

**NATIONAL WEATHER SERVICE MANUAL 10-923
SEPTEMBER 8, 2009**

**Operations and Services
Hydrologic Services Program, NWSPD 10-9**

WEATHER FORECAST OFFICE HYDROLOGIC PRODUCT EXAMPLES

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

OPR: W/OS31 (T. Helble)
Type of Issuance: Routine.

Certified by: W/OS3 (T. Graziano)

SUMMARY OF REVISIONS: This directive supersedes NWS Manual 10-923, “Weather Forecast Office Hydrologic Product Examples,” dated July 17, 2007. The following revisions were made to this manual:

- 1) In Section 2, Example 2, changes the MND Product Type Line to PROBABILISTIC HYDROLOGIC OUTLOOK, since most of the product contains probabilistic information. Replaces the product example to a recent outlook issued by the Eastern North Dakota/Grand Forks weather forecast office.
- 2) In Sections 3 through 8, adds instruction field markers before and after any call-to-action statement or safety message in the product examples. These markers allow users (and the NWS) to more easily parse out call-to-action statements and safety messages into separate Common Alerting Protocol (CAP) instruction fields.
- 3) In Section 5, removes the green font from examples to indicate operational status for VTEC in flash flood warnings and flash flood statements.
- 4) In Section 5, adds examples of a flash flood warning for an ice jam (Section 5.10), flash flood statement – follow-up to a flash flood warning for an ice jam (Section 5.11), flash flood warning for debris flows (Section 5.12), and flash flood statement – follow up to a flash flood warning for debris flows (Section 5.13).
- 5) In Section 6, removes the headlines from examples, except for the category increase example, in accordance with the new procedure in NWSI 10-922.
- 6) In Section 7, removes the green font from examples to indicate operational status for VTEC in areal flood warnings and follow-up statements.
- 7) In Section 7, adds examples of an areal flood warning for an ice jam (Section 7.6) and flood statement – cancellation of an areal flood warning for an ice jam (Section 7.7).
- 8) In Section 7, removes the lists of cities after the county-based geographic areas in the first bullet of all initial areal flood warning examples, in accordance with the new procedure in NWSI 10-922.
- 9) In Section 8, removes the green font from examples to indicate operational status for VTEC in areal advisories.

- 10) In Section 8, removes the lists of cities after the county-based geographic areas in the first bullet of all initial areal flood advisory examples, in accordance with the new procedure in NWSI 10-922.

(Signed)

August 24, 2009

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

Date

Weather Forecast Office Hydrologic Product Examples

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1. Introduction. This directive provides examples of weather forecast office (WFO) hydrologic products described in [NWS Instruction 10-922, Weather Forecast Office Hydrologic Products Specification](#). Some WFO hydrologic products issued under a given Advanced Weather Information Processing System (AWIPS) identifier (e.g., flood statement – FLS) are used for multiple purposes. Therefore, several product examples are provided to illustrate key applications. NWS Instruction 10-922 provides flexibility to include or exclude certain items from hydrologic products, so these examples should not be taken as the only prescribed formats.

2. Hydrologic Outlook (ESF).

2.1 Example #1 - Potential Flooding From Excessive Rainfall: Near Term. This outlook issued by WFO Springfield, MO describes the flood potential in the three to five day time frame.

FGUS73 KSGF 102135
ESFSGF
MOC055-056-058-060>062-110400-

HYDROLOGIC OUTLOOK
NATIONAL WEATHER SERVICE SPRINGFIELD MO
335 PM CST FRI DEC 10 1999

...ANOTHER HEAVY RAINMAKER TO HIT THE OZARKS COULD PRODUCE FLOODING
EARLY NEXT WEEK...

OVER THE PAST COUPLE OF WEEKS...SIGNIFICANT RAINFALL HAS FALLEN
ACROSS THE OZARKS. AS A RESULT...MOST OF SOUTHWEST MISSOURI IS ALMOST
BACK TO NORMAL RAINFALL...AND IN SOME CASES ABOVE NORMAL. THROUGH
DECEMBER 10...SPRINGFIELD HAS RECEIVED 6.84 INCHES AND MANY AREAS
OF THE OZARKS HAVE RECEIVED MORE THAN EIGHT INCHES. THE NORMAL
RAINFALL FOR SPRINGFIELD IN DECEMBER IS 3.16 INCHES.

BEGINNING MONDAY AND EARLY TUESDAY...THE OZARKS WILL RECEIVE ANOTHER
SOAKING RAIN. CURRENT WEATHER MODELS INDICATE A STORM TRACK ACROSS
NORTHERN ARKANSAS AND SOUTHERN MISSOURI...BASICALLY THE SAME TRACK
TAKEN BY THE RECENT STORMS. THIS MEANS ABUNDANT GULF MOISTURE WILL
BE PULLED INTO THE STORM AND DEPOSIT UPWARDS OF ONE TO TWO INCHES
ACROSS MOST SECTIONS OF SOUTHERN MISSOURI.

FLOODING MAY OCCUR BECAUSE THE GROUND IS SATURATED FROM RECENT
RAINS. LOW WATER CROSSINGS AND SMALL STREAMS COULD SWELL TO SMALL
RAGING STREAMS OF WATER. RIVERS...MAINLY ACROSS SOUTHERN MISSOURI...
COULD RISE CLOSE TO OR ABOVE FLOOD STAGE BY NEXT TUESDAY.

THE HAZARDOUS WEATHER OUTLOOK PRODUCT WILL BE UPDATED WITH THE LATEST
INFORMATION THROUGHOUT THE WEEKEND. ANOTHER SOURCE OF CURRENT WEATHER
INFORMATION FOR SOUTHERN MISSOURI IS THROUGH OUR WEB PAGE AT:
WWW.CRH.NOAA.GOV/SGF/.

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2.2 Example #2 – Probabilistic Hydrologic Outlook: Long Term. This outlook issued by WFO Eastern North Dakota/Grand Forks describes the potential for snowmelt flooding in the entire hydrologic service area in terms of probabilities of exceeding various stages.

FGUS73 KFGF 032030 CCB
ESFFGF
MNC005-007-027-029-051-057-069-077-087-107-111-113-119-125-073-
135-159-167-NDC003-005-017-019-027-035-039-063-067-071-077-081-
091-095-097-099-241200-

PROBABILISTIC HYDROLOGIC OUTLOOK
 NATIONAL WEATHER SERVICE EASTERN NORTH DAKOTA/GRAND FORKS ND
 330 PM CDT FRI APR 03 2009

..ADVANCED HYDROLOGIC PREDICTION SERVICES (AHPS) ENABLE THE NATIONAL WEATHER SERVICE TO PROVIDE LONG-RANGE PROBABILISTIC RIVER OUTLOOKS...

..RED RIVER BASIN OUTLOOK FOR RIVER FLOOD POTENTIAL...

RED RIVER BASIN
 LONG-RANGE PROBABILISTIC OUTLOOK
 VALID APRIL 9, 2009 - JUNE 1, 2009

IN THE TABLE BELOW, THE 90 THROUGH 10 PERCENT COLUMNS GIVE THE CHANCE THAT THE RIVER AT A CERTAIN LOCATION WILL RISE ABOVE THE STAGES INDICATED BY THE VALUES IN THE ROW FOR THAT LOCATION ANYTIME DURING THE NEXT 90 DAYS.

EXAMPLE: THE RED RIVER AT WAHPETON HAS A FLOOD STAGE OF 10 FEET. IN THE NEXT 90 DAYS THERE IS A 50 PERCENT CHANCE THAT THE RED RIVER AT WAHPETON WILL RISE ABOVE 18.6 FEET AND ONLY A 10 PERCENT CHANCE THAT IT WILL RISE ABOVE 19.9 FEET.

