

**NATIONAL WEATHER SERVICE INSTRUCTION 10-922
AUGUST 3, 2021**

**Operations and Services
Water Resources Services Program, NWSPD 10-9**

WEATHER FORECAST OFFICE WATER RESOURCES PRODUCTS SPECIFICATION

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SUMMARY OF REVISIONS: This directive supersedes NWS Instruction 10-922, “*Weather Forecast Office Water Resources Product Specification*,” dated December 6, 2019. The following revisions were made to this instruction:

- 1) In section 3, flash flood watches were consolidated into flood watches when the immediate cause is excessive rainfall. Flash flood watches were maintained only for these specific situations: threat of flash flooding due to non-convective causes (e.g., dam or levee failure, ice jam) or threat of flash flooding and debris flows caused by excessive rainfall on burn scars or in debris flow- and landslide-prone areas.
- 2) In sections 3-4 and 7-12, water resources products were reformatted into “WHAT”, “WHERE”, “WHEN”, “IMPACTS”, and “ADDITIONAL DETAILS” format.
- 3) In sections 5 and 6, the “EXPECTED RAINFALL...” tag was changed to “EXPECTED RAINFALL RATE...”.
- 4) In section 11, the five types of flood advisories, which included Urban and Small Stream Flood Advisory, Arroyo and Small Stream Flood Advisory, Small Stream Flood Advisory, Flood Advisory, and Hydrologic Advisory and appeared in the headline of each flood advisory segment, were consolidated to Flood Advisory.

July 20, 2021

Andrew D. Stern

Date

Director

Analyze, Forecast and Support Office

Weather Forecast Office Water Resources Products Specification

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1. Introduction. This directive describes water resources products issued by the National Oceanic and Atmospheric Administration’s National Weather Service (NWS) Weather Forecast Offices (WFOs). It provides guidelines, detailed content descriptions as needed, and a generic format for each product type. Examples of products described in this directive are provided in [NWS Manual \(NWSM\) 10-923, *Weather Forecast Office Water Resources Product Examples*](#).

1.1 NWS-Wide Product Standards. All WFO water resources products issued through NWS-supported dissemination systems follow certain identification and dissemination standards. Basic standards for text products, including those for World Meteorological Organization (WMO) headers, Advanced Weather Interactive Processing System (AWIPS) identifiers, Universal Geographic Codes (UGC), Mass News Dissemination (MND) header blocks, and product content are contained in [NWS Instruction \(NWSI\) 10-1701, *Text Product Formats and Codes*](#). Specific standards for UGCs are contained in [NWSI 10-1702, *Universal Geographic Code \(UGC\)*](#). Specific standards for Valid Time Event Code (VTEC) are contained in [NWSI 10-1703, *Valid Time Event Code \(VTEC\)*](#).

1.2 Standards for Specific Water Resources Products. Each main section of this directive covers a specific water resources product and can be divided into two parts. The first part, consisting of text from the beginning of each section up to and including the Section x.3.4 (Content) sub-section, plus Section x.4 (Updates, Amendments, and Corrections) at the very end, is a verbal overview of issuance procedures and key product characteristics. The first part must be used in conjunction with the second part, Section x.3.5—i.e., the shaded generic format, to receive a complete description of a product’s content and format. Note: in the generic formats, [(*optional*:)___] means the portion within the brackets is optional, while (*optional*) at the end of a line means the entire line or bullet is optional.

1.3 Multi-tiered, “Ready, Set, Go” Concept. NWS products use a three-tiered, “Ready, Set, Go” concept to convey the severity and timing of a forecast hazard and the level of forecaster confidence. This concept is reflected in the following three WFO water resources products:

- a. The hydrologic outlook (“Ready”) – Used to indicate that a hazardous flooding event **may develop**. It is intended to provide information to those who need considerable lead time to prepare for an event.
- b. The flood watch (“Set”) – Used when the expectation of a flood 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 mitigation plans in motion can do so.
- c. Flash flood warnings, flood warnings, and various advisories under the flood statement identifier (“Go”) – Issued without regard to time frame, whenever an event **is occurring, imminent, or has a very high probability of occurrence**.

WFOs should strive to issue products in the outlook, watch, warning/advisory sequence as confidence increases of a flood event's occurrence. The specific combinations of lead time and forecaster confidence appropriate for a given product may be specified in regional supplements.

1.4 Counties, Boroughs, and Parishes. Wherever text or a generic product format refers to counties, the term "county" is also intended to represent the terms "borough", "parish", and "independent city", all of which exist in lieu of counties in some states. Not all geographic areas can be specified as a county or borough, so the phrase "including the following areas" may be used instead of "including the following counties", if necessary.

1.5 Event Tracking Numbers for Products Covering Non-Adjacent Areas. When a water resources product is in effect for one or more contiguous zones/counties, and then a product with the same AWIPS identifier is issued for a geographically separated area, the second one should have a different VTEC event tracking number (ETN). However, ETNs generated by the approved product application should not be manually changed to follow this policy.

1.6 Appropriate Terminology for Expressing Event Frequency. When describing past, current, or expected flood or precipitation events in reference to annual probability (frequency), the terminology "T-year event" will not be used anywhere in a product. Instead, use "X percent annual chance event," where $X = 100 \times (1/T)$ percent. For example, use "1-percent annual chance flood" instead of "100-year flood." In addition, events should not be cited as having an estimated annual chance of less than 0.2 percent (frequency greater than 500-year) because the limited period of precipitation and streamflow records make such probabilities highly uncertain. When flood or precipitation frequencies are cited, they should be attributed to the agency which developed them. However, the best practice is to compare past, current, or expected events to previous events rather than an event with a certain annual probability.

2. Hydrologic Outlook (ESE). There are two types of hydrologic outlooks: (1) products describing the possibility of flooding on a near-term forecast horizon, typically more than 24 hours from the event; and (2) products providing long-term forecast information, such as water supply forecasts and probabilistic analyses.

2.1 Mission Connection. Hydrologic outlooks help the NWS meet its mission by providing long lead time information on the potential for flooding or other notable water resources events. This product gives users lead time to consider response options, execute mitigation activities, and plan reservoir operations; thus, helping to protect life and property and enhance the national economy.

2.2 Issuance Guidelines.

2.2.1 Creation Software. Use the river product formatter (RiverPro) in the WFO hydrologic forecast system (WHFS), a text editor, or other applications, as appropriate.

2.2.2 Issuance Criteria. A hydrologic outlook identifying the possibility of a flood event is issued for the WFO's hydrologic service area (HSA) (see [NWSI 10-903, Geographic Areas of Responsibility](#)) on an as-needed basis when one of the following criteria is met:

- a. A product needs to be issued to convey the possibility of flooding, with possible occurrence typically 24 hours or more into the future, but as little as 12 hours in some cases when near-term certainty is still low; or
- b. A hydrologic outlook was previously issued indicating the possibility of flooding, but none materialized. In this case, the new product issued under the ESF identifier would indicate there is no longer a possibility of flooding.

A hydrologic outlook providing long-term forecast information is issued for a WFO's HSA on an as-needed basis to provide long-term forecast information, such as probabilistic analyses and seasonal water supply forecasts.

2.2.3 Issuance Time. Hydrologic outlooks describing the possibility of a flood event are non-scheduled, event-driven products. Hydrologic outlooks providing long-term forecast information are typically issued on schedules coordinated with regional headquarters and local users.

2.2.4 Valid Time. A hydrologic outlook will be valid until a time/date specified in the product, or until it is cancelled or updated by another hydrologic outlook.

2.2.5 Product Expiration Time. The product expiration time (at the end of the UGC line, in Coordinated Universal Time, or UTC) varies with the time horizon covered in the product. For hydrologic outlooks describing the possibility of a flood event, the product expiration time is typically 12 to 24 hours, but may be several days. For hydrologic outlooks providing long-term forecast information, the product expiration time may be as great as 30 days.

2.3 Technical Description.

2.3.1 UGC Type. County codes should be used (zone codes for Alaska and Pacific Region and county or zone codes for Western Region).

2.3.2 MND Product Type Line. Use one of the following MND product type lines:

- a. For the possibility of near-term flooding: Hydrologic Outlook
- b. For water supply outlooks: Water Supply Outlook
- c. For probabilistic forecast information: Probabilistic Hydrologic Outlook

2.3.3 Content. Hydrologic outlooks are non-segmented, non-bulleted products written in a variety of formats tailored to their target audience. The following should be included in hydrologic outlooks describing the possibility of a flood event:

- a. Headline defining the type of flooding being addressed (e.g., flash flooding, main stem river flooding, snowmelt flooding),
- b. Area covered,
- c. Possible timing of the event,

- d. Relevant factors (e.g., synoptic conditions, Quantitative Precipitation Forecasts (QPFs), or soil conditions),
- e. Definition of an outlook (tailored to the specific situation), and
- f. A closing statement indicating when additional information will be provided.

The following should be included in hydrologic outlooks with long-term forecast information:

- a. Headline defining the type of water supply or extended-range streamflow forecast information being provided, and
- b. Clearly labeled forecast information presented in text and/or tabular format.

2.3.4 Format. The generic format is as follows:

```

FGA1A2ii cccc ddhhmm (BBB) (WMO heading)
ESFxxx (AWIPS identifier)
StCNNN-NNN-NNN-ddhhmm- (UGC Type: county)
(MND Product Type Line):
Hydrologic Outlook or Water Supply Outlook or Probabilistic Hydrologic Outlook
National Weather Service <city, state> (Issuing Office)
hhmm am/pm time_zone mon dd yyyy (Issuance time/date)

<...Headline...> (optional)

<Narrative forecast information> (optional)

&& (optional – used here if narrative info needs to be separated from tabular info)

<tabular observed, forecast, and/or probabilistic information> (optional)

$$

<Name/Initials/Forecaster ID> (optional)

```

Figure 1. Generic format for Hydrologic Outlook (ESF) product.

2.4 Updates, Amendments, and Corrections. Provide updates by issuing a new product. Amendments are not applicable to this product. Follow standard NWS practices for corrections.

3. Flood Watch (FFA). VTEC Phenomena Code: FA (for flood watch) or **FF** (for flash flood watch), and **Significance Code: A**. The VTEC Phenomena Code will be FA when the immediate cause (ic) is excessive rainfall (ER), which is the most common situation. VTEC Phenomena Code FF will be reserved for rare situations when the threat of flash flooding is due to non-convective immediate causes (e.g., dam or levee failure (DM), ice jam (IJ), glacier-dammed lake outburst (GO)) or the threat of flash flooding and debris flows is caused by excessive rainfall (ER) on burn scars or in debris flow- and landslide-prone areas when the hazard location and potential impacts are well known, even at watch time scales. VTEC phenomena code FA will still be used for non-convective immediate causes that do not meet the flash flood watch definition (i.e., flooding that begins within minutes to multiple hours of the causative event). Flood watches inform the public of the possibility of flooding, typically within a 6- to 48-hour time frame before the event. Flood watches may cover states, counties, rivers (i.e., reach), or portions of any of the above.

3.1 Mission Connection. Flood watches help the NWS meet its mission by providing advance notice and up-to-date information on the possibility of flooding. This allows users to begin monitoring hydrometeorological conditions more closely and elevate flood mitigation resources to a higher state of readiness; thus, helping to protect life and property.

3.2 Issuance Guidelines.

3.2.1 Creation Software. Flood watches will be created with the Hazard Services application.

3.2.2 Issuance Criteria. Flood watches will be issued for a WFO's county warning and forecast area (CWFA) (see [NWS Manual 10-507, Public Geographic Areas of Responsibility](#)). Flood watches will be issued when one or more of the following conditions are met:

- a. The chance meteorological, soil, and/or hydrologic conditions will lead to flooding within a 48-hour period is approximately 50 to 80 percent; or
- b. The chance meteorological, soil, and/or hydrologic conditions will lead to flooding more than 48 hours into the future is approximately 50 to 80 percent, and the forecaster determines that a flood watch is the best way to convey this possibility; or
- c. The chance meteorological, soil, hydrologic, and/or burn area conditions will lead to debris flows within a 48-hour period is approximately 50 to 80 percent; or
- d. A dam or levee may fail and threaten lives or property, but the threat is not deemed to be imminent, or
- e. The effective time of a previously issued flood watch changes; and/or
- f. The geographic area covered by a previously issued flood watch increases; and/or
- g. An update to a previously issued flood watch is required; and/or
- h. A cancellation of all or part of a previously issued flood watch is required; and/or
- i. The expiration of a previously issued flood watch is to be announced (optional – if required by regional or local office policies).

When the flood threat has ended, an expiration or cancellation segment should be issued for the flood watch rather than allowing the product to expire on its own.

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

3.2.4 Valid Time. A flood watch will be valid from the time when the potential for flooding should start until the time when the potential for flooding should end, both as indicated in the headline, or until the product is cancelled or has expired.

3.2.5 Product Expiration Time. The product expiration time (at the end of the UGC line, in UTC) is generally set to be 6 to 8 hours after product issuance, but may be upwards of 12 to 24 hours for longer-fused potential flood situations. This time should be set to indicate when the next update will be issued, or when approaching the end of the watch period, match the product valid time contained in the headline. When announcing expiration or cancellation of a flood

watch, the product expiration time is not more than one half-hour after the watch expiration or cancellation time.

3.2.6 Replacing a Flood/Flash Flood Watch with a Flood/Flash Flood Warning. If it is decided to replace a flood/flash flood watch with a flood/flash flood warning, first, issue a new flood warning according to the procedures in Section 9, or a flash flood warning according to the procedures in Section 5. Then, cancel the flood/flash flood watch according to procedures in this section. This ensures there is no coverage gap between the watch and the warning. Note: a flood watch may continue to be in effect if a flood warning is issued for a forecast point within the watch area. A flood watch may also continue to be in effect, if a flood warning has been issued for a portion of the overall watch area.

3.3 Technical Description.

3.3.1 UGC Type. Zone codes should be used (county or zone codes for Western Region).

3.3.2 MND Broadcast Instruction Line. Use: “URGENT - IMMEDIATE BROADCAST REQUESTED” for initial product issuances as well as for extensions in time and/or expansions in area. Note: “BULLETIN” may be used in exceptional situations, such as potential dam failures. See NWS Instruction 10-1701 for criteria on use of the terms “Urgent” and “Bulletin.”

3.3.3 MND Product Type Line. Use: “Flood Watch”.

3.3.4 Content. The flood watch product uses a segmented, bulleted format (bullets not used in cancellations/expirations). An optional general overview/synopsis section may be provided at the top of the product. The required segmented watch information section begins with the first UGC line followed immediately by primary and hydrologic VTEC (P-VTEC, H-VTEC) strings.

3.3.4.1 General Overview/Synopsis Section. This optional section, when included, contains at least one of the following items:

- a. General Overview Headline – One or more headlines summarizing the flood threat, potentially affected area, and expected time of development. Each overview headline starts and ends with three dots (...).
- b. General Synopsis – A brief, non-technical description of the developing potential flood situation, including associated hydrometeorological factors when appropriate. This synopsis is free format and may consist of several paragraphs, but the first line of the first paragraph will always be preceded by a single dot (.).

3.3.4.2 Segmented Watch Information Section. Information needed in a given flood watch product will be divided into one or more segments. If multiple segments are needed, they will be provided in the following order:

- a. Cancellations (CAN)
- b. Expirations (EXP)
- c. New issuances (NEW)

- d. Extensions in both time and area (EXB)
- e. Expansions in area (EXA)
- f. Extensions in time (EXT)
- g. Continuations (CON)

Correction (COR) segments will be provided wherever needed. NEW, EXB, EXT, EXA, and CON segments will include the following:

- a. UGC line, P-VTEC string, H-VTEC string, zones and cities listing, and date/time stamp, as shown in Figure 2 below. In the H-VTEC, only the immediate cause (ic) is entered-zeroes are entered for the NWS location identifier (NWSLI), flood severity (s) and the start, crest, and end times; and OO (double capital "O") is entered for flood record (fr).
- b. Headline briefly summarizing the segment content. For complete instructions on headline formats, see NWSI 10-1701 at Appendix A. Some examples, along with the type of segment they would accompany, are as follows:
 - (1) ...FLOOD WATCH IN EFFECT THROUGH WEDNESDAY MORNING... (NEW or EXT segments, when the watch starts now, or within three hours of product issuance, with a general time phrase used for the ending time because the Event Ending Time is more than 12 hours after issuance.)
 - (2) ...FLOOD WATCH IN EFFECT FROM 1 PM EST THIS AFTERNOON THROUGH WEDNESDAY EVENING... (NEW or EXT segments, with a specific time used for the start time and a general time phrase used for the ending time because the Event Begin Time is less than 12 hours from issuance, and the Event Ending Time is more than 12 hours after issuance.)
 - (3) ...FLOOD WATCH IN EFFECT FROM THIS EVENING THROUGH WEDNESDAY EVENING... (NEW or EXT segments, with general time phrases used for both the start and ending times because the Event Begin Time and Event Ending Time are both more than 12 hours after issuance.)
 - (4) ...FLASH FLOOD WATCH IN EFFECT UNTIL 6 PM PST THIS EVENING... (NEW or EXT segments, when the watch starts now, or within three hours of product issuance, with a specific time used for the ending time because the Event Ending Time is less than 12 hours after issuance.)
 - (5) ...FLOOD WATCH CONTINUES THROUGH WEDNESDAY EVENING... (CON segments, with a general time phrase used for the ending time because the Event Ending Time is more than 12 hours after issuance.)
 - (6) ...FLASH FLOOD WATCH EXPANDED THROUGH WEDNESDAY EVENING... (EXA and EXB segments)
 - (7) ...FLASH FLOOD WATCH IS CANCELLED... (CAN segments)

(8) ...FLASH FLOOD WATCH WILL EXPIRE AT 6 PM MDT THIS EVENING...
(EXP segments)

The headline will be followed by five bullets delimited by asterisks (*).

- c. WHAT... bullet – Flooding, Flash flooding, or Flooding and flash flooding possible due to immediate cause (ic).
- d. WHERE... bullet – A general term describing the geographic area covered, followed by “including the following,” followed by a list of zones/counties covered.
- e. WHEN... bullet – Phrase integrating the event beginning (when appropriate) and event ending times (see Figure 2 for details).
- f. IMPACTS... bullet – Potential impacts (e.g., areas under flood threat). Basin- or point-specific information may be integrated into this bullet.
- g. ADDITIONAL DETAILS... bullet – Watch basis (e.g., synoptic conditions, soil conditions, river conditions, or quantitative precipitation forecasts). Basin- or point-specific information may be integrated into this bullet.
- h. Call-to-action (CTA) (optional) – If included, the CTA will focus on avoiding flood dangers and do not include instructions on how to escape from vehicles caught in flood waters. If included, the beginning and end will be delineated with CTA markers as shown in Figure 2.
- i. Optional tabular hydrologic observations and/or point-specific forecasts, with a double ampersand (&&) delimiter separating each different format for data presentation.

CAN and EXP segments will include the following:

- a. UGC line, P-VTEC string, H-VTEC string, zones listing, cities listing (optional), and date/time stamp as shown in Figure 2. In the H-VTEC, only immediate cause (ic) is entered - zeroes are entered for the NWSLI, flood severity (s) and the start, crest, and end times; and OO (double capital “O”) is entered for flood record (fr).
- b. Headline summarizing content of the segment.
- c. Sentence announcing cancellation or expiration of the product, followed by a brief post-event synopsis and summary of hydrologic activity.

3.3.5 Format. For a flood watch, follow the generic format shown below in Figure 2:

```
WGA1A2ii cccc ddhhmm (BBB)
FFAxxx

URGENT - IMMEDIATE BROADCAST REQUESTED 1
Flood Watch
National Weather Service <city, state>
hhmm am/pm time_zone day mon dd yyyy
<...General overview headline...> (optional)
```

<.General synopsis of potential flood situation (free format)> (optional)

(Include one or more of the following segments in the indicated order:)

For corrections (located in same place as the original segment being corrected):

```
stZNNN-NNN>NNN-ddhhmm- (UGC-Zone & expiration time)
/k.COR.cccc.pp2.A.####.yymmddThhnnZB-yymmddThhnnZE/ (P-VTEC string)
/00000.0.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/ (H-VTEC string)
<zone #1>-<zone #2>-<zone #n>- (Zones listing)
Including <the cities of> location...location (optional) (city/location)
hhmm am/pm time_zone day mon dd yyyy

<Appropriate text as shown in one of the segment types below>

$$
```

For cancellations:

```
stZNNN-NNN>NNN-ddhhmm-
/k.CAN.cccc.pp2.A.####.yymmddThhnnZB-yymmddThhnnZE/
/00000.0.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
<zone #1>-<zone #2>-<zone #n>-
Including <the cities of> location...location (optional)
hhmm am/pm time_zone day mon dd yyyy

...<FLOOD or FLASH FLOOD> WATCH IS CANCELLED...

The <Flood or Flash Flood> Watch for [(optional:)<a> <portion<s> of>] <geographic
area>3 has been cancelled. <Brief post-synopsis of hydrometeorological
activity>

$$
```

For expirations:

```
stZNNN-NNN>NNN-ddhhmm-
/k.EXP.cccc.pp2.A.####.yymmddThhnnZB-yymmddThhnnZE/
/00000.0.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
<zone #1>-<zone #2>-<zone #n>-
Including <the cities of> location...location (optional)
hhmm am/pm time_zone day mon dd yyyy

...<FLOOD or FLASH FLOOD> WATCH <HAS EXPIRED or WILL EXPIRE> AT <time/day
phrase>4>...

The <Flood or Flash Flood> Watch for [(optional:)<a> <portion<s> of>] <geographic
area>3 has expired. <Brief post-synopsis of hydrometeorological activity>

$$
```

For new issuances:

```
stZNNN-NNN>NNN-ddhhmm-
/k.NEW.cccc.pp2.A.####.yymmddThhnnZB-yymmddThhnnZE/
/00000.0.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
<zone #1>-<zone #2>-<zone #n>-
Including <the cities of> location...location (optional)
hhmm am/pm time_zone day mon dd yyyy

...<<FLOOD or FLASH FLOOD> WATCH IN EFFECT> or <POTENTIAL FOR FLASH FLOODS
AND DEBRIS FLOWS> <FROM <time/day phrase>4 <TO or THROUGH> <time/day phrase>>
```


or <UNTIL or THROUGH> <time/day phrase> [(optional:)FOR THE BURN AREAS OF <geographic area>³]...

* WHAT...<<Flooding> or <Flash Flooding> or <Flooding and Flash Flooding>> possible due to <immediate cause>⁷.

The WHERE... bullet is one of the following two:

1) For ER and any other immediate cause except DM – dam failure:

* WHERE...<[(optional:)<A> <portion<s> of]> <geographic area>³...including the following <counties or areas>...[(optional:)in <optional directional term> <state>...]<zone #1>...<zone #2> and <zone #n>.⁵

2) For DM – dam failure:

* WHERE...The <river name> below <dam name> in <geographic area>³...including the following <counties or areas>...[(optional:)in <optional directional term> <state>...]<zone #1>...<zone #2> and <zone #n>.⁵

* WHEN...<From <time/day phrase>⁴ <to or through> <time/day phrase>> or <<until or through> <time/day phrase>>.

* IMPACTS...<potential impacts>.

* ADDITIONAL DETAILS...<hydrometeorological basis for the watch>.

PRECAUTIONARY/PREPAREDNESS ACTIONS... (included only if optional CTA is included)

<call-to-action statement> (optional)

&& (included only if optional CTA is included)

\$\$

For both expansions in area and extensions in time⁶:

stZNNN-NNN>NNN-ddhmm-
/k.EXB.cccc.pp².A.####.yyymmddThhnnZ_E-yyymmddThhnnZ_E/
/00000.0.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
<zone #1>-<zone #2>-<zone #n>-
Including <the cities of> location...location (optional)
hhmm am/pm time_zone day mon dd yyyy

...<<FLOOD or FLASH FLOOD> WATCH EXPANDED> or <POTENTIAL FOR FLASH FLOODS AND DEBRIS FLOWS EXPANDED> <FROM <time/day phrase>⁴ <TO or THROUGH> <time/day phrase>> or <UNTIL or THROUGH> <time/day phrase> [(optional:)FOR THE BURN AREAS OF <geographic area>³]...

* WHAT...<<Flooding> or <Flash Flooding> or <Flooding and Flash Flooding>> possible due to <immediate cause>⁷.

The WHERE... bullet is one of the following two:

1) For ER and any other immediate cause except DM – dam failure:

* WHERE...[(optional:)<A> <portion<s> of]><geographic area>³...including the following <counties or areas>...[(optional:)in <optional directional term> <state>...]<zone #1>...<zone #2> and <zone #n>.⁵

2) For DM - dam failure:

* WHERE...The <river name> below <dam name> to include

<geographic area>³...including the following <counties or areas>...
 [(optional:)in <optional directional term> <state>...]<zone #1>...
 <zone #2> and <zone #n>.⁵

* WHEN...<From <time/day phrase>⁴ <to or through> <time/day phrase>> or
 <<until or through> <time/day phrase>>.

* IMPACTS...<potential impacts>.

* ADDITIONAL DETAILS...<hydrometeorological basis>.

