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

NATIONAL WEATHER SERVICE INSTRUCTION 10-922
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Operations and Services
Hydrologic Services Program, NWSPD 10-9

WEATHER FORECAST OFFICE HYDROLOGIC PRODUCTS SPECIFICATION

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

OPR: OS31 (T. Helble) **Certified by:** OS3 (T. Graziano)
Type of Issuance: Routine.

SUMMARY OF REVISIONS: This directive supersedes NWS Instruction 10-922, "Weather Forecast Office Hydrologic Product Specification," dated July 11, 2006. The following revisions were made to this instruction:

1) Removes the green font from section 4 (Flood Watch for Forecast Points), section 7 (Flood Warning for Forecast Points), section 8 (Flood Statement – Follow-up to Flood Warning for Forecast Point), and section 12 (Flood Statement - Flood Advisory for Forecast Points), to indicate operational status for VTEC in products covered in these sections.
2) Continues using a green font in section 5 (Flash Flood Warning), section 6 (Flash Flood Statement), section 9 (Areal Flood Warning), section 10 (Flood Statement – Follow-up to Areal Flood Warning), and section 11 (Flood Statement – Areal Advisories) to indicate later implementation of VTEC for those products. Status of operational implementation of VTEC and new formats in event-based hydrologic products, as of the effective date for this directive, is shown in the following table:

Event-Based Hydrologic Product	AWIPS ID	Phenomena Code	Significance Code	Required Application
Areal Flood Watch	FFA	FA	A	GHG
Flash Flood Watch	FFA	FF	A	GHG
Flood Watch for Forecast Points	FFA	FL	A	RiverPro
Flash Flood Warning	FFW	FF	W	WarnGen
Flash Flood Statement	FFS	FF	W	WarnGen
Flood Warning for Forecast Points	FLW	FL	W	RiverPro
Flood Statement - Follow-up to Flood Warning for Forecast Points	FLS	FL	W	RiverPro
Areal Flood Warning	FLW	FA	W	WarnGen
Flood Statement - Follow-up to Areal Flood Warning	FLS	FA	W	WarnGen
Areal Advisories: • Urban and Small Stream Flood Advisory • Arroyo and Small Stream Flood Advisory • Small Stream Flood Advisory • Flood Advisory • Hydrologic Advisory	FLS	FA	Y	WarnGen
Flood Advisory for Forecast Points	FLS	FL	Y	RiverPro

3) In Section 1 (Introduction), adds a new sub-section highlighting the importance of the generic format sections (x.3.5) for each product in providing a complete description of product content and format.
4) In section 9.3.4.2 (Segmented Warning Information Section), under the phrase "Each segment of an areal flood warning will include the following," adds a counties/cities listing to the elements mentioned under item (a). Also adds counties/cities listing to the generic format for all segment types in section 9.3.5, figure 10. This reflects current practice.
5) In section 11.3.4.2 (Segmented Advisory Information Section), under the phrase: "New issuance and extension in time segments will include the following," adds a counties/cities listing to the elements mentioned under item (a). Under the phrase "Cancellation, expiration, and continuation segments will include the following," adds a counties/cities listing to the elements mentioned under item (a). This reflects current practice.
6) Fixes lettering typo on the last two lettered items in section 4.2.2.
7) To comply with NWSI 10-1702, eliminates the greater than signs (>) from sample UGCs identified as being for counties in generic format figures (e.g., Figure 4).
8) To reflect the current practice, adds ellipsis (...) to the end of the first bullet in flash flood warnings, areal flood warnings, and flood statement - areal advisories.
9) To reflect the current practice, adds periods to the end of the third and fourth bullets in flash flood warnings, areal flood warnings, and flood statement - areal advisories.
10) Deletes figure (old #5) showing point-specific forecast bullets at the end of a flash flood warning. Now, only the flash flood statement section shows an option for such information.
11) To reflect the current practice, adds periods to the end of appropriate bullets in flood warnings for forecast points, flood statements – follow up to flood warning for forecast points, flood watches for forecast points, and flood advisories for forecast points.
12) For the current stage bullet in flood warnings for forecast points and flood statements – follow up to flood warnings for forecast points, adds option to include a description of change in stage since a previous measurement.
13) Adds missing double dollar signs ($$) to the end of a few generic segment formats and more clearly describes the placement of double ampersands (&&) and where they are required.
14) Adds text to Section 8.3.4.2 stating that in flood statements following up to flood warnings for forecast points, the H-VTEC flood severity "s" will reflect the maximum severity that has actually been reached or is forecast to be reached for the event.
15) Adds text to Section 8.3.4.2 stating that when a warning is being cancelled and flood stage was never reached, all three date/time groups in the H-VTEC string are zeroed out.
16) Adds text to Sections 7.3.5 and 8.3.5 stating routine (ROU) segments will only exist as part of a product with other segments providing information on a future/occurring flood event.
17) Adds text to Sections 3.4, 4.4... 12.4 (Updates, Amendments, and Corrections) stating that corrections will not be made to elements in the VTEC strings or anything in the product which is numerically linked to elements in the VTEC strings.
18) Adds optional "recent activity" bullet to the generic formats for Flood Watches for Forecast Points (Section 4.3.5), Flood Warnings for Forecast Points (Section 7.3.5), Flood Statements - Follow-up to Flood Warnings for Forecast Point (Section 8.3.5), and Flood Statements - Flood Advisories for Forecast Points (section 12.3.5).
19) Deletes the requirement for correction (COR) segments be the first to occur in a Flood Watch for Forecast Points (Section 4.3.4.2), Flood Warning for Forecast Points (Section 7.3.4.2), Flood Statement - Follow-up to Flood Warning for Forecast Point (Section 8.3.4.2), and Flood Statement - Flood Advisory for Forecast Points (section 12.3.4.2). Instead, correction segments are specified to occur in the same position as the one being corrected.

20) Adds option to include "...OR UNTIL THE WARNING IS CANCELLED" after the event ending date time phrase in Flood Warnings for Forecast Points (sections 7.3.4.2, 7.3.4) and Flood Statements – Follow-up to Flood Warnings for Forecast Point (sections 8.3.4.2, 8.3.4).
21) Clearly identifies the call-to-action statement as part of the information found before the first segment of a Flood Watch for Forecast Points (Section 4.3.4.1), Flood Warning for Forecast Points (Section 7.3.4.1), Flood Statement - Follow-up to Flood Warning for Forecast Points (Section 8.3.4.1), and Flood Statement - Flood Advisory for Forecast Points (Section 12.3.4.1). Requires all call-to-action statements will begin with "SAFETY MESSAGE..." Note: offices wanting NWRWAVES to read a general call-to-action statement after the last segment may limit the text at the top of a product to just a call-to-action statement (i.e., omit the river/station name(s), event synopsis, etc.) and activate a switch in NWRWAVES which causes it to repeat the text at the top after the text in each segment.
22) In Section 8.3.4.2, deletes requirement to list county names in the Mass News Disseminator (MND) header block for Flood Statements – Follow-up Flood Warnings for Forecast Points.
23) For floods with indeterminate event ending date/times, deletes requirement to include an explanation of why flood duration can't be specified in forecast bullets of a Flood Warning for Forecast Points (Section 7.3.5) and Flood Statement – Follow-up to Flood Warning for Forecast Points (Section 8.3.5). Instead, this explanation will only be included once at the top of the product, in the synopsis section, to reduce product length and play time on NOAA Weather Radio All-Hazards (Sections 7.3.4.1, 8.3.4.1).
24) For floods with indeterminate event ending date/times, introduces the variable <long-term duration phrase> in the generic formats and descriptions of product content for Flood Warnings for Forecast Points (Section 7) and Flood Statements – Follow-up to Flood Warnings for Forecast Point (Section 8) to allow other phrases such as "FOR THE NEXT SEVERAL DAYS" to be used instead of only "UNTIL FURTHER NOTICE."
25) In generic formats for Flood Watches for Forecast Points (Section 4.3.5), Flood Warnings for Forecast Points (Section 7.3.5), Flood Statements - Follow-up to Flood Warning for Forecast Points (Section 8.3.5), and Flood Statements - Flood Advisory for Forecast Points (Section 12.3.5), makes optional headline wording parallel to other NWS products.
26) In Section 12.3.4.2, deletes requirement for new issuance (NEW) and extension in time (EXT) segments in a Flood Advisory for Forecast Points to be issued in stand-alone products. This reflects current practice.
27) In Sections 12.3.4.2 and 12.3.5, changes the lead-in text for bullets in EXT segments of a Flood Advisory for Forecast Points to read: "THE FLOOD ADVISORY CONTINUES FOR <cr> <river/stream name> <proximity term> <location>." This makes the lead-in used in this product parallel with the lead-ins for EXT segments in other point-specific products.
28) Adds requirements for optional flood impact bullets to begin with "IMPACT..." and the optional flood history bullets to begin with "FLOOD HISTORY..." in the Flood Watch for Forecast Points (Sections 4.3.4.2, 4.3.5), Flood Warning for Forecast Points (Sections 7.3.4.2, 7.3.5), Flood Statement - Follow-up to Flood Warning for Forecast Points (Sections 8.3.4.2, 8.3.5), and Flood Statement - Flood Advisory for Forecast Points (Sections 12.3.4.2, 12.3.5).

(Signed) January 23, 2007

Dennis H. McCarthy Date
Director, Office of Climate,
Water, and Weather and Services

Weather Forecast Office Hydrologic Products Specification

1. Introduction. This directive describes hydrologic products issued by National Oceanic and Atmospheric Administration National Weather Service (NWS) weather forecast offices (WFO), guidelines for these products, detailed content descriptions as needed, and a generic format for each product type. Examples of products described in this directive are provided in NWS Instruction (NWSI) 10-923, *Weather Forecast Office Hydrologic Product Examples*.

1.1 NWS-Wide Product Standards. All WFO hydrologic 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, AWIPS identifiers, universal geographic codes (UGC), mass news dissemination (MND) header blocks, and product content are contained in 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 Hydrologic Products. Each main section of this directive covers a specific hydrologic 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 hydrologic 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 Areal Products Covering Non-Adjacent Areas. When an areal hydrologic 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.

2. Hydrologic Outlook (ESF). 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, updates on drought conditions, 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 hydrologic 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 will be issued for the WFO's hydrologic service area (HSA - see *NWSI 10-903, Geographic Areas of Responsibility*) and should be issued 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 low 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.

Hydrologic outlooks providing long-term forecast information will be issued for a WFO's HSA on an as-needed basis to provide long-term forecast information such as seasonal water supply forecasts, drought information, and probabilistic analyses.

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 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 may be 12 to 24 hours. For hydrologic outlooks providing long-term forecast information, the product expiration time may be as much as 30 days.