CHANCE OF EXCEEDING STAGES AT MAINSTEM RED RIVER LOCATIONS
 VALID 4/9/2009 - 7/8/2009

LOCATION	FS(FT)	90%	80%	70%	60%	50%	40%	30%	20%	10%
WAHPETON ND	10	17.3	18.0	18.4	18.5	18.6	18.7	19.0	19.4	19.9
FARGO ND	18	40.4	40.8	41.2	41.4	41.7	41.9	42.4	43.3	44.6
HALSTAD ND	26	39.2	39.4	39.7	39.9	40.0	40.2	40.7	41.2	42.3
GRAND FORKS	28	49.8	50.3	50.7	51.2	51.7	52.1	52.7	53.8	56.1
OSLO MN	26	37.8	38.0	38.1	38.4	38.6	38.7	38.9	39.4	40.3
DRAYTON ND	32	43.6	43.9	44.1	44.5	44.7	44.9	45.2	46.1	46.6
PEMBINA ND	42	53.8	53.8	54.0	54.1	54.2	54.4	54.5	54.7	54.9

CHANCE OF EXCEEDING STAGES AT MINNESOTA TRIBUTARY LOCATIONS
 VALID 4/9/2009 - 7/8/2009

LOCATION	FS(FT)	90%	80%	70%	60%	50%	40%	30%	20%	10%
SO FORK BUFFALO RIVER...										
SABIN	12	16.3	16.5	16.8	16.9	17.0	17.1	17.4	17.9	18.4
BUFFALO RIVER...										
HAWLEY	7	10.3	10.5	10.6	10.7	10.8	10.9	11.2	11.6	11.9
DILWORTH	12	23.3	23.5	23.9	24.0	24.1	24.3	24.6	25.3	25.9
WILD RICE RIVER...										
TWIN VALLEY	10	11.3	11.8	11.9	12.1	12.5	12.8	13.2	13.4	14.0
HENDRUM	20	32.6	33.0	33.1	33.3	33.4	33.7	34.1	36.4	39.2
MARSH RIVER...										
SHELLY	14	20.5	21.0	21.3	21.9	22.7	23.1	23.6	24.3	25.2
SAND HILL RIVER...										
CLIMAX	20	32.7	33.6	33.9	34.6	35.7	36.5	37.1	37.7	38.5
RED LAKE RIVER...										
HIGHLANDING	12	9.6	10.0	10.3	10.5	10.6	11.0	11.6	12.5	13.1
CROOKSTON	15	22.7	23.8	24.0	24.7	25.3	25.7	26.3	26.7	28.6
SNAKE RIVER...										
WARREN	845	842.6	842.6	842.7	842.7	842.8	842.9	843.0	843.7	845.4
ALVARADO	106	104.4	104.6	105.0	105.2	105.9	106.2	107.1	107.9	108.9

TWO RIVERS RIVER...											
HALLOCK	802	808.6	808.9	809.2	809.4	809.7	809.9	810.1	810.3	810.8	
ROSEAU RIVER...											
ROSEAU	16	14.3	15.8	16.2	16.4	17.3	17.7	18.9	19.7	21.0	

CHANCE OF EXCEEDING STAGES AT NORTH DAKOTA TRIBUTARY LOCATIONS
VALID 4/9/2009 - 7/8/2009

LOCATION	FS(FT)	90%	80%	70%	60%	50%	40%	30%	20%	10%
WILD RICE RIVER...										
ABERCROMBIE	10	26.7	27.0	27.4	27.6	28.0	28.2	28.6	29.5	30.5
SHEYENNE RIVER...										
KINDRED	16	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.6
HARWOOD	884	892.1	892.1	892.1	892.1	892.2	892.2	892.2	892.3	892.3
WEST FARGO	18	22.8	22.8	22.8	22.8	22.9	22.9	22.9	23.0	23.0
MAPLE RIVER...										
ENDERLIN	9	13.9	14.5	14.7	15.0	15.3	15.5	15.7	16.4	17.3
MAPLETON	905	909.3	909.5	909.6	909.7	909.8	910.0	910.1	910.4	911.0
GOOSE RIVER...										
HILLSBORO	10	14.5	14.9	15.1	15.3	15.4	15.5	15.7	15.9	16.6
FOREST RIVER...										
MINTO	6	7.2	7.5	7.6	7.7	7.8	7.9	8.1	8.1	8.4
PARK RIVER...										
GRAFTON	12	14.7	15.5	15.8	16.0	16.2	16.6	16.9	17.2	18.4
PEMBINA RIVER...										
WALHALLA	11	14.5	14.6	14.6	14.7	14.8	14.9	15.0	15.1	15.2
NECHE	18	21.5	21.5	21.5	21.6	21.6	21.6	21.7	21.7	21.8

THE OUTLOOK PRODUCTION PROCESS...

THIS LONG RANGE PROBABILISTIC OUTLOOK IS BASED ON A SERIES OF PEAK RIVER LEVELS TAKEN FROM THE FORECAST RESULTS OF THE NWS ENSEMBLE STREAMFLOW MODEL (ESF). THE MODEL IS RUN FOR MULTIPLE SCENARIOS USING CURRENT RIVER...SNOW AND SOIL CONDITIONS COMBINED WITH ABOUT 50 YEARS OF PAST PRECIPITATION AND TEMPERATURE CONDITIONS EXPERIENCED DURING THE OUTLOOK PERIOD...AND COMPARED AGAINST CURRENT SPRING TEMPERATURE AND PRECIPITATION OUTLOOKS.

PROVIDING A RANGE OF RIVER LEVEL PROBABILITIES BASED ON CURRENT CONDITIONS AND PAST SPRING WEATHER...THE OUTLOOK GIVES EXPECTED AMOUNTS OF RISK WHICH CAN THEN HELP WITH LONG RANGE FLOOD PLANNING AND RESPONSE READINESS. THIS OUTLOOK IS A PART OF NOAA/S NATIONAL WEATHER SERVICE/S AHPS (ADVANCED HYDROLOGIC PREDICTION SERVICES).

FORECASTERS PRODUCE MULTIPLE SCENARIO HYDROGRAPHS USING THE ESF MODEL INITIALIZED WITH RECENT RAIN/SNOW AND SOIL MOISTURE CONDITIONS IN THE RED RIVER BASIN AND APPLYING SETS OF PAST PRECIPITATION AND TEMPERATURES FOR THE YEARS 1949 THROUGH 2004 AND FOR THE VALID PERIOD OF THE OUTLOOK.

ADDITIONAL INFORMATION SOURCES...

THE AHPS LONG RANGE PROBABILITY OUTLOOKS ARE ISSUED EACH MONTH TYPICALLY BETWEEN THE FIRST AND SECOND FRIDAY AFTER MID-MONTH. HOWEVER...SPRING FLOOD AND WATER RESOURCES OUTLOOKS ARE ISSUED SEVERAL TIMES DURING THE CRITICAL SPRING MELT PERIOD...USUALLY FROM EARLY MARCH TO EARLY APRIL...DEPENDING ON CONDITIONS.

THIS OUTLOOK IS ALSO PRESENTED AS GRAPHS OF THE PROBABILITY OF STAGE EXCEEDANCE FOR THE FULL PERIOD AND FOR WEEKLY INTERVALS DURING THE

PERIOD. THESE GRAPHS AND EXPLANATIONS THAT HELP INTERPRETING THEM ARE AVAILABLE FROM THE NWS GRAND FORKS AHPS WEB PAGE ON THE INTERNET AT:

WWW.WEATHER.GOV/GRANDFORKS

THEN CLICK ON THE "RIVERS AND LAKES AHPS" LINK IN THE LEFT MENU.

CURRENT RIVER CONDITIONS FOR ALL RIVER FORECAST POINTS IN THE RED RIVER OF THE NORTH AND DEVILS/STUMP LAKE CONDITIONS ARE ALSO AVAILABLE ON OUR WEB SITE...AS WELL AS THE 7-DAY FORECASTS WHEN THE RIVER AT THE FORECAST POINT IS IN OR NEAR FLOOD. IF YOU HAVE ANY QUESTIONS...CONTACT THE NWS AT 701-772-0720.

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2.3 Example #3 - Spring Ice Breakup Outlook: Long Term. This outlook issued by the Alaska Pacific River Forecast Center (RFC) describes the expected spring ice breakup on Alaska rivers. Note: the practice of issuing the ESF product at an RFC only exists in the Alaska Region.

FGAK78 PACR 270000
ESFAK
AKZALL-092200-

HYDROLOGIC OUTLOOK
NWS ALASKA PACIFIC RIVER FORECAST CENTER ANCHORAGE AK
300 PM AST FRI MAR 26 2004

...SPRING BREAKUP OUTLOOK FOR ALASKA...

THE FLOOD POTENTIAL FROM SNOWMELT AND ICE JAMS THIS SPRING BREAKUP SEASON THROUGHOUT ALASKA IS CURRENTLY RATED AS AVERAGE. THIS FORECAST IS BASED ON CURRENT BELOW NORMAL TO NORMAL SNOWPACK AND ICE THICKNESS BEING REPORTED OVER MOST OF ALASKA.