PRECAUTIONARY/PREPAREDNESS ACTIONS... (included only if optional CTA is included)

<call-to-action statement> (optional)

&& (included only if optional CTA is included)

\$\$

For expansions in area:

stZNNN-NNN>NNN-ddhhmm-
 /k.**EXA**.cccc.pp ².**A**.####.yymmddThhnnZ_B-yymmddThhnnZ_E/
 /00000.0.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
 <zone #1>-<zone #2>-<zone #n>-

Including <the cities of> location...location (optional)

hhmm am/pm time_zone day mon dd yyyy

...<<FLOOD or FLASH FLOOD> WATCH EXPANDED> or <POTENTIAL FOR FLASH FLOODS AND
 DEBRIS FLOWS EXPANDED> <FROM <time/day phrase>⁴ <TO or THROUGH> <time/day
 phrase>> or <UNTIL or THROUGH> <time/day phrase> [(optional:)FOR THE BURN AREAS
 OF <geographic area>³].

* WHAT...<<Flooding> or <Flash Flooding> or <Flooding and Flash Flooding>>
 possible due to <immediate cause>⁷.

The WHERE... bullet is one of the following two:

1) For ER and any other immediate cause except DM – dam failure:

* WHERE...[(optional:)<A> <portion(s) of>] <geographic area>³...including the
 following <counties or areas>...[(optional:)in <optional directional
 term> <state>...]<zone #1>...<zone #2> and <zone #n>.⁵

2) For DM- dam failure:

* WHERE...The <river name> below <dam name> to include <geographic
 area>³...including the following <counties or areas>...[(optional:)in
 <optional directional term> <state>...]<zone #1>...<zone #2> and <zone
 #n>.⁵

* WHEN...<From <time/day phrase>⁴ <to or through> <time/day phrase>> or
 <<until or through> <time/day phrase>>.

* IMPACTS...<potential impacts>.

* ADDITIONAL DETAILS...<hydrometeorological basis for watch expansion>.

PRECAUTIONARY/PREPAREDNESS ACTIONS... (included only if optional CTA is included)

<call-to-action statement> (optional)

&& (included only if optional CTA is included)

\$\$

For extensions in time:

stZNNN-NNN>NNN-ddhhmm-
/k.**EXT**.cccc.pp².**A**.####.yymmddThhnnZ_B-yymmddThhnnZ_E/
/00000.0.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
<zone #1>-<zone #2>-<zone #n>-

Including <the cities of> location...location (*optional*)
hhmm am/pm time_zone day mon dd yyyy

...<<FLOOD or FLASH FLOOD> WATCH NOW IN EFFECT> or <POTENTIAL FOR FLASH FLOODS AND DEBRIS FLOWS> <NOW FROM <time/day phrase>⁴ <TO or THROUGH> <time/day phrase>> or <UNTIL or THROUGH> <time/day phrase>...

* WHAT...<<Flooding> or <Flash Flooding> or <Flooding and Flash Flooding>> possible due to <immediate cause>⁷.

The WHERE... bullet is one of the following two:

1) For ER and any other immediate cause except DM – dam failure:

* WHERE...[(*optional*):<A> <portion<s> of>] <geographic area>³...including the following <counties or areas>...[(*optional*):in <optional directional term> <state>...] <zone #1>...<zone #2> and <zone #n>.⁵

2) For DM - dam failure:

* WHERE...The <river name> below <dam name> in <geographic area>³...including the following <counties or areas>...[(*optional*):in <optional directional term> <state>...]<zone #1>...<zone #2> and <zone #n>.⁵

* WHEN...<From <time/day phrase>⁴ <to or through> <time/day phrase>> or <<until or through> <time/day phrase>>.

* IMPACTS...<potential impacts>.

* ADDITIONAL DETAILS...<hydrometeorological basis for extending the watch>.

PRECAUTIONARY/PREPAREDNESS ACTIONS... (*included only if optional CTA is included*)

<call-to-action statement> (*optional*)

&& (*included only if optional CTA is included*)

\$\$

For continuations:

stZNNN-NNN>NNN-ddhhmm-
/k.**CON**.cccc.pp².**A**.####.yymmddThhnnZ_B-yymmddThhnnZ_E/
/00000.0.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
<zone #1>-<zone #2>-<zone #n>-

Including <the cities of> location...location (*optional*)
hhmm am/pm time_zone day mon dd yyyy

...<<FLOOD or FLASH FLOOD> WATCH REMAINS IN EFFECT> or <POTENTIAL FOR FLASH FLOODS AND DEBRIS FLOWS> <FROM <time/day phrase>⁴ <TO or THROUGH> <time/day phrase>> or <UNTIL or THROUGH> <time/day phrase>...

* WHAT...<<Flooding> or <Flash Flooding> or <Flooding and Flash Flooding>> possible due to <immediate cause>⁷.

The WHERE... bullet is one of the following two:

1) For ER and any other immediate cause except DM – dam failure:

* WHERE...[(*optional:*)<A> <portion<s> of>] <geographic area>³...including the following <counties or areas>...[(*optional:*)in <optional directional term> <state>...] <zone #1>...<zone #2> AND <zone #n>.⁵

2) For DM - dam failure:

* WHERE...The <river name> below <dam name> in <geographic area>³...including the following <counties or areas>...[(*optional:*)in <optional directional term> <state>...]<zone #1>...<zone #2> AND <zone #n>.⁵

* WHEN...<From <time/day phrase>⁴ <to or through> <time/day phrase>> or <<until or through> <time/day phrase>>.

* IMPACTS...<potential impacts>.

* ADDITIONAL DETAILS...<current hydrometeorological situation>.

PRECAUTIONARY/PREPAREDNESS ACTIONS... *(included only if optional CTA is included)*

<call-to-action statement> (*optional*)

&& *(included only if optional CTA is included)*

\$\$

<Name/Initials/Forecaster ID> (*optional*)

Note (1): The MND Broadcast Instruction Line is only used for initial product issuances (i.e., NEW) and expansions/extensions (i.e., EXA, EXT, or EXB), or for corrections of these four issuance types. It is not included in follow-ups for a previously issued product (i.e., those with CAN, EXP, and/or CON segments).

Note (2): The Phenomena Code pp is one of the following: **FF** for flash flood watches or **FA** for flood watches (longer-fused flooding). The VTEC Phenomena Code will be FA when the immediate cause (ic) is excessive rainfall (ER), which is the most common situation. VTEC Phenomena Code FF will be reserved for rare situations when the threat of flooding is due to non-convective immediate causes (e.g., dam or levee failure (DM), ice jam (IJ), glacier-dammed lake outburst (GO)) or the threat of flooding and debris flows is caused by excessive rainfall (ER) on burn scars when the hazard location and potential impacts are well known, even at watch time scales.

Note (3): All or any part of “<A> <portion<s> of>” may be omitted if necessary. <geographic area> may be any type of area (e.g., Southeast Kansas, The Thornapple River below Ada Dam, The Gap Fire Burn Area in Santa Barbara County, or a river/stream name).

Note (4): <time/day phrase> stands for time/day phrases used in long duration watches (see NWSI 10-1701).

Note (5): Additional states and associated counties may be listed after this sentence as needed.

Note (6): When the valid time period of a watch has been changed (made longer or shorter) and the valid area has been expanded, two segments are used: one uses the EXB action code (for the newly added area) and the other uses either the EXT action code (if the area being continued has an updated valid time) or the CON action code (if the area being continued is keeping its original valid time) (NWSI 10-1703, sec. 2.1.2, EXB paragraphs).

Note (7): <immediate cause> may be: excessive rainfall/heavy rain, rain and snowmelt, snowmelt, a [*optional:* risk of a potential] dam failure, a [*optional:* risk of a potential] levee failure, a [*optional:* risk of a potential] dam floodgate release, a [*optional:* risk of a potential] glacier-dammed lake outburst, or <a or an> [*optional:* risk of a potential] ice jam.

Figure 2. Generic format for a flood watch (FFA).

3.4 Updates, Amendments, and Corrections. Provide updates to a flood watch by issuing a follow-up product with the same phenomena/significance codes and ETN per the issuance criteria in Section 3.2.2. Amendments are not applicable to this product. Issue correction

segments for text and format errors when necessary. Correction segments will not be used for areas covered, elements in the P-VTEC or H-VTEC strings except for the immediate cause (ic), or anything which is numerically linked to content of the VTEC strings (e.g., flood watch ending time). To make changes when a correction segment is not allowed, issue another FFA product with the appropriate segment/VTEC action code(s) and the correct information.

4. Flood Watch for Forecast Points (FFA). VTEC Phenomena Code: FL, Significance Code: A. This optional product is issued by some NWS offices to inform the public of the possibility of flooding—typically within a 6- to 48-hour time frame before the event—at specific forecast points on rivers and streams. The flood watch for forecast points is not a mandatory product. It may be issued for a location regardless of whether or not the area surrounding the location is already covered by a flood watch.

4.1 Mission Connection. Flood watches help the NWS meet its mission by providing advance notice and up-to-date information on the possibility of flooding. This allows users to begin monitoring hydrometeorological conditions more closely and elevate flood mitigation resources to a higher state of readiness; thus, helping to protect life and property.

4.2 Issuance Guidelines.

4.2.1 Creation Software. Flood watches for forecast points will be created with the Hazard Services application.

4.2.2 Issuance Criteria. Flood watches for forecast points are issued for specific locations in a WFO's HSA. They may be issued when one or more of the following conditions are met:

- a. The chance meteorological, soil, and/or hydrologic conditions will lead to flooding within a 48-hour period is approximately 50 to 80 percent; or
- b. The chance meteorological, soil, and/or hydrologic conditions will lead to flooding more than 48 hours into the future is approximately 50 to 80 percent, and the forecaster determines that a flood watch is the best way to convey this possibility; or
- c. A dam or levee may fail and threaten lives or property, but the threat is not deemed to be imminent, or
- d. The effective time of a previously issued watch changes; and/or
- e. An update to a previously issued flood watch is required; and/or
- f. A cancellation of all or some of the forecast points in a previously issued flood watch is required; and/or
- g. The expiration of a previously issued flood watch is to be announced (optional - if required by regional or local office policies).

When the flood threat has ended, an expiration or cancellation segment should be issued for the flood watch rather than allowing the product to expire on its own.

4.2.3 Issuance Time. Flood watches for forecast points are non-scheduled, event-driven products.

4.2.4 Valid Time. A flood watch for forecast points will be valid from the time when the potential for flooding should start until the time when the flood potential is expected to end, or until the product is cancelled or has expired.

4.2.5 Product Expiration Time. The product expiration time (at the end of the UGC line, in UTC) is generally set to be 6 to 8 hours after product issuance, but may be upwards of 12 to 24 hours for longer-fused potential flood situations. This time should be set to indicate when the next update will be issued, or when approaching the end of the watch period, match the product valid time contained in the product bullets. When announcing expiration or cancellation of a flood watch, the product expiration time is not more than one-half hour after the watch expiration or cancellation time.

4.2.6 Replacing a Flood Watch with a Flood Warning. If it is decided to replace a flood watch for a forecast point with a flood warning, first, issue a new flood warning for the forecast point according to the procedures in Section 7. Then, cancel the flood watch according to procedures in this section. This ensures there is no coverage gap between the watch and the warning.

4.3 Technical Description.

4.3.1 UGC Type. Zone codes should be used (county or zone codes for Western Region). Include UGCs for all areas which use the forecast point as an index for flooding problems.

4.3.2 MND Broadcast Instruction Line. Use: “URGENT - IMMEDIATE BROADCAST REQUESTED” for initial product issuances and extensions in time. Note: “BULLETIN” may be used in exceptional situations such as potential dam failures. See NWS Instruction 10-1701 for criteria on use of the terms “Urgent” and “Bulletin”.

4.3.3 MND Product Type Line. Use: “Flood Watch”.

4.3.4 Content. The flood watch for forecast points uses a segmented, bullet format. An optional general overview/synopsis section, if provided, occurs at the top of the product. The required segmented watch information section occurs next, with its beginning identified by the first UGC line followed immediately by a P-VTEC string.

4.3.4.1 General Overview/Synopsis Section. This optional section, when included, contains one or more of the following items:

- a. General Overview Headline – One or more headlines summarizing the flood threat, affected area, and possible time of development. Each overview headline starts and ends with three dots (...). A list of rivers and forecast points may appear below the headlines.
- b. General Synopsis – A brief, non-technical description of the potential flood situation and contributing hydrometeorological factors. This synopsis is free format and may consist of several paragraphs, but the first line of the first paragraph will always be preceded by a

single dot (.). If QPFs are a factor in the issuance of this product, a description of the range of assumed QPF values will be included here.

- c. Call-to-Action (CTA) – A general statement for all forecast points covered in the product. Call-to-action statements will focus on avoiding potential flood dangers and do not include instructions on how to escape from vehicles caught in floodwaters.

After the CTA, a URL for additional information and a statement describing the time for the next scheduled update may be included. If a call-to-action statement, a URL for additional information, and/or a time for the next scheduled update are included, the collective beginning and end of these will be delineated with CTA markers as shown in Figure 3.

If any of the items described above for the general overview/synopsis are included in a product, they will be only provided at the top of a product as shown in Figure 3.

4.3.4.2 Segmented Watch Information Section. Information needed in a given flood watch for forecast points will be divided into one or more segments. If multiple segments are needed, they should be provided in the following order:

- a. Cancellations (CAN)
- b. Expirations (EXP)
- c. New issuances (NEW)
- d. Extensions in time (EXT)
- e. Continuations (CON)

However, segments may be ordered to group information in a way that makes the most sense geographically (e.g., by county, downstream order, forecast basin).

NEW, EXT, and CON segments will include the following:

- a. UGC line, P-VTEC string, H-VTEC string, and date/time stamp as shown in Figure 3. In the H-VTEC, only the immediate cause (ic) and NWSLI are entered - zeroes are entered for the flood severity (s) and the start, crest, and end times; and OO (double capital “O”) is entered for flood record (fr).
- b. **Headline** – “...FLOOD WATCH IN EFFECT <FROM <time/day phrase> TO <time/day phrase>> or UNTIL <time/day phrase>...” (for new issuances) or “...FLOOD WATCH EXTENDED UNTIL <time/day phrase>...” (for extensions in time) or “...FLOOD WATCH CONTINUES UNTIL <time/day phrase>...” (for continuations), followed by four bullets delimited by asterisks (*).
- c. **WHAT** bullet – Description of category of possible flooding, if known.
- d. **WHERE** bullet – “The” and then the river/stream and forecast point name. “The” may be omitted if it is unneeded (e.g., for creeks).

- e. WHEN bullet – “From/to” or “Until” information, obtained from the Event Beginning and Event Ending Date/Times used in the P-VTEC string. If the event has already begun, only provide the “Until” information. Use specific date/times in standard format.
- f. ADDITIONAL DETAILS bullet – followed on the next line by sub-bullets, delimited by (-):
 - 1) “At” followed by the time of observation and the current stage/flow, followed optionally by a phrase indicating the recent trend (see Figure 3).
 - 2) Flood stage/flow at the forecast point. Separate sub-bullets with other stages, such as caution stage, may also be listed before or after this sub-bullet.
 - 3) “Forecast...,” followed by time when the river/stream could reach flood stage/flow. It is optional to include possible crest/peak flow and time/day it could occur, and other relevant forecast information.
 - 4) (Optional) “Impact...,” followed by a description of the known impact(s) of flooding within the range of forecast stages (or flows).
- g. After a double ampersand (&&),
 - 1) (Optional) Observed and forecast data in tabular format
 - 2) Latitude/longitude polygon coordinates defining the watch area.

Observed and forecast data in tabular format may be presented after a double ampersand (&&) at the end of the product after the last segment.

CAN and EXP segments will include the following:

- a. UGC line, P-VTEC string, H-VTEC string, counties listing (optional), and date/time stamp as shown in Figure 3. In H-VTEC, use the same flood severity “s” as the most recently issued NEW, CON, or EXT segment.
- b. Headline – “...FLOOD WATCH IS <CANCELLED or CANCELLED AND HAS BEEN REPLACED BY A FLOOD WARNING>...” (for cancellations) or “...FLOOD WATCH <HAS EXPIRED or WILL EXPIRE> or <HAS EXPIRED or WILL EXPIRE AND HAS BEEN REPLACED BY A FLOOD WARNING>...” (for expirations), followed on the next line by a sentence which mentions the river/stream and forecast point name being cancelled or expired.
- c. ADDITIONAL DETAILS bullet – followed on the next line by sub-bullets, delimited by (-):
 - 1) “At” followed by the time of observation and the current stage/flow, followed optionally by a phrase indicating the recent trend (see Figure 3).
 - 2) “Forecast...” followed by a near-term stage/flow forecast.

- d. After a double ampersand (&&), latitude/longitude polygon coordinates defining the watch area.

4.3.5 Format. The generic format is shown below in Figure 3:

```
WGA1A2ii cccc ddhmm (BBB)
FFAxxx
```

```
URGENT - IMMEDIATE BROADCAST REQUESTED1
Flood Watch
National Weather Service <city, state>
hhmm am/pm time_zone day mon dd yyyy
```

The following overview headline/synopsis section within the brackets is optional, or may use a different format:

```
...The National Weather Service in <WFO location> has issued a
Flood Watch [(optional:) until <time/day phrase>4] for the following
<location(s) or river(s)> <in or on> <geographic name or phrase>...
- or -
...The Flood Watch continues [(optional:) until <time/day phrase>] for
the following <location(s) or river(s)> <in or on> <geographic name
or phrase>...

<river/stream> <proximity term> <location> [(optional:) affecting
<county #1>...<county #2> AND <county #n> <county or counties>].
<river/stream> <proximity term> <location> [(optional:) affecting
<county #1>...<county #2> AND <county #n> <county or counties>].
.
<river/stream> <proximity term> <location> [(optional:) affecting
<county #1>...<county #2> AND <county #n> <county or counties>].
affecting the following counties in <state>...<county #1>...
<county #2> and <county #n>. (optional)
- and / or -
...The Flood Watch <is cancelled or has expired or will expire> for the
following <location(s) or river(s)> <in or on> <geographic name or phrase>...

<river/stream> <proximity term> <location> [(optional:) affecting
<county #1>...<county #2> and <county #n> <county or counties>].
<river/stream> <proximity term> <location> [(optional:) affecting
<county #1>...<county #2> and <county #n> <county or counties>].
.
<river/stream> <proximity term> <location> [(optional:) affecting
<county #1>...<county #2> and <county #n> <county or counties>].
affecting the following counties in <state>...<county #1>...
<county #2> and <county #n>. (optional)

.<General synopsis. Note for cancellation or expiration products: if a flood
situation never developed, provide a brief explanation of why this was the
case; if flood situation developed or is developing, mention that a flood
product (advisory, warning) will be or has been issued>.

If product is not a cancellation or expiration, include the following:
The segments in this product are river forecasts for selected
locations in the watch area [(optional:) based on currently available
```

rainfall forecasts ranging from <QPF lower range> to <QPF upper range> inches over the <river/basin name(s)>]...

PRECAUTIONARY/PREPAREDNESS ACTIONS... *(include if any of the optional items below are included)*

<call-to-action>. *(optional)*

Additional information is available at <Web site URL>. *(optional)*

The next statement will be issued <time/day phrase>. *(optional)*

&& *(include if any of the optional items above are included)*

(Include one or more of the following segments in the indicated order:)

For corrections (located in same place as the original segment being corrected):

```
stZNNN-NNN>NNN-ddhhmm-
/k.COR.cccc.FL.A.####.yymmddThhnnZB-yymmddThhnnZE/
/nwsl.0.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
hhmm am/pm time_zone day mon dd yyyy
```

<Appropriate text as shown in one of the segment types below>.

\$\$

For cancellations:

```
stZNNN-NNN>NNN-ddhhmm-
/k.CAN.cccc.FL.A.####.yymmddThhnnZB-yymmddThhnnZE/
/nwsl.0.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
hhmm am/pm time_zone day mon dd yyyy
```

...FLOOD WATCH IS <CANCELLED> or <CANCELLED AND HAS BEEN REPLACED BY A FLOOD WARNING>...

The Flood Watch is <cancelled> or <cancelled and has been replaced by a Flood Warning> for the <river/stream name> <proximity term - e.g., at> <location>.

* ADDITIONAL DETAILS...

- At <time>² <day> the <stage or flow> was <stage/flow>³ [*(optional:)*...<<<an increase> or <a decrease> OF <stage/flow> <feet or cfs>> or <<no change since <time phrase>> or <and rising> or <and steady> or <and falling>>>].
- Recent Activity...<e.g., recent peaks/trends in river stage>. *(optional)*
- Forecast...<near-term stage/flow forecast>.

&&

<tabular observed/forecast values for segment> *(optional)*

LAT...LON nnnn nnnn

\$\$

(For each additional forecast point (if any), repeat the above in a separate segment)

For expirations:

```
stZNNN-NNN>NNN-ddhhmm-
/k.EXP.cccc.FL.A.####.yymmddThhnnZB-yymmddThhnnZE/
/nwsl.0.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
hhmm am/pm time_zone day mon dd yyyy
```

...FLOOD WATCH <HAS EXPIRED or WILL EXPIRE> or <<HAS EXPIRED or WILL EXPIRE>
AND HAS BEEN REPLACED BY A FLOOD WARNING>>...

The Flood Watch <has expired or will expire> or <<has expired or will
expire> and has been replaced by a Flood Warning>> for
the <river/stream name> <proximity term - e.g., at> <location>.

* ADDITIONAL DETAILS...

- At <time>² <day> the <stage or flow> was <stage/flow>³ [(optional:)...<<an
increase> or <a decrease> of <stage/flow> <feet or cfs>> or <<no change
since <time phrase>> or <and rising> or <and steady> or <and
falling>>>].
- Recent Activity...<e.g., recent peaks/trends in river stage>. (optional)
- Forecast...<near-term stage/flow forecast>.

&&

<tabular observed/forecast values for segment> (optional)

LAT...LON nnnn nnnn

\$\$

(For each additional forecast point (if any), repeat the above in a separate segment)

For new issuances:

```
stZNNN-NNN>NNN-ddhhmm-
/k.NEW.cccc.FL.A.####.yymmddThhnnZB-yymmddThhnnZE/
/nwsl.0.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
hhmm am/pm time_zone day mon dd yyyy
```

...FLOOD WATCH IN EFFECT <FROM <time/day phrase>⁴ TO <time/day phrase>> or
UNTIL <time/day phrase>...

* WHAT...<flood category> flooding is possible.⁵

* WHERE...<optional: The> <river/stream name> <proximity term - e.g., at>
<location>.

* WHEN...<From <time/day phrase>⁴ to <time/day phrase>> or Until <time/day
phrase>.

* ADDITIONAL DETAILS...

- At <time>² <day> the <stage or flow> was <stage/flow>³ [(optional:)...<<an
increase> or <a decrease> of <stage/flow> <feet or cfs>> or <<no change
since <time phrase>> or <and rising> or <and steady> or <and
falling>>>].
- Flood <stage or flow> is <flood stage/flow>.
- Recent Activity...<e.g., recent peaks/trends in river stage>. (optional)
- <other stage/flow type>⁶ <stage or flow> is <stage/flow>. (optional)
- Forecast...Flood <stage or flow> may be reached at <time> <day>.

```

    [(optional:) Additional forecast information (e.g., possible crest/time)].
    - Impact...<description of impact(s) at given stage(s)/flow(s). Include
      CTA info specific to this forecast point here>. (optional)
  &&

  <tabular observed/forecast values for segment> (optional)

  LAT...LON  nnnn nnnn

  $$
  (For each additional forecast point (if any), repeat the above in a separate segment)

```

For extensions in time:

```

stZNNN-NNN>NNN-ddhhmm-
/k.EXT.cccc.FL.A.####.yymmddThhnnZB-yymmddThhnnZE/
/nwsl1.0.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
hhmm am/pm time_zone day mon dd yyyy

...FLOOD WATCH EXTENDED <FROM <time/day phrase>4 to <time/day phrase>> or
UNTIL <time/day phrase>...

* WHAT...<flood category> flooding is possible.5

* WHERE...<optional: The> <river/stream name> <proximity term - e.g., at>
<location>.

* WHEN...<From <time/day phrase>4 to <time/day phrase>> or Until <time/day
phrase>.

* ADDITIONAL DETAILS...
  - At <time>2 <day> the <stage or flow> was <stage/flow>3 [(optional:)...<<<an
  increase> or <a decrease> of <stage/flow> <feet or cfs>> or <<<no change
  since <time phrase>> or <and rising> or <and steady> or <and
  falling>>>].
  - Flood <stage or flow> is <flood stage/flow>.
  - Recent Activity...<e.g., recent peaks/trends in river stage>. (optional)
  - <other stage/flow type>6 <stage or flow> is <stage/flow>. (optional)
  - Forecast...Flood <stage or flow> may be reached at <time> <day>.
    [(optional:) Additional forecast information (e.g., possible crest/time)].
  - Impact...<description of impact(s) at given stage(s)/flow(s). Include
    CTA info specific to this forecast point here>. (optional)

  &&

  <tabular observed/forecast values for segment> (optional)

  LAT...LON  nnnn nnnn

  $$
  (For each additional forecast point (if any), repeat the above in a separate segment)

```

For continuations:

stZNNN-NNN>NNN-ddhhmm-
 /k.**CON**.cccc.**FL.A**.####.yyymmddThhnnZ_B-yyymmddThhnnZ_E/
 /nwsli.0.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
 hhmm am/pm time_zone day mon dd yyyy

...FLOOD WATCH CONTINUES <FROM <time/day phrase>⁴ TO <time/day phrase>> or UNTIL <time/day phrase>...

* WHAT...<flood category> flooding is possible.⁵

* WHERE...<optional: The> <river/stream name> <proximity term - e.g., at> <location>.

* WHEN...<From <time/day phrase>⁴ to <time/day phrase>> or Until <time/day phrase>.

* ADDITIONAL DETAILS...