2.3 Technical Description.

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

2.3.2 MND Product Type Line. Use: "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. For hydrologic outlooks describing the possibility of a flood event, the following should be included:

a. Headline defining the type of flooding being addressed (e.g., flash flooding, main stem river flooding, snow melt flooding),

b. Area covered,

c. Possible timing of the event,

d. Relevant factors (e.g., synoptic conditions, quantitative precipitation forecasts (QPF), or soil conditions),

e. Definition of an outlook (tailored to the specific situation).

f. A closing statement indicating when additional information will be provided.

For hydrologic outlooks providing long-term forecast information, the following should be included:

a. Headline defining the type of water supply, drought, 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)
stC001-002-ddhhmm-                                          (UGC Type: county)

HYDROLOGIC OUTLOOK                                          (MND Product Type Line)
NATIONAL WEATHER SERVICE <WFO location>                     (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)

$$

<forecaster name/number> (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. Areal Flood Watch (FFA). VTEC Phenomena Code: FA (for flood watch) or **FF** (for flash flood watch), and **Significance Code: A**. Areal flood watches inform the public of the possibility of flooding – typically within a 6 to 48 hour time frame before the event. Areal flood watches may cover states, counties, and portions of counties, states, or rivers (i.e., reach).

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. Areal flood watches will be created with the Graphical Hazards Generator (GHG) application.

3.2.2 Issuance Criteria. Areal 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*). Areal flood watches will be issued when one or more of the following conditions are met:

a. The possibility exists for meteorological, soil, and/or hydrologic conditions to lead to flooding within a 48-hour period; or

b. The possibility exists for meteorological, soil, and/or hydrologic conditions to lead to flooding more than 48 hours into the future and the forecaster determines that the 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 flood watch changes; and/or

e. The geographic area covered by a previously issued flood watch increases; and/or

f. An update to a previously issued flood watch is required; and/or

g. A cancellation of all or part of a previously issued flood watch is required; and/or

h. The expiration of a previously issued flood watch is to be announced (optional - if required by regional or local office policies).

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

3.2.4 Valid Time. An areal flood watch will be valid until the time when the potential for flooding should end, 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 an areal flood watch, the product expiration time is not more than one half hour after the watch expiration or cancellation time.

3.3 Technical Description.

3.3.1 UGC Type. Zone codes should be used.

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 areal flood watch product uses a segmented, bullet 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 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 periods "..." (ellipses).

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 period ".".

3.3.4.2 Segmented Watch Information Section. Information needed in a given areal 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/cities listing, and date/time stamp as shown in the generic example below. In the H-VTEC, only the immediate cause (ic) is entered - zeros 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, Appendix A. Some examples, along with the type of segment they would accompany, are as follows:

(1) ...FLOOD WATCH IN EFFECT THROUGH WEDNESDAY MORNING... (initial issuance when the watch starts now, with a general time phrase used for the ending time because the Event Ending Time is more than 12 hours after initial issuance.)

(2) ...FLOOD WATCH IN EFFECT FROM 1 PM EST THIS AFTERNOON THROUGH WEDNESDAY EVENING... (initial issuance, 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 initial issuance and the Event Ending Time is more than 12 hours after initial issuance.)

(3) ...FLOOD WATCH IN EFFECT FROM THIS EVENING THROUGH WEDNESDAY EVENING... (initial issuance, 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 initial issuance.)

(4) ...FLOOD WATCH REMAINS IN EFFECT THROUGH WEDNESDAY EVENING... (continuation issuance, with a general time phrase used for the ending time because the Event Ending Time is more than 12 hours after initial issuance.)

(5) ...FLASH FLOOD WATCH IN EFFECT UNTIL 6 PM PST THIS EVENING... (initial issuance when the watch starts now, with a specific time used for the ending time because the Event Ending Time is less than 12 hours after initial issuance.)

(6) ...FLASH FLOOD WATCH IS CANCELLED...

c. Action lead-in phrase such as "THE NATIONAL WEATHER SERVICE IN <name> HAS ISSUED A" (for NEW), "THE NATIONAL WEATHER SERVICE IN <name> HAS EXPANDED THE" (for EXA and EXB), "THE FLOOD WATCH IS NOW IN EFFECT FOR" (for EXT), or "THE FLASH FLOOD WATCH CONTINUES FOR" (for CON), followed by three to four bullets (asterisks *), with the following information (bullets may be more than six lines):

(1) First bullet - FLOOD or FLASH FLOOD, followed by WATCH FOR PORTIONS OF, followed by a general term describing the geographic area covered, followed by INCLUDING THE FOLLOWING, followed by a list of zones/counties covered. In CON and EXT segments, only provide the geographic area and zones/counties list.

(2) Second bullet - phrase integrating the event beginning (when appropriate) and event ending times (see Figure 2 for details).

(3) Third bullet - watch basis (e.g., synoptic conditions, soil conditions, river conditions, or quantitative precipitation forecasts).

(4) Fourth bullet (optional) - potential impacts (e.g., areas under flood threat).

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

d. Statement defining the meaning of a watch, including: "A flood watch (or flash flood watch) means that flooding is possible but not imminent in the watch area."

e. Call-to-action (CTA) (optional) – will focus on avoiding flood dangers and not include instructions on how to escape from vehicles caught in flood waters.

f. 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 - zeros 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 an areal 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 original segment being corrected):

```
stZ001-005>015-ddhhmm-                                          (UGC-Z & expiration time)
/k.COR.cccc.pp [2].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>

$$
```

or / and (for cancellations):

```
stZ001-005>015-ddhhmm-
/k.CAN.cccc.pp [2].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 <A> PORTION<S> OF <geographic area>[3]
HAS BEEN CANCELLED. <Brief post-synopsis of hydrometeorological activity>

$$
```

or / and (for expirations):

```
stZ001-005>015-ddhhmm-
/k.EXP.cccc.pp [2].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 <A> PORTION<S> OF <geographic area> [3]
HAS EXPIRED. <Brief post-synopsis of hydrometeorological activity>

$$
```

or / and (for new issuances):

```
stZ001-005>015-ddhhmm-
/k.NEW.cccc.pp [2].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 <FROM <time/day phrase [4]> <TO or
THROUGH> <time/day phrase>> or <UNTIL or THROUGH> <time/day phrase>...

THE NATIONAL WEATHER SERVICE IN <WFO location> HAS ISSUED A

* <FLOOD or FLASH FLOOD> WATCH FOR [(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]

* <FROM <time/day phrase> [4] <TO or THROUGH> <time/day phrase>> or UNTIL
  or THROUGH> <time/day phrase>.

* <hydrometeorological basis for the watch>

* <potential impacts> (optional)

<statement defining meaning of a watch>

<call-to-action statement> (optional)

$$
```

or / and (for both expansions in area and extensions in time)[6]:

```
stZ001-005>015-ddhhmm-
/k.EXB.cccc.pp [2].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 <FROM <time/day phrase> [4] <TO or
THROUGH> <time/day phrase>> or <UNTIL or THROUGH> <time/day phrase>...

THE NATIONAL WEATHER SERVICE IN <WFO location> HAS EXPANDED THE

* <FLOOD or FLASH FLOOD> WATCH TO INCLUDE [(optional:)<A> <PORTION<S> OF>]
  <geog. area>[3]...INCLUDING THE FOLLOWING <COUNTIES or AREAS>...
  [(optional:)IN <optional directional term> <state>...]<zone #1>...
  <zone #2> AND <zone #n>.[5]

* <FROM <time/day phrase> [4] <TO or THROUGH> <time/day phrase>> or
  <UNTIL or THROUGH> <time/day phrase>.

* <hydrometeorological basis>

* <potential impacts> (optional)
```

<statement defining meaning of a watch>

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

$$

or / and (for expansions in area):

stZ001-005>015-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 IN EFFECT <FROM <time/day phrase [4]> <TO or THROUGH> <time/day phrase>> or <UNTIL or THROUGH> <time/day phrase>...

THE NATIONAL WEATHER SERVICE IN <WFO location> HAS EXPANDED THE

* <FLOOD or FLASH FLOOD> WATCH TO INCLUDE [*(optional:)*<A> <PORTION<S> OF>]
  <geog. area>[3]...INCLUDING THE FOLLOWING <COUNTIES or AREAS>...
  [*(optional:)*IN <optional directional term> <state>...]<zone #1>...
  <zone #2> AND <zone #n>.[5]

* <FROM <time/day phrase> [4] <TO or THROUGH> <time/day phrase>> or
  <UNTIL or THROUGH> <time/day phrase>.

* <hydrometeorological basis for watch expansion>

* <potential impacts> *(optional)*

<statement defining meaning of a watch>

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

$$

or / and (for extensions in time):

stZ001-005>015-ddhhmm-
/k.**EXT**.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 NOW IN EFFECT <FROM <time/day phrase [4]> <TO or THROUGH> <time/day phrase>> or <UNTIL or THROUGH> <time/day phrase>...

THE <FLOOD or FLASH FLOOD> WATCH IS NOW IN EFFECT FOR

* [*(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]

* <FROM <time/day phrase> [4] <TO or THROUGH> <time/day phrase>> or
  <UNTIL or THROUGH> <time/day phrase>.

* <hydrometeorological basis for extending the watch>

* <potential impacts> *(optional)*

```
<statement defining meaning of a watch>

<call-to-action statement> (optional)

$$
```

