FOR SNOW COVERED ROADS AND LIMITED VISIBILITIES...AND USE CAUTION WHILE DRIVING.

&&

\$\$



## APPENDIX B - Winter Weather Definitions

1	Introduction.....	B-1
2	Hazardous Winter Weather.....	B-1
3	Hazardous Winter Weather Phenomena Definitions .....	B-1
	3.1 Blizzard.....	B-1
	3.2 Freezing Rain or Drizzle.....	B-1
	3.3 Ice Storm.....	B-2
	3.4 Sleet.....	B-2
	3.5 Heavy Sleet .....	B-2
	3.6 Snow .....	B-2
	3.7 Blowing Snow.....	B-2
	3.8 Drifting Snow.....	B-2
	3.9 Heavy Snow .....	B-3
	3.10 Snow Flurries .....	B-3
	3.11 Snow Showers.....	B-3
	3.12 Snow Squalls.....	B-3
	3.13 Wind Chill.....	B-3

### 1. Introduction

This section contains definitions of winter weather elements used in the winter weather products.

### 2. Hazardous Winter Weather

Hazardous winter weather is a winter weather event that endangers life or property, provides an impediment to commerce, or if proper precaution is not taken, can become life threatening.

### 3. Hazardous Winter Weather Phenomena Definitions

#### 3.1 Blizzard

A blizzard means that the following conditions are expected to prevail for a period of 3 hours or longer:

- a. Sustained wind or frequent gusts to 35 miles an hour or greater and
- b. Considerable falling and/or blowing snow, i.e., frequently reducing visibility below 1/4 mile

Although there is no set temperature requirement for blizzard conditions, the life-threatening nature of the low temperatures in combination with the other hazardous conditions of wind, snow, and poor visibility increases dramatically when the temperature falls below 20F.

#### 3.2 Freezing Rain or Drizzle

Rain or drizzle that falls in liquid form but freezes upon impact with the ground or exposed objects. Small accumulations of ice can cause driving and walking difficulties while heavy accumulations produce extremely dangerous and damaging situations primarily by pulling down trees and utility lines.

### **3.3 Ice Storm**

An ice storm is used to describe occasions when damaging accumulations of ice are expected during freezing rain situations. Significant accumulations of ice pull down trees and utility lines resulting in loss of power and communication. These accumulations of ice make walking and driving extremely dangerous. Significant ice accumulations are usually accumulations of 0.25 inch (one quarter of an inch) or greater. Some variations in the criteria for "significant" accumulations of ice may be established by the regional director and formalized through the issuance of Supplements. This includes both higher thresholds for regions that are accustomed to ice events and lower thresholds for areas where lesser amounts can cause major problems.

### **3.4 Sleet**

Sleet is a type of precipitation consisting of transparent or translucent pellets of ice, 0.25 inch or less in diameter. These pellets of ice usually bounce when hitting hard ground and make a sound upon impact.

### **3.5 Heavy Sleet**

Heavy sleet is a relatively rare event defined as an accumulation of ice pellets covering the ground to a depth of 1/2 inch or more.

### **3.6 Snow**

Frozen precipitation in the form of (white or translucent) ice crystals that steadily falls for several hours or more. Qualifiers, such as occasional or intermittent, are used when a steady, prolonged (for several hours or more) fall is not expected.

### **3.7 Blowing Snow**

Blowing snow is snow lifted from the surface of the earth by the wind to a height of 6 feet or more above the surface (higher than drifting snow), and blown about in such quantities that horizontal visibility is reduced to less than 7 statute miles. Blowing snow is usually accompanied by drifting snow.

### **3.8 Drifting Snow**

Drifting snow is snow lifted from the surface of the earth by the wind to a height of less than 6 feet above the surface. Drifting snow may occur during or after a snowfall. Drifting snow is usually associated with blowing snow.

### **3.9 Heavy Snow**

Heavy Snow generally means:

- Snowfall accumulating to 4 inches or more in depth in 12 hours or less; or
- Snowfall accumulating to 6 inches or more in depth in 24 hours or less.