- At <time>² <day> the <stage or flow> was <stage/flow>³ [(optional:)...<<<an increase> or <a decrease> of <stage/flow> <feet or cfs>> or <<no change since <time phrase>> or <and rising> or <and steady> or <and falling>>>].
- Flood <stage or flow> is <flood stage/flow>.
- Recent Activity...<e.g., recent peaks/trends in river stage>. (optional)
- <other stage/flow type>⁶ <stage or flow> is <stage/flow>. (optional)
- Forecast...Flood <stage or flow> may be reached at <time> <day>. [(optional:) Additional forecast information (e.g., possible crest/time)].
- Impact...<description of impact(s) at given stage(s)/flow(s). Include CTA info specific to this forecast point here>. (optional)

&&

<tabular observed/forecast values for segment> (optional)

LAT...LON nnnn nnnn

\$\$

(For each additional forecast point (if any), repeat the above in a separate segment)

&& (only provided here if tabular observed/forecast values are provided below for entire product)

<tabular observed/forecast values for entire product> (optional)

\$\$ (only provided here if tabular observed/forecast values are provided above for entire product)

<Name/Initials/Forecaster ID> (optional)

Note (1): The MND Broadcast Instruction Line is only used for new and extension issuances.

Note (2): Where <time> stands alone as a variable, the format is hhmm am/pm time_zone.

Note (3): “Stage / flow” means either stage and/or discharge values may be used.

Note (4): <time/day phrase> stands for time/day phrases used in long duration watches (see NWSI 10-1701)—i.e., specific times within 12 hours of issuance, and general phrases beyond 12 hours (e.g., “Tuesday afternoon”).

Note (5): Include forecast category phrase, if applicable, and flood categories are available.

Note (6): Examples of “other stage/flow type:” Caution stage, Alert stage, or Monitor stage.

Figure 3. Generic format for flood watch for forecast points.

4.4 Updates, Amendments, and Corrections. Provide updates by issuing a follow-up product with the same phenomena/significance codes and ETN per the issuance criteria in Section 4.2.2. Amendments are not applicable to this product. Issue correction segments for text and format errors when necessary. Correction segments will not be used for changes to observed or forecast data, elements in the P-VTEC or H-VTEC strings, except for the NWSLI or immediate cause (ic), or anything numerically linked to elements in the VTEC strings (e.g., flood watch begin or end times). To make changes when a correction segment is not allowed, issue another FFA product with the appropriate segment/action code(s) and correct information.

5. Flash Flood Warning (FFW). VTEC Phenomena Code: FF, Significance Code: W. Flash flood warnings are issued when flooding is imminent or likely. This product will be reserved for those short-term events which require immediate action to protect life and property, such as dangerous small stream or urban flooding and dam or levee failures. The geographic area covered, which is defined by a polygon, may be all or a portion of one or more counties, a river/stream basin, or any other type of definable area (e.g., a specific valley). Flash flood warnings and tornado warnings will not be combined in the same product. Flash flood warnings should not be combined with severe thunderstorm warnings.

5.1 Mission Connection. Flash flood warnings help the NWS meet its mission by providing advance notification of dangerous, short-fused flood events. This allows users to take immediate mitigation actions, such as evacuation to higher ground; thus, helping to protect life and property.

5.2 Issuance Guidelines.

5.2.1 Creation Software. Flash flood warnings will be created with the Hazard Services application.

5.2.2 Issuance Criteria. A flash flood warning will be issued for a geographical area defined by a polygon in a WFO’s CWFA when:

- a. Flash flooding is reported; and/or
- b. A dam or levee failure is imminent or occurring; and/or
- c. A sudden failure of a naturally-caused stream obstruction (including debris slide, avalanche, or ice jam) is imminent or occurring, and/or
- d. Precipitation capable of causing flash flooding is indicated by radar, rain gages, and/or satellite; and/or

- e. Precipitation as indicated by radar, rain gages, satellite and/or other guidance is capable of causing debris flows, particularly (but not only) in burn areas; and/or
- f. Local monitoring and prediction tools indicate flash flooding is likely; and/or
- g. A hydrologic model indicates flash flooding for locations on small streams, or
- h. A previously issued flash flood warning needs to be extended in time, or
- i. Flash flooding is imminent or occurring in a geographical area currently not under a valid flash flood warning. Note: since flash flood warnings cannot be extended in area, a new flash flood warning should be issued for adjacent areas when flash flooding is imminent or occurring in those areas.

If a reliable source has reported that flooding has ended in all of the warned area and a flash flood warning is still in effect, a flash flood statement should be issued cancelling or expiring the warning, rather than allowing the product to expire on its own.

5.2.3 Issuance Time. Flash flood warnings are non-scheduled, event-driven products.

5.2.4 Valid Time. A flash flood warning will be valid from the time of issuance until the time when flooding (requiring immediate actions to protect life and property) is expected to end, as indicated in the second bullet, or until the product is cancelled. If it would provide the best public service to keep a flash flood warning in effect for an extended time, such as when multiple bands of heavy rain from a tropical system or a stationary front are prolonging or worsening a flash flood situation, extension (EXT) products may be issued (under the FFW identifier) to keep a flash flood warning in effect for whatever time is necessary—e.g., 6, 12, or even 24 or more hours.

The valid time for extensions to flash flood warnings should usually be 6 hours or less, but may be up to 12 hours when flash flooding is expected to persist during overnight hours or other special circumstances. Frequent updates to extended flash flood warnings should be provided through flash flood statements (Section 6) which provide supplemental information on active flash flood warning products. When determining the valid time or considering an appropriate time for warning cancellation, the ending time for the flooding should be the determining factor rather than the end of heavy precipitation.

5.2.5 Product Expiration Time. The product expiration time (at the end of the UGC line, in UTC) is the same as the warning valid time in the second bullet (local time).

5.2.6 Replacing a Flash Flood Warning with a Flood Warning. If it is decided to replace a flash flood warning with a flood warning, first, issue a new flood warning according to the procedures in Section 9. Then, cancel the flash flood warning according to procedures in Section 6. This ensures there is no coverage gap between the two products.

It is not necessarily required to replace a flash flood warning with a flood warning after a flash flood warning has been in effect for a predetermined length of time such as 6 hours. The primary means for determining whether a flash flood warning or a flood warning is needed is the level of

urgency, not an arbitrary time frame. If it would provide the best public service to keep a flash flood warning in effect for an extended time, such as when multiple bands of heavy rain from a tropical system or a stationary front are prolonging or worsening a flash flood situation, extension (EXT) products may be issued (under the FFW identifier) to keep a flash flood warning in effect for whatever time is necessary—e.g., 6, 12, or even 24 or more hours.

5.3 Technical Description.

5.3.1 UGC Type. County codes should be used (zone codes for Alaska and American Samoa).

5.3.2 MND Broadcast Instruction Line. Use: “BULLETIN - EAS ACTIVATION REQUESTED”.

5.3.3 MND Product Type Line. Use: “Flash Flood Warning”.

5.3.4 Content. Flash flood warnings use a bullet, Impact-Based Warning (IBW) format and will include:

- a. UGC line, P-VTEC string, H-VTEC string, and date/time stamp as shown in Figure 4. Only the immediate cause (ic) is entered in the H-VTEC string – zeroes are entered for the NWSLI, flood severity (s) and the start, crest, and end times; and OO (double capital “O”) is entered for flood record (fr). Immediate causes (ic) are described under (b) below. If the product is for flash flooding caused by a dam failure, the flood severity (s) is set to 1 (minor), 2 (moderate), or 3 (major), if it is known, or “U” if it is unknown.
- b. In exceedingly rare situations, when a severe threat to human life and catastrophic damage from a flash flood is imminent or ongoing, the headline “...A FLASH FLOOD EMERGENCY FOR [geographic area]...”.
- c. The action lead-in phrase “The National Weather Service in <WFO location> has issued a” (for new issuances) or “The National Weather Service in <WFO location> has extended the” (for extensions), followed by three to four bullets delimited by asterisks (*), with the following information (bullets may be more than 6 lines):
 - (1) First bullet, for immediate cause ER (excessive rainfall), IC (rain and/or snowmelt and/or ice jam), MC (other multiple causes), and UU (unknown) – “Flash Flood Warning for...,” followed by a list of county-based geographic areas—i.e., county names with appropriate geographic modifiers as needed such as: <county> in north central <state>, Southwest <county> in <state>, Southwest <county> in southeastern <state>, or The mountains and deserts of southwest <county> in southern <state>. Each county-based geographic area will be followed by three dots (...).

or, for immediate cause DM (dam failure):

“Flash Flood Warning for...,” followed on the next line by: <optional: The> <stream name> below <dam name> in..., followed on the next line by a list of county-based geographic areas, with three dots (...) after each area.

or, for immediate cause DM (levee failure), DR (upstream dam/reservoir release, GO (glacier-dammed lake outburst), IJ (ice jam), RS (rain and snowmelt), and SM (snowmelt):

“Flash Flood Warning for...,” followed on the next line by <type of flooding> in..., followed on the next line by a list of county-based geographic areas, with three dots (...) after each area.

- (2) Second bullet – “Until” followed by the event ending time.
- (3) Third bullet – “At” followed by the basis for the warning, followed on the next line by: “HAZARD...”, followed by a description of the hazard such as: Flash flooding caused by heavy rain or Life-threatening flash flooding caused by a dam failure, followed on the next line by “SOURCE...”, followed by how the flash flood was identified such as: Radar indicated, Radar and automated gauges, or Emergency management, followed on the next line by “IMPACT...”, followed by a brief description of the impact of the flash flooding.

In exceedingly rare situations, when a severe threat to human life and catastrophic damage from a flash flood is imminent or ongoing, the phrase “This is a FLASH FLOOD EMERGENCY for [geographic area]...<special call to action>” may be included.

Examples of situations which warrant the inclusion of flash flood emergency language in flash flood warnings may include, but are not limited to:

- Emergency manager(s) of the affected county(ies) or the state emergency management association declare a state of emergency and have confirmed that rapidly rising floodwaters are placing or will place people in life-threatening situations. The state of emergency for the affected areas may have been previously relayed by the emergency manager(s) or the state emergency management association through the WFO in a Non-Weather Emergency Message. These might include a Civil Emergency Message (CEM), an Evacuate Immediate (EVI), or a Local Area Emergency (LAE).
- Water has rapidly risen or will rapidly rise to levels where people who are ordinarily in safe locations during previous flash flood events are now placed in life-threatening situations. For example, people in homes that might see waters rapidly rise up to their front yards or steps during typical flash flood situations would experience waters that are several feet above floor level, such that rescue is necessary and/or their entire home is threatened.
- Multiple swift water rescue teams have been or are being deployed in response to flash flooding of an exceptional magnitude.

- Stream gages, where available, indicate floodwaters have risen rapidly to at least major levels, or if gages are not available, floodwaters have risen to levels rarely, if ever, seen.
- Total failure of a major high hazard dam that would have a catastrophic impact on the downstream communities.

In situations where a robust emergency management structure does not exist or external communications are not possible, a WFO may include flash flood emergency language in a flash flood warning without pre-coordinating with emergency managers when the above or similar criteria are met.

- (4) Fourth bullet (optional) - Pathcast, i.e., forecast timing of the flood with specific locations to be affected (e.g., cities, streets, mile markers, and neighborhoods) and the most flood-prone areas.

Basin- or point-specific information may be integrated into the bullets.

- d. A call-to-action statement following the bullets. Call-to-action statements will focus on avoiding flood dangers and do not include instructions on how to escape from vehicles caught in floodwaters. If a call-to-action statement is included, its beginning and end will be delineated with CTA markers as shown in Figure 4.
- e. Latitude/longitude polygon coordinates defining the warning area.
- f. IBW tags.

The flash flood source tag (FLASH FLOOD...) will be followed by the type of source, which may include, but is not limited to:

- RADAR INDICATED – Evidence on radar and near storm environment is supportive, but there has been no confirmation.
- OBSERVED – Flash flood impacts confirmed by trained spotters, law enforcement, media, other credible human observers, etc.

The flash flood damage threat tag (FLASH FLOOD DAMAGE THREAT...) will be followed by:

- Base (no tag) – Most flash floods, with the potential for impacts and damage.
- CONSIDERABLE – Flash floods capable of unusual severity of impact where urgent action is needed to protect lives and property.
- CATASTROPHIC – Exceedingly rare, violent flash floods which threaten lives and cause disastrous damage when floodwaters are placing or will place people in life-threatening situations by rapidly rising to levels rarely, if ever, seen. Catastrophic flash flood damage threat tags will only appear in flash flood warnings which include flash flood emergency language.

Wireless Emergency Alerts (WEA) will be issued only for flash flood warnings with CONSIDERABLE or CATASTROPHIC flash flood damage threat tags.

(Optional) The expected rainfall rate tag (EXPECTED RAINFALL RATE...) will be used when forecasters want to identify rainfall rates leading to potential or observed flash flooding, including rain falling on a burn scar, and will be followed by the rainfall rates leading to potential or observed flash flooding, which may include, but are not limited to:

- ##-## INCHES PER HOUR
- ## INCHES IN ## MINUTES
- ##-## INCHES IN ## MINUTES

The dam or levee failure tag ([DAM or LEVEE] FAILURE...) will be used to provide additional information about the status of the failing dam or levee and will be followed by:

- IMMINENT
- OCCURRING

If it is possible to provide hydrologic observations and/or forecasts for specific locations in the flash flood warning area, first, issue a flash flood warning for the affected counties/zones as described above. Then, include the point-specific information in a subsequently issued flash flood statement, using the format described in Figure 6 of Section 6.3.5.

5.3.5 Format. Follow the generic format shown below in Figure 4:

```
WGA1A2iii cccc ddhhmm (BBB)
FFWxxx
stC1NNN-2NNN-3NNN-ddhhmm-
/k.aaa1.cccc.FF.W.####.yy1mmddThh1nnZB-yy2mmddThh2nnZE/
/00000.s.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/

BULLETIN - EAS ACTIVATION REQUESTED
Flash Flood Warning
National Weather Service <city, state>
hhmm am/pm time_zone mon dd yyyy

...A FLASH FLOOD EMERGENCY FOR <geographic area>4... (optional, exceptional situations)

The National Weather Service in <WFO location> has [<issued a> or
<extended the>]
```

The first bullet is one of the following three:

- 1) For immediate cause = ER, IC, MC, and UU:
 - * Flash Flood Warning for...²
- 2) For DM - dam failure:
 - * Flash Flood Warning for...
 - <optional: The> <stream name> below <dam name> in...
- 3) For other immediate causes (DM – levee failure, DR, GO, IJ, RS, SM):
 - * Flash Flood Warning for...

```

| <type of flooding>3 in...
| <county #1, with appropriate geographic term(s) before and/or after>4...
| <county #2, with appropriate geographic term(s) before and/or after>...
| .
| <county #n, with appropriate geographic term(s) before and/or after>...
| <This includes the <city or cities> of location...location...> (optional)
* Until hhmm AM/PM time_zone5 (expiration time of warning)
* At hhmm AM/PM time_zone <warning basis statement and expected impacts>2.
  This is a FLASH FLOOD EMERGENCY for <geographic area>...<special call to
  action> (optional, exceptional situations)
  HAZARD...<description of hazard>
  SOURCE...<how the flash flood was identified>
  IMPACT...<brief description of the impact of the flash flooding>
* <forecast path of flood and/or locations to be affected>2. (optional)
PRECAUTIONARY/PREPAREDNESS ACTIONS... (include only if optional CTA is included)
<call-to-action statement> (optional)
&& (include only if optional CTA is included)
LAT...LON nnnn nnnn (mandatory)
FLASH FLOOD...<RADAR INDICATED or OBSERVED>6
FLASH FLOOD DAMAGE THREAT...<CONSIDERABLE or CATASTROPHIC>7
EXPECTED RAINFALL RATE...##-## INCHES PER HOUR8 (optional)
<DAM or LEVEE> FAILURE...<IMMINENT or OCCURRING>9
$$
<Name/Initials/Forecaster ID> (optional)

```

- Note (1): For flash flood warnings, the action code may only be NEW, EXT, or COR.
- Note (2): The length of the first, third, and fourth bullets may be longer than 6 lines to convey necessary warning area, warning basis, and pathcast information.
- Note (3): <type of flooding> may be: A levee failure, A dam floodgate release, A glacier-dammed lake outburst, An ice jam, or Extremely rapid snowmelt caused by volcanic eruption.
- Note (4): Any of the following would be appropriate geographic term(s) before and/or after the county name: Southwest Los Angeles County in southern California, Polk County in central Iowa, or The Gap Fire Burn Area in Santa Barbara County.
- Note (5): It is optional to include a day of the week after the time when needed.
- Note (6): This tag may include, but is not limited to: RADAR INDICATED or OBSERVED.
- Note (7): This tag will only appear in flash flood warnings for flash floods that threaten to cause “considerable” or “catastrophic” damage.
- Note (8): Expected rainfall rate may include, but is not limited to: ##-## INCHES PER HOUR, ## INCHES in ## MINUTES, or ##-## INCHES in ## MINUTES.
- Note (9): This tag will only appear in flash flood warnings for flash floods caused by dam or levee failures.

Figure 4. Generic format for a flash flood warning issued for an area.

5.4 Updates, Amendments, and Corrections. Provide updates by issuing a flash flood statement per criteria in Section 6.2.2. Amendments are not applicable. Issue correction segments for text and format errors when necessary. Corrected warnings will have the same time in the MND header and same ETN as the original warning. Corrections through use of the COR action code will not be made to areas covered, elements in the P-VTEC or H-VTEC strings, except the immediate cause (ic), or anything numerically linked to elements in the VTEC strings (e.g., flash flood warning ending time). Issue flash flood statements to remove erroneous areas from original warnings (as reflected in either the UGC or the body of the warning). Issue a new FFW (with new ETN) to add an area not already covered by an existing FFW. Issue an extension (EXT) FFW to change the expiration time of a flash flood warning.

6. Flash Flood Statement (FFS). VTEC Phenomena Code: FF, Significance Code: W. Flash flood statements provide supplemental information on active flash flood warning products, such as updated observations and impact information.

6.1 Mission Connection. Flash flood statements help the NWS meet its mission by providing updated information on dangerous, short-fused flood events. This allows mitigation activities for continuing or receding flash flood threats to be directed towards locations where high water presents a danger to life and property.

6.2 Issuance Guidelines.

6.2.1 Creation Software. Flash flood statements will be created with the Hazard Services application.

6.2.2 Issuance Criteria. Flash flood statements will be issued for geographical areas defined by a polygon in a WFO's CWFA to:

- a. Announce cancellation or expiration of a flash flood warning; and/or
- b. Provide additional information to supplement a continuing flash flood warning.

If a reliable source has reported that flooding has ended in all of the warned area and a flash flood warning is still in effect, a flash flood statement should be issued, cancelling or expiring the warning, rather than allowing the product to expire on its own.

6.2.3 Issuance Time. Flash flood statements are non-scheduled, event-driven products, issued when necessary according to the above issuance criteria.

6.2.4 Valid Time. A flash flood warning described in a flash flood statement will continue to be valid until it expires or is cancelled.

6.2.5 Product Expiration Time. For flash flood statements providing supplemental information on (but not cancelling) a flash flood warning, the product expiration time (at the end of the UGC line) is the same as product expiration time for the referenced flash flood warning. For flash flood statements announcing expiration or cancellation of a flash flood warning, the product expiration time is not more than 10 minutes after the warning expiration or cancellation time.

6.2.6 Replacing a Flash Flood Warning with a Flood Warning. If it is decided to replace a flash flood warning with a flood warning, first issue a new flood warning according to the procedures in Section 9. Then cancel the flash flood warning according to procedures in this section. This ensures there is no coverage gap between the two products.

It is not necessarily required to replace a flash flood warning with a flood warning after a flash flood warning has been in effect for a predetermined length of time such as 6 hours. The primary means for determining whether a flash flood warning or a flood warning is needed is the level of urgency, not the time frame. If it would provide the best public service to keep a flash flood warning in effect for an extended time, such as when multiple bands of heavy rain from a tropical system are prolonging or worsening a flash flood situation, extension (EXT) products may be issued (under the FFW identifier) to keep a flash flood warning in effect for whatever time is necessary – e.g., 6, 12, or even 24 or more hours.

6.3 Technical Description.

6.3.1 UGC Type. County codes should be used (zone codes for Alaska, Guam, and American Samoa).

6.3.2 MND Broadcast Instruction Line. Not applicable to the flash flood statement.

6.3.3 MND Product Type Line. Use: “Flash Flood Statement”.

6.3.4 Content. The flash flood statement product uses a segmented, non-bulleted format. If more than one type of segment is needed (e.g., cancellation plus continuation) in a given product, they will be ordered by VTEC action code as follows:

- a. Cancellations (CAN)
- b. Expirations (EXP)
- c. Continuations (CON)

The NEW, EXA, and EXB action codes will not be used in flash flood statements. Extensions in time (EXT) will be handled as special issuances under the FFW identifier. When a flash flood warning for a large area needs to be cancelled for part of its original area and extended in time for the other part, do the following: (1) first, issue a two-segment FFS with a CAN segment and the original ETN for the area being cancelled, and a CON segment with the original ETN for the area still under a flash flood warning; (2) then, go back into Hazard Services to select the extension option for the remaining area of the flash flood warning; (3) format a product with the FFW identifier, the original ETN, and the EXT action code; and (4) issue the product. Correction segments will be issued whenever needed.

CAN and EXP segments in flash flood statements will include the following:

- a. UGC line, P-VTEC string, H-VTEC string, counties/cities listing, and date/time stamp as shown in Figure 5. Whether or not point-specific forecast information is included, only immediate cause (ic) is entered in the H-VTEC string - zeroes are entered for the NWSLI,

flood severity (s) and the start, crest, and end times; and OO (double capital “O”) is entered for flood record (fr).

- b. A headline indicating the flash flood warning is being cancelled or expired, followed by the area covered by the flash flood warning.
- c. An update on current/future hydrometeorological conditions and impacts.
- d. Latitude/longitude polygon coordinates defining the warning area.

CON segments in flash flood statements will include the following:

- a. UGC line, P-VTEC string, H-VTEC string, counties/cities listing, and date/time stamp as shown in Figure 5. Whether or not point-specific forecast information is included, only immediate cause (ic) is entered in the H-VTEC string - zeroes are entered for the NWSLI, flood severity (s) and the start, crest, and end times; and OO (double capital “O”) is entered for flood record (fr). If the product is for flash flooding caused by a dam failure, the flood severity “s” is set to 1 (minor), 2 (moderate), or 3 (major), if it is known, or “U” if it is unknown.
- b. A headline indicating the flash flood warning continues to be in effect, followed by the area covered by the flash flood warning.
- c. An update on current/future hydrometeorological conditions and impacts, followed on the next line by: “HAZARD...”, followed by a description of the hazard such as: Flash flooding caused by heavy rain or life-threatening flash flooding from a dam failure, followed on the next line by “SOURCE...”, followed by how the flash flood was identified such as: Radar rainfall estimates or Emergency management, followed on the next line by “IMPACT...”, followed by a brief description of the impact of the flash flooding.
- d. A call-to-action statement. Call-to-action statements will focus on avoiding flood dangers and do not include instructions on how to escape from vehicles caught in flood waters. If a call-to-action statement is included, its beginning and end will be delineated with CTA markers as shown in Figure 5.
- e. Latitude/longitude polygon coordinates defining the warning area.
- f. IBW tags.

The flash flood source tag (FLASH FLOOD...) will be followed by the type of source, which may include, but is not limited to:

RADAR INDICATED – Evidence on radar and near storm environment is supportive, but there has been no confirmation.

OBSERVED – Flash flood impacts confirmed by trained spotters, law enforcement, media, other credible human observers, etc.

The flash flood damage threat tag (FLASH FLOOD DAMAGE THREAT...) will be followed by:

Base (no tag) – Most flash floods, with the potential for impacts and damage.

CONSIDERABLE – Flash floods capable of unusual severity of impact where urgent action is needed to protect lives and property.

CATASTROPHIC – Exceedingly rare, violent flash floods which threaten lives and cause disastrous damage when floodwaters are placing or will place people in life-threatening situations by rapidly rising to levels rarely, if ever, seen. Catastrophic flash flood damage threat tags will only appear in flash flood warnings which include flash flood emergency language.

WEAs will only be issued for a flash flood statement which exhibits an increase in damage threat (e.g., Base (no tag) to CONSIDERABLE or CONSIDERABLE to CATASTROPHIC) when compared to the active flash flood warning that it is supplementing.

(Optional) The expected rainfall rate tag (EXPECTED RAINFALL RATE...) will be used when forecasters want to identify rainfall rate leading to potential or observed flash flooding, including rain falling on a burn scar, and will be followed by the rainfall rate leading to potential or observed flash flooding, which may include, but is not limited to:

- ##-## INCHES PER HOUR
- ## INCHES IN ## MINUTES
- ##-## INCHES IN ## MINUTES

The dam or levee failure tag ([DAM or LEVEE] FAILURE...) will be used to provide additional information about the status of the failing dam or levee and will be followed by:

- IMMINENT or
- OCCURRING

In exceedingly rare situations, when a severe threat to human life and catastrophic damage from a flash flood is imminent or ongoing, the forecaster may insert the headline "...FLASH FLOOD EMERGENCY FOR [GEOGRAPHIC AREA]..." Such headlines should only be used when reliable sources have provided clear evidence that rapidly rising floodwaters are placing or will place people in exceptional life-threatening situations.