or / and (for continuations):

```
stZ001-005>015-ddhhmm-
/k.CON.cccc.pp [2].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 REMAINS IN EFFECT <FROM <time/day phrase [4]>
<TO or THROUGH> <time/day phrase>> or <UNTIL or THROUGH> <time/day
phrase>...

THE <FLOOD or FLASH FLOOD> WATCH CONTINUES FOR

* <A> <PORTION<S> OF> <geographic area> [3]...INCLUDING THE FOLLOWING
  <COUNTIES or AREAS>...[(optional:)IN <optional directional term>
  <state>...] <zone #1>...<zone #2>...<zone #n>.[5]

* <FROM <time/day phrase> [4] <TO or THROUGH> <time/day phrase>> or

  <UNTIL or THROUGH> <time/day phrase>.

* <current hydrometeorological situation>

* <potential impacts> (optional)

<statement defining meaning of a watch>

<call-to-action statement> (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): for Phenomena Code pp: **FF** is entered if product is a flash flood watch, **FA** is entered if product is a flood watch (for longer-fused flooding).
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 or river/stream name), followed by a list of zone or county names, separated by state names if more than one state is covered.
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 with 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).

Figure 2. Generic format for an areal flood watch (FFA).

3.4 Updates, Amendments, and Corrections. Provide updates to an areal 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/action code(s) and 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. A flood watch for forecast points may be issued for locations within an area covered by an areal flood watch, or for locations in an area which is not covered by an areal 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 RiverPro 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 possibility exists for meteorological, soil, and/or hydrologic conditions to lead to flooding within a 48-hour period; or

b. The possibility exists for meteorological, soil, and/or hydrologic conditions to lead to flooding more than 48 hours into the future and the forecaster determines that the 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).

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 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.

4.3 Technical Description.

4.3.1 UGC Type. Zone codes should be used. 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 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 periods "..." (ellipses). 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 period "." If quantitative precipitation forecasts (QPF) 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 – a general statement for all forecast points covered in the product. The first line of the call-to-action will always start with "SAFTEY MESSAGE...". Call-to-action statements will focus on avoiding potential flood dangers and not include instructions on how to escape from vehicles caught in flood waters.

At the end of this section, a URL for additional information and statement describing the time for the next scheduled update may be included. 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 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)

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 - zeros 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. One of the following action lead-in phrases: "THE NATIONAL WEATHER SERVICE IN <WFO location> HAS ISSUED A" (for new issuances), "THE FLOOD WATCH CONTINUES FOR" (for continuations), or "THE FLOOD WATCH IS EXTENDED FOR" (for extensions), followed on the next line by "THE" and then the river/stream and forecast point names ("THE" may be omitted if it is unneeded [e.g., for creeks]), followed by four to seven bullets delimited by asterisks (*), described as follows (bullets may be more than six lines):

   (1) FROM/TO or UNTIL information, obtained from the Event Beginning and Event Ending Date/Times used in the P-VTEC string. If the watch is to become effective within three hours of product issuance, only the UNTIL information is provided.

   (2) AT followed by the time of observation and the current stage/flow, followed optionally by a phrase indicating the recent trend (see Figure 3).

   (3) Description of category of possible flooding, if known.

   (4) Flood stage/flow at the forecast point. Separate bullets with other stages such as caution stage may also be listed before or after this bullet.

   (5) 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.

   (6) (Optional) IMPACT..., followed by a description of the known impact(s) of flooding within the range of forecast stages (or flows).

Observed and forecast data in tabular format may be presented at the end of each segment, or 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. An action lead-in phrase "THE FLOOD WATCH IS CANCELLED FOR" (for cancellations), or "THE FLOOD WATCH HAS EXPIRED FOR" (for expirations), followed on the next line by "THE" and then the river/stream and forecast point names ("THE" may be omitted if it is unneeded [e.g., for creeks]), followed by two bullets delimited by asterisks (*), described as follows (bullets may be more than six lines):

(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.

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

```
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
```

The following overview headline/synopsis section within the next brackets is required:

```
...THE NATIONAL WEATHER SERVICE IN <WFO location> HAS ISSUED A
FLOOD WATCH [(optional:) UNTIL <time/day phrase> [1]] 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> [1]] 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> 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)>]...

SAFETY MESSAGE...<call-to-action>. (optional)

ADDITIONAL INFORMATION IS AVAILABLE AT <Web site URL>. (optional)

THE NEXT STATEMENT WILL BE ISSUED <time/day phrase>. (optional)
```

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

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

```
stZ001-005>015-ddhhmm-
/k.COR.cccc.FL.A.####.yymmddThhnnZB-yymmddThhnnZE/
/nwsli.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>.

$$
```

or / and (for cancellations):

```
stZ001-005>015-ddhhmm-
/k.CAN.cccc.FL.A.####.yymmddThhnnZB-yymmddThhnnZE/
/nwsli.0.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
hhmm am/pm time_zone day mon dd yyyy

...FLOOD WATCH IS CANCELLED... (optional)

THE FLOOD WATCH IS CANCELLED FOR
  THE <river/stream name> <proximity term - e.g., AT> <location>.
* AT <time> [2] <day> THE <STAGE/FLOW> [3] WAS <stage/flow> [(optional:)
  ...<<AN INCREASE> or <A DECREASE> OF <stage/flow> <FEET or CFS>> or
  <<NO CHANGE> SINCE <time phrase>>].
* RECENT ACTIVITY...<e.g., recent peaks/trends in river stage>. (optional)
* FORECAST... <near-term stage/flow forecast>.

&& (only provided here if tabular observed/forecast values are provided below for this segment)
  <tabular observed/forecast values for segment> (optional)
$$
```

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

or / and (for expirations):

```
stZ001-005>015-ddhhmm-
/k.EXP.cccc.FL.A.####.yymmddThhnnZB-yymmddThhnnZE/
/nwsli.0.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
hhmm am/pm time_zone day mon dd yyyy

...FLOOD WATCH <HAS EXPIRED or WILL EXPIRE> AT <time/day phrase> [4]>... (optional)

THE FLOOD WATCH <HAS EXPIRED or WILL EXPIRE> FOR
  THE <river/stream name> <proximity term - e.g., AT> <location>.
* AT <time> [2] <day> THE LATEST <STAGE/FLOW> [3] IS <stage/flow> [(optional:)
  ...<<AN INCREASE> or <A DECREASE> OF <stage/flow> <FEET or CFS>> or
  <<NO CHANGE> SINCE <time phrase>>].
* RECENT ACTIVITY...<e.g., recent peaks/trends in river stage>. (optional)
* FORECAST...<near-term stage/flow forecast>.

&& (only provided here if tabular observed/forecast values are provided below for this segment)
  <tabular observed/forecast values for segment> (optional)
$$
```

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

or / and (for new issuances):

```
stZ001-005>015-ddhhmm-
/k.NEW.cccc.FL.A.####.yymmddThhnnZB-yymmddThhnnZE/
/nwsli.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>>... (optional)

THE NATIONAL WEATHER SERVICE IN <WFO location> HAS ISSUED A
* FLOOD WATCH FOR
  THE <river/stream name> <proximity term - e.g., AT> <location>.
* <FROM <time/day phrase> [4] TO <time/day phrase>> or UNTIL <time/day phrase>.
* AT <time> [3] <day> THE <STAGE/FLOW> [3] WAS <stage/flow> [(optional:)
  ...<<AN INCREASE> or <A DECREASE> OF <stage/flow> <FEET or CFS>> or
  <<NO CHANGE> SINCE <time phrase>>].
* <flood category> FLOODING IS POSSIBLE.[5]
* RECENT ACTIVITY...<e.g., recent peaks/trends in river stage>. (optional)
* <other stage/flow type> [6] <STAGE/FLOW> IS <stage/flow>. (optional)
* FLOOD <STAGE/FLOW> IS <flood stage/flow>.
* FORECAST...FLOOD <STAGE/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)

&& (only provided here if tabular observed/forecast values are provided below for this segment)
  <tabular observed/forecast values for segment> (optional)
$$
```

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

or / and (for extensions in time)

```
stZ001-005>015-ddhhmm-
/k.EXT.cccc.FL.A.####.yymmddThhnnZB-yymmddThhnnZE/
/nwsli.0.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
hhmm am/pm time_zone day mon dd yyyy
```

...FLOOD WATCH NOW IN EFFECT UNTIL <FROM <time/day phrase> [4] TO <time/day phrase>> or <UNTIL <time/day phrase>>... *(optional)*

THE FLOOD WATCH CONTINUES FOR
  THE <river/stream name> <proximity term – e.g., AT> <location>.
* <FROM <time/day phrase> [4] TO <time/day phrase>> or UNTIL <time/day phrase>.
* AT <time> [2] <day> THE <STAGE/FLOW> [3] WAS <stage/flow> [*(optional:)*
  ...<<AN INCREASE> or <A DECREASE> OF <stage/flow> <FEET or CFS>> or
  <<NO CHANGE> SINCE <time phrase>>].
* <flood category> FLOODING IS POSSIBLE. [5]
* RECENT ACTIVITY...<e.g., recent peaks/trends in river stage>. *(optional)*
* <other stage/flow type> [6] <STAGE/FLOW> IS <stage/flow>. *(optional)*
* FLOOD <STAGE/FLOW> IS <flood stage/flow>.
* FORECAST...FLOOD <STAGE/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)*

&& *(only provided here if tabular observed/forecast values are provided below for this segment)*

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

$$

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

or / and (for continuations)

stZ001-005>015-ddhhmm-
/k.**CON**.cccc.**FL**.**A**.####.yymmddThhnnZ$_B$-yymmddThhnnZ$_E$/
/nwsli.0.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
hhmm am/pm time_zone day mon dd yyyy

...FLOOD WATCH REMAINS IN EFFECT <FROM <time/day phrase> [4] TO <time/day phrase>> or <UNTIL <time/day phrase>>... *(optional)*

THE FLOOD WATCH CONTINUES FOR
  THE <river/stream name> <proximity term - e.g., AT> <location>.
* <FROM <time/day phrase> [4] TO <time/day phrase>> or UNTIL <time/day phrase>.
* AT <time> [2] <day> THE <STAGE/FLOW> [3] WAS <stage/flow> [*(optional:)*
  ...<<AN INCREASE> or <A DECREASE> OF <stage/flow> <FEET or CFS>> or
  <<NO CHANGE> SINCE <time phrase>>].
* <flood category> FLOODING IS POSSIBLE.[5]
* RECENT ACTIVITY...<e.g., recent peaks/trends in river stage>. *(optional)*
* <other stage/flow type> [6] <STAGE/FLOW> IS <stage/flow>. *(optional)*
* FLOOD <STAGE/FLOW> IS <flood stage/flow>.
* FORECAST...FLOOD <STAGE/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)*

&& *(only provided here if tabular observed/forecast values are provided below for this segment)*

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

$$

(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 for 0 to 12 hours, general phrases for 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. This product will be reserved for those short-term events which require immediate action to protect lives and property, such as dangerous small stream flooding or urban flooding and dam or levee failures. The geographic areas addressed by flash flood warnings may be counties, portions of counties, river/stream basins, or other definable areas (e.g., deserts, valleys). Flash flood warnings may include observations and forecasts for specific points. 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 to 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. Create flash flood warnings using the WarnGen application.

5.2.2 Issuance Criteria. A flash flood warning will be issued for a county or counties (zones - Alaska, Guam, and American Samoa) 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. Local monitoring and prediction tools indicate flash flooding is likely; and/or

f. A hydrologic model indicates flash flooding for locations on small streams, or

g. A previously issued flash flood warning needs to be extended in time.

h. Flash flooding is imminent or occurring in one or more additional counties (zones - Alaska, Guam, and American Samoa) currently not under a valid flash flood warning. Note: a new warning may be issued for an already covered county if deemed necessary by a forecaster (e.g., for different area of a large county).

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 until the time when flooding (requiring immediate actions to protect lives and property) is expected to end, as indicated in the second bullet, or until the product is cancelled. 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 headline (local time).

5.3 Technical Description.

5.3.1 UGC Type. Use County codes (Zone for Alaska, Guam, 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 format and will include:

a. UGC line, P-VTEC string, H-VTEC string, and date/time stamp as shown in Figure 4. Whether or not point-specific forecast information is included, only immediate cause (ic) is entered in the H-VTEC string - zeros 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 provides information on flash flooding which is not the direct result of heavy precipitation (e.g., a dam failure) and the flood severity is unknown, the flood severity "s" is set to "U."

b. 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 six lines):

(1) First bullet - FLASH FLOOD WARNING FOR, followed by a list of the counties covered with, if needed, appropriate geographic modifiers, e.g., <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>.

(2) Second bullet - UNTIL, followed by the event ending time.

(3) Third bullet - AT, followed by a discussion of the warning basis and expected impacts.

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

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

c. A call-to-action statement following the bullets. Call-to-action statements will focus on avoiding flood dangers and not include instructions on how to escape from vehicles caught in flood waters.

d. Latitude/longitude polygon coordinates defining the warning area.

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 and 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:

```
WGA1A2ii cccc ddhhmm (BBB)
FFWxxx
stC001-002-ddhhmm-
/k.aaa [1].cccc.FF.W.####.yymmddThhnnZB-yymmddThhnnZE/
/00000.0.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/

BULLETIN - EAS ACTIVATION REQUESTED
FLASH FLOOD WARNING
NATIONAL WEATHER SERVICE <WFO location>
Hhmm am/pm time_zone mon dd yyyy

THE NATIONAL WEATHER SERVICE IN <WFO location> HAS <ISSUED A or
EXTENDED THE>

* FLASH FLOOD WARNING FOR...[2]
  <county #1, with appropriate geographic modifier(s)> [3]
  <county #2, with appropriate geographic modifier(s)>
  .
  .
  <county #n, with appropriate geographic modifier(s)>
  <INCLUDING <THE CITIES OF> location...location> (optional)
```

```
* UNTIL hhmm am/pm time_zone [4]                          (expiration time of warning)

* AT hhmm am/pm time_zone <warning basis statement and expected impacts>.[2]

* <forecast path of flood or sequence of locations to be affected>.[2] (optional)

<call-to-action statement>.

LAT...LON  nnnn nnnn                    <-- (mandatory list of latitude/longitude points outlining
                                            the forecaster-drawn polygon defining the warning area)

$$

<forecaster name/number> (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 six (6) lines to convey necessary warning area, warning basis, and pathcast information.
Note (3): <county #, with appropriate geographic modifier(s)> may be any type of county-based area – e.g., SOUTHWEST LOS ANGELES COUNTY IN SOUTHERN CALIFORNIA.
Note (4): It is optional to include a day name after the time when needed.

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 counties/zones from original warnings (either in the UGC or the body of the warning). Issue a new FFW (with new ETN) to add areas not already covered by a FFW. Issue an extension FFW (EXT) 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 to meet its mission by providing information users need to direct mitigation activities towards continuing flash flood threats and/or receding flood situations where high waters present a danger to lives and property.

6.2 Issuance Guidelines.

6.2.1 Creation Software. Create flash flood statements using the WarnGen application.

6.2.2 Issuance Criteria. Flash flood statements will be issued for 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.

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 or updated by another flash flood statement.

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 ten minutes after the warning expiration or cancellation time.

6.3 Technical Description.

6.3.1 UGC Type. Use County codes (Zone 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)

Note: there will be no segments for new issuances (NEW), expansions in area (EXA), extensions in time (EXT), and extensions in both time and area (EXB). All such situations will be covered by issuance of new flash flood warning products. For the situation when a multi-county flash flood warning needs to be cancelled for part of its original area and extended in time for the other part, issue a single-segment FFS with a CAN action code and the original ETN for the area being cancelled and then issue a separate FFW product using an EXT action code and the original ETN for the area being extended. Correction segments will be provided wherever needed.

All 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 - zeros 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 provides information on flash flooding which is not the direct result of heavy precipitation (e.g., a dam failure) and the flood severity is unknown, the flood severity "s" is set to "U."

b. Headline with indication of whether the flash flood warning continues to be in effect or is being cancelled or allowed to expire, followed by the area covered by the flash flood warning;

c. Update on current/future hydrometeorological conditions and impacts;

d. Call-to-action statement. Call-to-action statements will focus on avoiding flood dangers and not include instructions on how to escape from vehicles caught in flood waters.

e. Latitude/longitude polygon coordinates defining the warning area.

If point-specific hydrologic observations and/or forecasts are to be provided in the format used for 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:

```
WGA1A2ii cccc ddhhmm (BBB)
FFSxxx

FLASH FLOOD STATEMENT
NATIONAL WEATHER SERVICE <WFO location>
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 original segment being corrected):

```
stC001-002-ddhhmm-
/k.COR.cccc.FF.W[1].####.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.>

$$
```

or / and (for cancellations):

```
stC001-002-ddhhmm-
/k.CAN.cccc.FF.W[1].####.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 FLASH FLOOD WARNING HAS BEEN CANCELLED FOR <geographic area>...[2]

<Brief post-event synopsis>.

LAT...LON  nnnn nnnn

$$
```

or / and (for expirations):

```
stC001-002-ddhhmm-
/k.EXP.cccc.FF.W [1].####.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 FLASH FLOOD WARNING HAS EXPIRED FOR <geographic area>... [2]

<brief post-event synopsis>.

LAT...LON  nnnn nnnn

$$
```

or / and (for continuations):

```
stC001-002-ddhhmm-
/k.CON.cccc.FF.W [1].####.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 FLASH FLOOD WARNING REMAINS IN EFFECT UNTIL <hhmm am/pm time_zone> [3]
FOR <geographic area>... [2]

<current hydrometeorological situation and expected impacts>.

<call-to-action statement>.

LAT...LON  nnnn nnnn

$$
```

<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, section 2.1.5).
Note (2): Headline shown is used when immediate cause (ic) is excessive rainfall (ER) or rain & snowmelt (RS). More specific headlines may be used for less common ic's such as dam or levee failure (DM).
Note (3): It is optional to include a day name after the time, when needed.

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 <WFO location>
hhmm am/pm time_zone day mon dd yyyy
```

```
stC001-002-ddhhmm-
/k.CON.cccc.FF.W [1].####.yymmddThhnnZB-yymmddThhnnZE/
/00000 [2].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 FLASH FLOOD WARNING REMAINS IN EFFECT UNTIL <hhmm am/pm time_zone>
FOR <geographic area>...

<current hydrometeorological situation and expected impacts>.

<call-to-action statement>.

LAT...LON  nnnn nnnn

$$
```

```
stC001-002-ddhhmm-
hhmm am/pm time_zone day mon dd yyyy
<nwsli> [2]

FOR THE <river/stream name> <proximity term - e.g., AT> <location>...
* AT <time> <day> THE <STAGE/FLOW> WAS <stage/flow>. [3]
* <flood category> FLOODING IS OCCURRING AND <flood category> FLOODING
  IS FORECAST. [4]
* <other stage/flow type> [5] <STAGE/FLOW> IS <stage/flow>. (optional)
* FLOOD <STAGE/FLOW> IS <flood stage/flow>.
* 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, section 2.1.5).
Note (2): The NWSLI is zeroed out in the H-VTEC string for the areal 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.

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 counties/zones from a current warning. Issue a new FFW (with new ETN) to add areas not already covered by a 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 which is threatening lives and property and can be quantified or indexed at specific locations and is not accounted for in areal 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 areal flood or flash flood warnings.

7.1 Mission Connection. Flood warnings help the NWS to 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.

7.2 Issuance Guidelines.

7.2.1 Creation Software. RiverPro in the WHFS will be used.

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

a. RFC guidance and/or flood monitoring and prediction tools indicate flooding is 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 simply the greater of either the current observed flooding or the highest forecast flooding indicated at a given product issuance.

When an increase in flood category has occurred or is forecast to occur, a flood warning product will be issued for the forecast points 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 flood statements will also remain the same. Other forecast points which are under a flood warning but not affected by a change in flood category will be covered in a separate flood statement product.

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 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 for each forecast point is cancelled 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 – a fixed time adjustment (e.g., 6, 12, 24 hrs) may be set in RiverPro which allows the event ending date/time to be delayed by that amount past the flood end date/time. This provides added time to receive an observation confirming that a river has indeed fallen back below flood stage before the flood 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 low as 6 hours for more rapidly changing flood situations.

7.3 Technical Description.

7.3.1 UGC Type. County codes should be used (Zone 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, 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.

7.3.4.1 General Overview/Synopsis Section. This optional section (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 periods "..." (ellipses). 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 period ".". If one or more of the product segments has an undefined flood ending time (i.e., UNTIL FURTHER NOTICE is used), a best estimate of the flood duration and a brief explanation as to why it can't be specified exactly will be included here.

c. Call-to Action – a general statement for all forecast points covered in the product. The first line of the call-to-action will always start with "SAFTEY MESSAGE...". Call-to-action statements will focus on avoiding flood dangers and not include instructions on how to escape from vehicles caught in flood waters.

Text describing where additional information can be found and when the next follow-up statement will be issued may also be included in the general overview/synopsis section. If any of the items described above for the general overview/synopsis are to be included in a product, they will be only provided 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 (segmentation by forecast point). 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 zeros for any unknown date/time group.

b. Headline summarizing the segment content (optional for new issuances).

c. The action lead-in phrase: "THE NATIONAL WEATHER SERVICE IN <WFO location> HAS ISSUED A." After this, bullets delimited by asterisks (*), will contain the following:

(1) FLOOD WARNING FOR, followed on the next line by "THE" and then the river/stream and forecast point names. "THE" may be omitted if it is unneeded (e.g., for creeks). For products announcing flood category increases, this bullet is not used. For these cases, the action lead-in phrase will be THE FLOOD WARNING CONTINUES FOR, followed on the next line by the river/stream and forecast point names.

(2) 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, only the UNTIL information is provided. If the event ending date/time can't 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.

(3) AT followed by the time of observation and the current stage/flow, followed optionally by a phrase indicating the recent trend (see Figure 7).

(4) 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.

(5) Flood stage/flow at the forecast point (other stages such as caution stage may also be listed in separate bullets).

(6) FORECAST..., followed by forecast information - e.g., time when river will reach flood stage/flow, forecast crest/peak flow and time/day when expected, and time when river/stream will fall below flood stage/flow.

(7) (Optional) IMPACT..., followed by a description of the known impact of flooding within the range of forecast stages (or flows). Call-to-action information specific to the forecast point may be included here.

(8) (Optional) FLOOD HISTORY..., followed by flood history information.

Bullets may be longer than six lines if necessary. Observed and forecast data in tabular format may be presented at the end of each segment, or 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:

```
...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)*

SAFETY MESSAGE...<call-to-action – general to the entire product>. *(optional)*

ADDITIONAL INFORMATION IS AVAILABLE AT <Web site URL>. *(optional)*

THE NEXT STATEMENT WILL BE ISSUED <time/day phrase>. *(optional)*

(Include one or more of the following segments in the indicated order[3]:)