Variation in the criteria for heavy snowfall in certain sections of the country may be established at the option of the regional director. This includes both higher thresholds for regions that are accustomed to snow and lower thresholds for areas where lesser accumulations can cause significant impacts. Such variations should be formalized through the issuance of Regional Supplements.

Express snowfall amounts as a range of values, e.g., "8 to 12 inches." However, in heavy snow situations where there is considerable uncertainty concerning the range of values, it may be more appropriate to use phrases, such as "...up to 12 inches..." or alternatively "...8 inches or more..."

### **3.10 Snow Flurries**

Snow flurries are short duration (generally a few minutes) light snow showers with no measurable accumulation (trace category).

### **3.11 Snow Showers**

Snow showers are brief periods of snowfall in which intensity can be varied and may change rapidly. Some accumulation is possible. A snow shower in which light snow falls for a few minutes is typically called a snow flurry.

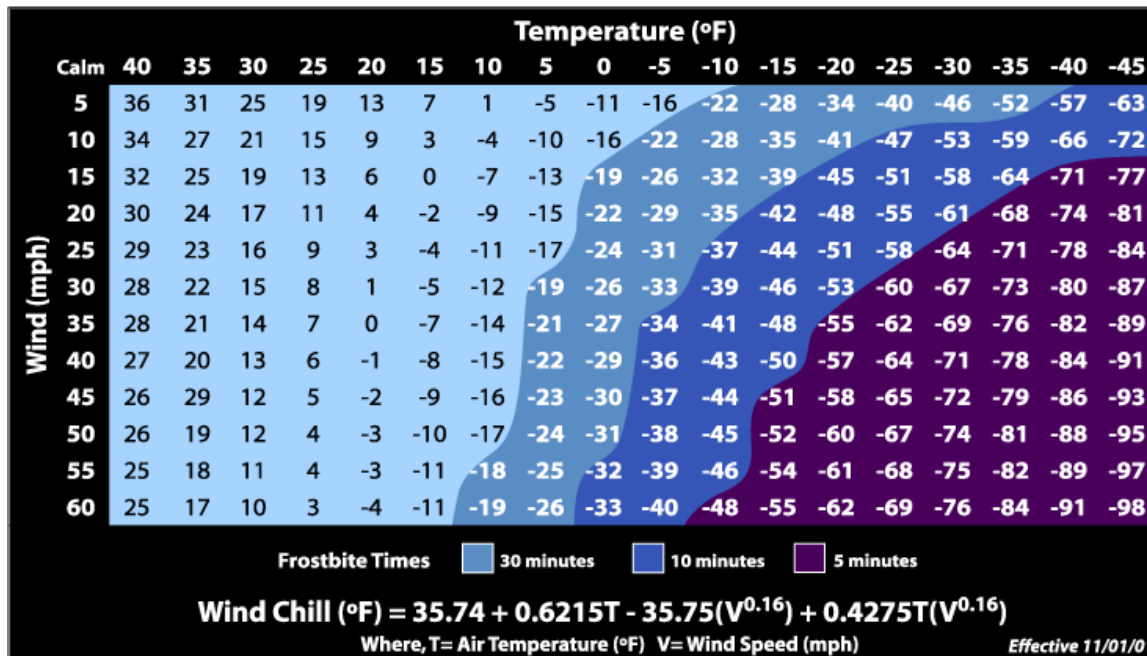
### **3.12 Snow Squalls**

Snow squalls are intense, but limited duration, periods of moderate to heavy snowfall, accompanied by strong, gusty surface winds and possibly lightning (generally moderate to heavy snow showers). Snow accumulation may be significant. Regional variation to this definition is expected. For example, close to the Great Lakes, snow squalls are usually locally intense, narrow bands of heavy snow that can extend over long distances, persist for many hours, and produce 6 inches or more of snow in 12 hours or less.

### **3.13 Wind Chill**

The Wind Chill Temperature (WCT) is the air temperature at which the heat transfer rate and skin temperature would be the same in the absence of wind. The WCT represents the temperature the body feels when it is exposed to wind and cold. Prolonged exposure can lead to frostbite and hypothermia.