Examples of situations which warrant the inclusion of flash flood emergency language in flash flood warnings may include but are not limited to:

- Emergency manager(s) of the affected county(ies) or the state emergency management association declare a state of emergency and have confirmed that rapidly rising

floodwaters are placing or will place people in life-threatening situations. The state of emergency for the affected areas may have been previously relayed by the emergency manager(s) or the state emergency management association through the WFO in a Non-Weather Emergency Message. These might include a Civil Emergency Message (CEM), an Evacuate Immediate (EVI), or a Local Area Emergency (LAE).

- Water has rapidly risen or will rapidly rise to levels where people who are ordinarily in safe locations during previous flash flood events are now placed in life-threatening situations. For example, people in homes that might see waters rapidly rise up to their front yards or steps during typical flash flood situations would experience waters that are several feet above floor level, such that rescue is necessary and/or their entire home is threatened.
- Multiple swift water rescue teams have been or are being deployed in response to flash flooding of an exceptional magnitude.
- Stream gages, where available, indicate floodwaters have risen rapidly to at least major levels or if gages are not available, floodwaters have risen to levels rarely if ever seen.
- Total failure of a major high hazard dam that would have a catastrophic impact on the downstream communities.

In situations where a robust emergency management structure does not exist or external communications are not possible, a WFO may include flash flood emergency language in a flash flood statement without pre-coordinating with emergency managers when the above or similar criteria are met.

If point-specific hydrologic observations and/or forecasts are to be provided in the format used in flood warnings for forecast points (FLW), use a double dollar sign (\$\$) to separate off the information for each forecast point as shown in Figure 6.

6.3.5 Format. For a flash flood statement providing supplemental information on a flash flood warning issued for a defined area, follow the generic format shown below in Figure 5:

```
WGA1A2iii cccc ddhhmm (BBB)
FFSxxx
```

```
Flash Flood Statement
National Weather Service <city, state>
hhmm am/pm time_zone day mon dd yyyy
```

(Include one or more of the following segments in the indicated order:)

For corrections (located in same place as the original segment being corrected):

```
stCNNN-NNN-NNN-ddhhmm-
/k.COR.cccc.FF.W1.####.yymmddThhnnZB-yymmddThhnnZE/
/00000.s.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
<county #1>-<county #2>-<county #n>-
Including <the cities of> location...location
hhmm am/pm time_zone day mon dd yyyy
```

<Appropriate text as shown in one of the segment types below.>

\$\$

For cancellations:

stCNNN-NNN-NNN-ddhhmm-
 /k.CAN.cccc.FF.W¹.####.yyymmddThhnnZ_B-yyymmddThhnnZ_E/
 /00000.s.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
 <county #1>-<county #2>-<county #n>-
 Including <the cities of> location...location
 hhmm am/pm time_zone day mon dd yyyy

The headline is one of the following three:

1) For immediate cause = ER, IC, MC, and UU:

...THE FLASH FLOOD WARNING HAS BEEN CANCELLED FOR <geographic area>²...

2) For DM - dam failure:

...THE FLASH FLOOD WARNING FOR THE [*include for imminent failure: IMMINENT*] FAILURE OF <dam name> ON <optional: THE> <stream name> HAS BEEN CANCELLED FOR <geographic area>²...

3) For other immediate causes (DM – levee failure, DR, GO, IJ, RS, SM):

...THE FLASH FLOOD WARNING FOR <type of flooding>³ HAS BEEN CANCELLED FOR <geographic area>²...

<Brief post-event synopsis>.

LAT...LON nnnn nnnn

(mandatory)

\$\$

For expirations:

stCNNN-NNN-NNN-ddhhmm-
 /k.EXP.cccc.FF.W¹.####.yyymmddThhnnZ_B-yyymmddThhnnZ_E/
 /00000.s.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
 <county #1>-<county #2>-<county #n>-
 Including <the cities of> location...location
 hhmm am/pm time_zone day mon dd yyyy

The headline is one of the following three:

1) For immediate cause = ER, IC, MC, and UU

...THE FLASH FLOOD WARNING HAS EXPIRED FOR <geographic area>²...

2) For DM - dam failure:

...THE FLASH FLOOD WARNING FOR THE [*include for imminent failure: IMMINENT*] FAILURE OF <dam name> ON <optional: THE> <stream name> HAS EXPIRED FOR <geographic rea>²...

a

3) For other immediate causes (DM – levee failure, DR, GO, IJ, RS, SM):

...THE FLASH FLOOD WARNING FOR <type of flooding>³ HAS EXPIRED FOR geographic <area>²...

<brief post-event synopsis>.

LAT...LON nnnn nnnn

(mandatory)

\$\$

For continuations:

stCNNN-NNN-NNN-ddhhmm-

```
/k.CON.cccc.FF.W1.####.yymmddThhnnZB-yymmddThhnnZE/
/00000.s.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
<county #1>-<county #2>-<county #n>-
Including <the cities of> location...location
hhmm am/pm time_zone day mon dd yyyy
```

The headline is one of the following three:

1) For immediate cause = ER, IC, MC, and UU:

```
...THE FLASH FLOOD WARNING REMAINS IN EFFECT UNTIL <hhmm am/pm time_zone>4 OR
F<geographic area>2...
```

2) For DM - dam failure:

```
...THE FLASH FLOOD WARNING FOR THE [include for imminent failure: IMMINENT] FAILURE OF
<dam name> ON optional: THE <stream name> REMAINS IN EFFECT UNTIL hhmm am/pm
time_zone4 FOR <geographic area>2...
```

3) For other immediate causes (DM – levee failure, DR, GO, IJ, RS, SM):

```
...THE FLASH FLOOD WARNING FOR <type of flooding>3 REMAINS IN EFFECT UNTIL hmm
ham/pm time_zone4 FOR <geographic area>2...
```

```
...A FLASH FLOOD EMERGENCY FOR <geographic area>2... (optional, exceptional situations)
```

```
<current hydrometeorological situation>.
```

```
HAZARD... <description of hazard>
```

```
SOURCE... <how the flash flood was identified>
```

```
IMPACT... <brief description of the impact of the flash flooding>
```

```
PRECAUTIONARY/PREPAREDNESS ACTIONS... (include only if optional CTA is included)
```

```
<call-to-action statement> (optional)
```

```
&& (include only if optional CTA is included)
```

```
LAT...LON nnnn nnnn (mandatory)
```

```
FLASH FLOOD...<RADAR INDICATED or OBSERVED>5
```

```
FLASH FLOOD DAMAGE THREAT...<CONSIDERABLE or CATASTROPHIC>6
```

```
EXPECTED RAINFALL RATE...##-## INCHES PER HOUR7 (optional)
```

```
<DAM or LEVEE> FAILURE...<IMMINENT or OCCURRING>8
```

```
$$
```

```
<Name/Initials/Forecaster ID> (optional)
```

Note (1): The significance code for this product is “W” because the flash flood statement provides supplemental information on a previously issued flash flood warning product (see NWSI 10-1703 at Section 2.1.5).

Note (2): Any of the following would be appropriate geographic term(s) before and/or after the county name: Southwest Los Angeles County in southern California, Polk County in central Iowa, or The Gap Fire Burn Area in Santa Barbara County.

Note (3): <type of flooding> may be: A LEVEE FAILURE, A DAM FLOODGATE RELEASE, A GLACIER-DAMMED LAKE OUTBURST, AN ICE JAM, EXTREMELY RAPID SNOW MELT, OR EXTREMELY RAPID SNOWMELT CAUSED BY VOLCANIC ERUPTION.

Note (4): It is optional to include a day of the week after the time, when needed.

Note (5) This tag may include, but is not limited to: RADAR INDICATED or OBSERVED.

Note (6): This tag will only appear in flash flood statements for flash floods that threaten to cause “considerable” or “catastrophic” damage.

Note (7): Expected rainfall rate may include, but is not limited to: ##-## INCHES PER HOUR, ## INCHES IN ## MINUTES, ##-## INCHES IN ## MINUTES

Note (8): This tag will only appear in flash flood statements for flash floods caused by dam or levee failures.

Figure 5. Generic format for a flash flood statement for a defined area.

For a flash flood statement with forecasts for specific locations, follow the generic format shown below in Figure 6.

```

WGA1A2ii cccc ddhhmm (BBB)
FFSxxx

Flash Flood Statement
National Weather Service <city, state>
hhmm am/pm time_zone day mon dd yyyy

stC1NNN-NNN-NNN-ddhhmm-
/k.CON.cccc.FF.W1.####.yy1mmddThhnnZB-yy2mmddThhnnZE/
/000002.s.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
<county #1>-<county #2>-<county #n>-
Including <the cities of> location...location
hhmm am/pm time_zone day mon dd yyyy

...THE FLASH FLOOD WARNING <For immediate causes other than ER and IC: <FOR
<type of cause>>> REMAINS IN EFFECT UNTIL <hhmm am/pm time_zone> FOR
<geographic area>...

...A FLASH FLOOD EMERGENCY for <geographic area>...      (optional, exceptional situations)

<current hydrometeorological situation and expected impacts>.
HAZARD... <description of hazard>
SOURCE... <how the flash flood was identified>
IMPACT... <brief description of the impact of the flash flooding>
PRECAUTIONARY/PREPAREDNESS ACTIONS...                  (include only if optional CTA is included)
<call-to-action statement> (optional)
&&                                                         (include only if optional CTA is included)
LAT...LON  nnnn nnnn                                     (mandatory)
FLASH FLOOD...<RADAR INDICATED or OBSERVED>6
FLASH FLOOD DAMAGE THREAT...<CONSIDERABLE or CATASTROPHIC>7
EXPECTED RAINFALL RATE...##-## INCHES PER HOUR8        (optional)
<DAM or LEVEE> FAILURE...<IMMINENT or OCCURRING>9

$$

stC1NNN-NNN-NNN-ddhhmm-
hhmm am/pm time_zone day mon dd yyyy
<nwsli>2

For <optional: The> <river/stream name> <proximity term - e.g., at>
<location>...
* At <time> <day> the <stage/flow> was <stage/flow>3.
* Flood <stage or flow> is <flood stage/flow>.

```

```
* <flood category> flooding is occurring and <flood category> flooding
  is forecast 4.
* <other stage/flow type>5 <stage/flow> is <stage/flow>. (optional)
* Forecast...Flood <stage/flow> <will be reached or was reached> at
  <time> <day>. [(optional:) <One or more sentences with additional forecast
  information or observations such as forecast crest/time and time for fall
  below flood stage/flow>].
* Impact...<description of impact(s) at given stage(s)/flow(s)>. (optional)

&& (only used if tabular observed/forecast values are provided below)
  <tabular forecast values for the above forecast point> (optional)

$$
```

(If there are additional points, repeat using the above format, ending each segment with a \$\$)

<Name/Initials/Forecaster ID> (optional)

Note (1): The significance code for this product is “W” because the flash flood statement provides supplemental information on a previously issued flash flood warning product (see NWSI 10-1703 at Section 2.1.5).

Note (2): The NWSLI is zeroed out in the H-VTEC string for the flash flood statement segment, but is included after the date/time stamp at the top of each segment for point-specific observed/forecast information. No VTEC is included in the segments with point-specific observed/forecast information.

Note (3): “Stage/flow” means either stage and/or discharge values may be used.

Note (4): Include one or both observed/forecast category phrases if applicable and flood categories are available.

Note (5): Examples of “other stage/flow type” are: Caution stage, Alert stage, or Monitor stage.

Note (6): This tag may include, but is not limited to: RADAR INDICATED or OBSERVED.

Note (7): This tag will only appear in flash flood statements for flash floods that threaten to cause “considerable” or “catastrophic” damage.

Note (8): Rainfall rate may include, but is not limited to: ##-## INCHES PER HOUR, ## INCHES IN ## MINUTES, or ##-## INCHES IN ## MINUTES.

Note (9): This tag will only appear in flash flood statements for flash floods caused by dam or levee failures.

Figure 6. Generic format for a flash flood statement with forecast(s) for specific location(s).

Note that Figure 6 only shows a generic format for continuation segments. Use the following instructions to determine the format for segments with other action codes:

- a. For the top portion (i.e., from WMO header to latitude/longitude coordinates), use the same segment format for that action code as shown in Figure 5.
- b. For the bottom portion (i.e., after a double dollar sign (\$\$)) of each segment, use the same format provided for point-specific forecast information in Figure 6.

6.4 Updates, Amendments, and Corrections. Provide additional updates to current flash flood warnings by issuing additional flash flood statements. Amendments are not applicable to this product. Issue correction segments for text and format errors when necessary. Correction segments will not be used for changes to areas covered, elements in the P-VTEC or H-VTEC strings, except the immediate cause (ic), or to anything numerically linked to elements in the VTEC strings (e.g., flash flood warning ending time). Issue another flash flood statement to remove a portion of the geographic area from a current warning. Issue a new FFW (with new ETN) to add areas not already covered by an FFW. Issue an extension FFW (EXT) to change the expiration time of a flash flood warning.

7. Flood Warning For Forecast Points (FLW). VTEC Phenomena Code: FL, Significance Code: W. Flood warnings for forecast points are issued for any high flow, overflow, or inundation event threatening life and/or property, which can be quantified or indexed at specific locations and is not accounted for in flood or flash flood warning products. Flood warnings for forecast points usually include information on upstream and/or downstream locations which are impacted. Note: a flood warning for forecast points may be in effect for the same counties covered in a flood watch, a flood warning, or a flash flood warning.

7.1 Mission Connection. Flood warnings help the NWS meet its mission by providing advance notice of imminent or occurring flooding. This gives users time to initiate mitigation actions such as evacuation, removal of goods and belongings, adjustment of reservoir releases, and activation of diversion works; thus, helping to protect life and property.

7.2 Issuance Guidelines.

7.2.1 Creation Software. Flood warnings for forecast points will be created with the Hazard Services application.

7.2.2 Issuance Criteria. Flood warnings for forecast points will be issued for a WFO's HSA when:

- a. RFC guidance normally used as an input to this product and/or flood monitoring and prediction tools indicate flooding is more than 80 percent likely; and/or
- b. Reports or observations indicate flooding is occurring; or
- c. The maximum of observed or forecast flooding increases to a higher category (e.g., minor to moderate) than the maximum of observed or forecast flooding indicated in the previously issued flood warning/statement. (Flood categories are defined in [NWS Manual 10-950, Definitions and General Terminology](#).) This maximum is the greater of either the current observed flooding or the highest forecast flooding indicated at a given product issuance.

The following are special criteria for issuance and cancellation:

- a. When an increase in flood category has occurred or is forecast to occur, a flood warning product will be issued for the forecast point(s) involved using the CON or EXT action codes and a special headline. The ETNs associated with the affected forecast points will remain the same as in the previously issued flood warning/statement. ETNs in subsequently issued FLS (flood statements) will also remain the same. Other forecast points under a flood warning, but not affected by a change in flood category, will be covered in a separate FLS product.
- b. A flood warning does not have to be issued for the river/stream reach or its surrounding region if the river/stream flooding is adequately accounted for by one or more flood warnings for forecast points.

- c. If a reliable source has reported that flooding has ended at one or more forecast points and a flood warning is still in effect, a FLS product should be issued cancelling or expiring the flood warning for those points rather than allowing the product to expire on its own.

7.2.3 Issuance Time. Flood warnings are non-scheduled, event-driven products.

7.2.4 Valid Time. Flood warnings for forecast points will be valid from the time when the flooding is forecast to start, as indicated in the event beginning date/time group in the P-VTEC string and/or the second bullet; until the time indicated in the event ending date/time group in the P-VTEC string and/or the second bullet; or until the warning is cancelled for the forecast point in a subsequently issued flood statement. If river/stream characteristics and/or hydrometeorological conditions make it impractical to specify when the event will end, the event ending date/time group and the flood end date/time group are coded with ten zeros (000000T0000Z) and a long-term duration phrase such as “Until further notice” is used in the second bullet. Note: the P-VTEC event ending date/time is not always the same as the H-VTEC flood end date/time—an adjustment may be set in Hazard Services, which allows the event ending date/time in the P-VTEC to be delayed by a fixed time amount (e.g., 6, 12, 24 hours) past the flood end date/time in the H-VTEC. This provides added time to receive an observation confirming that a river has indeed fallen back below flood stage before the warning is considered to be officially ended.

7.2.5 Product Expiration Time. The product expiration time (at the end of the UGC line) is generally set to be 12 to 24 hours after product issuance, but may be as little as 6 hours for more rapidly changing flood situations.

7.3 Technical Description.

7.3.1 UGC Type. County codes should be used (zone codes for Alaska). Include UGCs for all areas which use the forecast point as an index for flooding problems.

7.3.2 MND Broadcast Instruction Line. For default, use: “BULLETIN - EAS ACTIVATION REQUESTED.” “BULLETIN - IMMEDIATE BROADCAST REQUESTED” or no phrase at all may be used depending on the urgency of the hydrologic situation, regional policies, and partner/user requirements.

7.3.3 MND Product Type Line. Use: “Flood Warning”.

7.3.4 Content. The flood warning product uses a segmented, bulleted format. An optional general overview/synopsis section, if provided, occurs at the top of the product. The required segmented warning information section occurs next, starting with a UGC line, followed by P-VTEC and H-VTEC strings, then a date/time stamp.

7.3.4.1 General Overview/Synopsis Section. This optional section, when included, (required for category increase situations) contains one or more of the following items:

- a. General Overview Headline - One or more headlines summarizing the type of products in effect, the action being taken, and the expected event duration (if known). Each overview headline starts and ends with three dots (...). A list of rivers and forecast points may

appear below the headlines. The general overview headline is required when a flood warning product contains one or more segments announcing an increase in flood category. In such cases, the headline clearly indicates the category increase—e.g., “... Flooding forecast to increase in severity on the Green River...”

- b. General Synopsis - A brief, non-technical description of the flood situation and contributing hydrometeorological factors. This synopsis is free format and may consist of several paragraphs, but the first line of the first paragraph will always be preceded by a single dot (.). If one or more of the product segments has an undefined flood ending time (i.e., a phrase such as “Until further notice” is used), a best estimate of the flood duration and a brief explanation as to why it cannot be specified exactly will be included here.
- c. Call-to-Action – A general statement for all forecast points covered in the product. Call-to-action statements will focus on avoiding flood dangers and do not include instructions on how to escape from vehicles caught in flood waters.

After the CTA, a URL for additional information and a statement describing the time for the next scheduled update may be included. If a call-to-action statement, a URL for additional information, and/or a time for the next scheduled update is included, the collective beginning and end of these will be delineated with CTA markers as shown in Figure 7.

Items (a–c) as described above will only be included in the general overview/synopsis at the top of a product as shown in Figure 7.

7.3.4.2 Segmented Warning Information Section. Information in a flood warning product will be divided into one or more segments. Each location covered in the product will have its own segment. This provides for straightforward application of VTEC action codes (e.g., CAN, CON) in subsequent flood statement products for each forecast point, and allows the NWSLI to be used in each H-VTEC string to uniquely identify the forecast point. Correction segments will appear in the position of the segment they are correcting. New issuance segments may be grouped in any desired order (e.g., by county, forecast basin, downstream order). A UGC may be associated with more than one segment in this product.

Each segment of a flood warning for forecast points will include the following:

- a. UGC line, P-VTEC string, H-VTEC string, and date/time stamp as shown in Figure 7. If the flood severity “s” in the H-VTEC string is unknown, enter “U.” Use zeroes for any unknown date/time group.
- b. Headline – “...FLOOD WARNING IN EFFECT <FROM <time/day phrase>¹ UNTIL <<time/day phrase>¹ [(optional:)]...OR UNTIL THE WARNING IS CANCELLED] or <long-term duration phrase>² >> or <UNTIL <<time/day phrase>¹ [(optional:)]...OR UNTIL THE WARNING IS CANCELLED] or <long-term duration phrase>>>...” (for new issuances) or “...<Forecast or Observed> FLOODING INCREASED FROM <category> TO <category> SEVERITY [(optional:)] AND INCREASED IN DURATION UNTIL <time/day phrase>]...” (for flood category increases)

- c. WHAT bullet – followed by one or both of the following as applicable (if flood category information is available) – description of category of current flooding, if flooding is already occurring, and description of the category of expected flooding.
- d. WHERE bullet – “The” and then the river/stream and forecast point names. “The” may be omitted if it is not needed (e.g., for creeks).
- e. WHEN bullet – “From/Until” information obtained from the Event Beginning and Event Ending Date/Times used in the P-VTEC string. If the flooding is to begin within three hours of product issuance, then only the “Until” information is provided. If the event ending date/time cannot be specified, use a long-term duration phrase such as “Until further notice” in its place. Use general date/time phrases such as “Tuesday afternoon” instead of specific date/times. “...or until the warning is cancelled” may be included after the ending date/time phrase to indicate the warning may be cancelled early, if data is received indicating that flooding is over.
- f. ADDITIONAL DETAILS bullet – followed on the next line by sub-bullets, delimited by (-):
 - 1) “At” followed by the time of observation and the current stage/flow, followed optionally by a phrase indicating the recent trend (see Figure 7).
 - 2) Flood stage/flow at the forecast point (other stages such as caution stage may also be listed in separate sub-bullets).
 - 3) (Optional) “Recent Activity...,” followed by text describing recent peaks and trends of the river.
 - 4) “Forecast...,” followed by forecast information—e.g., time when river/stream will reach its crest.
 - 5) (Optional) “Impact...,” followed by description of the known impacts of flooding within the range of forecast stages (or flows). Call-to-action information specific to the forecast point may be included here.
 - 6) (Optional) “Flood History...,” followed by flood history information.
- g. After a double ampersand (&&),
 - 1) (Optional) Observed and forecast data in tabular format
 - 2) Latitude/longitude polygon coordinates defining the warning area.

Bullets may be longer than 6 lines if necessary. Observed and forecast data in tabular format may be presented at the end of the product after the last segment.

7.3.5 Format. The generic format is shown below in Figure 7:

WGA₁A₂ii cccc ddhhmm (BBB)
FLWxxx

BULLETIN - <EAS ACTIVATION or IMMEDIATE BROADCAST> REQUESTED *(optional)*
Flood Warning
National Weather Service <city, state>
hhmm am/pm time_zone day mon dd yyyy

The following overview headline/synopsis section within the brackets is optional, or may use a different format:

...The National Weather Service in <WFO location> has issued a
Flood Warning [(optional:) until <time/day phrase>¹] for the following
<river(s) or stream(s)> in <geographic area>...

- or -

...<Forecast or Observed> flooding changed from <category> to <category>
severity [(optional:) and increased in duration] for the following
<river(s) or stream(s)> in <geographic area>...

<river/stream> at <location> [(optional:) affecting <county #1>...
<county #2> and <county #n> <county or counties>].

<river/stream> at <location> [(optional:) affecting <county #1>...
<county #2> and <county #n> <county or counties>].

.

<river/stream> at <location> [(optional:) affecting <county #1>...
<county #2> and <county #n> <county or counties>].

affecting the following counties in <state>...<county #1>...
<county #2> and <county #n>. *(optional)*

.<General hydrometeorological synopsis>. *(optional)*

PRECAUTIONARY/PREPAREDNESS ACTIONS... *(include if any of the optional items below are included)*

<call-to-action>. *(optional)*

Additional information is available at <Web site URL>. *(optional)*

The next statement will be issued <time/day phrase>. *(optional)*

&& *(include if any of the optional items above are included)*

(Include one or more of the following segments in the indicated order³:)

For corrections (located in same place as the original segment being corrected):

stC₁NNN-NNN-ddhhmm-
/k.**COR**.cccc.**FL.W**.####.yyymmddThhnnZ_B-yyymmddThhnnZ_E/
/nwsli.s⁴.ic.yymmddThhnnZ_B.yyymmddThhnnZ_C.yyymmddThhnnZ_E.fr/
hhmm am/pm time_zone day mon dd yyyy

<Appropriate text as shown in one of the segment types below>.

\$\$

For new issuances:

stC₁NNN-NNN-ddhhmm-
/k.**NEW**.cccc.**FL.W**.####.yyymmddThhnnZ_B-yyymmddThhnnZ_E/
/nwsli.s⁴.ic.yymmddThhnnZ_B.yyymmddThhnnZ_C.yyymmddThhnnZ_E.fr/
hhmm am/pm time_zone day mon dd yyyy

...FLOOD WARNING IN EFFECT <FROM <time/day phrase>¹ UNTIL <<time/day phrase>¹ [(optional:)...OR UNTIL THE WARNING IS CANCELLED] or <long-term duration phrase>²>> or <UNTIL <<time/day phrase>¹ [(optional:)...OR UNTIL THE WARNING IS CANCELLED] or <long-term duration phrase>>>...

* WHAT...<category> flooding is forecast.

* WHERE...<optional: The ><river/stream name> <proximity term - e.g., at> <location>.

* WHEN...<From <time/day phrase>¹ until <<time/day phrase>¹ [(optional:)...or Until the warning is cancelled] or <long-term duration phrase>²>> or <Until <<time/day phrase>¹ [(optional:)...or Until the warning is cancelled] or <long-term duration phrase>>>.

* ADDITIONAL DETAILS...