ICE - MARCH 1 ICE THICKNESS DATA ARE AVAILABLE FOR A LIMITED NUMBER OF OBSERVING SITES IN ALASKA. MEASUREMENTS INDICATE THAT ICE THICKNESS IS NEAR NORMAL OR THINNER THAN NORMAL IN MOST LOCATIONS. ALL YUKON RIVER ICE MEASUREMENTS ARE THINNER THAN NORMAL AND MEASUREMENTS ON THE KUSKOKWIM RIVER ARE AT OR BELOW NORMAL. AMONG A FEW SCATTERED LOCATIONS WITH THICKER THAN NORMAL ICE IS THE KOYUKUK RIVER AT BETTLES THAT HAS 4-FT THICK ICE WHICH REPRESENTS A INCREASE OF 30% OVER NORMAL CONDITIONS. FREEZING CONDITIONS DEVELOPED LATE OVER MUCH OF ALASKA FOLLOWED BY RELATIVELY NORMAL TEMPERATURES THROUGH JANUARY. THE RATE OF ICE GROWTH WAS INHIBITED BY THE INSULATION PROVIDED BY SNOWFALL SOON AFTER FREEZE-UP. A FEW WARM PERIODS IN FEBRUARY SLOWED ICE GROWTH IN THE SOUTHERN HALF OF ALASKA. SNOW - AN ANALYSIS OF THE MARCH 1 SNOWPACK BY THE NATURAL RESOURCES CONSERVATION SERVICE (NRCS) INDICATES NEAR NORMAL TO BELOW NORMAL SNOWPACK THROUGH MOST OF ALASKA. MEASUREMENTS OF ABOVE NORMAL SNOWPACK WERE REPORTED AT LOW ELEVATIONS ON THE NORTHERN KENAI PENINSULA AND AT SCATTERED LOCATIONS IN THE LOWER AND UPPER YUKON BASINS...PORCUPINE BASIN...FORTYMILE BASIN...COPPER RIVER BASIN...AND THE NORTHERN PANHANDLE. AREAS OF BELOW NORMAL MEASUREMENTS INCLUDE THE UPPER KUSKOKWIM BASIN...SUSITNA BASIN...UPPER COPPER BASIN...LOWER TANANA BASIN...AND THE SOUTHERN PANHANDLE. ALTHOUGH THESE AREAS REPORTED BELOW NORMAL SNOWPACK...THERE IS STILL ENOUGH SNOW IN MOST AREAS TO PRODUCE SIGNIFICANT SNOWMELT RUNOFF PEAKS IF SUBJECTED TO A RAPID WARMING PATTERN. WARM WEATHER IN FEBRUARY CAUSED SOME LOSS OF SNOWPACK IN LOW ELEVATION LOCATIONS IN SOUTHERN COASTAL AREAS.

FOR MORE DETAILS ON THE MARCH 1 SNOWPACK...PLEASE REFER TO THE VARIOUS SNOW GRAPHS OPTIONS AT THE APRFC WEB SITE AT... [HTTP://APRFC.ARH.NOAA.GOV](http://APRFC.ARH.NOAA.GOV) OR ON THE NRCS WEB SITE AT... [HTTP://AMBCS.ORG](http://AMBCS.ORG) AND SELECTING SNOWPACK REPORTS OR SNOWPACK MAPS.

WEATHER - MOST OF ALASKA WAS WARMER THAN NORMAL DURING FEBRUARY BUT HAS RETURNED TO MORE SEASONAL TEMPERATURES DURING MARCH. THE GREATEST FACTOR IN DETERMINING THE SEVERITY OF BREAKUP REMAINS THE WEATHER DURING APRIL AND MAY. THE SPRING OUTLOOK FOR THE APRIL THROUGH JUNE PERIOD CALLS FOR A GREATER LIKELIHOOD OF ABOVE NORMAL TEMPERATURES FOR ALL OF ALASKA EXCEPT THE NORTH SLOPE. THE OUTLOOK FOR APRIL INDICATES NO TENDENCY FOR ABOVE OR BELOW NORMAL TEMPERATURES IN ALASKA. THUS IT SEEMS UNLIKELY THAT THE ANTICIPATED WARM WEATHER WILL DEVELOP EARLY IN THE APRIL TO JUNE PERIOD. IF THE WEATHER REMAINS RELATIVELY COOL IN APRIL AND EARLY MAY FOLLOWED BY RAPID WARMING DURING MAY...THE MAJORITY OF SNOWMELT VOLUME WILL REACH THE STREAMS OVER A SHORT TIME PERIOD INCREASING THE PEAK IN STREAMFLOW AND THEREFORE INCREASING THE CHANCE OF ICE JAMS. FOR MORE INFORMATION ON THE OUTLOOKS FOR THIS SPRING PLEASE REFER TO THE CLIMATE PREDICTION CENTER WEB SITE AT...

[HTTP://WWW.CPC.NCEP.NOAA.GOV/PRODUCTS/FORECASTS](http://WWW.CPC.NCEP.NOAA.GOV/PRODUCTS/FORECASTS)

THE FLOOD POTENTIAL IS DESCRIBED BELOW...

FLOOD POTENTIAL	DEFINITION
BELOW AVERAGE.....	COMMUNITIES THAT FLOOD NEARLY EVERY YEAR MAY EXPERIENCE MINOR FLOODING OF LOW LYING AREAS
AVERAGE.....	COMMUNITIES PRONE TO SNOWMELT OR ICE JAM FLOODS SHOULD EXPECT SIMILAR CONDITIONS THIS YEAR
ABOVE AVERAGE.....	SEVERAL COMMUNITIES ARE VERY LIKELY TO FLOOD AND THE EXTENT OF FLOODING MAY BE SUBSTANTIAL

FOR MORE DETAIL AND TO SEE A FLOOD POTENTIAL MAP...ICE THICKNESS MAP ...SNOWPACK MAP...AND OTHER BREAKUP INFORMATION...REFER TO OUR WEB SITE AT...

[HTTP://APRFC.ARH.NOAA.GOV/PRODUCTS/GBRKUP.PHP](http://APRFC.ARH.NOAA.GOV/PRODUCTS/GBRKUP.PHP)

IF YOU HAVE ANY COMMENTS OR QUESTIONS REGARDING THIS STATEMENT... PLEASE EMAIL US AT BECKY.PERRY@NOAA.GOV

THE NEXT SPRING BREAKUP OUTLOOK IS SCHEDULED FOR APRIL 9 2004.

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3. Areal Flood Watch and Associated Follow-up Products (FFA).

3.1 Example #1 - Flood Watch. Situation – A storm system is approaching the WFO Blacksburg, VA area from the south. Models and Hydrometeorological Prediction Center (HPC) guidance indicate that the storm could produce moderate to heavy rain over an extended period. Forecasters see the potential for flooding, but at this time they cannot predict with certainty which rivers and streams are threatened. The WFO issues a flood watch for zones in Virginia and North Carolina at 2:52 a.m. on Tuesday May 27, 2003.

WGUS61 KRNK 270652
FFARNK

URGENT - IMMEDIATE BROADCAST REQUESTED
FLOOD WATCH
NATIONAL WEATHER SERVICE BLACKSBURG VA
252 AM EDT TUE MAY 27 2003

NCZ003>006-019-020-VAZ022>024-032>035-043>047-058-059-271300-
/O.NEW.KRNK.FA.A.0002.030527T1400Z-030528T0800Z/
/00000.0.ER.000000T0000Z.000000T0000Z.000000T0000Z.OO/
AMHERST-APPOMATTOX-BEDFORD-BOTETOURT-BUCKINGHAM-CAMPBELL-CASWELL-
CHARLOTTE-FRANKLIN-HALIFAX-HENRY-PATRICK-PITTSYLVANIA-ROANOKE-
ROCKBRIDGE-ROCKINGHAM-STOKES-SUNNY-WILKES-YADKIN-
252 AM EDT TUE MAY 27 2003

...FLOOD WATCH IN EFFECT FROM 10 AM THIS MORNING THROUGH WEDNESDAY
MORNING...