# Wind Chill Chart



Based on the latest human study research provided by the Office of the Federal Coordinator for Meteorology, the wind chill chart (Figure B-1) provides WCTs and objective frostbite time values. The threshold for dangerous WCT starts at -18°F, where frostbite can occur on exposed flesh within 30 minutes. As the WCT drops, the frostbite time decreases, especially with higher wind speeds. WFOs will include frostbite time references in the body of text for Wind Chill Warnings and should include frostbite time references, when applicable, for Wind Chill Advisories.

**APPENDIX C - Headline Time Phrases**

1. Introduction..... C-1

2. Winter Weather Watch Date/Time Phrases ..... C-1

    2.1 Issuance Time and Event Start Time on the same Calendar Day ..... C-1

    2.2 Issuance Time and Event Start Time on Different Calendar Days ..... C-2

3. Winter Weather Warning and Advisory Date/Time Phrases ..... C-2

    3.1 Issuance Time and Event Start Time on the same Calendar day ..... C-2

    3.2 Issuance Time and Event Start Time are on Different Calendar Days ..... C-3

    3.3 Issuance Time = Event Start Time ..... C-4

    3.4 Time Zone Indicators ..... C-5

    3.5 Zone Grouping with Two or More Time Zones..... C-5

**1. Introduction**

This section contains the headline day and time phrases used in winter weather watch, warning and advisory products.

**2. Winter Weather Watch Date/Time Phrases**

The watch headline will include a general event beginning and event ending day/time phrase. The general day/time phrases are defined in Table C-1.

<b>Time Period Covered</b>	<b>Same Calendar Day Time Phrase</b>	<b>Day +1 Calendar Day Time Phrase</b>	<b>Day + 2 Calendar Day Time Phrase</b>
Midnight - 5:59 AM	Not Applicable	Late Tonight	Late (day + 1) Night
6 AM - 11:59 AM	Not Applicable	(day + 1) Morning	(day + 2) Morning
Noon - 5:59 PM	This Afternoon	(day + 1) Afternoon	(day + 2) Afternoon
6 PM - 11:59 PM	This Evening	(day + 1) Evening	(day + 2) Evening

**Table C-1.** General headline day/time phrases for long duration watches.

**2.1 Issuance Time and Event Start Time on the same Calendar Day**

When the issuance time and event start time occur on the same calendar day, the watch headline will include the time phrases listed in Table C-1.

Example:

- Issuance Time - 4 AM Tuesday
- Event Start Time - 8 PM Tuesday
- Event End Time - 4 PM Wednesday

Watch Headline:

...WINTER STORM WATCH IN EFFECT FROM THIS EVENING THROUGH WEDNESDAY AFTERNOON...

**2.2 Issuance Time and Event Start Time on Different Calendar Days**

When the issuance time and event start time occur on different calendar days, the watch headline will include the time phrase (Table C-2) and day(s) the product is in effect for.

Example:

Issuance Time - 3 PM Tuesday  
 Event Start Time - 5 AM Wednesday  
 Event End Time - 5 AM Thursday

Watch Headline:

...WINTER STORM WATCH IN EFFECT FROM LATE TONIGHT THROUGH LATE WEDNESDAY NIGHT...

Example:

Issuance Time - 4 AM Tuesday  
 Event Start Time - 6 AM Wednesday  
 Event End Time - 5 PM Thursday

Watch Headline:

...LAKE EFFECT SNOW WATCH IN EFFECT FROM WEDNESDAY MORNING THROUGH THURSDAY AFTERNOON...

**3. Winter Weather Warning and Advisory Date/Time Phrases**

Winter weather warning and advisory headlines will include the specific time, time zone indicator, and day the warning/advisory is in effect.

**3.1 Issuance Time and Event Start Time on the same Calendar day**

When the issuance time and event start time occur on the same calendar day, the warning and advisory headline will include the time phrases listed in Table C-2.

Time Period Covered	Same Calendar Day Time Phrase
Midnight - 5:59 AM	Early This Morning
6 AM - 11:59 AM	This Morning
Noon - 5:59 PM	This Afternoon
6 PM - 11:59 PM	This Evening

**Table C-2.** Headline time phrases for long duration warnings and advisories in effect on same calendar day of issuance.