- At <time>⁵ <day> the <stage or flow> was <stage/flow>⁶ [(optional:)...<<an increase> or <a decrease> of <stage/flow> <feet or cfs>> or <<no change since <time phrase>> or <and rising> or <and steady> or <and falling>>>].
- Flood <stage or flow> is <flood stage/flow>.
- <other stage/flow type>⁷ <stage or flow> is <stage/flow>. (optional)
- Recent Activity...<e.g., recent peaks/trends in river stage>. (optional)
- Forecast...Flood <stage or flow> will be reached at <time> <day>⁹. <One or more optional sentences with additional forecast information such as forecast crest/time and time for fall below flood stage>.
- Impact...<description of impacts at given stage(s)/flow(s)>. Include CTA info specific to this forecast point here>. (optional)
- Flood History...<flood history information>. (optional)

&&

<tabular observed/forecast values for segment> (optional)

LAT...LON nnnn nnnn

\$\$

(For each additional forecast point (if any), repeat the above in a separate segment)

For flood category increases:

stCNNN-NNN-ddhhmm-
/k.<CON or EXT>¹⁰.cccc.FL.W.####.yymmddThhnnZ_B-yymmddThhnnZ_E/
/nwslis⁴.ic.yymmddThhnnZ_B.yymmddThhnnZ_C.yymmddThhnnZ_E.fr/
hhmm am/pm time_zone day mon dd yyyy

...<Forecast or Observed> FLOODING INCREASED FROM <category> TO <category> SEVERITY [(optional:) AND INCREASED IN DURATION UNTIL <time/day phrase>]...

* WHAT...<category> flooding is occurring and <category> flooding is forecast.⁸

* WHERE...<optional: The> <river/stream name> <proximity term - e.g., at> <location>.

* WHEN...<From <time/day phrase>¹ until <<time/day phrase>¹[(optional:)...or Until the warning is cancelled] or <long-term duration phrase>²>> or <Until <<time/day phrase>¹[(optional:)...or Until the warning is cancelled] or <long-term duration phrase>>>.

* ADDITIONAL DETAILS...

- At <time>⁵ <day> the <stage or flow> was <stage/flow>⁶ [(optional:)...<<an increase> or <a decrease> of <stage/flow> <feet or cfs>> or <<no change since <time phrase>> or <and rising> or <and steady> or <and falling>>>].
- Flood <stage or flow> is <flood stage/flow>.
- <other stage/flow type>⁷ <stage or flow> is <stage/flow>. (optional)
- Recent Activity...<e.g., recent peaks/trends in river stage>. (optional)
- Forecast...<One or more sentences with forecast information such as when flood stage will be reached, forecast crest/time, and time for fall below flood stage.>
- Impact...<description of impacts at given stage(s)/flow(s). Include CTA info specific to this forecast point here>. (optional)
- Flood History...<flood history information>. (optional)

&&

<tabular observed/forecast values for segment> (optional)

LAT...LON nnnn nnnn

\$\$

(For each additional forecast point (if any), repeat the above in a separate segment)

&& (only provided here if tabular observed/forecast values are provided below for entire product)

<tabular observed/forecast values for entire product> (optional)

\$\$ (only provided here if tabular observed/forecast values are provided above for entire product)

<Name/Initials/Forecaster ID> (optional)

Note (1): <time/day phrase> indicates phrases used in long duration watches (see NWSI 10-1701)—i.e., specific times within 12 hours of issuance, general phrases for beyond 12 hours (e.g., “Tuesday afternoon”).

Note (2): <Long-term duration phrase> is a phrase characterizing the duration of a flood with an indeterminate ending time—“(and) for the next several days” may be used if it is reasonably certain flooding will last approximately one week or less, and “(and) until further notice” will be used for other situations.

Note (3): Cancellation (CAN), expiration (EXP), normal extension (EXT), and normal continuation (CON) segments are handled under the FLS identifier (see Section 8).

Note (4): “U” is entered for Flood severity “s” if the forecast flood category is unknown.

Note (5): Where <time> stands alone as a variable, the format is **hhmm am/pm time_zone**.

Note (6): “Stage/flow” means either stage and/or discharge values may be used.

Note (7): Examples of “other stage/flow type”: Caution stage, Alert stage, or Monitor stage.

Note (8): Include one or both observed/forecast category phrases, if applicable, and flood categories are available.

Note (9): Omit this phrase if flood stage was already reached before product was issued.

Note (10): Use EXT in category increase segments when an extension is involved; otherwise use CON.

Figure 7. Generic format for a flood warning for forecast points.

A flood warning with NEW (and COR) segments may also include segments for forecast points which are below flood warning criteria. Such segments will use the **VTEC Phenomena Code HY and Significance Code S**. These ROU (routine) segments are included when it is beneficial to provide a complete overview of a river reach and some forecast points have observed or forecast flooding and some do not. ROU segments will only be issued when they are part of a product with other segments providing information on observed/forecast flooding—a FLW (or FLS) product may never be issued which consists only of ROU segments. ROU segments will include partially populated VTEC strings as shown in the generic format below (Figure 8).

```
stCNNN-NNN-ddhhmm-
/k.ROU.cccc.HY.S.0000.000000T0000Z-000000T0000Z 1/
/nwslI.N.ic.000000T0000Z.000000T0000Z.000000T0000Z.NO 1/
hhmm am/pm time_zone day mon dd yyyy

Forecast information for
  <optional: The> <river/stream name> <proximity term - e.g., at> <location>.
* At <time> <day> the <stage or flow> was <stage/flow> [(optional):...<<<an
  increase> or <a decrease> of <stage/flow> <feet or cfs>> or <<<no change
  since <time phrase>> or <and rising> or <and steady> or <and falling>>>].
* Flood <stage or flow> is <flood stage/flow>.
* <other stage/flow type> <stage or flow> is <stage/flow>. (optional)
* No flooding is currently forecast.
* Recent Activity...<e.g., recent peaks/trends in river stage>. (optional)
* Forecast...<One or more sentences with information such as the magnitude
  and timing for the forecast peak stage/flow>.
* Impact...<description of impact at given stage(s)/flow(s)>. (optional)
* Flood History...<flood history information>. (optional)

&&

  <tabular observed/forecast values for segment> (optional)

LAT...LON  nnnn nnn

$$

(For each additional forecast point (if any), repeat the above in a separate segment)
```

Note (1): The VTEC strings are partially populated—in the P-VTEC string, ROU is used for the action code, the office ID is used for cccc, and HY.S is used for the phenomena/significance codes. In the H-VTEC string, the NWSLI is included, N is used for the flood severity, an appropriate immediate cause is used for ic, and NO is used for the flood record status.

Figure 8. Generic format for a ROU segment in a flood warning (or flood statement) providing information on forecast points which are below flood warning criteria.

7.4 Updates, Amendments, and Corrections. Provide updates to a flood warning by issuing a flood statement per the criteria in Section 8.2.2. Amendments are not applicable to this product. Issue correction (COR) segments for text and format errors when necessary. COR segments will not be used for changes to observed or forecast data; elements in the P-VTEC or

H-VTEC strings except for the NWSLI, immediate cause (ic), or flood record status (fr); or anything numerically linked to elements in the VTEC strings (e.g., crest time, flood warning end time, flood severity). To make corrections when a COR segment is not allowed, issue a flood statement (FLS) with the correct information as described in Section 8 (note: use FLW for category increases).

8. Flood Statement - Follow-up to Flood Warning For Forecast Points (FLS).

VTEC Phenomena Code: FL, Significance Code: W. Flood statements contain supplemental information on previously issued flood warnings, such as updated observations and forecasts.

8.1 Mission Connection. Flood statements help the NWS meet its mission by updating information on threatening situations covered in previously issued flood warnings; thus, helping to protect life and property.

8.2 Issuance Guidelines.

8.2.1 Creation Software. Flood statements following up a flood warning for forecast points will be created with the Hazard Services application.

8.2.2 Issuance Criteria. Flood statements will be issued to follow up flood warnings when:

- a. Information needs to be provided to update or supplement a previously issued flood warning; and/or
- b. The effective time changes in a previously issued flood warning (except if accompanied by a flood category increase—in that case, issue a flood warning); and/or
- c. Cancellation or expiration of a flood warning needs to be announced; and/or
- d. Observed flooding decreases to a lower category (e.g., moderate to minor) than was provided in the most recently issued flood warning/statement and a lower category than was forecast to be occurring at the time for the next product update.

The following are special cancellation criteria:

- a. When flooding has ended and/or the WFO has decided not to issue any further flood warnings for a forecast point, and the previously issued segment for the point had an undefined flood end date/time (i.e., 000000T0000Z), a cancellation (CAN) segment will be issued. This ensures the flood warning is cleared from partner/user computer systems.
- b. When flooding has ended and the previously issued segment had a defined flood end date/time, it is recommended that cancellation or expiration segments be issued for the forecast point.
- c. If a reliable source has reported that flooding has ended at one or more forecast points and a flood warning is still in effect, a flood statement should be issued, cancelling or expiring the flood warning for those points, rather than allowing it to expire on its own.

8.2.3 Issuance Time. Flood statements are non-scheduled, event-driven products.

8.2.4 Valid Time. A flood warning for a forecast point being followed up by a flood statement will continue to be valid from the time when the flooding is forecast to start, as indicated in the event beginning date/time group in the P-VTEC string and/or the second bullet (unless that time has already passed, in which case the event beginning date/time group is coded with ten zeros (000000T0000Z)); until the time indicated in the event ending date/time group in the P-VTEC string and/or the second bullet; or until the warning is cancelled or omitted from a subsequently issued flood statement. If river/stream characteristics and/or hydrometeorological conditions make it impractical to specify when the event will end, the event ending date/time group and the flood end date/time group are coded with ten zeros (000000T0000Z) and a long-term duration phrase such as “until further notice” is used in the second bullet. Note: the P-VTEC event ending date/time is not always the same as the H-VTEC flood end date/time—an adjustment may be set in Hazard Services which allows the event ending date/time in the P-VTEC to be delayed by a fixed time amount (e.g., 6, 12, 24 hours) past the flood end date/time in the H-VTEC. This provides added time to receive an observation confirming that a river has indeed fallen back below flood stage before the warning is considered to be officially ended.

8.2.5 Product Expiration Time. The product expiration time (at the end of the UGC line) is generally set to be 12 to 24 hours after product issuance, but may be as little as 6 hours for more rapidly changing situations. For flood statements announcing expiration or cancellation of a flood warning for forecast points, the product expiration time is not more than one-half hour after the warning expiration or cancellation time.

8.3 Technical Description.

8.3.1 UGC Type. County codes should be used (zone codes for Alaska). Include UGCs for all areas which use the forecast point as an index for flooding problems.

8.3.2 MND Broadcast Instruction Line. Not applicable to the flood statement.

8.3.3 MND Product Type Line. Use: “Flood Statement”.

8.3.4 Content. This product uses a segmented, bulleted format. An optional general overview/synopsis section, if provided, occurs at the top of the product. The required segmented warning information section occurs next, with its beginning identified by the first UGC line followed immediately by a P-VTEC string.

8.3.4.1 General Overview/Synopsis Section. This optional section contains one or more of the following:

- a. General Overview Headline – One or more headlines summarizing the type of products in effect, the action being taken, and the expected event duration (if known). Each overview headline starts and ends with three dots (...). A list of forecast points may appear below the headlines.
- b. General Synopsis – A brief, non-technical description of the flood situation and contributing hydrometeorological factors. This synopsis is free format and may consist of several paragraphs, but the first line of the first paragraph will always be preceded by a single dot (.). If one or more of the product segments has an undefined flood ending time

(i.e., a phrase such as “until further notice” is used), a best estimate of the flood duration and a brief explanation as to why it cannot be specified exactly will be included here.

- c. Call-to-Action – A general statement for all forecast points covered in the product. Call-to-action statements will focus on avoiding flood dangers and do not include instructions on how to escape from vehicles caught in flood waters.

After the CTA, a URL for additional information and a statement describing the time for the next scheduled update may be included. If a call-to-action statement, a URL for additional information, and/or a time for the next scheduled update is included, the collective beginning and end of these will be delineated with CTA markers as shown in Figure 9.

Items (a–c) as described above will only be included in the general overview/synopsis at the top of a product as shown in Figure 9.

8.3.4.2 Segmented Flood Statement Information Section . Information will be divided into one or more segments. Each forecast point will have its own segment to provide for straightforward application of VTEC action codes (e.g., CAN, CON) in subsequent issuances for each forecast point and maximizes the meaning of values in the date/time group in the H-VTEC string. A county UGC may be associated with more than one segment. If more than one type of segment is to be included (e.g., cancellation plus continuation) in a product, the segments should be further ordered by the following VTEC action codes:

- a. Cancellations (CAN)
- b. Expirations (EXP)
- c. Extensions (EXT)
- d. Continuations (CON)

However, segments may be ordered to group information in a way that makes the most sense geographically (e.g., by county, downstream order, forecast basin). Correction segments will appear in the position of the segment they are correcting. Note: there will be no NEW, EXA, or EXB segments in flood statements following up flood warnings for forecast points. Also note: the COR action code will only be used in flood statements to correct previously issued flood statements—corrections to flood warnings will be handled under the FLW AWIPS identifier.

In a flood statement following up a flood warning for forecast points, EXT and CON segments will include:

- a. UGC line, P-VTEC string, H-VTEC string, and date/time stamp as shown in Figure 9. If the flood severity (s) in the H-VTEC string is unknown, enter “U.” Throughout the course of an event, “s” will reflect the maximum severity that has been reached or forecast to be reached. Use zeroes for any unknown date/time group.
- b. Headline – “...FLOOD WARNING <EXTENDED or CONTINUES> <FROM <time/day phrase>¹ UNTIL <<time/day phrase>¹ [(optional:)]...OR UNTIL THE WARNING IS CANCELLED] or <long-term duration phrase>²>> or <UNTIL

<<time/day phrase>¹ [(optional:)...OR UNTIL THE WARNING IS CANCELLED] or <long-term duration phrase>>>...”.

- c. WHAT... bullet – followed by one or both of the following as applicable (if flood category information is available) – description of category of current flooding, if flooding is already occurring, and description of the category of expected flooding.
- d. WHERE... bullet – “The” and then the river/stream and forecast point names. “The” may be omitted if it is not needed (e.g., for creeks).
- e. WHEN... bullet – followed by “From/To” or “Until” information obtained from the Event Beginning and Event Ending Date/Times used in the P-VTEC string. If the flooding will begin within three hours of product issuance, only the “Until” information is provided. If the event ending date/time cannot be specified, use a long-term duration phrase such as “Until further notice” in place of the time. Use general date/time phrases such as “Monday morning” instead of specific date/times. “...or until the warning is cancelled” may be included after the ending date/time phrase to indicate the warning may be cancelled at an earlier time once data is received indicating that flooding is over.
- f. ADDITIONAL DETAILS... bullet – followed on the next line by sub-bullets, delimited by (-):
 - 1) “At” followed by the time of observation and the current stage/flow, followed optionally by a phrase indicating the recent trend (see Figure 9).
 - 2) Flood stage/flow at the forecast point (other stages such as caution stage may also be listed in separate sub-bullets).
 - 3) (Optional) “Recent Activity...,” followed by text describing recent peaks and trends of the river.
 - 4) “Forecast...,” followed by relevant information—e.g., time when river/stream reached, will reach, or fell below flood stage/flow; forecast crest/peak flow and time/day when expected; time when river/stream will fall below flood stage/flow; and other useful forecast information.
 - 5) (Optional) “Impact...,” followed by description of the known impacts of flooding within the range of forecast stages (or flows). Call-to-action information specific to the forecast point may be included here.
 - 6) (Optional) “Flood History...,” followed by flood history information.
- g. After a double ampersand (&&),
 - 1) (Optional) Observed and forecast data in tabular format
 - 2) Latitude/longitude polygon coordinates defining the warning area.

Observed and forecast data in tabular format may be presented at the end of the product after the last segment.

CAN and EXP segments will include:

- a. UGC line, P-VTEC string, H-VTEC string, and date/time stamp as shown in Figure 9. If the flood severity (s) in the H-VTEC string is unknown, enter “U.” Throughout the course of an event, “s” will reflect the maximum severity that has been reached or forecast to be reached. Use zeroes for any unknown date/time group. When a warning is being cancelled and flood stage was never reached, all three H-VTEC date/time groups are zeroed out.
- e. Headline – “...FLOOD WARNING IS CANCELLED...” (for cancellations) or “...FLOOD WARNING <HAS EXPIRED or WILL EXPIRE>...” (for expirations), followed on the next line by a sentence which mentions the river/stream and forecast point name being cancelled or expired.
- b. ADDITIONAL DETAILS... bullet – followed on the next line by sub-bullets, delimited by (-):
 - 1) “At” followed by the time of observation and the current stage/flow, followed optionally by a phrase indicating the recent trend (see Figure 9).
 - 2) Flood stage/flow at the forecast point (other stages such as caution stage may also be listed in separate sub-bullets).
 - 3) (Optional) “Recent Activity...,” followed by relevant information—e.g., time when river/stream fell below flood stage/flow; time when river/stream fell below other stage/flow.
 - 4) “Forecast...,” followed by brief forecast indicating expected trend.
 - 5) (Optional) “Impact...” followed by description of the known impacts of flooding within the range of forecast stages (or flows). Call-to-action information specific to the forecast point may be included here.
 - 6) (Optional) “Flood History...” followed by flood history information.
- c. After a double ampersand (&&), latitude/longitude polygon coordinates defining the watch area.

8.3.5 Format. The generic format is shown below in Figure 9:

```
WGA1A2ii cccc ddhhmm (BBB)
FLSxxx
```

```
Flood Statement
National Weather Service <city, state>
hhmm am/pm time_zone day mon dd yyyy
```

The following overview headline/synopsis section within the brackets is optional, or may use a different format:

```
[ ...The Flood Warning continues [(optional:) until <time/day phrase>1] for
the following <river(s) or stream(s)> in <geographic area>...
<river/stream> <proximity term> <location> [(optional:) affecting
```

```

    <county #1>...<county #2> and <county #n> <county or counties>].
    <river/stream> <proximity term> <location> [(optional:) affecting
    <county #1>...<county #2> and <county #n> <county or counties>].
    .
    <river/stream> <proximity term> <location> [(optional:) affecting
    <county #1>...<county #2> and <county #n> <county or counties>].
    affecting the following counties in <state>...<county #1>...
    <county #2> and <county #n> (optional)
    and / or
    ...The Flood Warning <is cancelled or has expired> for the following
    <river(s) or stream(s)> in <geographic area>...

    <river/stream> <proximity term> <location> [(optional:) affecting
    <county #1>...<county #2> and <county #n> <county or counties>].
    <river/stream> <proximity term> <location> [(optional:) affecting
    <county #1>...<county #2> and <county #n> <county or counties>].
    .
    <river/stream> <proximity term> <location> [(optional:) (affecting
    <county #1>...<county #2> and <county #n> <county or counties>].
    affecting the following counties in <state>...<county #1>...
    <county #2> and <county #n>. (optional)

    .<General synopsis>. (optional)

    PRECAUTIONARY/PREPAREDNESS ACTIONS... (include if any of the optional items below are included)

    <call-to-action>. (optional)

    Additional information is available at <Web site URL>. (optional)

    The next statement will be issued <time/day phrase>. (optional)

    && (include if any of the optional items above are included)

```

(Include one or more of the following segments in the indicated order³.)

For corrections (located in same place as the original segment being corrected):

```

stCNNN-NNN-ddhhmm-
/k.COR.cccc.FL.W4.####.yymmddThhnnZB-yymmddThhnnZE/
/nwslis.s5.ic.yymmddThhnnZB.yymmddThhnnZC.yymmddThhnnZE.fr/
hhmm am/pm time_zone day mon dd yyyy

<Appropriate text as shown in one of the segment types below>.

$$

```

For cancellations:

```

stCNNN-NNN-ddhhmm-
/k.CAN.cccc.FL.W4.####.yymmddThhnnZB-yymmddThhnnZE/
/nwslis.s5.ic.yymmddThhnnZB.yymmddThhnnZC.yymmddThhnnZE.fr/
hhmm am/pm time_zone day mon dd yyyy

...FLOOD WARNING CANCELLED...

The Flood Warning is cancelled for
the> <river/stream name> <proximity term- e.g., at> <location>.

* ADDITIONAL DETAILS...

```

- At <time>⁶ <day> the <stage or flow> was <stage/flow>⁷ [(optional:)...<<<an increase> or <a decrease> of <stage/flow> <feet or cfs>> or <<no change since <time phrase>> or <and rising> or <and steady> or <and falling>>>].
- Flood <stage or flow> is <flood stage/flow>.
- <other stage/flow type>⁸ <stage or flow> is <stage/flow>. (optional)
- Recent Activity...<e.g., when river fell below flood stage>. (optional)
- Fell below flood <stage or flow> at <time> <day>. (optional)
- Fell below <other stage/flow type> at <time> <day>. (optional)
- Forecast...<brief forecast indicating expected trend>.
- Impact...<description of impact at given stage(s)/flow(s)>. (optional)
- Flood History...<flood history information>. (optional)

&&

<tabular observed/forecast values for segment> (optional)

LAT...LON nnnn nnnn

\$\$

(For each additional forecast point (if any), repeat the above in a separate segment)

For expirations:

stCNNN-NNN-ddhhmm-
 /k.EXP.cccc.FL.W⁴.####.yymmddThhnnZ_B-yymmddThhnnZ_E/
 /nwsli.s⁵.ic.yymmddThhnnZ_B.yymmddThhnnZ_C.yymmddThhnnZ_E.fr/
 hhmm am/pm time_zone day mon dd yyyy

...FLOOD WARNING <HAS EXPIRED or WILL EXPIRE>...

The Flood Warning has expired or will expire for
 the> <river/stream name> <proximity term - e.g., at> <location>.

* ADDITIONAL DETAILS...

- At <time>⁶ <day> the <stage or flow> was <stage/flow>⁷ [(optional:)...<<<an increase> or <a decrease> of <stage/flow> <feet or cfs>> or <<no change since <time phrase>> or <and rising> or <and steady> or <and falling>>>].
- Flood <stage or flow> is <flood stage/flow>.
- <other stage/flow type>⁸ <stage or flow> is <stage/flow>. (optional)
- Recent Activity...<e.g., when river fell below stage>. (optional)
- Fell below flood <stage or flow> at <time> <day>. (optional)
- Fell below <other stage/flow type> at <time> <day>. (optional)
- Forecast... <brief forecast indicating expected trend>.
- Impact...<description of impact at given stage(s)/flow(s)>. (optional)
- Flood History...<flood history information>. (optional)

&&

<tabular observed/forecast values for segment> (optional)

LAT...LON nnnn nnnn

\$\$

(For each additional forecast point (if any), repeat the above in a separate segment)

For extensions in time, i.e., change in Event Begin or End Date/Time:

stCNNN-NNN-ddhhmm-

/k.**EXT**.cccc.**FL.W**⁴.####.yymmddThhnnZ_B-yymmddThhnnZ_E/
/nwsli.s⁵.ic.yymmddThhnnZ_B.yymmddThhnnZ_C.yymmddThhnnZ_E.fr/
hhmm am/pm time_zone day mon dd yyyy

...FLOOD WARNING EXTENDED <FROM <time/day phrase>¹ UNTIL <<time/day phrase>¹[(optional:)...or UNTIL THE WARNING ID CANCELLED] or <long-term duration phrase>² >> or <UNTIL <<time/day phrase>¹[(optional:)...or UNTIL THE WARNING IS CANCELLED] or <long-term duration phrase>>>...

* WHAT...<category> flooding is occurring and <category> flooding is forecast.⁹

* WHERE...<optional: The> <river/stream name> <proximity term - e.g., at> <location>.

* WHEN...<From <time/day phrase>¹ until <<time/day phrase>¹[(optional:)...or until the warning is cancelled] or <long-term duration phrase>² >> or <Until <<time/day phrase>¹[(optional:)...or until the warning is cancelled] or <long-term duration phrase>>>.

* ADDITIONAL DETAILS...

- At <time>⁶ <day> the <stage or flow> was <stage/flow>⁷ [(optional:)...<<<an increase> or <a decrease> of <stage/flow> <feet or cfs>> or <<no change since <time phrase>> or <and rising> or <and steady> or <and falling>>>].
- Flood <stage or flow> is <flood stage/flow>.
- <other stage/flow type>⁸ is <stage/flow>. (optional)
- <category> flooding is occurring and <category> flooding is forecast.⁹
- Recent Activity...<e.g., recent peaks/trends in river stage>. (optional)
- Forecast...<One or more sentences with forecast information such as When flood stage will be reached, forecast crest/time, and time for fall below flood stage/flow.>
- Impact...<description of impacts at given stage(s)/flow(s). Include CTA info specific to this forecast point here>. (optional)
- Flood History...<flood history information>. (optional)

&&

<tabular observed/forecast values for segment> (optional)

LAT...LON nnnn nnnn

\$\$

(For each additional forecast point (if any), repeat the above in a separate segment)

When Event Ending Date/Time is being forecast for the first time¹⁰:

```
stCNNN-NNN-ddhhmm-
/k.EXT.cccc.FL.W4.####.yymmddThhnnZB-yymmddThhnnZE/
/nwslis5.ic.yymmddThhnnZB.yymmddThhnnZC.yymmddThhnnZE.fr/
hhmm am/pm time_zone day mon dd yyyy

...FLOOD WARNING EXTENDED UNTIL <time/day phrase>1[(optional:)...OR
  UNTIL THE WARNING IS CANCELLED]>...

* WHAT...<category> flooding is occurring and <category> flooding is
  forecast.9

* WHERE...<optional: The> <river/stream name> <proximity term - e.g., at>
  <location>.

* WHEN...<From <time/day phrase>1 until <time/day phrase>1[(optional:)...or
  until the warning is cancelled]> or <Until <time/day phrase>1 [(optional:)...or
  until the warning is cancelled]>.

* ADDITIONAL DETAILS...
  - At <time>6 <day> the <stage or flow> was <stage/flow>7 [(optional:)...<<an
    increase> or <a decrease> of <stage/flow> <feet or cfs>> or <<no change
    since <time phrase>> or <and rising> or <and steady> or <and
    falling>>>].
  - Flood <stage or flow> is <flood stage/flow>.
  - <other stage/flow type>8 is <stage/flow>. (optional)
  - Recent Activity...<e.g., recent peaks/trends in river stage>. (optional)
  - Forecast...<One or more sentences with forecast information such as
    when flood stage will be reached, forecast crest/time, and time for
    fall below flood stage/flow>.
  - Impact...<description of impacts at given stage(s)/flow(s). Include CTA
    info specific to this forecast point here>. (optional)
  - Flood History...<flood history information>. (optional)

&&

<tabular observed/forecast values for segment> (optional)

LAT...LON  nnnn nnnn

$$
(For each additional forecast point (if any), repeat the above in a separate segment)
```

For continuations:

```
stCNNN-NNN-ddhhmm-
/k.CON.cccc.FL.W4.####.yymmddThhnnZB-yymmddThhnnZE/
/nwslis5.ic.yymmddThhnnZB.yymmddThhnnZC.yymmddThhnnZE.fr/
hhmm am/pm time_zone day mon dd yyyy

...FLOOD WARNING CONTINUES <FROM <time/day phrase>1 UNTIL <<time/day
  phrase>1[(optional:)...OR UNTIL THE WARNING IS CANCELLED] or <long-term duration
  phrase>2 >> or <UNTIL <<time/day phrase>1 [(optional:)...OR UNTIL THE WARNING IS
  CANCELLED] or <long-term duration phrase>>>...
```

* WHAT...<category> flooding is occurring and <category> flooding is forecast.⁹

* WHERE...<optional: The> <river/stream name> <proximity term - e.g., at> <location>.