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

stC001-002-ddhhmm-
/k.**COR**.cccc.**FL**.**W**.####.yymmddThhnnZ$_B$-yymmddThhnnZ$_E$/
/nwsli.s[4].ic.yymmddThhnnZ$_B$.yymmddThhnnZ$_C$.yymmddThhnnZ$_E$.fr/
Hhmm am/pm time_zone day mon dd yyyy

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

$$

or / and (for new issuances):

stC001-002-ddhhmm-
/k.**NEW**.cccc.**FL**.**W**.####.yymmddThhnnZ$_B$-yymmddThhnnZ$_E$/
/nwsli.s[4].ic.yymmddThhnnZ$_B$.yymmddThhnnZ$_C$.yymmddThhnnZ$_E$.fr/
hhmm am/pm time_zone day mon dd yyyy

...FLOOD WARNING IN EFFECT <FROM <<time/day phrase> [1] <TO <time/day phrase>>
or <long-term duration phrase>[2] > or <<UNTIL <time/day phrase>> or <long-
term duration phrase>>... *(optional)*

THE NATIONAL WEATHER SERVICE IN <WFO location> HAS ISSUED A
* FLOOD WARNING FOR
  THE <river/stream name> <proximity term - e.g., AT> <location>.
* <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>>>.
* AT <time> [5] <day> THE <STAGE/FLOW> WAS <stage/flow> [6] [*(optional:)*...<<AN
  INCREASE> or <A DECREASE> OF <stage/flow> <FEET or CFS>> or <<NO CHANGE>
  SINCE <time phrase>>].
* <category> FLOODING IS OCCURRING AND <category> FLOODING IS FORECAST. [7]
* RECENT ACTIVITY...<e.g., recent peaks/trends in river stage>. *(optional)*
* <other stage/flow type> [8] <STAGE/FLOW> IS <stage/flow>. *(optional)*
* FLOOD <STAGE/FLOW> IS <flood stage/flow>.
* FORECAST...FLOOD <STAGE/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)*

&& *(only provided here if tabular observed/forecast values are provided below for this segment)*

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

$$

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

(for flood category increases):

stC001-002-ddhhmm-
/k.<**CON** or **EXT**> [10].cccc.**FL.W**.####.yymmddThhnnZ$_B$-yymmddThhnnZ$_E$/
/nwsli.s[4].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>]...

THE FLOOD WARNING CONTINUES FOR
  THE <river/stream name> <proximity term - e.g., AT> <location>.
* <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>>>.
* AT <time> [5] <day> THE <STAGE/FLOW> WAS <stage/flow> [6] [*(optional:)*...<<AN
  INCREASE> or <A DECREASE> OF <stage/flow> <FEET or CFS>> or <<NO CHANGE>
  SINCE <time phrase>].
* <category> FLOODING IS OCCURRING AND <category> FLOODING IS FORECAST.
* RECENT ACTIVITY...<e.g., recent peaks/trends in river stage>. *(optional)*
* <other stage/flow type> [8] <STAGE/FLOW> IS <stage/flow>. *(optional)*
* FLOOD <STAGE/FLOW> IS <flood stage/flow>.
* 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)*

&& *(only provided here if tabular observed/forecast values are provided below for this segment)*

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

$$

(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> stands for time/day phrases used in long duration watches (see NWSI 10-1701) - i.e., specific times for 0 to 12 hours, 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 by the FLS product (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): Include one or both observed/forecast category phrases if applicable and flood categories are available.
Note (8): Examples of "other stage/flow type": CAUTION STAGE, ALERT STAGE, or MONITOR STAGE.
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**. Inclusion of these ROU (routine) segments provides a complete set of forecast and warning information for a series of points along a river reach, regardless of whether or not they are in flood. ROU segments will only be issued when they are part of a product with other segments providing information on a future or occurring event which is above product issuance criteria (e.g., flood stage). ROU segments will include partially populated VTEC strings as shown in the generic format below (Figure 8).

```
stC001-002-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
  THE <river/stream name> <proximity term - e.g., AT> <location>.
* AT <time> <day> THE <STAGE/FLOW> WAS <stage/flow> [(optional:)...<<AN
  INCREASE> or <A DECREASE> OF <stage/flow> <FEET or CFS>> or <<NO CHANGE
  SINCE <time phrase>>].
* NO FLOODING IS CURRENTLY FORECAST.
* RECENT ACTIVITY...<e.g., recent peaks/trends in river stage>. (optional)
* <other stage/flow type> <STAGE/FLOW> IS <stage/flow>. (optional)
* FLOOD <STAGE/FLOW> IS <flood stage/flow>.
* 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)

&& (only provided here if tabular observed/forecast values are provided below for this segment)
  <tabular observed/forecast values for segment> (optional)
$$
(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 to 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. The RiverPro software in WHFS will be used.

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.

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 in a flood statement will continue to be valid until the time indicated in the event ending date/time group in the P-VTEC string and the second bullet, or until it is cancelled by or omitted from a 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 necessarily the same as the H-VTEC flood end date/time – a fixed time adjustment (e.g., 6, 12, 24 hrs) may be set in RiverPro which allows the event ending date/time to be delayed by that amount past the flood end date/time. This provides added time to receive an observation confirming that a river has indeed fallen back below flood stage before the flood is considered to be officially ended as far as the product and its associated ETN is concerned.

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 low 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 (Zones in 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, 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.

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 periods "..." (ellipses). 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 period ".". If one or more of the product segments has an undefined flood ending time (e.g., UNTIL FURTHER NOTICE is used), a best estimate of the flood duration and a brief explanation as to why it can't be specified exactly will be included here.

c. Call-to Action – a general statement for all forecast points covered in the product. The first line of the call-to-action will always start with "SAFTEY MESSAGE..." Call-to-action statements will focus on avoiding flood dangers and not include instructions on how to escape from vehicles caught in flood waters.

Text describing where additional information can be found and when the next follow-up statement will be issued may also be included in the general overview/synopsis section. If any of the items described above for the general overview/synopsis are to be included in a product, they will only be provided 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 (segmentation by forecast point). This provides 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 VTEC action code as follows:

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, 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 zeros for any unknown date/time group. When a warning is being cancelled and flood stage was never reached, all three date/time groups are zeroed out.

b. Headline summarizing content of the segment (optional for cancellation, expiration, and continuation segments).

c. Action lead-in phrase such as "THE FLOOD WARNING CONTINUES FOR" (other action lead-in phrases are provided in Figure 9), followed on the next line (indented) by "THE" and then the river/stream and forecast point names. "THE" may be omitted if it is unneeded (e.g., for creeks). After the river/stream and forecast point names, the following bulleted warning information, delimited by asterisks (*), will be provided:

   (1) For extensions and continuations: 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 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.

   (2) AT followed by the time of observation and the current stage/flow, followed optionally by a phrase indicating the recent trend (see Figure 9).

   (3) If flood category information is available, one or both of the following as applicable: description of category of current flooding, if flooding is already occurring, and description of the category of expected flooding (this information may be omitted for cancellations and expirations).

   (4) Flood stage/flow at the forecast point (other stages such as caution stage may also be listed in separate bullets).

(5) 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.

(6) (Optional) IMPACT..., followed by a description of the known impact of flooding within the range of forecast stages (or flows). Call-to-action information specific to the forecast point may be included here.

(7) (Optional) FLOOD HISTORY..., followed by flood history information.

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

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 next brackets is optional:

```
...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)

SAFETY MESSAGE...<call-to-action>. (optional)
```

```
ADDITIONAL INFORMATION IS AVAILABLE AT <Web site URL>. (optional)

THE NEXT STATEMENT WILL BE ISSUED <time/day phrase>. (optional)
```

(Include one or more of the following segments in the indicated order[3]:)

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

```
stC001-002-ddhhmm-
/k.COR.cccc.FL.W [4].####.yymmddThhnnZB-yymmddThhnnZE/
/nwsli.s[5].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>.

$$
```

or / and (for cancellations):

```
stC001-002-ddhhmm-
/k.CAN.cccc.FL.W [4].####.yymmddThhnnZB-yymmddThhnnZE/
/nwsli.s[5].ic.yymmddThhnnZB.yymmddThhnnZC.yymmddThhnnZE.fr/
hhmm am/pm time_zone day mon dd yyyy

...FLOOD WARNING IS CANCELLED... (optional)

THE FLOOD WARNING IS CANCELLED FOR
  THE <river/stream name> <proximity term- e.g., AT> <location>.
* AT <time> [6] <day> THE <STAGE/FLOW> [7] WAS <stage/flow> [(optional:)
  ...<<AN INCREASE> or <A DECREASE> OF <stage/flow> <FEET or CFS>> or
  <<NO CHANGE> SINCE <time phrase>>].
* <other stage/flow type> [8] <STAGE/FLOW> IS <stage/flow>. (optional)
* FLOOD <STAGE/FLOW> IS <flood stage/flow>.
* RECENT ACTIVITY...<e.g., when river fell below flood stage>. (optional)
* FELL BELOW FLOOD <STAGE/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)

&& (only provided here if tabular observed/forecast values are provided below for this segment)
  <tabular observed/forecast values for segment> (optional)
$$
```

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

or / and (for expirations):

```
stC001-002-ddhhmm-
/k.EXP.cccc.FL.W [4].####.yymmddThhnnZB-yymmddThhnnZE/
/nwsli.s[5].ic.yymmddThhnnZB.yymmddThhnnZC.yymmddThhnnZE.fr/
hhmm am/pm time_zone day mon dd yyyy

...FLOOD WARNING <HAS EXPIRED or WILL EXPIRE AT <time/day phrase> [1]>...
(optional)

THE FLOOD WARNING <HAS EXPIRED or WILL EXPIRE> FOR
  THE <river/stream name> <proximity term - e.g., AT> <location>.
* AT <time> [6] <day> THE LATEST <STAGE/FLOW> [7] IS <stage/flow> [(optional:)
  ...<<AN INCREASE> or <A DECREASE> OF <stage/flow> <FEET or CFS>> or
  <<NO CHANGE> SINCE <time phrase>>].
* <other stage/flow type> [8] <STAGE/FLOW> IS <stage/flow>. (optional)
* FLOOD <STAGE/FLOW> IS <flood stage/flow>.
```

```
* RECENT ACTIVITY...<e.g., when river fell below stage>. (optional)
* FELL BELOW FLOOD <STAGE/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)

&& (only provided here if tabular observed/forecast values are provided below for this segment)
  <tabular observed/forecast values for segment> (optional)
$$
```

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

or / and (for extensions in time)

```
stC001-002-ddhhmm-
/k.EXT.cccc.FL.W [4].####.yymmddThhnnZB-yymmddThhnnZE/
/nwsli.s[5].ic.yymmddThhnnZB.yymmddThhnnZC.yymmddThhnnZE.fr/
Hhmm am/pm time_zone day mon dd yyyy