THE NATIONAL WEATHER SERVICE IN BLACKSBURG HAS ISSUED A

- * FLOOD WATCH FOR PORTIONS OF SOUTHWESTERN VIRGINIA AND NORTHWEST
NORTH CAROLINA...INCLUDING THE FOLLOWING COUNTIES IN VIRGINIA...
AMHERST...APPOMATTOX...BEDFORD...BOTETOURT...BUCKINGHAM...CAMPBELL...
CHARLOTTE...FRANKLIN...HALIFAX...HENRY...PATRICK...PITTSYLVANIA...
ROANOKE AND ROCKBRIDGE.
IN NORTH CAROLINA...CASWELL...ROCKINGHAM...STOKES...SURRY...WILKES
AND YADKIN.
- * FROM 10 AM THIS MORNING THROUGH WEDNESDAY MORNING.
- * LOW PRESSURE IS EXPECTED TO STRENGTHEN OVER THE CAROLINAS AND MOVE
EAST THIS AFTERNOON AS A POTENT UPPER DISTURBANCE OVER KENTUCKY
MOVES OVER THE SOUTHERN APPALACHIANS. AS A RESULT RAIN IS EXPECTED
TO REDEVELOP AND BECOME HEAVY AT TIMES ALONG AND EAST OF THE BLUE
RIDGE LATER THIS MORNING AND THIS AFTERNOON.
- * LOWER PORTIONS OF THE DAN AND ROANOKE RIVERS ARE ALREADY IN OR NEAR
FLOOD DUE TO HEAVY RAINFALL SUNDAY...AND ADDITIONAL RAINFALL COULD
EASILY CAUSE SHARP RISES ON THESE RIVERS. AREA CREEKS AND STREAMS
ARE ALSO RUNNING HIGH AND COULD FLOOD WITH MORE HEAVY RAIN.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

REMEMBER...A FLOOD WATCH MEANS THAT FLOODING IS POSSIBLE BUT NOT
IMMINENT IN THE WATCH AREA.

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Notes and Explanations –

- (1) The forecaster believes the flood threat starts at 10 a.m. on Tuesday, May 27, 2003 (1400Z). Therefore, the Event Beginning Date/Time group is 030527T1400Z and the beginning time/day phrase used in the second bullet is “10 AM THIS MORNING.”
- (2) The forecaster wants the watch to be valid until 4 a.m. Wednesday, May 28, 2003 (800Z). Therefore, the Event Ending Date/Time group is 030528T0800Z and the ending time/day phrase used in the second bullet is the general phrase “WEDNESDAY MORNING.”

3.2 Example #2 - Flood Watch: Follow-up With Cancellation, Extension in Area, and Continuation Segments. Situation - WFO Blacksburg issued a flood watch for zones in North

Carolina and Virginia at 2:52 a.m. on Tuesday May 27, 2003 (section 3.1). Later in the morning, models and HPC guidance indicated a more westerly storm track, so at 8:00 a.m., new zones are added to the watch in North Carolina, Virginia, West Virginia and a few zones in the eastern part of the original watch area are cancelled. The product would have three segments as follows:

WGUS61 KRNK 271200
FFARNK

URGENT - IMMEDIATE BROADCAST REQUESTED
FLOOD WATCH
NATIONAL WEATHER SERVICE BLACKSBURG VA
800 AM EDT TUE MAY 27 2003

...FLOOD WATCH AREA SHIFTED WESTWARD WITH FLOODING NOW POSSIBLE IN
SOUTHWESTERN VIRGINIA...EASTERN WEST VIRGINIA AND NORTHWEST NORTH
CAROLINA UNTIL TOMORROW MORNING...

NCZ005-006-VAZ044>047-058-059-271300-
/O.CAN.KRNK.FA.A.0002.030527T1400Z-030528T0800Z/
/00000.0.ER.000000T0000Z.000000T0000Z.000000T0000Z.OO/
APPOMATTOX-BUCKINGHAM-CAMPBELL-CHARLOTTE-CASWELL-HALIFAX-
PITTSYLVANIA-ROCKINGHAM-
800 AM EDT TUE MAY 27 2003

...FLOOD WATCH IS CANCELLED...

THE FLOOD WATCH FOR PORTIONS OF SOUTHWESTERN VIRGINIA AND NORTHWEST
NORTH CAROLINA HAS BEEN CANCELLED. LOW PRESSURE CONTINUES TO
STRENGTHEN OVER THE CAROLINAS AS AN UPPER DISTURBANCE THAT TRIGGERED
HEAVY RAIN OVER KENTUCKY IS STARTING TO MOVE IN OVER THE SOUTHERN
APPALACHIANS. HOWEVER...THE HEAVIEST RAINFALL IS NOW EXPECTED TO
OCCUR FURTHER WEST ALONG BOTH SIDES OF THE BLUE RIDGE THIS MORNING AND
THIS AFTERNOON. THEREFORE...THE FLOOD WATCH IS BEING CANCELLED FOR
THOSE COUNTIES FARTHER EAST FROM THE BLUE RIDGE.

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NCZ001-002-018-VAZ011>018-020-WVZ044-045-272000-
/O.EXA.KRNK.FA.A.0002.030527T1400Z-030528T0800Z/
/00000.0.ER.000000T0000Z.000000T0000Z.000000T0000Z.OO/
ALLEGHANY-ASHE-BATH-CARROLL-CRAIG-FLOYD-GILES-GRAYSON-GREENBRIER-
MONROE-MONTGOMERY-PULASKI-WATAUGA-WYTHE-
800 AM EDT TUE MAY 27 2003

...FLOOD WATCH IN EFFECT THROUGH WEDNESDAY MORNING...

THE NATIONAL WEATHER SERVICE IN BLACKSBURG HAS EXPANDED THE

- * FLOOD WATCH TO INCLUDE PORTIONS OF THE APPALACHIAN REGIONS OF
VIRGINIA...WEST VIRGINIA AND NORTH CAROLINA...INCLUDING THE
FOLLOWING COUNTIES...IN VIRGINIA...BATH...CARROLL...CRAIG...FLOYD...
GILES...GRAYSON...MONTGOMERY...PULASKI AND WYTHE. IN WEST
VIRGINIA...GREENBRIER AND MONROE. IN NORTH CAROLINA...ALLEGHANY...
ASHE AND WATAUGA.
- * THROUGH WEDNESDAY MORNING.
- * LOW PRESSURE CONTINUES TO STRENGTHEN OVER THE CAROLINAS AS A POTENT
UPPER DISTURBANCE THAT TRIGGERED HEAVY RAIN OVER KENTUCKY IS
STARTING TO MOVE OVER THE SOUTHERN APPALACHIANS. HOWEVER...THE
HEAVIEST RAINFALL IS NOW EXPECTED TO OCCUR ALONG BOTH SIDES OF THE

BLUE RIDGE THIS MORNING AND THIS AFTERNOON. THEREFORE...THE FLOOD WATCH IS BEING EXTENDED INTO AREAS ALONG AND WEST OF THE BLUE RIDGE.

- * AREA CREEKS AND STREAMS ARE RUNNING HIGH AND COULD FLOOD WITH MORE HEAVY RAIN.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

REMEMBER...A FLOOD WATCH MEANS THAT FLOODING IS POSSIBLE BUT NOT IMMINENT IN THE WATCH AREA.

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NCZ003-004-019-020-VAZ022>024-032>035-043-272000-
/O.CON.KRNK.FA.A.0002.030527T1400Z-030528T0800Z/
/00000.0.ER.000000T0000Z.000000T0000Z.000000T0000Z.OO/
AMHERST-BEDFORD-BOTETOURT-FRANKLIN-HENRY-PATRICK-ROANOKE-
ROCKBRIDGE-STOKES-SUNNY-WILKES-YADKIN-
800 AM EDT TUE MAY 27 2003

...FLOOD WATCH REMAINS IN EFFECT THROUGH WEDNESDAY MORNING...

THE FLOOD WATCH CONTINUES FOR

- * PORTIONS OF SOUTHWESTERN VIRGINIA AND NORTHWEST NORTH CAROLINA... INCLUDING THE FOLLOWING COUNTIES...IN VIRGINIA...AMHERST... BEDFORD...BOTETOURT...FRANKLIN...HENRY...PATRICK...ROANOKE... ROCKBRIDGE AND STOKES. IN NORTH CAROLINA...SURRY...WILKES AND YADKIN.

- * THROUGH WEDNESDAY MORNING.

- * LOW PRESSURE CONTINUES TO STRENGTHEN OVER THE CAROLINAS AS A POTENT UPPER DISTURBANCE THAT TRIGGERED HEAVY RAIN OVER KENTUCKY IS STARTING TO MOVE OVER THE SOUTHERN APPALACHIANS. THE HEAVIEST RAINFALL IS NOW EXPECTED BE CENTERED OVER THE BLUE RIDGE THIS MORNING AND THIS AFTERNOON. THEREFORE...THE FLOOD WATCH CONTINUES ALONG THE WESTERN SLOPES OF THE BLUE RIDGE.

- * ADDITIONAL RAINFALL COULD CAUSE RISES ON THE UPPER REACHES OF THE DAN AND ROANOKE RIVERS RIVERS. AREA CREEKS AND STREAMS ARE ALSO RUNNING HIGH AND COULD FLOOD WITH MORE HEAVY RAIN.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

REMEMBER...A FLOOD WATCH MEANS THAT FLOODING IS POSSIBLE BUT NOT IMMINENT IN THE WATCH AREA.