* WHEN...<from <time/day phrase>¹ until <<time/day phrase>¹ [(optional:)...or until the warning is cancelled] or <long-term duration phrase>² >> or <until <<time/day phrase>¹ [(optional:)...or until the warning is cancelled] or <long-term duration phrase>>>.

* ADDITIONAL DETAILS...

- At <time>⁶ <day> the <stage or flow> was <stage/flow>⁷ [(optional:)...<<an increase> or <a decrease> of <stage/flow> <feet or cfs>> or <<no change since <time phrase>> or <and rising> or <and steady> or <and falling>>>].
- Flood <stage or flow> is <flood stage/flow>.
- <other stage/flow type>⁸ is <stage/flow>. (optional)
- Recent Activity...<e.g., recent peaks/trends in river stage>. (optional)
- Forecast...<One or more sentences with forecast information such as when flood stage will be reached, forecast crest/time, and time for fall below flood stage.>
- Impact...<description of impacts at given stage(s)/flow(s). Include CTA info specific to this forecast point here.>. (optional)
- Flood History...<flood history information>. (optional)

&&

<tabular observed/forecast values for segment> (optional)

LAT...LON nnnn nnnn

\$\$

(For each additional forecast point (if any), repeat the above in a separate segment)

&& (only provided here if tabular observed/forecast values are provided below for entire product)

<tabular observed/forecast values for entire product> (optional)

\$\$ (only provided here if tabular observed/forecast values are provided above for entire product)

<Name/Initials/Forecaster ID> (optional)

Note (1): <time/day phrase> indicates phrases used in long duration watches (see NWSI 10-1701)—i.e., specific times within 12 hours of issuance, general phrases for beyond 12 hours (e.g., “Tuesday afternoon”).

Note (2): <Long-term duration phrase> characterizes the duration of a flood with an indeterminate event ending date/time—and for the next several days may be used if it is reasonably certain flooding will last approximately one week or less and “(and) until further notice” will be used for other situations.

Note (3): New issuances (NEW) will be handled by the flood warning product (FLW – see Section 7).

Note (4): The significance code for this product is “W” because the flood statement provides supplemental information on a previously issued (and still active) flood warning product (see NWSI 10-1703 at Section 2.1.5).

Note (5): “U” is entered for Flood severity “s” if the forecast flood category is unknown.

Note (6): Where <time> stands alone as a variable, the format is **hhmm am/pm time_zone**.

Note (7): “Stage/flow” means either stage and/or discharge values may be used.

Note (8): Examples of “other stage/flow type:” Caution stage, Alert stage, or Monitor stage.

Note (9): Include one or both observed/forecast category phrases if applicable and flood categories are available.

Note (10): When the ending date and time is being forecast for the first time for a flood for which previous FLS products had an indeterminate P-VTEC event ending date/time, a special extension (EXT) segment is issued.

After this special extension segment is issued, the next product reverts to using a continuation (CON) segment until the flood ends, unless the event ending time changes again, which would require another extension segment. The event tracking number remains unchanged during this process.

Figure 9. Generic format for flood statement following up a flood warning for forecast points.

A flood statement following up a flood warning for forecast points with cancellation, expiration, extension, or continuation (and COR) segments may also include ROU segments with information on forecast points which are below flood warning criteria. ROU segments are included when it is beneficial to provide a complete overview of a river reach and some forecast points have observed or forecast flooding and some do not. ROU segments will only be issued when they are part of a product with other segments providing information on observed/forecast flooding—a FLS (or FLW) product will never be issued which consists only of ROU segments. ROU segments will include partially populated VTEC strings as shown in Figure 8 (Section 7.3.5).

8.4 Updates, Amendments, and Corrections. Provide updates by issuing an additional flood statement per the criteria in Section 8.2.2. Amendments are not applicable to this product. Issue COR segments for text and format errors when necessary. COR segments will not be used for changes to observed or forecast data; elements in the P-VTEC or H-VTEC strings except for the NWSLI, immediate cause (ic), or flood record status (fr); or to anything numerically linked to elements in the VTEC strings (e.g., crest time, flood warning end time, flood category). To make corrections when a COR segment is not allowed, issue another flood statement with the same ETN(s) and correct information (note: use FLW for category increases).

9. Flood Warning (FLW). VTEC Phenomena Code: FA, Significance Code: W. A flood warning may be issued for any high flow, overflow, or inundation in a geographic area which threatens life and property and is not appropriately covered by a flash flood warning or flood warning for forecast points. The geographic area covered, which is defined by a polygon, may be all or a portion of one or more counties, a river/stream basin, or any other type of definable area (e.g., a specific valley).

9.1 Mission Connection. Flood warnings help the NWS meet its mission by providing advance notice of imminent or occurring flooding. This gives users time to initiate mitigation actions such as evacuation, removal of goods and belongings, alteration of reservoir releases, and activation of diversion works; thus, helping to protect life and property.

9.2 Issuance Guidelines.

9.2.1 Creation Software. Flood warnings will be created with the Hazard Services application.

9.2.2 Issuance Criteria. A flood warning will be issued for a geographical area defined by a polygon in a WFO’s CWFA when:

- a. Flood monitoring and forecasting tools indicate an over 80 percent likelihood of flooding over an area which cannot be quantified by a flood warning for forecast points; and/or
- b. Flooding is reported over a wide area which cannot be quantified by a flood warning for forecast points; and/or
- c. A previously issued flood warning needs to be extended in time; or
- d. Flooding is imminent or occurring in a geographical area currently not under a valid flood warning. Note: since flood warnings cannot be extended in area, a new flood warning should be issued for adjacent areas when flooding is imminent or occurring in those adjacent areas.

The following are special issuance and cancellation criteria:

- a. A flood warning does not have to be issued if river/stream flooding is adequately accounted for by one or more flood warnings for forecast points.
- b. If a reliable source has reported that flooding has ended in all of the warned area and a flood warning is still in effect, a flood statement should be issued cancelling or expiring the flood warning rather than allowing it to expire on its own.

9.2.3 Issuance Time. Flood warnings are non-scheduled, event-driven products.

9.2.4 Valid Time. Flood warnings will be valid from the time of issuance until the time when flooding (requiring actions to protect life and property) is expected to end, as indicated in the Event Ending Date/Time element in the P-VTEC string and the second bullet, or until the product is cancelled by a flood statement.

9.2.5 Product Expiration Time. The product expiration time (at the end of the UGC line) is generally set to be 6 to 24 hours after product issuance, depending on the hydrologic situation.

9.3 Technical Description.

9.3.1 UGC Type. County codes should be used (zone codes for Alaska).

9.3.2 MND Broadcast Instruction Line. Use either: “BULLETIN – EAS ACTIVATION REQUESTED” or “BULLETIN – IMMEDIATE BROADCAST REQUESTED” depending on the urgency of the hydrologic situation, regional policies, and user requirements.

9.3.3 MND Product Type Line. Use: “Flood Warning”.

9.3.4 Content. The flood warning product uses a segmented, bulleted format. An optional general overview/synopsis section may be provided at the top of the product. The required segmented warning information section begins with the first UGC line followed immediately by a P-VTEC string.

9.3.4.1 General Overview/Synopsis Section. This optional section contains at least one of the following:

- a. General Overview Headline – One or more headlines summarizing the current flood situation, affected locations/areas, and the expected duration (if known). Each overview headline starts and ends with three dots (...).
- b. General Synopsis – A brief description of the flood situation. A discussion of associated hydrometeorological factors may be provided. This synopsis is free format and may consist of several paragraphs, but the first line of the first paragraph will always be preceded by a single dot (.).

9.3.4.2 Segmented Warning Information Section. Information in a product will be divided into one or more segments. Correction segments will appear in the position of the segment they are correcting. Note: there are no extensions in area (EXA), extensions in both time and area (EXB), and continuation (CON) segments in flood warnings. Continuations are handled under the flood statement (FLS) identifier and new areas are covered in separate new issuances under the FLW identifier.

Each segment of a flood warning will include the following:

- a. UGC line, P-VTEC string, H-VTEC string, counties listing, cities listing (optional), and date/time stamp as shown in Figure 10. In the hydrologic VTEC, use zeroes for the NWSLI and flood severity (s). Use zeroes for the start, crest, and end date/time groups and OO (double capital “O”) for the flood record status (fr). Immediate causes (ic) are described under (b) below.
- b. Headline – “...FLOOD WARNING IN EFFECT UNTIL hhmm am/pm time_zone...” (for new issuances) or “...FLOOD WARNING CONTINUES UNTIL hhmm am/pm time_zone ...” (for extensions in time), followed by five bullets delimited by asterisks (*):

(1)WHAT... bullet, for immediate cause ER (excessive rainfall), IC (rain and/or snowmelt and/or ice jam), MC (other multiple causes), and UU (unknown) – “Flooding”, optionally followed by the phrase “of urban areas and small streams or small streams” followed by “is imminent or occurring”.

or, for immediate cause DM (dam failure):

“Flooding of”, followed by: “the <stream name> below <dam name>”, followed by “is imminent or occurring”.

or, for immediate cause DM (levee failure), DR (upstream dam/reservoir release, GO (glacier-dammed lake outburst), IJ (ice jam), RS (rain and snowmelt), and SM (snowmelt):

“Flooding due to”, followed by “<type of flooding>”, followed by “is imminent or occurring”.

- (2) WHERE... bullet – County-based geographic area covered by the warning. To minimize overall product length, do not list any cities after the geographic areas in the WHERE bullet.
 - (3) WHEN... bullet – Phrase integrating the event beginning (when appropriate) and event ending times (see Figure 10 for details).
 - (4) IMPACTS... bullet – Discussion of expected impacts.
 - (5) ADDITIONAL DETAILS... bullet – Warning basis/current meteorological situation.
- c. Call-to-action statement – Will focus on avoiding flood dangers and do not include instructions on how to escape from vehicles caught in flood waters. If a call-to-action statement is included, its beginning and end will be delineated with CTA markers as shown in Figure 10.
 - d. Latitude/longitude polygon coordinates defining the warning area.

9.3.5 Format. The generic format for flood warnings is shown below in Figure 10.

```
WGA1A2ii cccc ddhhmm (BBB)
FLWxxx
```

```
BULLETIN - <EAS ACTIVATION or IMMEDIATE BROADCAST> REQUESTED
FLOOD WARNING
NATIONAL WEATHER SERVICE <city, state>
hhmm am/pm time_zone day mon dd yyyy
```

```
<...General overview headline...> (optional)
<.General synopsis of flood situation.> (optional)
```

(Include one of the following types of segments:)

For corrections:

```
stCNNN-NNN-NNN-ddhhmm-
/k.COR.cccc.FA.W.####.yymmddThhnnZB-yymmddThhnnZE/
/00000.0.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
<county #1>-<county #2>-<county #n>-
Including <the cities of> location...location
hhmm am/pm time_zone day mon dd yyyy
<Appropriate text as shown in the warning issuance/extension segment below>
$$
```

For new issuances and extensions in time:

```
stCNNN-NNN-NNN-ddhhmm-
/k.<NEW or EXT>.cccc.FA.W.####.yymmddThhnnZB-yymmddThhnnZE/
/00000.0.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
<county #1>-<county #2>-<county #n>-
Including <the cities of> location...location
hhmm am/pm time_zone day mon dd yyyy
...FLOOD WARNING <IN EFFECT or CONTINUES> UNTIL hhmm am/pm time_zone3...
```

The WHAT... bullet is one of the following three:

```

1) For immediate cause = ER, IC, MC and UU:
* WHAT...Flooding [optional: of urban areas and small streams or small
streams] is imminent or occurring.
2) For DM - dam failure:
* WHAT...Flooding of the <stream name> below <dam name> is imminent or
occurring.
3) For other immediate causes (DM – levee failure, DR, GO, IJ, RS, SM):
* WHAT...Flooding due to <type of flooding>1 is imminent or occurring.

* WHERE...<county #1, with appropriate geographic modifier(s)>2,
<county #2, with appropriate geographic modifier(s)>, ...<county #n,
with appropriate geographic modifier(s)>.

<forecast path of flood and/or locations to be affected>. (optional)

* WHEN...Until hhmm am/pm time_zone3
* IMPACTS...<expected impacts>.
* ADDITIONAL DETAILS...<warning basis/current meteorological situation>.

PRECAUTIONARY/PREPAREDNESS ACTIONS... (include only if optional CTA is included)

<call-to-action statement> (optional)

&& (include only if optional CTA is included)

LAT...LON nnnn nnnn (mandatory)

$$

<Name/Initials/Forecaster ID> (optional)

```

Note (1): <type of flooding> may be: A Levee Failure, A Dam Floodgate Release, A Glacier-Dammed Lake Outburst, An Ice Jam, Rain and Snowmelt, or Snowmelt.
Note (2): <county #, with appropriate geographic modifier(s)> may be any type of county-based area, a county name, county name with a directional modifier (e.g., Southern Cass County in Nebraska), or river reach (e.g., The Pend Oreille River in Pend Oreille County in northeast Washington).
Note (3): It is optional to include a day of week after the time when needed.

Figure 10. Generic format for flood warnings.

9.4 Updates, Amendments, and Corrections. Provide updates by issuing a flood statement per instructions in Section 10.2.2. Amendments are not applicable to this product. Issue correction segments for text and format errors when necessary. Corrected warnings will have the same time in the MND header and the same ETN as the original warning. Correction segments will not be used for changes to areas covered, elements in the P-VTEC or H-VTEC strings except for the immediate cause (ic), or anything numerically linked to elements in the VTEC strings (e.g., flood warning ending time). Issue a new FLW (with a new ETN) for counties/zones not already covered by a FLW. Issue an extension FLW to change the expiration time of an existing product. Issue a flood statement to remove erroneous counties/zones from an existing product (either in the UGC or the body of the warning).

10. Flood Statement – Follow-up to Flood Warning (FLS). VTEC Phenomena Code: FA, Significance Code: W. This type of flood statement contains supplemental information on previously issued flood warnings, such as updated observations and impact information.

10.1 Mission Connection. Flood statements help the NWS meet its mission by updating information on threatening situations covered in previous flood warnings; thus, helping to protect life and property.

10.2 Issuance Guidelines.

10.2.1 Creation Software. Flood statements following up a flood warning will be created with the Hazard Services application.

10.2.2 Issuance Criteria. Flood statements will be issued to follow up flood warnings when:

- a. Information needs to be provided to update or supplement a previously issued flood warning, and/or
- b. Cancellation or expiration of all or part of a flood warning needs to be announced.

If a reliable source has reported that flooding has ended in all of the warned area and a flood warning is still in effect, a flood statement should be issued cancelling or expiring the flood warning rather than allowing it to expire on its own.

10.2.3 Issuance Time. Flood statements are non-scheduled, event-driven products.

10.2.4 Valid Time. A flood warning being followed up in a flood statement will continue to be valid until the time when the flooding is expected to end, as indicated in the second bullet and the event ending date/time element in the P-VTEC line, or until the product is cancelled by a subsequent flood statement.

10.2.5 Product Expiration Time. For flood statements providing follow-up information on a flood warning (i.e., extension or continuation), the product expiration time is either the same as the product expiration time for the referenced flood warning, or an appropriate time when the next update needs to be issued (typically 6 to 24 hours – depends on the current situation and hydrologic characteristics of the area). For flood statements announcing expiration or cancellation of a flood warning, the product expiration time is not more than ten minutes after the warning expiration or cancellation time.

10.3 Technical Description.

10.3.1 UGC Type. County codes should be used (zone codes for Alaska).

10.3.2 MND Broadcast Instruction Line. Not applicable to the flood statement.

10.3.3 MND Product Type Line. Use: “Flood Statement”.

10.3.4 Content. The flood statement following up a flood warning uses a segmented, non-bulleted format. The required segmented warning information section begins with the first UGC line followed immediately by a P-VTEC string.

10.3.4.1 General Overview/Synopsis Section. This optional section, when included, contains at least one of the following:

- a. General Overview Headline – One or more headlines summarizing the current flood situation, affected locations/areas, and the expected duration (if known). Each overview headline starts and ends with three dots (...).
- b. General Synopsis – A brief, non-technical description of the flood situation. A discussion of contributing hydrometeorological factors may be provided. This synopsis is free format and may consist of several paragraphs, but the first line of the first paragraph will always be preceded by a single dot (.).

10.3.4.2 Segmented Flood Statement Information Section. Information in a flood statement following up a flood warning will be divided into one or more segments. If more than one type of segment is needed in a given product (e.g., cancellation plus continuation), the segments should be further ordered by VTEC action codes as follows:

- a. Cancellations (CAN)
- b. Expirations (EXP)
- c. Continuations (CON)

Note: FLS products will not have segments for new issuances (NEW), expansions in area (EXA), and extensions in both area and time (EXB). All such situations will be covered by issuance of new FLW products. Extensions in time (EXT) are handled as special issuances under the FLW identifier. When a flood warning for a large area needs to be cancelled for part of its original area and extended in time for the other part, do the following: (1) first, issue a two-segment FLS with a CAN segment and the original ETN for the area being cancelled, and a CON segment with the original ETN for the area still under a flood warning; (2) then, go back into Hazard Services to select the extension option for the remaining area of the flood warning; (3) format a product with the FLW identifier, the original ETN, and the EXT action code; and (4) issue the product. Also note—the COR action code will only be used to correct previously issued FLS products—corrections to flood warnings will be handled under the FLW identifier.

Cancellation (CAN) and expiration (EXP) segments will include:

- a. UGC line, P-VTEC string, H-VTEC string, counties listing, cities listing (optional), and date/time stamp as shown in Figure 11. In the H-VTEC, use zeroes for the NWSLI and flood severity (s). Use zeroes for the start, crest, and end date/time groups and OO (double capital “O”) for the flood record status (fr).
- b. Headline summarizing content of the segment.
- c. Brief post-event synopsis (for cancellation and expiration segments) or a description of the current hydrometeorological situation and expected impacts (for continuation segments). These may be one or more paragraphs in length. Do not use modifiers such as “County” in front of “Flood Warning”.

- d. Call-to-action statement (for CON segments). Call-to-action statements will focus on avoiding flood dangers and do not include instructions on how to escape from vehicles caught in flood waters. If a call-to-action statement is included, its beginning and end will be delineated with CTA markers as shown in Figure 11.
- e. Latitude/longitude polygon coordinates defining the warning area.

Continuation (CON) segments will include:

- a. UGC line, P-VTEC string, H-VTEC string, counties listing, cities listing (optional), and date/time stamp as shown in Figure 11. In the H-VTEC, use zeroes for the NWSLI and flood severity (s). Use zeroes for the start, crest, and end date/time groups and OO (double capital “O”) for the flood record status (fr).
- b. Headline – “...FLOOD WARNING REMAINS IN EFFECT UNTIL hhmm am/pm time_zone...”, followed by five bullets delimited by asterisks (*).:
 - (1) WHAT... bullet, for immediate cause ER (excessive rainfall), IC (rain and/or snowmelt and/or ice jam), MC (other multiple causes), and UU (unknown) – “Flooding”, optionally followed by the phrase “of urban areas and small streams or small streams” followed by “continues”.
 - or, for immediate cause DM (dam failure):
“Flooding of”, followed by: “the <stream name> below <dam name>”, followed by “continues”.
 - or, for immediate cause DM (levee failure), DR (upstream dam/reservoir release, GO (glacier-dammed lake outburst), IJ (ice jam), RS (rain and snowmelt), and SM (snowmelt):
“Flooding due to”, followed by “<type of flooding>”, followed by “continues”.
 - (2) WHERE... bullet – County-based geographic area covered by the warning. To minimize overall product length, do not list any cities after the geographic areas in the WHERE bullet.
 - (3) WHEN... bullet – Phrase integrating the event beginning (when appropriate) and event ending times (see Figure 10 for details).
 - (4) IMPACTS... bullet – Discussion of expected impacts.
 - (5) ADDITIONAL DETAILS... bullet – Warning basis/current meteorological situation.
- c. Call-to-action statement – Will focus on avoiding flood dangers and do not include instructions on how to escape from vehicles caught in flood waters. If a call-to-action statement is included, its beginning and end will be delineated with CTA markers as shown in Figure 10.
- d. Latitude/longitude polygon coordinates defining the warning area.

10.3.5 Format. The generic format for a flood statement following up a flood warning is shown below in Figure 11:

```
WGA1A2ii cccc ddhhmm (BBB)
FLSxxx
```

```
Flood Statement
National Weather Service <city, state>
hhmm am/pm time_zone day mon dd yyyy
```

<...General overview headline...> *(optional)*

<.General synopsis of flood situation.> *(optional)*

(Include one or more of the following segments in the indicated order:)

For corrections:

```
stC1NNN-NNN-NNN-ddhhmm-
/k.COR.cccc.FA.W1.####.yymmddThhnnZB-yymmddThhnnZE/
/00000.0.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
<county #1>-<county #2>-<county #n>-
Including <the cities of> location...location
hhmm am/pm time_zone day mon dd yyyy

<Appropriate text as shown in one of the segment types below>.
$$
```

For cancellations:

```
stC1NNN-NNN-NNN-ddhhmm-
/k.CAN.cccc.FA.W1.####.yymmddThhnnZB-yymmddThhnnZE/
/00000.0.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
<county #1>-<county #2>-<county #n>-
Including <the cities of> location...location
hhmm am/pm time_zone day mon dd yyyy
```

The headline is one of the following three:

1) For immediate cause = ER, IC, MC and UU:

...THE FLOOD WARNING HAS BEEN CANCELLED FOR [*optional*: URBAN AREAS AND SMALL
SSTREAMS IN or SMALL STREAMS IN] <geographic area>²...

2) For DM - dam failure:

...THE FLOOD WARNING FOR THE [*include for imminent failure*: IMMINENT] FAILURE OF <dam
rname> ON <*optional*: THE> <stream name> HAS BEEN CANCELLED FOR <geographic
area>²...

3) For other immediate causes (DM – levee failure, DR, GO, IJ, RS, SM):

...THE FLOOD WARNING FOR <type of flooding>³ HAS BEEN CANCELLED FOR geographic
<area>²...

<Brief post-event synopsis>.

LAT...LON nnnn nnnn *(mandatory)*

\$\$

For expirations:

```
stC1NNN-NNN-NNN-ddhhmm-
/k.EXP.cccc.FA.W1.####.yymmddThhnnZB-yymmddThhnnZE/
```


/00000.0.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
 <county #1>-<county #2>-<county #n>-
 Including <the cities of> location...location
 hhmm am/pm time_zone day mon dd yyyy

The headline is one of the following three:

1) For immediate cause = ER, IC, MC and UU:

...THE FLOOD WARNING HAS EXPIRED FOR [optional: URBAN AREAS AND SMALL STREAMS IN
 for SMALL STREAMS IN] <geographic area>²...

2) For DM - dam failure:

...THE FLOOD WARNING FOR THE [include for imminent failure: IMMINENT] FAILURE OF <dam
 name> ON <optional: THE> <stream name> HAS EXPIRED FOR <geographic area>²...

3) For other immediate causes (DM – levee failure, DR, GO, IJ, RS, SM):

...THE FLOOD WARNING FOR <type of flooding>³ HAS EXPIRED FOR <geog. area>²...

<Brief post-event synopsis>.

LAT...LON nnnn nnnn

(mandatory)

\$\$

For continuations:

StCNNN-NNN-NNN-ddhhmm-
 /k.CON.cccc.FA.W¹.####.yymmddThhnnZ_B-yymmddThhnnZ_E/
 /00000.0.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
 <county #1>-<county #2>-<county #n>-
 Including <the cities of> location...location
 hhmm am/pm time_zone day mon dd yyyy

...THE FLOOD WARNING REMAINS IN EFFECT UNTIL hhmm am/pm time_zone⁴...

The WHAT... bullet is one of the following three:

1) For immediate cause = ER, IC, MC and UU:

* WHAT...Flooding [optional: of urban areas and small streams or small
 streams] continues.

2) For DM - dam failure:

* WHAT...Flooding of the <stream name> below <dam name> continues.