...FLOOD WARNING NOW IN EFFECT <FROM <<time/day phrase> [1] <TO <time/day
phrase>> or <long-term duration phrase>[2] > or <<UNTIL <time/day phrase>> or
<long-term duration phrase>>... (optional)[10]

THE FLOOD WARNING CONTINUES FOR
  THE <river/stream name> <proximity term - e.g., AT>  <location>.
* <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>>>.
* AT <time> [5] <day> THE <STAGE/FLOW> WAS <stage/flow>. [6] [(optional:)
  ...<<AN INCREASE> or <A DECREASE> OF <stage/flow> <FEET or CFS>> or
  <<NO CHANGE> SINCE <time phrase>>].
* <category> FLOODING IS OCCURRING AND <category> FLOODING IS FORECAST. [9]
* <other stage/flow type> [8] IS <stage/flow>. (optional)
* FLOOD <STAGE/FLOW> IS <flood stage/flow>.
* 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)

&& (only provided here if tabular observed/forecast values are provided below for this segment)
  <tabular observed/forecast values for segment> (optional)
$$
```

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

or / and (when Event Ending Date/Time is being forecast for the first time)[11]:

```
stC001-002-ddhhmm-
/k.EXT.cccc.FL.W [4].####.yymmddThhnnZB-yymmddThhnnZE/
/nwsli.s[5].ic.yymmddThhnnZB.yymmddThhnnZC.yymmddThhnnZE.fr/
Hhmm am/pm time_zone day mon dd yyyy
```

```
...FLOOD WARNING NOW IN EFFECT UNTIL <time/day phrase> [1]...

THE FLOOD WARNING CONTINUES FOR
  THE <river/stream name> <proximity term - e.g., AT> <location>.
* <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]>.
* AT <time/> [6] <day> THE <STAGE/FLOW> [7] WAS <stage/flow> [(optional:)
  ...<<AN INCREASE> or <A DECREASE> OF <stage/flow> <FEET or CFS>> or
  <<NO CHANGE> SINCE <time phrase>>].
* <category> FLOODING IS OCCURRING AND <category> FLOODING IS FORECAST. [9]
* <other stage/flow type> [8] IS <stage/flow>. (optional)
* FLOOD <STAGE/FLOW> IS <flood stage/flow>.
* 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)

&& (only provided here if tabular observed/forecast values are provided below for this segment)
  <tabular observed/forecast values for segment> (optional)
$$
```

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

or / and (for continuations):

```
stC001-002-ddhhmm-
/k.CON.cccc.FL.W [4].####.yymmddThhnnZB-yymmddThhnnZE/
/nwsli.s[5].ic.yymmddThhnnZB.yymmddThhnnZC.yymmddThhnnZE.fr/
Hhmm am/pm time_zone day mon dd yyyy

...FLOOD WARNING REMAINS IN EFFECT <FROM <<time/day phrase> [1] <TO <time/day
phrase>> or <long-term duration phrase>[2] > or <<UNTIL <time/day phrase>> or
<long-term duration phrase>>... (optional)

THE FLOOD WARNING CONTINUES FOR
  THE <river/stream name> <proximity term - e.g., AT> <location>.
* <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>>>.
* AT <time/> [6] <day> THE <STAGE/FLOW> [7] WAS <stage/flow> [(optional:)
  ...<<AN INCREASE> or <A DECREASE> OF <stage/flow> <FEET or CFS>> or
  <<NO CHANGE> SINCE <time phrase>>].
* <category> FLOODING IS OCCURRING AND <category> FLOODING IS FORECAST. [9]
* RECENT ACTIVITY...<e.g., recent peaks/trends in river stage>. (optional)
* <other stage/flow type> [8] IS <stage/flow>. (optional)
* FLOOD <STAGE/FLOW> IS <flood stage/flow>.
* 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)
```

```
&& (only provided here if tabular observed/forecast values are provided below for this segment)
  <tabular observed/forecast values for segment> (optional)
$$
(For each additional forecast point (if any), repeat the above in a separate segment)
&& (only provided here if tabular observed/forecast values are provided below for entire product)
  <tabular observed/forecast values for entire product> (optional)
$$ (only provided here if tabular observed/forecast values are provided above for entire product)

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

Note (1): <time/day phrase> stands for time/day phrases used in long duration watches (see NWSI 10-1701) - i.e., specific times for 0 to 12 hours, 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, 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): Headline is optional, but recommended for significant extensions, with interpretation of "significant" determined on case by case basis.
Note (11): 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 data/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 correction) 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 set of forecast and warning information for a series of points along a river reach, regardless of whether they are in flood or not. ROU segments will include partially populated VTEC strings as shown previously 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. Areal Flood Warning (FLW). VTEC Phenomena Code: FA, Significance Code: W.
Areal flood warnings are issued for any high flow, overflow, or inundation in a defined area such

as a group of counties or an area along a river or stream which threaten lives and property and are not appropriately covered by flash flood warnings or flood warnings for forecast points.

9.1 Mission Connection. Flood warnings help the NWS to 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. Areal flood warnings will be created using the WarnGen application.

9.2.2 Issuance Criteria. Areal flood warnings will be issued for the WFO's CWFA when:

a. Flood monitoring and forecasting tools indicate flooding is likely 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 areal flood warning needs to be extended in time; or

d. Flooding is imminent or occurring in one or more additional counties (zones - Alaska) currently not under a valid flood warning (no EXA/EXB action codes used). Note: a new warning may be issued for an already covered county if deemed necessary by a forecaster (e.g., for different area of a large county).

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

9.2.4 Valid Time. Areal flood warnings will be valid until the time when the flooding (requiring actions to protect lives 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 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 areal flood warning product uses a segmented, bullet 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 periods "..." (ellipses).

b. General Synopsis - 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 period ".".

9.3.4.2 Segmented Warning Information Section. Information in a product will be divided into one or more segments. Correction segments will be 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 areal flood warnings (continuations are handled in the flood statement [FLS] product and new areas are covered in separate new issuance flood warning [FLW] products).

Each segment of an areal 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 zeros for the NWSLI and flood severity "s." The available entries for Immediate Cause "ic" are ER (excessive rainfall), SM (snowmelt), RS (rain and snowmelt), IJ (ice jam), and IC (Rain and/or snowmelt and/or ice jam). Use zeros for the start, crest, and end date/time groups and OO (double capital "O") for the flood record status "fr."

b. The action lead-in phrase THE NATIONAL WEATHER SERVICE IN <WFO location> HAS ISSUED A. After this lead-in, there will be three to four bullets delimited by asterisks (*) providing the following information (bullets may be longer than six lines):

(1) First bullet - FLOOD WARNING FOR, optionally followed by the phrase URBAN AREAS AND SMALL STREAMS IN or SMALL STREAMS IN, followed by a term describing the geographic area covered.

(2) Second bullet - phrase integrating the event beginning (when appropriate) and event ending times (see Figure 10 for details).

(3) Third bullet - Discussion of the warning basis.

(4) Fourth bullet - (optional) Discussion of expected impacts.

c. Call-to-action statement - will focus on avoiding flood dangers and not include instructions on how to escape from vehicles caught in flood waters.

d. Latitude/longitude polygon coordinates defining the warning area.

9.3.5 Format. The generic format for areal 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:

stC001-002-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>

$$

    or (for new issuances and extensions in time):

stC001-002-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

THE NATIONAL WEATHER SERVICE IN <WFO location> HAS <ISSUED A or
EXTENDED THE>

* FLOOD WARNING FOR [(optional:) URBAN AREAS AND SMALL STREAMS IN or SMALL
  STREAMS IN]...
  <county #1, with appropriate geographic modifier(s)> [1]
  <county #2, with appropriate geographic modifier(s)>
  .
  .
  <county #n, with appropriate geographic modifier(s)>
  <INCLUDING <THE CITIES OF> location...location > (optional)

* UNTIL hhmm am/pm time_zone [2]

* <warning basis>.

* <expected impacts>. (optional)
```

```
<call-to-action statement>

LAT...LON  nnnn nnnn

$$

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

Note (1): <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 (2): It is optional to include a day name after the time when needed.

Figure 10. Generic format for areal 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 areal FLW (with a new ETN) for counties/zones not already covered by an areal FLW. Issue an extension areal 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 Areal Flood Warning (FLS). VTEC Phenomena Code: FA, Significance Code: W. This type of flood statement contains supplemental information on previously issued areal flood warnings, such as updated observations and impact information.

10.1 Mission Connection. Flood statements help the NWS to 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. The WarnGen application will be used.

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

a. Information needs to be provided to update or supplement a previously issued areal flood warning, and/or

b. Cancellation or expiration of all or part of a flood warning needs to be announced.

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

10.2.4 Valid Time. An areal 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 an areal flood warning (i.e., extension or continuation), the product expiration time is either the same as the product expiration time for the referenced areal flood warning, or an appropriate period of time until 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 an areal 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 (Zones in 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 an areal 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 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 periods "..." (ellipses).

b. General Synopsis - a brief, non-technical 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 period "."

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

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

Note - FLS products following up areal flood warnings will not have segments for new issuances (NEW) and extensions in time (EXT) - these actions are only used with the FLW identifier. For situations when a multi-county areal flood warning needs to be cancelled for part of its original area and extended in time for the other part, issue a FLS using a single cancellation segment with

the original ETN for the area being cancelled and then issue a separate areal FLW product announcing extension of the flood warning with the original ETN for the area being extended. Also note - the COR action code will only be used to correct previously issued flood statements - corrections to flood warnings will be handled by flood warnings.

Cancellation (CAN), expiration (EXP), and 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 zeros for the NWSLI and flood severity "s." Use zeros 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 continuation segments). Call-to-action statements will focus on avoiding flood dangers and not include instructions on how to escape from vehicles caught in flood waters.

e. Latitude/longitude polygon coordinates defining the warning area.

10.3.5 Format. The generic format for a flood statement following up an areal 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:

```
stC001-002-ddhhmm-
/k.COR.cccc.FA.W[1].####.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>.

$$
```

or / and (for cancellations):

```
stC001-002-ddhhmm-
/k.CAN.cccc.FA.W [1].####.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 FLOOD WARNING HAS BEEN CANCELLED FOR [(optional:) URBAN AREAS AND SMALL
STREAMS IN or SMALL STREAMS IN] <geographic area [2]>...

<Brief post-event synopsis>.

LAT...LON  nnnn nnnn

$$
```

or / and (for expirations):

```
stC001-002-ddhhmm-
/k.EXP.cccc.FA.W [1].####.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 FLOOD WARNING HAS EXPIRED FOR [(optional:) URBAN AREAS AND SMALL STREAMS
IN or SMALL STREAMS IN] <geographic area [2]>...

<Brief post-event synopsis>.

LAT...LON  nnnn nnnn

$$
```

or / and (for continuations):

```
stC001-002-ddhhmm-
/k.CON.cccc.FA.W [1].####.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 FLOOD WARNING REMAINS IN EFFECT UNTIL hhmm am/pm time_zone [3] FOR
[(optional:) URBAN AREAS AND SMALL STREAMS IN or SMALL STREAMS IN]
<geographic area [2]>...

<current hydrometeorological situation and expected impacts>.

<call-to-action statement>.

LAT...LON  nnnn nnnn

$$
```

<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, 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).
Note (3): It is optional to include a day name after the time when needed.