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Notes and Explanations:

- (1) A cancellation segment (CAN) is used to remove the zones from the area for which a flood watch no longer applies.
- (2) An extension in area segment (EXA) is used for the new zones now being covered by the multi-segmented flood watch.
- (3) All three segments in this product have the same event tracking number.
- (4) A continuation segment (CON) is used for the zones in the original watch that will continue to be covered in the multi-segmented flood watch.

(5) This product is being issued at 8:00 a.m. (1200Z), which is two hours before the event beginning time provided in this and the original product (10:00 a.m. or 1400Z). The Event Beginning Date/Time for all three segments remains the same as the initial flood watch (030527T1400Z), but since it is less than three hours from the issuance time, "THROUGH WEDNESDAY MORNING" is used in the second bullet of segments 2 and 3.

(6) All three segments, including the cancellation segment, use the same date and time in the Event Ending Date/Time group - i.e., 4 a.m. on May 28th (030528T0800Z).

3.3 Example #3 - Flash Flood Watch. Situation: A storm system is moving into the WFO Springfield, MO area from the west. Using HPC QPF and RFC guidance, forecasters conclude that flash flooding could occur. However, the specific locations that could experience flash flooding cannot be predicted with certainty. At 3:00 a.m. (900Z) on Wednesday, March 19, 2003, a flash flood watch is issued for seven zones in southwestern Missouri.

WGUS63 KFGF 190900
FFASGF

URGENT - IMMEDIATE BROADCAST REQUESTED
FLOOD WATCH
NATIONAL WEATHER SERVICE SPRINGFIELD MO
300 AM CST WED MAR 19 2003

MOZ066-077-088-093-094-101-102-191500-
/O.NEW.KSGF.FF.A.0002.030319T1500Z-030320T2200Z/
/00000.0.ER.000000T0000Z.000000T0000Z.000000T0000Z.OO/
BARRY-BARTON-JASPER-LAWRENCE-MCDONALD-NEWTON-VERNON-
300 AM CST WED MAR 19 2003

...FLASH FLOOD WATCH IN EFFECT FROM 9 AM THIS MORNING THROUGH
THURSDAY AFTERNOON...

THE NATIONAL WEATHER SERVICE IN SPRINGFIELD HAS ISSUED A

- * FLASH FLOOD WATCH FOR A PORTION OF SOUTHWESTERN MISSOURI...
INCLUDING THE FOLLOWING COUNTIES...BARRY...BARTON...JASPER...
LAWRENCE...MCDONALD...NEWTON AND VERNON.
- * FROM 9 AM THIS MORNING THROUGH THURSDAY AFTERNOON.
- * A STRONG STORM SYSTEM MOVING NORTHEAST ACROSS THE CENTRAL PLAINS
WILL CONTINUE TO PUMP MOISTURE NORTHWARD FROM THE GULF OF MEXICO.
A LARGE BAND OF RAIN AND THUNDERSTORMS WILL CONTINUE TO ROTATE
NORTHWESTWARD AROUND THIS UPPER LOW. MODERATE TO HEAVY RAIN AND
OCCASIONAL THUNDERSTORMS ASSOCIATED WITH THIS BAND WILL CONTINUE
OVER THE WATCH AREA MUCH OF TODAY. WIDESPREAD RAINFALL AMOUNTS OF
1 TO 2 INCHES ARE LIKELY IN THE WATCH AREA TODAY...WITH LOCALLY
HEAVIER AMOUNTS OF 3 OR MORE INCHES POSSIBLE.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

REMEMBER...A FLASH FLOOD WATCH MEANS THAT FLOODING IS POSSIBLE BUT NOT
IMMINENT IN THE WATCH AREA. PERSONS IN SOUTHWESTERN MISSOURI SHOULD
BE AWARE OF THE POSSIBILITY FOR HEAVY RAINFALL AND FLASH FLOODING...
CHECK YOUR PREPAREDNESS REQUIREMENTS...ESPECIALLY IF YOU HAVE
INTERESTS ALONG RIVERS IN THE AREA. KEEP INFORMED...AND BE READY FOR
ACTION IF FLOODING IS OBSERVED OR IF A FLASH FLOOD WARNING IS ISSUED.
STAY TUNED TO NOAA WEATHER RADIO...COMMERCIAL MEDIA OR YOUR CABLE
TELEVISION PROVIDER FOR WATCH UPDATES AND POSSIBLE WARNINGS.

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Notes and Explanations:

(1) The forecaster believes the flood threat starts at 9:00 a.m. on Wednesday, March 19, 2003 (1500Z). Therefore, the Event Beginning Date/Time group is 030319T1500Z and the beginning time/day phrase used in the second bullet is "9 AM THIS MORNING."

(2) The forecaster wants the watch to be valid until 4:00 p.m. Thursday, March 20 (2200Z). Therefore, the Event Ending Date/Time group is 030320T2200Z and the ending time/day phrase used in the second bullet is "THURSDAY AFTERNOON."

3.4 Example #4 - Flash Flood Watch: Follow-up With Extension in Time and Extension In Area Segments.

Situation: Six hours after the initial flash flood watch was issued, forecasters at WFO Springfield, MO observe that the approaching storm will cover a wider area and have a longer duration than originally anticipated. At 9:00 a.m. on Wednesday, March 19, they issue a flash flood watch which expands coverage into three zones in southeastern Kansas and extends the event expiration time by eight hours from 4:00 p.m. Thursday afternoon to midnight.

WGUS63 KFGF 191500
FFASGF

URGENT - IMMEDIATE BROADCAST REQUESTED
FLOOD WATCH
NATIONAL WEATHER SERVICE SPRINGFIELD MO
900 AM CST WED MAR 19 2003

...AREA OF POSSIBLE FLASH FLOODING EXPANDED INTO FAR SOUTHEASTERN KANSAS AND PERIOD OF THREAT EXTENDED UNTIL LATE THURSDAY NIGHT...

MOZ066-077-088-093-094-101-102-192100-
/O.EXT.KSGF.FF.A.0002.000000T0000Z-030321T0600Z/
/00000.0.ER.000000T0000Z.000000T0000Z.000000T0000Z.OO/
BARRY-BARTON-JASPER-LAWRENCE-MCDONALD-NEWTON-VERNON-
900 AM CST WED MAR 19 2003

...FLASH FLOOD WATCH EXTENDED THROUGH LATE THURSDAY NIGHT...

THE NATIONAL WEATHER SERVICE IN SPRINGFIELD HAS EXTENDED THE

* FLASH FLOOD WATCH FOR A PORTION OF SOUTHWESTERN MISSOURI...
INCLUDING THE FOLLOWING COUNTIES...BARRY...BARTON...JASPER...
LAWRENCE...MCDONALD...NEWTON AND VERNON.

* THROUGH LATE THURSDAY NIGHT.

* A STRONG STORM SYSTEM MOVING NORTHEAST ACROSS THE CENTRAL PLAINS CONTINUES TO DRAW MOISTURE NORTHWARD FROM THE GULF OF MEXICO. RAIN AND A FEW THUNDERSTORMS ARE BEGINNING TO MOVE INTO THE SOUTHERN PART OF THE WATCH AREA. HEAVY RAIN IS NOW POSSIBLE INTO TONIGHT... WITH LOCALIZED AMOUNTS OF 1 TO 2 INCHES POSSIBLE IN THE WATCH AREA. EVEN HEAVIER AMOUNTS OF 3 OR MORE INCHES COULD STILL OCCUR.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

A FLASH FLOOD WATCH MEANS THAT FLOODING IS POSSIBLE BUT NOT IMMINENT IN THE WATCH AREA. PERSONS IN SOUTHWESTERN MISSOURI SHOULD BE AWARE OF THE POSSIBILITY FOR HEAVY RAINFALL AND FLASH FLOODING...CHECK YOUR PREPAREDNESS REQUIREMENTS...ESPECIALLY IF YOU HAVE INTERESTS ALONG

SMALL RIVERS AND STREAMS IN THE AREA. KEEP INFORMED...AND BE READY FOR ACTION IF FLOODING IS OBSERVED OR IF A FLASH FLOOD WARNING IS ISSUED.

STAY TUNED TO NOAA WEATHER RADIO...COMMERCIAL MEDIA OR YOUR CABLE TELEVISION PROVIDER FOR WATCH UPDATES AND POSSIBLE WARNINGS.