3) For other immediate causes (DM – levee failure, DR, GO, IJ, RS, SM):

* WHAT...Flooding due to <type of flooding>³ continues.

* WHERE...<geographic area>².

* WHEN...Until hhmm am/pm time_zone⁴.

* IMPACTS...<expected impacts>.

* ADDITIONAL DETAILS...<current hydrometeorological situation>.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

(include only if optional CTA is included)

<call-to-action statement> (optional)

&&

(include only if optional CTA is included)

LAT...LON nnnn nnnn

(mandatory)

\$\$

<Name/Initials/Forecaster ID> (optional)

Note (1): The significance code for this product is “W” because the flood statement provides supplemental information on a previously issued (and still active) flood warning product (see NWSI 10-1703 at Section 2.1.5).

Note (2): <geographic area> may be any type of county-based area: one or more county names, one or more county names with a directional modifiers and state names (e.g., SOUTHERN CASS COUNTY IN NEBRASKA), or a description of a river reach (e.g., THE PEND OREILLE RIVER IN PEND OREILLE COUNTY IN NORTHEAST WASHINGTON). The geographic area will be in sentence case when appearing in the WHERE... bullet.

Note (3): <type of flooding> may be: a levee failure, a dam floodgate release, a glacier-dammed lake outburst, an ice jam, rain and snowmelt, or snowmelt.

Note (4): It is optional to include a day name after the time when needed.

Figure 11. Generic format for flood statement following up a flood warning.

10.4 Updates, Amendments, and Corrections. Provide updates by issuing follow-up flood statements per the criteria in Section 10.2.2. Amendments are not applicable to this product. Issue correction segments for text and format errors when necessary. Correction segments will not be used for changes to areas covered, elements in the P-VTEC or H-VTEC strings except for the immediate cause (ic), or to anything in the product numerically linked to elements in the VTEC strings (e.g., flood warning ending time). Issue a new FLW (with a new ETN) to cover an area not already under a flood warning. A follow-up to a flood warning which uses an EXT segment to extend the warning may be issued under the FLW identifier.

11. Flood Statement - Flood Advisory (FLS). VTEC Phenomena Code: FA, Significance Code: Y. A flood advisory provides information on elevated river/stream flow or ponding of water in a geographic area, when such an event warrants notification of the public in a product less urgent than a warning. The geographic area covered is defined by a polygon. A flood advisory is issued under the flood statement AWIPS Identifier (FLS).

11.1 Mission Connection. This product helps the NWS meet its mission by providing notification on unusual hydrologic activity; thus, helping to protect life and property.

11.2 Issuance Guidelines.

11.2.1 Creation Software. Flood advisories will be created with the Hazard Services application.

11.2.2 Issuance Criteria. Flood advisories will be issued for a geographical area defined by a polygon in a WFO’s CWFA when:

- a. Elevated streamflow or ponding of water occurs or is more than 80 percent likely to occur which warrants public notification.
- b. An advisory needs to be issued for a geographical area currently not under a valid flood advisory (no expansions in area (EXA) or extensions in both time and area (EXB) are allowed). Since flood advisories cannot be extended in area, a new flood advisory should be issued for adjacent areas when deemed necessary by a forecaster.
- c. Updated hydrometeorological information needs to be provided on an existing advisory.

If a reliable source has reported that elevated streamflow or ponding of water has ended in all of the advisory area and a flood advisory is still in effect, a flood statement should be issued cancelling or expiring the flood advisory, rather than allowing it to expire on its own.

11.2.3 Issuance Time. Flood advisories issued under the flood statement identifier are non-scheduled, event-driven products.

11.2.4 Valid Time. This product will be valid until the time when the hydrologic conditions of concern are expected to end, as indicated in the headline, or until the product is cancelled or updated by another advisory.

11.2.5 Product Expiration Time. For initial (NEW) flood advisory products, the product expiration time (at the end of the UGC line) is the same as the valid time in the headline and is generally set to be 6 to 24 hours after product issuance, depending on the hydrologic situation and type of advisory. For flood statements with follow-up information on a flood advisory (i.e., EXT or CON), the product expiration time is either the same as the product expiration time for the referenced advisory, or 6 to 24 hours in the future depending on the hydrologic situation and type of advisory. When announcing expiration or cancellation of an advisory, the product expiration time is not more than ten minutes after the issuance time.

11.2.6 Replacing a Flood Advisory With a Flash Flood Warning or Flood Warning. If it is decided to replace a flood advisory with a flash flood warning or a flood warning, first, issue a new flash flood warning or a flood warning according to the procedures in Sections 5 or 9, respectively. Then, cancel the flood advisory according to procedures in this section. This ensures there is no coverage gap between the two products.

11.3 Technical Description.

11.3.1 UGC Type. County codes should be used (zone codes for Alaska and American Samoa).

11.3.2 MND Broadcast Instruction Line. Not applicable to this product.

11.3.3 MND Product Type Line. Use: “Flood Advisory”.

11.3.4 Content. An optional general overview/synopsis section may be included at the top of the product. Flood advisories use a segmented, bulleted format (except for cancellations, expirations, and continuations) which is similar to the format for flood warnings (see Figure 12).

11.3.4.1 General Overview/Synopsis Section. This optional section, when included, contains at least one of the following:

- a. General Overview Headline – One or more headlines summarizing the current situation, affected locations/areas, and the expected duration. Each overview headline starts and ends with three dots (...).
- b. General Synopsis – A brief, non-technical description of the current hydrometeorological situation and contributing factors. This synopsis is free format and may consist of several paragraphs, but the first line of the first paragraph will always be preceded by a single dot (.).

11.3.4.2 Segmented Advisory Information Section. Information in a flood advisory issued under the flood statement identifier will be divided into one or more segments. If more than one type of segment is needed, they will be provided in the following order:

- a. Cancellations (CAN)
- b. Expirations (EXP)
- c. Continuations (CON)

New (NEW) and extension in time (EXT) segments will be issued in stand-alone products and will not be mixed with cancellation, expiration, or continuation segments. Extensions in area (EXA) and extensions in both area and time (EXB) will not be used. When a flood advisory for a large area needs to be cancelled for part of its original area and extended in time for the other part, do the following: (1) first, issue a two-segment FLS advisory with a CAN segment and the original ETN for the area being cancelled, and a CON segment with the original ETN for the area still under a flood advisory; (2) then, go back into Hazard Services to select the extension option for the remaining area of the flood advisory; (3) format a product with the FLS identifier, the original ETN, and the EXT action code; and (4) issue the advisory extension.

New issuance, extension in time, and continuation segments will include the following:

- a. UGC line, P-VTEC string, H-VTEC string, counties listing, cities listing (optional), and date/time stamp as shown in Figure 12. In the H-VTEC, use zeroes for the NWSLI and “N” for flood severity (s) to indicate advisory-level flooding. In addition to ER (excessive rainfall), the available entries for Immediate Cause (ic) are IC (rain and/or snowmelt and/or ice jam), IJ (ice jam), RS (rain and snowmelt), and SM (snowmelt). Use zeroes for the start, crest, and end date/time groups and OO (double capital “O”) for the flood record status (fr).
- b. **Headline** – “...FLOOD ADVISORY IN EFFECT UNTIL hhmm am/pm time_zone...” (for new issuances) or “...FLOOD ADVISORY EXTENDED UNTIL hhmm am/pm time_zone ...” (for extensions in time) or “...FLOOD ADVISORY CONTINUES UNTIL hhmm am/pm time_zone...” (for continuations), followed by five bullets delimited by asterisks (*):
 - (1) **WHAT...** bullet – for immediate cause ER, RS, IC (rain and/or snowmelt and/or ice jam), <Type of advisory>; followed by the optional phrase “for <hydrologic condition>,” followed by a preposition—i.e., for, of, at, in, or on, followed by three dots (...); followed on the next line(s) by a list of county-based geographic areas, with three dots (...) after each area. Types of advisories are: Urban and Small Stream Flood Advisory, Arroyo and Small Stream Flood Advisory, Small Stream Flood Advisory, Flood Advisory, and Hydrologic Advisory. Examples of hydrologic conditions that can be manually inserted include rapid rises or minor flooding in poor drainage areas.

or, for immediate cause IJ (ice jam), RS (rain and snowmelt), and SM (snowmelt):

<Type of advisory>; followed by for...; followed on the next line by An ice jam, Rain and Snowmelt, or Snowmelt; followed by in... or on...; followed on the next line by a list of county-based geographic areas, with three dots (...) after each area. Types of advisories are described under (1) above.

To minimize overall product length, do not list any cities after the geographic areas in the first bullet.

- (2) WHERE... bullet – Geographic area covered by the advisory.
 - (3) WHEN... bullet – Phrase integrating the event beginning (when appropriate) and event ending times (see Figure 12 for details).
 - (4) IMPACTS... bullet – Expected impacts of the elevated flow situation.
 - (5) ADDITIONAL DETAILS... bullet (optional) – Basis for the advisory.
- c. Call-to-action statement. Call-to-action statements will focus on avoiding flood dangers and do not include instructions on how to escape from vehicles caught in floodwaters. If a call-to-action statement is included, its beginning and end will be delineated with CTA markers as shown in Figure 12.
 - d. Latitude/longitude polygon coordinates defining the warning area.

Cancellation and expiration segments will include the following:

- a. UGC line, P-VTEC string, H-VTEC string, counties listing, cities listing (optional), and date/time stamp as shown in Figure 12. In the H-VTEC, use zeroes for the NWSLI and “N” for flood severity (s) to indicate advisory-level flooding. Use zeroes for the start, crest, and end date/time groups and OO (double capital “O”) for the flood record status (fr).
- b. Headline summarizing content of the segment.
- c. Brief post-event synopsis (for cancellation and expiration segments) or a description of the current hydrometeorological situation and expected impacts (for continuation segments). These may be one or more paragraphs in length.
- d. Call-to-action statement (for continuations), focusing on avoiding flood danger. If a call-to-action statement is included, its beginning and end will be delineated with CTA markers as shown in Figure 12.
- e. Latitude/longitude polygon coordinates defining the advisory area.

11.3.5 Format. The generic format for a flood advisory is shown below in Figure 12:

```
WGA1A2ii cccc ddhhmm (BBB)
FLSxxx

Flood Advisory
National Weather Service <city, state>
```

hhmm am/pm time_zone day mon dd yyyy

(Include one or more of the following segments in the indicated order:)

For corrections:

```
StCNNN-NNN-NNN-ddhhmm-
/k.COR.cccc.FA.Y.####.yymmddThhnnZB-yymmddThhnnZE/
/00000.N.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
<county #1>-<county #2>-<county #n>-
Including <the cities of> location...location
hhmm am/pm time_zone day mon dd yyyy
<Appropriate text as shown in one of the segment types below>.
$$
```

For cancellations:

```
StCNNN-NNN-NNN-ddhhmm-
/k.CAN.cccc.FA.Y.####.yymmddThhnnZB-yymmddThhnnZE/
/00000.N.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
<county #1>-<county #2>-<county #n>-
Including <the cities of> location...location
hhmm am/pm time_zone day mon dd yyyy
```

The headline is one of the following two:

1) For immediate cause = ER and IC:

...THE FLOOD ADVISORY [(optional:) FOR <hydrologic condition>²] HAS BEEN [CANCELLED FOR <geographic area> [(optional:) AND HAS BEEN REPLACED BY A FLOOD WARNING]...

2) For other immediate causes (IJ, RS, SM, GO, DR):

...THE FLOOD ADVISORY FOR <(optional:) A or AN> <immediate cause>³ HAS BEEN [CANCELLED FOR <geographic area> [(optional:) AND HAS BEEN REPLACED BY A FLOOD WARNING]...

<Brief post-event synopsis>.

LAT...LON nnnn nnnn
\$\$

(mandatory)

For expirations:

```
StCNNN-NNN-NNN-ddhhmm-
/k.EXP.cccc.FA.Y.####.yymmddThhnnZB-yymmddThhnnZE/
/00000.N.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
<county #1>-<county #2>-<county #n>-
Including <the cities of> location...location
hhmm am/pm time_zone day mon dd yyyy
```

The headline is one of the following two:

1) For immediate cause = ER and IC:

...THE FLOOD ADVISORY FOR [(optional:) FOR <hydrologic condition>²] HAS EXPIRED FOR <geographic area>...

2) For other immediate causes (IJ, RS, SM, GO, DR):

...THE FLOOD ADVISORY FOR <(optional:) A or AN> <immediate cause>³ HAS EXPIRED [FOR <geographic area>...

<Brief post-event synopsis>.

LAT...LON nnnn nnnn

(mandatory)

\$\$

For continuations:

stCNNN-NNN-NNN-ddhhmm-
 /k.**CON**.cccc.**FA.Y**.####.yyymmddThhnnZ_B-yyymmddThhnnZ_E/
 /00000.N.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
 <county #1>-<county #2>-<county #n>-
 Including <the cities of> location...location
 hhmm am/pm time_zone day mon dd yyyy

...FLOOD ADVISORY REMAINS IN EFFECT UNTIL hhmm am/pm time_zone⁵...

The WHAT bullet is one of the following two:

1) For immediate cause = ER and IC:

* WHAT.....<type of flooding>¹ [(optional:) for <hydrologic condition>²] <...due to, resulting from> <(optional:) a or an> <immediate cause>³.

2) For other immediate causes (IJ, RS, SM, GO, DR):

* WHAT...<type of flooding>¹ <...due to, resulting from> <(optional:) a or an> <immediate cause>³.

* WHERE...<county #1, with appropriate geographic modifier(s)>⁴, <county #2, with appropriate geographic modifier(s)>, <county #n, with appropriate geographic modifier(s)>.

* WHEN...Until hhmm am/pm time_zone⁵

* IMPACTS...<expected impacts>.

* ADDITIONAL DETAILS...<basis for advisory>. (optional)

PRECAUTIONARY/PREPAREDNESS ACTIONS... (include only if optional CTA is included)

<call-to-action statement> (optional)

&& (include only if optional CTA is included)

LAT...LON nnnn nnnn

(mandatory)

\$\$

For new issuances:

stCNNN-NNN-NNN-ddhhmm-
 /k.**NEW**.cccc.**FA.Y**.####.yyymmddThhnnZ_B-yyymmddThhnnZ_E/
 /00000.N.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
 <county #1>-<county #2>-<county #n>-
 Including <the cities of> location...location
 hhmm am/pm time_zone day mon dd yyyy

...FLOOD ADVISORY IN EFFECT UNTIL hhmm am/pm time_zone⁵...

The WHAT bullet is one of the following two:

1) For immediate cause = ER and IC:

* WHAT...<type of flooding>¹ [(optional:) for <hydrologic condition>²] <...due to, resulting from> <(optional:) a or an> <immediate cause>³.

2) For other immediate causes (IJ, RS, SM, GO, DR):

* WHAT...<type of flooding>¹ <...due to, resulting from> <(optional:) a or an> <immediate cause>³.

* WHERE...<county #1, with appropriate geographic modifier(s)>⁴, <county #2, with appropriate geographic modifier(s)>, <county #n, with appropriate geographic modifier(s)>.

* WHEN...Until hhmm am/pm time_zone⁵

* IMPACTS...<expected impacts>.

* ADDITIONAL DETAILS...<basis for advisory>. (optional)

PRECAUTIONARY/PREPAREDNESS ACTIONS... (include only if optional CTA is included)

<call-to-action statement> (optional)

&& (include only if optional CTA is included)

LAT...LON nnnn nnnn (mandatory)

\$\$

For extensions in time:

stCNNN-NNN-NNN-ddhhmm-
/k.EXT.cccc.FA.Y.####.yymmddThhnnZ_B-yymmddThhnnZ_E/
/00000.N.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
<county #1>-<county #2>-<county #n>-
Including <the cities of> location...location
hhmm am/pm time_zone day mon dd yyyy

...FLOOD ADVISORY EXTENDED UNTIL hhmm am/pm time_zone⁵...

The WHAT bullet is one of the following two:

1) For immediate cause = ER and IC:

* WHAT...<type of flooding>¹ [(optional:) for <hydrologic condition>²] <...due to, resulting from> <(optional:) a or an> <immediate cause>³.

2) For other immediate causes (IJ, RS, SM, GO, DR):

* WHAT...<type of flooding>¹ <...due to, resulting from> <(optional:) a or an> <immediate cause>³.

* WHERE...<county #1, with appropriate geographic modifier(s)>⁴, <county #2, with appropriate geographic modifier(s)>, <county #n, with appropriate geographic modifier(s)>.

* WHEN...Until hhmm am/pm time_zone⁵

* IMPACTS...<expected impacts>.

* ADDITIONAL DETAILS...<basis for advisory>. (optional)

PRECAUTIONARY/PREPAREDNESS ACTIONS... (include only if optional CTA is included)

<call-to-action statement> (optional)

&& (include only if optional CTA is included)

LAT...LON nnnn nnnn (mandatory)

\$\$

<Name/Initials/Forecaster ID> (optional)

Note (1): The following may be used for <type of flooding>: Urban and small stream flooding, Arroyo and small stream flooding, Small stream flooding, and Flooding.

Note (2): Hydrologic conditions that may be manually added include: rapid rises and minor flooding in poor drainage areas.

Note (3): The following may be used for <immediate cause> where specified: Excessive rainfall, Rain and/or snowmelt and/or ice jam, Ice jam, Rain and snowmelt, Snowmelt, Glacier-Dammed Lake Outburst, or Upstream Dam or Reservoir Release. The <type of flooding> will be in all caps if it appears in a headline.

Note (4): <county #, with appropriate geographic modifier(s)> may be any type of county-based area: a county name, county name with a directional modifier (e.g., East Pima County in Arizona), or river reach (e.g., The Aroostook and Saint John Rivers in Aroostook County in northern Maine).

Note (5): It is optional to include a day name after the time when needed.

Figure 12. Generic format for a flood advisory issued under the flood statement identifier.

11.4 Updates, Amendments, and Corrections. Provide updates to current flood advisories by issuing a follow-up flood statement with the same phenomena/significance codes and ETN per the criteria in Section 11.2.2. Amendments are not applicable to this product. Issue correction segments for text and format errors when necessary. These corrected advisories will have the same time in the MND header and the same ETN as the initial advisory. Correction segments will not be used for changes to areas covered, elements in the P-VTEC or H-VTEC strings, except for the immediate cause (ic), or to anything in the product numerically linked to elements in the VTEC strings (e.g., flood advisory ending time). Issue a new flood advisory (with a new ETN) for an area not already covered by an existing advisory. Issue a follow-up flood advisory with an extension segment to change the expiration time of an existing product. WFOs should issue follow-up flood statements to notify users when erroneous counties/zones were removed from initial flood advisories (either in the UGC code or the body of the advisory).

12. Flood Statement - Flood Advisory for Forecast Points (FLS). VTEC Phenomena Code: FL, Significance Code: Y. Flood advisories for forecast points provide information on elevated river/stream flows as indexed by observations and/or forecasts at specific locations, when such events warrant notification of the public in a product less urgent than a warning.

12.1 Mission Connection. This product helps the NWS meet its mission by providing information on notable hydrologic activity; thus, helping to protect life and property.

12.2 Issuance Guidelines. This is currently an optional product issued by some WFOs.

12.2.1 Creation Software. Flood advisories for forecast points will be created with the Hazard Services application.

12.2.2 Issuance Criteria. Flood advisories may be issued for forecast points in an HSA when:

- a. Elevated streamflow warranting public notification occurs or is more than 80 percent likely to occur at one or more locations. Flood advisories should not be issued for rivers and streams which are above flood stage or currently expected to exceed flood stage.
- b. One or more forecast points are already covered by an existing advisory, but an advisory needs to be issued for additional forecast points. In this case, the initial issuance for the

new points should be a product which is a separate advisory from any product with updated information for the other points.

- c. Providing updated hydrometeorological information on a previously issued advisory. Forecast points covered in more than one initial advisory issuance may be combined into a single follow-up product.

If a reliable source has reported that elevated streamflow has ended at one or more forecast points and a flood advisory is still in effect, a flood statement should be issued cancelling or expiring the flood advisory rather than allowing it to expire on its own.

12.2.3 Issuance Time. Flood advisories issued under the flood statement identifier are non-scheduled, event-driven products.

12.2.4 Valid Time. This product will be valid until the time when the elevated streamflow is expected to no longer be of concern, as indicated in the headline, or until the product is cancelled or updated by another advisory.

12.2.5 Product Expiration Time. The product expiration time (at the end of the UGC line) is the same as the valid time in the headline and is generally set to be 6 to 24 hours after product issuance, depending on the hydrologic situation and characteristics of the area of concern. When announcing expiration or cancellation of a flood advisory, the product expiration time is not more than one-half hour after the advisory expiration or cancellation time.

12.2.6 Replacing a Flood Advisory with a Flood Warning. If it is decided to replace a flood advisory for a forecast point with a flood warning, first, issue a new flood warning for the forecast point according to the procedures in Section 7. Then, cancel the flood advisory according to procedures in this section. This ensures there is no coverage gap between the advisory and the warning.

12.3 Technical Description.

12.3.1 UGC Type. County codes should be used (zone codes for Alaska). Include UGCs for all areas which use the forecast point as an index for flooding problems.

12.3.2 MND Broadcast Instruction Line. Not applicable to this product.

12.3.3 MND Product Type Line. Use: "Flood Advisory".

12.3.4 Content. Flood advisories for forecast points use a segmented, bullet format which is similar to the format for flood warnings for forecast points (see Figure 13). An optional general overview/synopsis section, if provided, occurs at the top of the product. The required segmented watch information section occurs next, with its beginning identified by the first UGC line followed immediately by a P-VTEC string.

12.3.4.1 General Overview/Synopsis Section. This optional section, when included, has one or more of the following:

- a. General Overview Headline – One or more headlines summarizing the current elevated streamflow situation, affected locations/areas, and the expected duration. Each overview headline starts and ends with three dots (...). A list of rivers and forecast points may appear below the headlines.
- b. General Synopsis – A brief, non-technical description of the elevated streamflow situation and contributing hydrometeorological factors. This synopsis is free format and may consist of several paragraphs, but the first line of the first paragraph will always be preceded by a single dot (.).
- c. Call-to-Action – A general statement for all forecast points covered in the product. Call-to-action statements will focus on avoiding flood dangers and do not include instructions on how to escape from vehicles caught in flood waters. After the CTA, a URL for additional information and a statement describing the time for the next scheduled update may be included. If a call-to-action statement, a URL for additional information, and/or a time for the next scheduled update is included, the collective beginning and end of these will be delineated with CTA markers as shown in Figure 13.

If any of the items described above for the general overview/synopsis section is included in a product, they will be only provided at the top of a product as shown in Figure 13.

12.3.4.2 Segmented Advisory Information Section. A flood advisory for forecast points will be divided into one or more segments, each segment containing information on a forecast point. If more than one type of segment is needed, it will be provided in the following order:

- a. Cancellations (CAN)
- b. Expirations (EXP)
- c. New issuances (NEW)
- d. Extensions in time (EXT)
- e. Continuations (CON)

However, segments may be ordered to group information in a way that makes the most sense geographically (e.g., by county, downstream order, forecast basin). Correction segments will appear in the position of the segment they are correcting.

NEW, EXT, and CON segments will include:

- a. UGC line, P-VTEC string, H-VTEC string, and date/time stamp as shown in Figure 13. In the H-VTEC, enter the appropriate NWSLI and “N” for flood severity (s) to indicate advisory-level flooding. Use zeroes for the Flood Begin, Flood Crest, and Flood End Date/Time groups and OO (double capital “O”) for the flood record status (fr).
- b. Headline – “...FLOOD ADVISORY IN EFFECT <FROM <time/day phrase> TO <time/day phrase>> or UNTIL <time/day phrase>...” (for new issuances) or “...FLOOD ADVISORY EXTENDED UNTIL <time/day phrase>...” (for extensions in time) or “...FLOOD ADVISORY CONTINUES UNTIL <time/day phrase>...” (for

continuations), followed by four bullets delimited by asterisks (*).

- c. WHAT bullet – “Elevated streamflow requiring public awareness.” (for new issuances) or “Elevated streamflow requiring public awareness continues.” (for extensions in time and continuations).
- d. WHERE bullet – “The” (when needed) and the river/stream and forecast point name.
- e. WHEN bullet – “From/to” or “Until” information, obtained from the Event Beginning and Event Ending Date/Times used in the P-VTEC string. If the event has already begun, only provide the “Until” information. Use specific date/times in standard format.
- f. ADDITIONAL DETAILS bullet – followed on the next line by sub-bullets, delimited by (-):
 - 1) “At” followed by the time of observation and the current stage/flow, followed optionally by a phrase indicating the recent trend (see Figure 13).
 - 2) Flood stage/flow at the forecast point (other stages such as caution stage may also be listed in separate sub-bullets).
 - 3) “Forecast...,” followed by forecast information—e.g., time when river/stream will reach its crest.
 - 4) (Optional) “Impact...,” followed by description of the known impacts of flooding within the range of forecast stages (or flows). Call-to-action information specific to the forecast point may be included here.
- g. After a double ampersand (&&),
 - 1) (Optional) Observed and forecast data in tabular format
 - 2) Latitude/longitude polygon coordinates defining the advisory area.

Observed and forecast data in tabular format may be presented at the end of the product after the last segment.