Figure 11. Generic format for flood statement following up an areal flood warning.

10.4 Updates, Amendments, and Corrections. Provide updates by issuing additional 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 areal FLW (with a new ETN) for counties/zones not already covered by an areal FLW. Issue an areal FLW with an extension segment to change the expiration time of an areal flood warning.

11. Flood Statement - Areal Advisories (FLS). VTEC Phenomena Code: FA, Significance Code: Y. Areal advisories issued under the flood statement identifier - i.e., urban and small stream flood advisories, arroyo and small stream flood advisories, small stream flood advisories, flood advisories, and hydrologic advisories - provide information on elevated river/stream flows or ponding of water in urban or other areas, when such events warrant notification of the public in a product less urgent than a warning.

11.1 Mission Connection. This product helps the NWS to 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. Areal advisories will be created with the WarnGen application.

11.2.2 Issuance Criteria. Areal advisories will be issued for a WFO's CWFA when:

a. Elevated stream flow or ponding of water occurs or will occur which warrants public notification.

b. An advisory needs to be issued for one or more additional counties (zones - Alaska, Guam, and American Samoa) currently not under a valid advisory (no expansions in area [EXA] or extensions in both time and area [EXB] allowed). Note: a new advisory may be issued for an already covered county if deemed necessary by a forecaster (e.g., for different area of a large county).

c. Providing updated hydrometeorological information on an existing advisory.

11.2.3 Issuance Time. Areal 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. 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, type of advisory, and characteristics of the area of concern. When announcing expiration or cancellation of an advisory, the product expiration time is not more than ten minutes after the warning expiration or cancellation time.

11.3 Technical Description.

11.3.1 UGC Type. County codes should be used (Zone for Alaska, Guam, 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. Areal advisories use a segmented, bullet format (except for cancellations, expirations, and continuations) which is similar to areal flood warnings (see Figure 12).

11.3.4.1 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 situation, affected locations/areas, and the expected duration. Each overview headline starts and ends with three periods "..." (ellipses).

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 period ".".

11.3.4.2 Segmented Advisory Information Section. Information in an areal 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. For situations when a multi-county areal flood advisory needs to be cancelled for part of its original area and extended in time for the other part, issue an areal advisory product using a single cancellation segment with the original ETN for the area being cancelled and then issue a separate areal advisory product announcing extension of the advisory with the original ETN for the area being extended.

New issuance and extension in time 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 zeros for the NWSLI and "N" for flood severity "s" to indicate advisory-level flooding. Use zeros for the start, crest, and end date/time groups and OO (double capital "O") for the flood record status "fr."

b. An action lead-in phrase – "THE NATIONAL WEATHER SERVICE IN <WFO location> HAS ISSUED A" (for new issuance) or "THE NATIONAL WEATHER SERVICE IN <WFO location> HAS EXTENDED THE" (for extension in time), followed by three to four bullets delimited by asterisks (*) providing the following information (bullets may be longer than six lines):

(1) First bullet - <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 the streams or geographic area covered. Types of advisories are: URBAN AND SMALL STREAM FLOOD ADVISORY, ARROYO AND SMALL STREAM FLOOD ADVISORY, SMALL STREAM FLOOD ADVISORY, FLOOD ADVISORY, and HYDRO-LOGIC ADVISORY. Examples of hydrologic conditions include ICE JAM FLOODING, RAPID RISES, or MINOR FLOODING IN POOR DRAINAGE AREAS.

(2) Second bullet - phrase integrating the event beginning (when appropriate) and event ending times.

(3) Third bullet - basis for the advisory

(4) Fourth bullet (optional) - expected impacts of the elevated flow situation.

c. A call-to-action statement. Call-to-action statements will focus on avoiding flood dangers and not include instructions on how to escape from vehicles caught in flood waters.

Cancellation, expiration, 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 zeros for the NWSLI and "N" for flood severity "s" to indicate advisory-level flooding. Use zeros 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).

e. Latitude/longitude polygon coordinates defining the advisory area.

11.3.5 Format. The generic format for an areal 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

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

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

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

For corrections:

```
stC001-002-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>.

$$
```

or / and (for cancellations):

```
stC001-002-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 <type of advisory> [1] [(optional:) FOR <hydrologic condition> [2]] HAS BEEN
CANCELLED FOR <geographic area>...

<Brief post-event synopsis>.

LAT...LON  nnnn nnnn

$$
```

or / and (for expirations):

```
stC001-002-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 <type of advisory> [1] [(optional:) FOR <hydrologic condition> [2]] HAS
EXPIRED FOR <geographic area>...

<Brief post-event synopsis>.

LAT...LON  nnnn nnnn

$$
```

or / and (for continuations):

```
stC001-002-ddhhmm-
/k.CON.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 <type of advisory> [1] [(optional:) FOR <hydrologic condition> [2]] REMAINS
IN EFFECT UNTIL hhmm am/pm time_zone [4] FOR <geographic area>...

<current hydrometeorological situation and expected impacts>.

<call-to-action statement>.

LAT...LON  nnnn nnnn

$$
```

or (for new issuances):

```
stC001-002-ddhhmm-
/k.NEW.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 NATIONAL WEATHER SERVICE IN <WFO location> HAS ISSUED <A or AN>

* <type of advisory> [1] [(optional:) FOR <hydrologic condition> [2]] <FOR, OF,
  AT, IN, or ON>...
  <county #1, with appropriate geographic modifier(s)[3] >
  <county #2, with appropriate geographic modifier(s)>
  .
  .
  <county #n, with appropriate geographic modifier(s)>
  <INCLUDING <THE CITIES OF> location...location> (optional)

* UNTIL hhmm am/pm time_zone [4]

* <basis for advisory>.

* <expected impacts>. (optional)

<call-to-action statement>.

LAT...LON  nnnn nnnn

$$
```

or (for extensions in time):

```
stC001-002-ddhhmm-
/k.EXT.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 NATIONAL WEATHER SERVICE IN <WFO location> HAS EXTENDED THE

* <type of advisory> [1] [(optional:) FOR <hydrologic condition> [2]] <FOR, OF,
  AT, IN, or ON>...
  <county #1, with appropriate geographic modifier(s)[3] >
  <county #2, with appropriate geographic modifier(s)>
  .
  .
  <county #n, with appropriate geographic modifier(s)>
```

```
* UNTIL hhmm am/pm time_zone [4]

* <basis for advisory>.

* <expected impacts>. (optional)

<call-to-action statement>.

LAT...LON  nnnn nnnn

$$

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

Note (1): types of areal advisories include: URBAN AND SMALL STREAM FLOOD ADVISORY, ARROYO AND SMALL STREAM FLOOD ADVISORY, SMALL STREAM FLOOD ADVISORY, FLOOD ADVISORY, and HYDROLOGIC ADVISORY.
Note (2): Examples of hydrologic conditions that could be used here include: ICE JAM FLOODING, RAPID RISES, and MINOR FLOODING IN POOR DRAINAGE AREAS.
Note (3): <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 (4): It is optional to include a day name after the time when needed.

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

11.4 Updates, Amendments, and Corrections. Provide updates to current areal 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 areal flood advisory (with a new ETN) for counties/zones not already covered by an existing advisory. Issue a follow-up areal 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 areal flood advisories (either in the UGC code or the body of the warning).

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 to 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. RiverPro in the WHFS will be used.

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

a. Elevated stream flow warranting public notification occurs or is expected 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.

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.

12.3 Technical Description.

12.3.1 UGC Type. County codes should be used (Zone 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 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 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 periods “...” (ellipses). 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 period ".".

c. Call-to Action – a general statement for all forecast points covered in the product. The first line of the call-to-action will always start with "SAFTEY MESSAGE...". Call-to-action statements will focus on avoiding flood dangers and not include instructions on how to escape from vehicles caught in flood waters.

If any of the items described above for the general overview/synopsis section are 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, they 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 zeros for the Flood Begin, Flood Crest, and Flood End Date/Time groups and OO (double capital "O") for the flood record status "fr."

b. Optional headline summarizing content of the segment.

c. Action lead-in phrase – "THE NATIONAL WEATHER SERVICE IN <WFO location> HAS ISSUED A (skip to next line) * FLOOD ADVISORY FOR" (for new issuances) or "THE FLOOD ADVISORY CONTINUES FOR (for continuations and extensions in time);" followed on the next line (indented) by "THE" and then the river/stream and forecast point names. "THE" may be omitted if it is unneeded (e.g., for creeks). After the river/stream and forecast point names, the following bulleted advisory information, delimited by asterisks (*), will be provided for the forecast point (bullets may be longer than six lines if necessary):

(1) For extensions in time and continuations: 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.

(2) AT followed by the time of observation and the current stage/flow, followed optionally by a phrase indicating the recent trend (see Figure 13).

(3) Flood stage/flow at the forecast point (other stages such as caution stage may also be listed in separate bullets).

(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.

Observed and forecast data in tabular format may be presented at the end of each segment, or 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 zeros for the start, crest, and end date/time groups and OO (double capital "O") for the flood record status.

b. Optional headline summarizing content of the segment.

c. Action lead-in phrase – "THE FLOOD ADVISORY IS CANCELLED FOR" (for cancellations), or "THE FLOOD ADVISORY HAS EXPIRED or WILL EXPIRE FOR" (for expirations); followed on the next line (indented) by "THE" and then the river/stream and forecast point names. "THE" may be omitted when it is unneeded (e.g., for creeks). After the river/stream and forecast point names, the following bulleted advisory information, delimited by asterisks (*), will be provided (bullets may be longer than six lines if necessary):

(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 bullets).

(3) FORECAST... followed by a near-term stage/flow forecast.

(4) (Optional) IMPACT... followed by a description of the known impacts of flooding within the range of forecast stages (or flows).

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

WGA$_1$A$_2$ii 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)*

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

ADDITIONAL INFORMATION IS AVAILABLE AT <Web site URL>. *(optional)*

THE NEXT STATEMENT WILL BE ISSUED <time/day phrase>. *(optional)*

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

For corrections:

stC001-002-ddhhmm-
/k.**COR**.cccc.**FL**.**Y**.####.yymmddThhnnZ$_B$-yymmddThhnnZ$_E$/
/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>.

$$

or / and (for cancellations):

stC001-002-ddhhmm-
/k.**CAN**.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 IS CANCELLED... *(optional)*

THE FLOOD ADVISORY IS CANCELLED FOR
  THE <river/stream name> <proximity term – e.g., AT> <location>.
* AT <time> [2] <day> THE <STAGE/FLOW> WAS <stage/flow>. [3] [*(optional:)*
  ...<<AN INCREASE> or <A DECREASE> OF <stage/flow> <FEET or CFS>> or
  <<NO CHANGE> SINCE <time phrase>>].
* RECENT ACTIVITY...<e.g., recent peaks/trends in river stage>. *(optional)*
* <other stage/flow type> [4] <STAGE/FLOW> IS <stage/flow>. *(optional)*
* FLOOD <STAGE/FLOW> IS <flood stage/flow>.
* FORECAST...<brief forecast indicating expected trend>. *(optional)*
* IMPACT...<description of impact at given stage(s)/flow(s)>. *(optional)*

&& *(only provided here if tabular observed/forecast values are provided below for this segment)*
  <tabular observed/forecast values for segment> *(optional)*

$$

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

or / and (for expirations):

stC001-002-ddhhmm-
/k.**EXP**.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 <HAS EXPIRED or WILL EXPIRE AT <time/day phrase> [1]>...
(optional)