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KSZ073-097-101-192100-
/O.EXB.KSGF.FF.A.0002.000000T0000Z-030321T0600Z/
/00000.0.ER.000000T0000Z.000000T0000Z.000000T0000Z.OO/
BOURBON-CHEROKEE-CRAWFORD-
900 AM CST WED MAR 19 2003

...FLASH FLOOD WATCH IN EFFECT THROUGH LATE THURSDAY NIGHT...

THE NATIONAL WEATHER SERVICE IN SPRINGFIELD HAS EXPANDED THE

* FLASH FLOOD WATCH TO INCLUDE A PORTION OF FAR SOUTHEASTERN KANSAS...

* THROUGH LATE THURSDAY NIGHT.

* A STRONG STORM SYSTEM MOVING NORTHEAST ACROSS THE CENTRAL PLAINS CONTINUES TO DRAW MOISTURE NORTHWARD FROM THE GULF OF MEXICO. RAIN AND A FEW THUNDERSTORMS ROTATING AROUND THIS LOW ARE BEGINNING TO MOVE INTO THE SOUTHERN PART OF THE WATCH AREA. HEAVY RAIN MAY AFFECT AREAS FURTHER WEST INTO SOUTHEASTERN KANSAS AND LAST INTO TONIGHT. LOCAL AMOUNTS OF 1 TO 2 INCHES ARE POSSIBLE IN THE WATCH AREA...WITH 3 OR MORE INCHES STILL POSSIBLE IN SOME LOCATIONS.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

A FLASH FLOOD WATCH MEANS THAT FLOODING IS POSSIBLE BUT NOT IMMINENT IN THE WATCH AREA. BE AWARE OF THE POSSIBILITY FOR HEAVY RAINFALL AND FLASH FLOODING...CHECK YOUR PREPAREDNESS REQUIREMENTS... ESPECIALLY IF YOU HAVE INTERESTS ALONG SMALL RIVERS AND STREAMS IN THE AREA. KEEP INFORMED...AND BE READY FOR ACTION IF FLOODING IS OBSERVED OR IF A FLASH FLOOD WARNING IS ISSUED.

STAY TUNED TO NOAA WEATHER RADIO...COMMERCIAL MEDIA OR YOUR CABLE TELEVISION PROVIDER FOR WATCH UPDATES AND POSSIBLE WARNINGS.

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Notes and Explanations:

(1) The new zones being added to the flash flood watch are handled in an EXB (extended in both area and time) segment and the zones in the original flood watch are handled in an EXT (extended in time) segment.

(2) The valid time for the original flash flood watch was 9:00 a.m. Since this follow-up product is being issued at 9:00 a.m., the event is considered to have already begun and the Event Beginning Date/Time groups for both segments are coded with ten zeros (000000T0000Z). Therefore, no beginning time/day phrases are used in the headlines and second bullets of the EXB and EXT segments.

(3) The forecaster wants to extend the valid time by eight hours to midnight (0600Z). Therefore, the Event Ending Date/Time group is 030321T0600Z and the ending time/day phrase used is "LATE THURSDAY NIGHT."

3.5 Example #5 - Flash Flood Watch: Short and Long Zone Names. Situation: A forecaster at WFO Albuquerque, NM notes a line of thunderstorms is moving across the state. Observations, models, and HPC guidance indicate conditions are favorable for flash flooding, but the nature of the storm makes it difficult to predict with certainty whether the rainfall will persist and where flooding could occur, so a flash flood watch is issued for the day over a wide area.

WGUS65 KABQ 281555
FFAABQ

URGENT - IMMEDIATE BROADCAST REQUESTED
FLOOD WATCH
NATIONAL WEATHER SERVICE ALBUQUERQUE NM
955 AM MDT SAT OCT 28 2000

...FLASH FLOODING POSSIBLE IN THE EAST CENTRAL PLAINS AND SOUTHEAST
NEW MEXICO TODAY...

NMZ006-012-013-018>021-282200-
/O.NEW.KABQ.FF.A.0015.001028T1555Z-001028T2200Z/
/00000.0.ER.000000T0000Z.000000T0000Z.000000T0000Z.OO/
HARDING COUNTY-CONCHAS LAKE/GUADALUPE COUNTY-QUAY COUNTY-
DE BACA COUNTY-CHAVES COUNTY PLAINS-ROOSEVELT COUNTY-CURRY COUNTY-
955 AM MDT SAT OCT 28 2000

...FLASH FLOOD WATCH IN EFFECT UNTIL 4 PM THIS AFTERNOON...

THE NATIONAL WEATHER SERVICE IN ALBUQUERQUE HAS ISSUED A

* FLASH FLOOD WATCH FOR A PORTION OF THE EAST CENTRAL PLAINS AND
SOUTHEAST AREAS OF NEW MEXICO... INCLUDING THE FOLLOWING AREAS...
HARDING COUNTY...CONCHAS LAKE/GUADALUPE COUNTY...QUAY COUNTY...
DE BACA COUNTY...CHAVES COUNTY PLAINS...ROOSEVELT COUNTY AND CURRY
COUNTY.

* UNTIL 4 PM THIS AFTERNOON.

* AT 950 AM MDT...WELL DEFINED LINE OF STRONG THUNDERSTORMS WAS
MOVING SLOWLY EASTWARD ACROSS PARTS OF EASTERN NEW MEXICO. THE LINE
CURRENTLY EXTENDS FROM WESTERN CHAVES TO NORTHEAST DE BACA INTO
EASTERN SAN MIGUEL AND HARDING COUNTIES. THE LINE OF THUNDERSTORMS
WILL GRADUALLY MOVE EASTWARD AS THE UPPER LEVEL STORM SYSTEM BEGINS
TO MOVE INTO NORTHEAST NEW MEXICO LATER TODAY.

* SOUTHERLY WINDS...AT THE SURFACE AND ALOFT...ARE CREATING AN
ENVIRONMENT FAVORABLE FOR TRAINING OF THUNDERSTORMS OVER THE
EASTERN PORTIONS OF NEW MEXICO. SOME OF THE STRONGER STORMS COULD
PRODUCE RAINFALL RATES BETWEEN 1 TO 2 INCHES AN HOUR.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

A FLASH FLOOD WATCH MEANS THAT FLOODING IS POSSIBLE BUT NOT IMMINENT
IN THE WATCH AREA.

STAY TUNED TO NOAA WEATHER RADIO...COMMERCIAL MEDIA OR YOUR CABLE
TELEVISION PROVIDER FOR WATCH UPDATES AND POSSIBLE WARNINGS.

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Notes and Explanation:

(1) The forecaster wants the watch to start immediately because the line of thunderstorms has

already formed, so the Event Beginning Date/Time (001028T1555Z) is the same as the product issuance date/time (9:55 a.m. on Saturday, Oct 28, 2000).

(2) Note how terrain-oriented names are used for some zones such as "Chaves County Plains," while other zone names correspond one-to-one with counties.

3.6 Example #6 - Flash Flood Watch: Long Zone Names. Situation: A storm system with heavy rainfall is moving into southern California. Because it is difficult to predict where and if flash flood-causing rainfall will occur, forecasters at WFO San Diego, CA issue a flash flood watch for the night and next day over most of the county warning area.

WGUS66 KSGX 120342
FFASGX

URGENT - IMMEDIATE BROADCAST REQUESTED
FLOOD WATCH
NATIONAL WEATHER SERVICE SAN DIEGO CA
745 PM PST TUE FEB 11 2003

...FLASH FLOODING POSSIBLE OVER SOUTHERN CALIFORNIA UNTIL THURSDAY MORNING...

CAZ042-043-048-050-055>058-061-062-121200-
/O.NEW.KSGX.FF.A.0003.030212T0345Z-030213T1200Z/
/00000.0.ER.000000T0000Z.000000T0000Z.000000T0000Z.OO/
ORANGE COUNTY COASTAL AREAS-SAN DIEGO COUNTY COASTAL AREAS-
SAN BERNARDINO AND RIVERSIDE COUNTY VALLEYS-THE INLAND EMPIRE-
SAN DIEGO COUNTY VALLEYS-SAN BERNARDINO COUNTY MOUNTAINS-RIVERSIDE
COUNTY MOUNTAINS-SANTA ANY MOUNTAINS AND FOOTHILLS-SAN DIEGO COUNTY
MOUNTAINS-COACHELLA VALLEY-SAN DIEGO COUNTY DESERTS-
745 PM PST TUE FEB 11 2003

...FLASH FLOOD WATCH IN EFFECT THROUGH THURSDAY MORNING...