CAN and EXP segments will include:

- a. UGC line, P-VTEC string, H-VTEC string, and date/time stamp as shown in Figure 13. In the H-VTEC, use the appropriate NWSLI and “N” for the flood severity (s) to indicate an advisory-level situation. Use zeroes for the start, crest, and end date/time groups and OO (double capital “O”) for flood record status (fr).
- b. Headline – “...FLOOD ADVISORY <CANCELLED or CANCELLED AND HAS BEEN REPLACED BY A FLOOD WARNING>...” (for cancellations) or “...FLOOD ADVISORY <HAS EXPIRED or WILL EXPIRE> or <HAS EXPIRED or WILL EXPIRE AND HAS BEEN REPLACED BY A FLOOD WARNING>...” (for

expirations), followed on the next line by a sentence which mentions the river/stream and forecast point name being cancelled or expired.

- c. ADDITIONAL DETAILS bullet – followed on the next line by sub-bullets, delimited by (-):
 - 1) “At” followed by the time of observation and the current stage/flow, followed optionally by a phrase indicating the recent trend (see Figure 13).
 - 2) Flood stage/flow at the forecast point (other stages such as caution stage may also be listed in separate sub-bullets).
 - 3) “Forecast...,” followed by forecast information—e.g., time when river/stream will reach its crest.
 - 4) (Optional) “Impact...,” followed by description of the known impacts of flooding within the range of forecast stages (or flows). Call-to-action information specific to the forecast point may be included here.

- d. After a double ampersand (&&), latitude/longitude polygon coordinates defining the advisory area.

12.3.5 Format. The generic format is shown below in Figure 13:

```

WGA1A2ii cccc ddhhmm (BBB)
FLSxxx

Flood Advisory
National Weather Service <city, state>
hhmm am/pm time_zone day mon dd yyyy

<...General overview headline...> (optional)

.<General synopsis of elevated flow situation>. (optional)

PRECAUTIONARY/PREPAREDNESS ACTIONS... (include if any of the optional items below are included)

<call-to-action>. (optional)

Additional information is available at <Web site URL>. (optional)

The next statement will be issued <time/day phrase>. (optional)

&& (include if any of the optional items above are included)

(Include one or more of the following segments in the indicated order:)

For corrections:
[ stC1NNN-NNN-ddhhmm-
/k.COR.cccc.FL.Y.####.yyymmddThhnnZB-yyymmddThhnnZE/
/nwsli.N.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
hhmm am/pm time_zone day mon dd yyyy
<Appropriate text as shown in one of the segment types below>.
] $$

For cancellations:

```

```
stCNNN-NNN-ddhhmm-
/k.CAN.cccc.FL.Y.####.yymmddThhnnZB-yymmddThhnnZE/
/nwslI.N.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
hhmm am/pm time_zone day mon dd yyyy
```

...FLOOD ADVISORY <CANCELLED or CANCELLED AND HAS BEEN REPLACED BY A FLOOD WARNING>...

The Flood Advisory is <cancelled> or <cancelled and has been replaced by a Flood Warning for the <river/stream name> <proximity term - e.g., at> <location>.

* ADDITIONAL DETAILS...

- At <time>² <day> the <stage or flow> was <stage/flow>³ [(optional:)...<<an increase> or <a decrease> of <stage/flow> <feet or cfs>> or <<no change since <time phrase>> or <and rising> or <and steady> or <and falling>>>].
- Flood <stage or flow> is <flood stage/flow>.
- Recent Activity...<e.g., recent peaks/trends in river stage>. (optional)
- <other stage/flow type>⁴ <stage/flow> is <stage/flow>. (optional)
- Forecast...<brief forecast indicating expected trend>. (optional)
- Impact...<description of impact at given stage(s)/flow(s)>. (optional)

&&

<tabular observed/forecast values for segment> (optional)

LAT...LON nnnn nnnn

\$\$

(For each additional forecast point (if any), repeat the above in a separate segment)

For expirations:

```
stCNNN-NNN-ddhhmm-
/k.EXP.cccc.FL.Y.####.yymmddThhnnZB-yymmddThhnnZE/
/nwslI.N.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
hhmm am/pm time_zone day mon dd yyyy
```

...FLOOD ADVISORY <HAS EXPIRED or WILL EXPIRE> or <HAS EXPIRED or WILL EXPIRE AND HAS BEEN REPLACED BY A FLOOD WARNING>...

The Flood Advisory <has expired or will expire> or <has expired or will expire and has been replaced by a Flood Warning> for the ><river/stream name> <proximity term - e.g., at> <location>.

* ADDITIONAL DETAILS...

- At <time>² <day> the <stage or flow> was <stage/flow>³ [(optional:)...<<an increase> or <a decrease> of <stage/flow> <feet or cfs>> or <<no change since <time phrase>> or <and rising> or <and steady> or <and falling>>>].
- Flood <stage or flow> is <flood stage/flow>.
- Recent Activity...<e.g., recent peaks/trends in river stage>. (optional)
- <other stage/flow type>⁴ <stage/flow> is <stage/flow>. (optional)
- Forecast...<brief forecast indicating expected trend>. (optional)

- Impact...<description of impact at given stage(s)/flow(s)>. *(optional)*
 &&
 <tabular observed/forecast values for segment> *(optional)*
 LAT...LON nnnn nnnn
 \$\$
(For each additional forecast point (if any), repeat the above in a separate segment)

For new issuances:

stCNNN-NNN-ddhhmm-
 /k.**NEW**.cccc.**FL.Y**.####.yymmddThhnnZ_B-yymmddThhnnZ_E/
 /nwsli.N.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
 hhmm am/pm time_zone day mon dd yyyy
 ...FLOOD ADVISORY IN EFFECT <FROM <time/day phrase>¹ TO <time/day phrase>> or
 UNTIL <time/day phrase>...
 * WHAT...Elevated streamflow requiring public awareness.
 * WHERE...<optional: The ><river/stream name> <proximity term - e.g., at>
 <location>.
 * WHEN...<From <time/day phrase> to <time/day phrase>> or Until <time/day
 phrase>.
 * ADDITIONAL DETAILS...
 - At <time>² <day> the <stage or flow> was <stage/flow>³ [(optional):...<<an
 increase> or <a decrease> of <stage/flow> <feet or cfs>> or <<no change
 since <time phrase>> or <and rising> or <and steady> or <and
 falling>>>].
 - Flood <stage or flow> is <flood stage/flow>.
 - Recent Activity...<e.g., recent peaks/trends in river stage>. *(optional)*
 <other stage/flow type> ⁴ <stage/flow> is <stage/flow>. *(optional)*
 - Forecast...<One or more sentences with forecast information such as
 magnitude/time of the crest, expected trend, etc.>.
 - Impact...<description of impact at given stage(s)/flow(s). Include CTA
 info specific to this forecast point here>. *(optional)*
 &&
 <tabular observed/forecast values for segment> *(optional)*
 LAT...LON nnnn nnnn
 \$\$
(For each additional forecast point (if any), repeat the above in a separate segment)

For extensions in time:

stCNNN-NNN-ddhhmm-
 /k.**EXT**.cccc.**FL.Y**.####.yymmddThhnnZ_B-yymmddThhnnZ_E/

```
/nwsli.N.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
hhmm am/pm time_zone day mon dd yyyy
```

...FLOOD ADVISORY EXTENDED UNTIL <time/day phrase>...

* WHAT...Elevated streamflow requiring public awareness continues.

* WHERE...<optional: The ><river/stream name> <proximity term - e.g., at> <location>.

* WHEN...Until <time/day phrase>.

* ADDITIONAL DETAILS...

- At <time>² <day> the <stage or flow> was <stage/flow>³ [(optional:)...<<<an increase> or <a decrease> of <stage/flow> <feet or cfs>> or <<no change since <time phrase>> or <and rising> or <and steady> or <and falling>>>].
- Flood <stage or flow> is <flood stage/flow>.
- Recent Activity...<e.g., recent peaks/trends in river stage>. (optional) <other stage/flow type>⁴ is <stage/flow>. (optional)
- Forecast...<One or more sentences with forecast information such as magnitude/time of the crest, expected trend, etc.>.
- Impact...<description of impacts at given stage(s)/flow(s). Include CTA info specific to this forecast point here>. (optional)

&&

<tabular observed/forecast values for segment> (optional)

LAT...LON nnnn nnnn

\$\$

(For each additional forecast point (if any), repeat the above in a separate segment)

For continuations:

```
stCNNN-NNN-ddhhmm-
/k.CON.cccc.FL.Y.####.yymmddThhnnZB-yymmddThhnnZE/
/nwsli.N.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
hhmm am/pm time_zone day mon dd yyyy
```

...FLOOD ADVISORY CONTINUES UNTIL <time/day phrase>...

* WHAT...Elevated streamflow requiring public awareness continues.

* WHERE...<optional: The ><river/stream name> <proximity term - e.g., at> <location>.

* WHEN...Until <time/day phrase>.

* ADDITIONAL DETAILS...

- At <time>² <day> the <stage or flow> was <stage/flow>³ [(optional:)...<<<an increase> or <a decrease> of <stage/flow> <feet or cfs>> or <<no change since <time phrase>> or <and rising> or <and steady> or <and falling>>>].


```

- Flood <stage or flow> is <flood stage/flow>.
- Recent Activity...<e.g., recent peaks/trends in river stage>. (optional)
  <other stage/flow type> 4 is <stage/flow>. (optional)
- Forecast...<One or more sentences with forecast information such as
  magnitude/time of the crest, expected trend, etc.>.
- Impact...<description of impacts at given stage(s)/flow(s). Include CTA
  info specific to this forecast point here>. (optional)

&&

<tabular observed/forecast values for segment> (optional)

LAT...LON  nnnn nnnn

$$

(For each additional forecast point (if any), repeat the above in a separate segment)

&& (only provided here if tabular observed/forecast values are provided below for entire product)
  <tabular observed/forecast values for entire product> (optional)
$$ (only provided here if tabular observed/forecast values are provided above for entire product)

<Name/Initials/Forecaster ID> (optional)

```

Note (1): The variable <time/day phrase> is a place holder for any of the standard headline time/day phrases used for NWS long duration warnings and advisories (e.g., 4:00 PM this afternoon, 4:00 AM PST Tuesday).
 Note (2): Where <time> stands alone as a variable, the format is **hhmm am/pm time_zone**.
 Note (3): “stage/flow” means either stage and/or discharge values may be used.
 Note (4): Examples of “other stage/flow type:” Caution stage, Alert stage, or Monitor stage.

Figure 13. Generic format for a flood advisory for forecast points.

12.4 Updates, Amendments, and Corrections. Provide updates by issuing a follow-up flood advisory for forecast points per the issuance criteria in Section 12.2.2. Amendments are not applicable to this product. Issue correction segments for text and format errors when necessary. Correction segments will not be used for changes to observed or forecast data, elements in the P-VTEC or H-VTEC strings except for the NWSLI or immediate cause (ic), or anything numerically linked to elements in the VTEC strings (e.g., flood advisory begin or end times). To make corrections when a COR segment is not allowed, issue a follow-up flood advisory for forecast points with the correct information and appropriate VTEC action code.

13. Hydrologic Statement (RVS). The hydrologic statement provides hydrologic forecasts and related information in a format which meets the needs of partners and other users.

13.1 Mission Connection. The hydrologic statement helps the NWS meet its mission by providing water resources information in a format which can be easily read by users who do not have sophisticated decoding capabilities.

13.2 Issuance Guidelines.

13.2.1 Creation Software. Use RiverPro or other applications as appropriate.

13.2.2 Issuance Criteria. Issue this product when river forecasts have been prepared for the HSA, or to disseminate information on significant hydrologic conditions.

13.2.3 Issuance Time. Issue on schedules coordinated with users, or an event basis as needed.

13.2.4 Valid Time. This product will be valid from the time of release until the next update unless otherwise specified.

13.3 Technical Description.

13.3.1 UGC Type. County codes should be used (zone codes for Alaska).

13.3.2 MND Broadcast Instruction Line. Not applicable to the hydrologic statement.

13.3.3 MND Product Type Line. Use: “Hydrologic Statement”.

13.3.4 Content. The hydrologic statement uses a non-segmented, non-bulleted format. Hydrologic statements typically include a headline identifying the area affected and narrative information and/or observations/forecasts of river stages, lake levels, and ice conditions.

13.3.5 Format. The generic format for hydrologic statements is shown in Figure 14 below:

```
FGA1A2ii cccc ddhhmm (BBB)
RVSxxx
stC1NNN-NNN-NNN-ddhhmm-

Hydrologic Statement
National Weather Service <city, state>
hhmm am/pm time_zone mon dd yyyy

...<Headline statement>... (optional)

<Narrative information> (optional)

&& (optional - if narrative info needs to be separated from tabular info)

<tabular observed and/or forecast information> (optional)

$$

<Name/Initials/Forecaster ID> (optional)
```

Figure 14. Generic format for a Hydrologic Statement (RVS).

13.4 Updates, Amendments, and Corrections. Provide updates by issuing a new product. Amendments are not applicable to this product. Follow standard NWS practices for corrections.

14. Hydrologic Summary (RVA). This product provides hydrologic observations and related information in a format which meets the needs of users. It may be used to disseminate information not included in the Hydrologic Statement or River and Lake Forecast Product.

14.1 Mission Connection. The hydrologic summary helps the NWS meet its mission by providing water resources information which can be used by users to assess antecedent conditions or the current status of rivers and reservoirs.

14.2 Issuance Guidelines.

14.2.1 Creation Software. Use RiverPro or other applications as appropriate.

14.2.2 Issuance Criteria. Issue hydrologic summaries after data on rivers and reservoirs in the HSA have been collected and quality controlled.

14.2.3 Issuance Time. Issue on schedules coordinated with local users.

14.2.4 Valid Time. This product will be valid from the time of release until the next update unless otherwise specified.

14.3 Technical Description.

14.3.1 UGC Type. County codes should be used (zone codes for Alaska).

14.3.2 MND Broadcast Instruction Line. Not applicable to the hydrologic summary.

14.3.3 MND Product Type Line. Use: "Hydrologic Summary".

14.3.4 Content. The hydrologic summary uses a non-segmented, non-bulleted format. Hydrologic summaries contain an optional headline and provide information, such as observations of river stages, lake levels, precipitation data, or ice conditions.

14.3.5 Format. The generic format for hydrologic summaries is shown in Figure 15 below:

```
SRA1A2ii cccc ddhhmm (BBB)
RVxxxx
stC1NNN-2NNN-3NNN-ddhhmm-

Hydrologic Summary
National Weather Service <city, state>
hhmm am/pm time_zone mon dd yyyy

<...headline...> (optional)

<Tabular data>

$$

<Name/Initials/Forecaster ID> (optional)
```

Figure 15. Generic format for Hydrologic Summaries (RVA).

14.4 Updates, Amendments, and Corrections. Provide updates by issuing a new product. Amendments are not applicable to this product. Follow standard NWS practices for corrections.

15. River and Lake Forecast Product (RVD). This product provides hydrologic forecasts and observations in Standard Hydrometeorological Exchange Format (SHEF).

15.1 Mission Connection. The river and lake forecast product helps the NWS meet its mission by providing hydrologic forecasts and observations in a standardized format, which allows ingestion into a variety of computer applications operated by users.

15.2 Issuance Guidelines.

15.2.1 Creation Software. Use RiverPro in the WHFS or other applications as appropriate.

15.2.2 Issuance Criteria. This product will be issued daily for daily forecast points in the HSA. More frequent updates may be provided if needed.

15.2.3 Issuance Time. This product will be issued routinely on a schedule which meets the needs of partners and other users. The product can be issued as frequently as once per day, with updates as needed, or as infrequently as once per week.

15.2.4 Valid Time. This product will be valid from the time of release until updated.

15.3 Technical Description.

15.3.1 UGC Type. County codes should be used (zone for Alaska).

15.3.2 MND Broadcast Instruction Line. Not applicable to the river and lake forecast product.

15.3.3 MND Product Type Line. Use: “Daily River and Lake Summary”.

15.3.4 Content. River and lake forecast products will include a table containing observed and forecast data in SHEF A.b A format, vertically aligned to maximize readability. Headers defining the field in each column will be provided in the following order:

- a. NWSLI;
- b. Station name;
- c. Flood stage (if applicable);
- d. Current stage or lake elevation;
- e. Twenty-four-hour change;
- f. One-day forecast; and
- g. Additional data, such as 6-hourly or daily forecasts out to seven days (optional).

Rows of data should be grouped by river basin, with the name of the river basin provided above each grouping. When multiple forecast points exist on the same river, the river name should only be provided once. An optional narrative may be included in the product.

15.3.5 Format. The generic format is shown in Figure 16 below:

```
FGA1A2ii cccc ddhhmm (BBB)
RVDxxx
stC1NNN-2NNN-3NNN-ddhhmm-

Daily River and Lake Summary
National Weather Service <city, state>
hhmm am/pm time_zone mon dd yyyy

<narrative> (optional)
```

```
<SHEF-encoded hydrologic forecasts>
$$
<Name/Initials/Forecaster ID> (optional)
```

Figure 16. Generic format for Daily River and Lake Summaries (RVD).

15.4 Updates, Amendments, and Corrections. Provide updates by issuing a new product. Amendments are not applicable to this product. Follow standard NWS practices for corrections.

16. Hydrometeorological Data Products (RRx). These products contain precipitation and other hydrometeorological data from various networks, including the NWS Cooperative Network, flood warning systems, Automated Surface Observing System (ASOS), and networks operated by partnering agencies.

16.1 Mission Connection. Hydrometeorological data products help the NWS meet its mission by contributing hydrometeorological observations to a national information database which can be used by other government agencies, the private sector, and the public to enhance the national economy.

16.2 Issuance Guidelines.

16.2.1 Creation Software. Use the WHFS or other applications as appropriate.

16.2.2 Issuance Criteria. Issue this product to disseminate hydrometeorological data.

16.2.3 Issuance Time. Issue according to schedules developed with local users.

16.2.4 Valid Time. Not applicable – this product is a report of observed data.

16.3 Technical Description.

16.3.1 UGC Type. (Optional) County codes should be used (zone for Alaska).

16.3.2 MND Broadcast Instruction Line. Not applicable.

16.3.3 MND Product Type Line. Use one of the MND product type lines shown in Table 1, below.

16.3.4 Content. Hydrometeorological data products will be formatted in SHEF and:

- a. Contain a WMO header;
- b. Contain an MND header block as shown in Figure 17 (if a WFO product); and
- c. Include a headline statement introducing the product (if a WFO product).

WMO Heading	MND Product Type Line	Content
SRA ₁ A ₂ ii cccc ddhhmm (BBB) RR1xxx	Hydrometeorological Data Report #1	Local hydromet data, including observations from partner systems

SRA ₁ A ₂ ii cccc ddhhmm (BBB) RR2xxx	Hydrometeorological Data Report #2	Precipitation data
SRA ₁ A ₂ ii cccc ddhhmm (BBB) RR3xxx	Hydrometeorological Data Report #3	Data from cooperative observers
SRA ₁ A ₂ ii cccc ddhhmm (BBB) RR4xxx	Hydrometeorological Data Report #4	Cooperative observer special reports
SRA ₁ A ₂ ii cccc ddhhmm (BBB) RR5xxx	Hydrometeorological Data Report #5	Hourly hydrometeorological data (e.g., from flood warning system)
SRA ₁ A ₂ ii cccc ddhhmm (BBB) RR6xxx	Hydrometeorological Data Report #6	ASOS precip report, produced on exceedance of threshold rates
SRA ₁ A ₂ ii cccc ddhhmm (BBB) RR7xxx	Hydrometeorological Data Report #7	ASOS hourly precipitation report
SRA ₁ A ₂ ii cccc ddhhmm (BBB) RR8xxx	Hydrometeorological Data Report #8	Data provided by water resources agencies
SRA ₁ A ₂ ii cccc ddhhmm (BBB) RR9xxx	Hydrometeorological Data Report #9	Local hydrometeorological data
SRA ₁ A ₂ ii cccc ddhhmm (BBB) RRMxxx	Miscellaneous Hydrologic Data Report	Local hydrometeorological data, SHEF or tabular format
SRA ₁ A ₂ ii cccc ddhhmm (BBB) RRAxix	Automated Data Report	Automated river and rain gage data

Table 1. Header instructions for hydrometeorological data products.

16.3.5 Format. The generic format is shown in Figure 17 below:

```

SRA1A2ii cccc ddhhmm (BBB)
RRxxxxx
stCNNN-NNN-NNN-ddhhmm- (optional)

<MND Product Type Line> (optional)
National Weather Service <city, state> (optional)
hhmm am/pm time_zone mon dd yyyy (optional)

<...Headline statement...> (optional)

<Data summary, SHEF or tabular format>

$$ (optional)

<Name/Initials/Forecaster ID> (optional)

```

Figure 17. Generic format for Hydrometeorological Data Products (RRx).

16.4 Updates, Amendments, and Corrections. Provide updates by issuing a new product. Amendments are not applicable to this product. Follow standard NWS practices for corrections.

17. Hydrometeorological Data Summary Products (HYx). These products provide daily, weekly, and monthly summaries of hydrometeorological observations.

17.1 Mission Connection. These products help the NWS meet its mission by providing quality-controlled observations to a national information database, which can be used by other government agencies, the private sector, and the public to enhance the national economy.

17.2 Issuance Guidelines.

17.2.1 Creation Software. Create hydrometeorological data summary products using the WHFS or other applications as appropriate.

17.2.2 Issuance Criteria. Issue this product when daily, weekly, or monthly data has been compiled and reviewed.

17.2.3 Issuance Time. Issue daily, weekly, or monthly hydrometeorological summary products according to schedules developed with local users.

17.2.4 Valid Time. Not applicable – this product is a report of observed data.

17.3 Technical Description.

17.3.1 UGC Type. County codes should be used (zone codes for Alaska).

17.3.2 MND Broadcast Instruction Line. Not applicable.

17.3.3 MND Product Type Line. Use the MND product type lines shown in Table 2, below.

17.3.4 Content. Hydrometeorological data summary products will include a:

- a. WMO header;
- b. MND header block as shown in the generic format below, with the product name matching one of the MND product type lines listed in Table 2, below; and
- c. Headline statement introducing the product (optional).

WMO Header	MND Product Type Line	Content
SXA ₁ A ₂ ii cccc ddhhmm (BBB) HYDxxx	Daily Hydrometeorological Data Summary	Quality controlled daily ¹ hydrometeorological data
CWA ₁ A ₂ ii cccc ddhhmm (BBB) HYWxxx	Weekly Hydrometeorological Data Summary	Quality controlled weekly hydrometeorological data
CSA ₁ A ₂ ii cccc ddhhmm (BBB) HYMxxx	Monthly Hydrometeorological Data Summary	Quality controlled monthly hydrometeorological data

Note (1): product not limited to strictly daily issuance—e.g., may be issued every other day.

Table 2. Header instructions for hydrometeorological data summary products.

17.3.5 Format. The generic format for hydrologic data products is shown in Figure 18 below. Note: use the WMO headings shown in Table 2, above—i.e., TT=SX for daily products; TT=CW for weekly products; and TT=CS for monthly products.

```
TTA1A2iii cccc ddhhmm (BBB)
HYXxxx
stC1NNN-NNN-NNN-ddhhmm-

<MND Product Type Line>
National Weather Service <city, state>
hhmm am/pm time_zone mon dd yyyy
```

```

<...Headline statement...> (optional)
<Data summary, SHEF or tabular format>
$$
<Name/Initials/Forecaster ID> (optional)

```

Figure 18. Generic format for Hydrometeorological Data Summary Products (HYx).

17.4 Updates, Amendments, and Corrections. Provide updates by issuing a new product. Amendments are not applicable to this product. Follow standard NWS practices for corrections.

18. Hydrometeorological Coordination Message (HCM). Hydrometeorological coordination messages are produced by WFOs to communicate any type of internal forecast/support-oriented information to supporting RFCs, other WFOs, and the National Centers for Environmental Prediction (NCEP). This product is not distributed over NWS-supported public dissemination pathways or posted on the Internet, but may be made available through secured mechanisms to selected partners.

18.1 Mission Connection. The hydrometeorological coordination message helps the NWS meet its mission by providing RFC, WFO, and NCEP forecasters with a mechanism for communicating sensitive information on potential hydrometeorological activity before it is released to the public in the form of forecasts and warnings.

18.2 Issuance Guidelines.

18.2.1 Creation Software. Use appropriate text editor on AWIPS.

18.2.2 Issuance Time. The HCM is a non-scheduled, event-driven product.

18.3 Technical Description.

18.3.1 MND Product Type Line. Use: “Hydrometeorological Coordination Message”.

18.3.2 Content. Topics discussed in this product may include (but are not limited to): contingency planning for future hydrometeorological events, QPF verification information, hydrologic forecast verification information, and problems with gage or radar-based data.

18.3.3 Format. The generic format is shown in Figure 19 below:

```

AGA1A2ii Kccc ddhhmm (BBB)
HCMxxx

Hydrometeorological Coordination Message
National Weather Service <city, state>
hhmm am/pm time_zone day mon dd yyyy

<Headline introducing the information to be presented below>

<Discussion>

$$

```

Figure 19. Generic format for Hydrometeorological Coordination Message (HCM).

18.4 Updates, Amendments, and Corrections. Not applicable.

19. Web-Based Products. The water resources forecast information and observed data contained in products described in the previous sections, as well as additional output from WFO hydrometeorological systems, can be incorporated into graphical products and a forecast information database and made available through mechanisms such as the Internet. These products and information sets, provided through the NWS water resources web presence and supported through the Advanced Hydrologic Prediction Service (AHPS), will conform to current NWS, NOAA, and DOC policies. Basic policies for products provided through the NWS water resources web presence are contained in [NWSI 10-932, *National Water Resources Web Products Specification*](#). The displays and features of web-based water resources products are described in detail in the online manual [Water Resources Information on the Web: A Manual for Users](#).