Example:

Issuance Time - 4 AM Tuesday  
Event Start Time - 7 AM Tuesday  
Event End Time - 11 AM Wednesday

Warning Headline:

...WINTER STORM WARNING IN EFFECT FROM 7 AM THIS MORNING TO 11 AM EST WEDNESDAY...

**Special Case #1:**

Similar Time Phrase for the Start and End Times. If the start and end time use the same time phrase, then only one time phrase will be used and it will be placed after the end time.

Example:

Issuance Time - 10 AM Tuesday  
Event Start Time - 1 PM Tuesday  
Event End Time - 5 PM Tuesday

Warning Headline:

...WINTER STORM WARNING IN EFFECT FROM 1 PM TO 5 PM MDT THIS AFTERNOON...

**Special Case #2**

If the start time and end time use “Early This Morning” and “This Morning,” then place the time phrase “This Morning” after the end time ONLY.

Example:

Issuance Time - 1 AM Tuesday  
Event Start Time - 4 AM Tuesday  
Event End Time - 9 AM Tuesday

Advisory Headline:

...WINTER WEATHER ADVISORY IN EFFECT FROM 4 AM TO 9 AM CST THIS MORNING...

**3.2 Issuance Time and Event Start Time are on Different Calendar Days**

When the issuance time and event start time occur on different calendar days, the warning and advisory headline will include the time and day(s) the product is in effect for.

Example:

Issuance Time - 3 PM Tuesday  
Event Start Time - 5 AM Wednesday  
Event End Time - 5 AM Thursday

Warning Headline:

...ICE STORM WARNING IN EFFECT FROM 5 AM WEDNESDAY TO 5 AM EST THURSDAY...

**Special Case #1**

If the event start time and end time occur on same day, then the day phrase will be used after the event end time only.

Example:

Issuance Time - 10 PM Tuesday  
Event Start Time - 5 AM Wednesday  
Event End Time - 5 PM Wednesday

Warning Headline:

...LAKE EFFECT SNOW WARNING IN EFFECT FROM 5 AM TO 5 PM CST WEDNESDAY...

**3.3 Issuance Time = Event Start Time**

When the issuance time and event start time occur simultaneously, the warning and advisory headline will only include the event end time in the headline.

**Special Case #1**

If the event end time occurs on same calendar day as the issuance time, then use the same calendar rules for the end time phrase set in Table C-1.

Example:

Issuance Time - 4 AM Tuesday  
Event Start Time - 4 AM Tuesday  
Event End Time - 8 PM Tuesday

Advisory Headline:

...WINTER WEATHER ADVISORY IN EFFECT UNTIL 8 PM PST THIS EVENING...

**Special Case #2**

If the event end time occurs on a different day than the issuance time, then, the day phrase will be used after the event end time.

Example:

Issuance Time - 4 PM Tuesday  
Event Start Time - 4 PM Tuesday  
Event End Time - 2 AM Wednesday

Warning Headline:

...WINTER STORM WARNING IN EFFECT UNTIL 2 AM CST WEDNESDAY...



### **Special Case #3**

If the issuance time is within three hours of the event start time, then only include the event end time in the headline.

Example:

Issuance Time - 10:15 PM Tuesday  
Event Start Time - 1 AM Wednesday  
Event End Time - 10 AM Wednesday

Advisory Headline:

...WINTER WEATHER ADVISORY IN EFFECT UNTIL 10 AM EST WEDNESDAY...

### **3.4 Time Zone Indicators**

The long duration WSW warning and advisory headline will include a time zone indicator after the specific time. If two times are listed, then place the time zone indicator after the second time listed.

### **3.5 Zone Grouping with Two or More Time Zones**

If the zone grouping includes more than one time zone, then the additional time zone(s) will be placed in forward slashes next to all time indicators.

Warning Headline:

...WINTER STORM WARNING IN EFFECT FROM 3 AM EDT /2 AM EST/ /2 AM CDT/ TO 10 AM EDT /9 AM EST/ /9AM CDT/ THIS MORNING...

Advisory Headline:

...WINTER WEATHER ADVISORY IN EFFECT UNTIL 8 PM PST /9 PM MST/ TONIGHT...