THE NATIONAL WEATHER SERVICE IN SAN DIEGO HAS ISSUED A

* FLASH FLOOD WATCH FOR THE COASTAL...MOUNTAIN...INLAND EMPIRE...
AND SOUTHERN DESERT AREAS OF SOUTHERN CALIFORNIA... INCLUDING
THE FOLLOWING AREAS...ORANGE COUNTY COASTAL AREAS...SAN DIEGO
COUNTY COASTAL AREAS...SAN BERNARDINO AND RIVERSIDE COUNTY
VALLEYS...THE INLAND EMPIRE...SAN DIEGO COUNTY VALLEYS...SAN
BERNARDINO COUNTY MOUNTAINS...RIVERSIDE COUNTY MOUNTAINS...
SANTA ANY MOUNTAINS AND FOOTHILLS...SAN DIEGO COUNTY MOUNTAINS...
COACHELLA VALLEY AND SAN DIEGO COUNTY DESERTS.

* THROUGH THURSDAY MORNING.

* A LARGE STORM SOUTHWEST OF SAN DIEGO WILL CONTINUE TO FEED
MOISTURE INTO SOUTHERN CALIFORNIA TONIGHT AND WEDNESDAY. AS THE
STORM MOVES NORTHEAST RAIN WILL INCREASE ACROSS THE AREA...WITH
HEAVY RAIN LIKELY WEDNESDAY. RAINFALL RATES OF 1/2 INCH PER HOUR
OR MORE WILL PRODUCE STREET FLOODING...AND MAY ALSO BRING SMALL
CREEKS AND STREAMS TO BANKFULL.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

A FLASH FLOOD WATCH MEANS THAT FLOODING IS POSSIBLE BUT NOT IMMINENT
IN THE WATCH AREA.

THE HEAVY RAINS WILL INCREASE THE THREAT OF MUDSLIDES AND FLOODING IN
AND BELOW THE BURN AREAS. RESIDENTS IN THESE AREAS SHOULD MAKE
PREPARATIONS FOR FLOODING AND BE PREPARED TO MOVE TO HIGHER GROUND IF

HEAVY RAINS DEVELOP. STAY TUNED TO NOAA WEATHER RADIO...COMMERCIAL MEDIA OR CABLE TELEVISION FOR WATCH UPDATES AND POSSIBLE WARNINGS.

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Notes and Explanations:

(1) The forecaster wants the watch to start immediately because the storm system is already moving on shore, so the Event Beginning Date/Time (030212T0345Z) is the same as the product issuance date/time (7:45 p.m. on Tuesday, Feb 11, 2003).

(2) Note how the highly variable topography in Southern California necessitates the use of more terrain-oriented zone names such as "San Bernardino County Mountains."

3.7 Example #7 - Flood Watch: Long Zone Names. Situation: A large area of moderate rainfall is occurring over the coast range portion of the WFO Portland, OR county warning area. Under current antecedent conditions, RFC guidance indicates that this heavily forested area can absorb about two inches of rainfall without significant flooding. QPFs indicate that heavier rainfall could occur in a few areas, so the forecaster knows that there is some potential for flooding. Therefore, a flood watch is issued until 11:00 p.m. Saturday evening. The zones covered in this product are different from those common in the central, eastern, and southern U.S. – highly variable topography in the western states frequently necessitates long zone names which reflect geographic regions (e.g., North Oregon Coast) rather than counties.

WGUS66 KPQR 220131
FFAPQR

URGENT - IMMEDIATE BROADCAST REQUESTED
FLOOD WATCH
NATIONAL WEATHER SERVICE PORTLAND OR
530 PM PST FRI MAR 21 2003

ORZ001>004-006>008-WAZ021-220700-
/O.NEW.KPQR.FA.A.0007.030322T0130Z-030323T0700Z/
/00000.0.ER.000000T0000Z.000000T0000Z.000000T0000Z.OO/
NORTH OREGON COAST-CENTRAL OREGON COAST-COAST RANGE OF NORTHWEST
OREGON-CENTRAL COAST RANGE OF WESTERN OREGON-GREATER PORTLAND
METRO AREA-CENTRAL WILLAMETTE VALLEY-SOUTH WILLAMETTE VALLEY-
SOUTH WASHINGTON COAST-
530 PM PST FRI MAR 21 2003

...FLOOD WATCH IN EFFECT THROUGH SATURDAY NIGHT...

THE NATIONAL WEATHER SERVICE IN PORTLAND HAS ISSUED A

* FLOOD WATCH FOR THE WILLAMETTE TRIBUTARIES DRAINING THE NORTHWEST OREGON COAST RANGE AND THE COASTAL RIVERS AND STREAMS OF SOUTHWEST WASHINGTON AND NORTHWEST OREGON...INCLUDING THE FOLLOWING AREAS... NORTH OREGON COAST...CENTRAL OREGON COAST...COAST RANGE OF NORTHWEST OREGON...CENTRAL COAST RANGE OF WESTERN OREGON...GREATER PORTLAND METRO AREA...CENTRAL WILLAMETTE VALLEY...SOUTH WILLAMETTE VALLEY AND SOUTH WASHINGTON COAST.

* THROUGH SATURDAY NIGHT.

* RAIN CONTINUES TO FALL THIS EVENING OVER THE COAST AND COAST RANGE OF SOUTHWEST WASHINGTON AND NORTHWEST OREGON...AND WILL CONTINUE TO BE HEAVY AT TIMES TONIGHT.

* SEVERAL OF THE RIVERS AND STREAMS DRAINING THE COAST RANGE IN NORTHWEST OREGON AND SOUTHWEST WASHINGTON MAY RISE TO FLOOD STAGE TONIGHT OR SATURDAY. ALONG THE COASTAL SLOPES THE STREAMS MOST AT RISK FOR FLOODING INCLUDE THE NEHALEM...WILSON...SILETTE AND SIUSLAW RIVERS. STREAMS AT RISK FOR FLOODING DRAINING THE EAST SLOPES OF THE COAST RANGE INTO THE WILLAMETTE RIVER INCLUDE THE LUCKIAMUTE...MARYS AND UPPER TULATIN RIVERS.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

A FLOOD WATCH MEANS THAT FLOODING IS POSSIBLE BUT NOT IMMINENT IN THE WATCH AREA.

STAY TUNED TO NOAA WEATHER RADIO...COMMERCIAL MEDIA OR YOUR CABLE TELEVISION PROVIDER FOR WATCH UPDATES AND POSSIBLE WARNINGS. STAGE FORECASTS FOR RIVERS IN THE WATCH AREA SHOULD BE MONITORED. THESE STAGE FORECASTS ARE BASED ON OBSERVED AND FORECAST RAINFALL AND TEMPERATURES. IF ACTUAL RAINFALL AND TEMPERATURES VARY FROM THE FORECAST VALUES...THE RIVER STAGE WILL VARY ACCORDINGLY. RIVER FORECASTS ALSO INCLUDE CURRENT AND PLANNED RESERVOIR RELEASES. FOR THE LATEST RIVER STAGES AND FORECASTS...VISIT OUR WEB PAGE AT WWW.WRH.NOAA.GOV/PORTLAND/PUBLIC_HYDRO.

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J. DOE

Notes and Explanations:

- (1) The forecaster wants the watch to start immediately because the rainfall has already started, so the Event Beginning Date/Time (030322T0130Z) is the same as the product issuance date/time (5:30 p.m. on Friday, Mar 21, 2003).
- (2) Note how more terrain-oriented zone names such as "Coast Range of Northwest Oregon" are used because of the mountainous topography in coastal Oregon and Washington.
- (3) Note the highly specific description of the areas and streams with the potential for flooding.

3.8 Example #8 - Flood Watch: Follow-up With Long Zone Names. Five and a half hours after the initial flood watch was issued, forecasters at WFO Portland, OR issued a flood watch to update the original watch.

WGUS66 KPQR 220700
FFAPQR

FLOOD WATCH
NATIONAL WEATHER SERVICE PORTLAND OR
1100 PM PST FRI MAR 21 2003

ORZ001>004-006>008-WAZ021-221300-
/O.CON.KPQR.FA.A.0007.000000T0000Z-030323T0700Z/
/00000.0.ER.000000T0000Z.000000T0000Z.000000T0000Z.OO/
NORTH OREGON COAST-CENTRAL OREGON COAST-COAST RANGE OF NORTHWEST
OREGON-CENTRAL COAST RANGE OF WESTERN OREGON-GREATER PORTLAND METRO
AREA-CENTRAL WILLAMETTE VALLEY-SOUTH WILLAMETTE VALLEY-SOUTH
WASHINGTON COAST-
1100 PM PST FRI MAR 21 2003

...FLOOD WATCH REMAINS IN EFFECT THROUGH SATURDAY NIGHT...