```
THE FLOOD ADVISORY <HAS EXPIRED or WILL EXPIRE> FOR
  THE <river/stream name> <proximity term - e.g., AT> <location>.
* AT <time> [2] <day> THE LATEST <STAGE/FLOW> IS <stage/flow> [3] [(optional:)
  ...<<AN INCREASE> or <A DECREASE> OF <stage/flow> <FEET or CFS>> or
  <<NO CHANGE> SINCE <time phrase>>].
* RECENT ACTIVITY...<e.g., recent peaks/trends in river stage>. (optional)
* <other stage/flow type> [4] <STAGE/FLOW> IS <stage/flow>. (optional)
* FLOOD <STAGE/FLOW> IS <flood stage/flow>.
* FORECAST...<brief forecast indicating expected trend>. (optional)
* IMPACT...<description of impact at given stage(s)/flow(s)>. (optional)

&& (only provided here if tabular observed/forecast values are provided below for this segment)
  <tabular observed/forecast values for segment> (optional)
$$
```

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

or (for new issuances)

```
stC001-002-ddhhmm-
/k.NEW.cccc.FL.Y.####.yymmddThhnnZB-yymmddThhnnZE/
/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>>... (optional)

THE NATIONAL WEATHER SERVICE IN <WFO location> HAS ISSUED A
* FLOOD ADVISORY FOR
  THE <river/stream name> <proximity term - e.g., AT> <location>.
* <FROM <time/day phrase> [1] TO <time/day phrase>> or UNTIL <time/day phrase>.
* AT <time> [2] <day> THE <STAGE/FLOW> WAS <stage/flow> [3] [(optional:)
  ...<<AN INCREASE> or <A DECREASE> OF <stage/flow> <FEET or CFS>> or
  <<NO CHANGE> SINCE <time phrase>>].
* RECENT ACTIVITY...<e.g., recent peaks/trends in river stage>. (optional)
* <other stage/flow type> [4] <STAGE/FLOW> IS <stage/flow>. (optional)
* FLOOD <STAGE/FLOW> IS <flood stage/flow>.
* 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)

&& (only provided here if tabular observed/forecast values are provided below for this segment)
  <tabular observed/forecast values for segment> (optional)
$$
```

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

or (for extensions in time)

```
stC001-002-ddhhmm-
/k.EXT.cccc.FL.Y.####.yymmddThhnnZB-yymmddThhnnZE/
/nwsli.N.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
Hhmm am/pm time_zone day mon dd yyyy

...FLOOD ADVISORY NOW IN EFFECT UNTIL <FROM <time/day phrase> [1] TO <time/day
phrase>> or <UNTIL <time/day phrase>>... (optional)

THE FLOOD ADVISORY CONTINUES FOR
  THE <river/stream name> <proximity term - e.g., AT> <location>.
* <FROM <time/day phrase> [1] TO <time/day phrase>> or UNTIL <time/day phrase>.
```

```
* AT <time> [2] <day> THE <STAGE/FLOW> WAS <stage/flow> [3] [(optional:)
  ...<<AN INCREASE> or <A DECREASE> OF <stage/flow> <FEET or CFS>> or
  <<NO CHANGE> SINCE <time phrase>>].
* RECENT ACTIVITY...<e.g., recent peaks/trends in river stage>. (optional)
* <other stage/flow type> [4] IS <stage/flow>. (optional)
* FLOOD <STAGE/FLOW> IS <flood stage/flow>.
* 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)

&& (only provided here if tabular observed/forecast values are provided below for this segment)
  <tabular observed/forecast values for segment> (optional)
$$
```

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

or / and (for continuations):

```
stC001-002-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 REMAINS IN EFFECT <FROM <time/day phrase> [1] TO <time/day
phrase>> or <UNTIL <time/day phrase>>... (optional)

THE FLOOD ADVISORY CONTINUES FOR
  THE <river/stream name> <proximity term - e.g., AT> <location>.
* <FROM <time/day phrase> [1] TO <time/day phrase>> or UNTIL <time/day phrase>.
* AT <time/> [2] <day> THE <STAGE/FLOW> WAS <stage/flow> [3] [(optional:)
  ...<<AN INCREASE> or <A DECREASE> OF <stage/flow> <FEET or CFS>> or
  <<NO CHANGE> SINCE <time phrase>>].
* RECENT ACTIVITY...<e.g., recent peaks/trends in river stage>. (optional)
* <other stage/flow type> [4] IS <stage/flow>. (optional)
* FLOOD <STAGE/FLOW> IS <flood stage/flow>.
* 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)

&& (only provided here if tabular observed/forecast values are provided below for this segment)
  <tabular observed/forecast values for segment> (optional)
$$
```

(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., 400 PM THIS AFTERNOON, 400 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.

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 hydrologic 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 on an event basis when 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 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
stC001-002-ddhhmm-

HYDROLOGIC STATEMENT
NATIONAL WEATHER SERVICE <WFO location>
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)
$$
<forecaster name/number> (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). The hydrologic summary provides hydrologic observations and related information in a format which meets the needs of users. This product 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 hydrologic 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 statements 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 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)
RVAxxx
stC001-002-ddhhmm-

HYDROLOGIC SUMMARY
NATIONAL WEATHER SERVICE <WFO location>
hhmm am/pm time_zone mon dd yyyy

<...headline...> (optional)

<Tabular data>

$$

<forecaster name/number> (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). The river and lake forecast 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 ingest into a variety of computer applications operated by users.

15.2 Issuance Guidelines.

15.2.1 Creation Software. Generate the river and lake forecast product using 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 ".b " 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. 24 hour change;

f. 1 day forecast; and

g. Additional data, such as 6 hourly or daily forecasts out to 7 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 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
stC001-002-ddhhmm-

DAILY RIVER AND LAKE SUMMARY
NATIONAL WEATHER SERVICE <WFO location>
hhmm am/pm time_zone mon dd yyyy

<SHEF-encoded hydrologic forecasts>

$$

<forecaster name/number> (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, ASOS, and networks operated by partnering agencies.

16.1 Mission Connection. These 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. Create hydrometeorological data products using 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.

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_1A_2ii cccc ddhhmm (BBB) RR1xxx	HYDROMETEOROLOGICAL DATA REPORT #1	Local hydromet data, including observations from partner systems
SRA_1A_2ii cccc ddhhmm (BBB) RR2xxx	HYDROMETEOROLOGICAL DATA REPORT #2	Precipitation data
SRA_1A_2ii cccc ddhhmm (BBB) RR3xxx	HYDROMETEOROLOGICAL DATA REPORT #3	Data from cooperative observers
SRA_1A_2ii cccc ddhhmm (BBB) RR4xxx	HYDROMETEOROLOGICAL DATA REPORT #4	Cooperative observer special reports
SRA_1A_2ii cccc ddhhmm (BBB) RR5xxx	HYDROMETEOROLOGICAL DATA REPORT #5	Hourly hydrometeorological data (e.g., from flood warning system)
SRA_1A_2ii cccc ddhhmm (BBB) RR6xxx	HYDROMETEOROLOGICAL DATA REPORT #6	ASOS precip report, produced on exceedence of threshold rates
SRA_1A_2ii cccc ddhhmm (BBB) RR7xxx	HYDROMETEOROLOGICAL DATA REPORT #7	ASOS hourly precipitation report
SRA_1A_2ii cccc ddhhmm (BBB) RR8xxx	HYDROMETEOROLOGICAL DATA REPORT #8	Data provided by water resources agencies
SRA_1A_2ii cccc ddhhmm (BBB) RR9xxx	HYDROMETEOROLOGICAL DATA REPORT #9	Local hydrometeorological data
SRA_1A_2ii cccc ddhhmm (BBB) RRMxxx	MISCELLANEOUS HYDROLOGIC DATA REPORT	Local hydrometeorological data, SHEF or tabular format
SRA_1A_2ii cccc ddhhmm (BBB) RRAxxx	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)
RRxxxx
stC001-002-ddhhmm- (optional)

<MND Product Type Line> (optional)
NATIONAL WEATHER SERVICE <WFO location> (optional)
hhmm am/pm time_zone mon dd yyyy (optional)

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

<Data summary, SHEF or tabular format>

$$ (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 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.

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; and

c. Headline statement introducing the product (optional).

WMO Header	MND Product Type Line	Content
SXA_1A_2ii cccc ddhhmm (BBB) HYDxxx	DAILY HYDROMETEOROLOGICAL DATA SUMMARY	Quality controlled daily [1] hydrometeorological data
CWA_1A_2ii cccc ddhhmm (BBB) HYWxxx	WEEKLY HYDROMETEOROLOGICAL DATA SUMMARY	Quality controlled weekly hydrometeorological data
CSA_1A_2ii 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, i.e., TT=SX for daily products; TT=CW for weekly products; and TT=CS for monthly products.

```
TTA1A2ii cccc ddhhmm (BBB)
HYXxxx
stC001-002-ddhhmm-

<MND Product Type Line>
NATIONAL WEATHER SERVICE <WFO location>
hhmm am/pm time_zone mon dd yyyy

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

<Data summary, SHEF or tabular format>

$$
```

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
NWS <WFO name> <WFO location>
Time 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. Advanced Hydrologic Prediction Service. The hydrologic 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 WFO Advanced Hydrologic Prediction Service (AHPS) products and information sets provided through the Internet will conform to current NWS, NOAA, and DOC policies. Basic specifications for the National AHPS Web page are provided in NWSI 10-930, *National Hydrologic Products Specification*.