THE FLOOD WATCH CONTINUES FOR

- * THE WILLAMETTE TRIBUTARIES DRAINING THE NORTHWEST OREGON COAST RANGE AND THE COASTAL RIVERS AND STREAMS OF SOUTHWEST WASHINGTON AND NORTHWEST OREGON...INCLUDING THE FOLLOWING AREAS...NORTH OREGON COAST...CENTRAL OREGON COAST...COAST RANGE OF NORTHWEST OREGON...CENTRAL COAST RANGE OF WESTERN OREGON...GREATER PORTLAND METRO AREA...CENTRAL WILLAMETTE VALLEY...SOUTH WILLAMETTE VALLEY AND SOUTH WASHINGTON COAST.
- * THROUGH SATURDAY NIGHT.
- * MODERATE RAIN CONTINUES TO FALL THIS EVENING OVER THE WATCH AREA WITH A FEW HEAVIER AREAS ON THE COASTAL SLOPES. SO FAR ALL MAJOR RIVERS AND STREAMS DRAINING THE COAST RANGE IN NORTHWEST OREGON AND SOUTHWEST WASHINGTON ARE BELOW FLOOD STAGE...BUT STILL SHOULD BE MONITORED CLOSELY FOR THE POSSIBILITY OF FLOODING SHOULD RAINFALL EXCEED THE CURRENTLY FORECAST VALUES.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

A FLOOD WATCH MEANS THAT FLOODING IS POSSIBLE BUT NOT IMMINENT IN THE WATCH AREA.

STAY TUNED TO NOAA WEATHER RADIO...COMMERCIAL MEDIA OR YOUR CABLE TELEVISION PROVIDER FOR WATCH UPDATES AND POSSIBLE WARNINGS. THE LATEST RIVER STAGES AND FORECASTS CAN BE MONITORED AT WWW.WRH.NOAA.GOV/PORTLAND/PUBLIC_HYDRO.

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J. DOE

3.9 Example #9 - Flood Watch: Expiration With Long Zone Names. The rain has moved east of the WFO Portland area and rivers remained below flood stage, so forecasters issue a final product to announce expiration of the flood watch at 11:00 p.m. on Saturday, March 22.

WGUS66 KPQR 230700
FFAPQR

FLOOD WATCH
NATIONAL WEATHER SERVICE PORTLAND OR
1100 PM PST SAT MAR 22 2003

ORZ001>004-006>008-WAZ021-230715-
/O.EXP.KPQR.FA.A.0007.000000T0000Z-030323T0700Z/
/00000.0.ER.000000T0000Z.000000T0000Z.000000T0000Z.OO/
NORTH OREGON COAST-CENTRAL OREGON COAST-COAST RANGE OF NORTHWEST
OREGON-CENTRAL COAST RANGE OF WESTERN OREGON-GREATER PORTLAND
METRO AREA-CENTRAL WILLAMETTE VALLEY-SOUTH WILLAMETTE VALLEY-
SOUTH WASHINGTON COAST-
1100 PM PST SAT MAR 22 2003

...FLOOD WATCH HAS EXPIRED...

THE FLOOD WATCH FOR THE WILLAMETTE TRIBUTARIES DRAINING THE NORTHWEST OREGON COAST RANGE AND THE COASTAL RIVERS AND STREAMS OF SOUTHWEST WASHINGTON AND NORTHWEST OREGON HAS BEEN ALLOWED TO EXPIRE.

MODERATE TO HEAVY RAIN FELL OVERNIGHT ALONG THE COAST AND IN THE COAST RANGE OF SOUTHWEST WASHINGTON AND NORTHWEST OREGON...BUT REMAINED WITHIN THE RANGE OF FORECAST VALUES. THIS ALLOWED ALL RIVERS AND STREAMS IN THE WATCH AREA TO REMAIN BELOW FLOOD STAGE. RIVERS WILL STILL BE AT HIGH LEVELS FOR THE NEXT FEW DAYS BUT GRADUALLY RECEDE UNTIL THE NEXT STORM ARRIVES THIS TUESDAY.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

THE LATEST STAGES AND FORECASTS FOR RIVERS AND STREAMS CAN BE FOUND AT OUR WEB PAGE AT WWW.WRH.NOAA.GOV/PORTLAND/PUBLIC_HYDRO.

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3.10 Example #10 - Flash Flood Watch: Potential Dam Failure. Situation – An operator of a dam on the Thornapple River in Michigan notices that a structural concern has developed on the dam and notifies WFO Grand Rapids. The WFO issues a short duration flash flood watch to cover the period while the operator investigates further to see if a dam failure is imminent.

WGUS63 KGRR 022036
FFAGRR

URGENT - IMMEDIATE BROADCAST REQUESTED
FLOOD WATCH
NATIONAL WEATHER SERVICE GRAND RAPIDS MI
336 PM EST FRI DEC 2 2005

MIZ057-022130-
/O.NEW.KGRR.FF.A.0001.051202T2036Z-051202T2100Z/
/00000.0.DM.000000T0000Z.000000T0000Z.000000T0000Z.OO/
KENT-
336 PM EST FRI DEC 2 2005

...FLASH FLOOD WATCH FOR THE THORNAPPLE RIVER BELOW ADA DAM IN KENT COUNTY IN EFFECT UNTIL 4 PM EST THIS AFTERNOON...

THE NATIONAL WEATHER SERVICE IN GRAND RAPIDS HAS ISSUED A

- * FLASH FLOOD WATCH FOR THE THORNAPPLE RIVER BELOW ADA DAM IN KENT COUNTY.
- * UNTIL 4 PM EST THIS AFTERNOON
- * AT 334 PM EST...THE DAM OPERATOR REPORTED THAT THE ADA DAM HAS A POTENTIAL STRUCTURAL CONCERN.
- * THE NEAREST DOWNSTREAM TOWN IS ADA...LOCATED 1/4 MILE FROM THE DAM. PEOPLE IN THE LOW LYING AREAS BELOW ADA DAM SHOULD KEEP ABEAST OF THE SITUATION AND STAY ALERT TO CHANGING CONDITIONS... INCLUDING POSSIBLE EVACUATIONS.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

A FLASH FLOOD WATCH MEANS THAT CONDITIONS MAY DEVELOP THAT LEAD TO FLASH FLOODING. FLASH FLOODING IS A VERY DANGEROUS SITUATION.

YOU SHOULD MONITOR LATER FORECASTS AND BE PREPARED TO TAKE ACTION SHOULD FLASH FLOOD WARNINGS BE ISSUED.

DAM SAFETY EXPERTS...WITH STATE AND LOCAL EMERGENCY SERVICES... ARE MONITORING THE DAM AND WILL ISSUE A PUBLIC STATEMENT AS CONDITIONS WARRANT. PLAN NOW SO YOU WILL KNOW WHAT TO DO IN AN

EMERGENCY. KEEP INFORMED BY LISTENING TO LOCAL RADIO AND TELEVISION FOR STATEMENTS AND POSSIBLE WARNINGS. FOLLOW THE ADVICE OF PUBLIC SAFETY OFFICIALS.

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3.11 Example #11 - Flash Flood Watch: Follow-up for Potential Dam Failure. Situation – WFO Grand Rapids issues a follow-up on the flash flood watch for a dam on the Thornapple River in Michigan.

WGUS63 KGRR 022100
FFAGRR

URGENT - IMMEDIATE BROADCAST REQUESTED
FLOOD WATCH
NATIONAL WEATHER SERVICE GRAND RAPIDS MI
400 PM EST FRI DEC 2 2005

MIZ057-030030-
/O.EXT.KGRR.FF.A.0001.000000T0000Z-051203T0000Z/
/00000.0.DM.000000T0000Z.000000T0000Z.000000T0000Z.OO/
KENT-
400 PM EST FRI DEC 2 2005

...FLASH FLOOD WATCH NOW IN EFFECT UNTIL 7 PM...

THE FLASH FLOOD WATCH IS NOW IN EFFECT FOR

- * THE THORNAPPLE RIVER BELOW ADA DAM IN KENT COUNTY.
- * UNTIL 7 PM EST THIS EVENING
- * AT 400 PM EST...ADA DAM REMAINS INTACT...BUT THE DAM OPERATOR IS STILL INVESTIGATING A POTENTIAL STRUCTURAL CONCERN. THEREFORE... THE WATCH HAS BEEN EXTENDED UNTIL IT CAN BE DETERMINED WHETHER A THREAT OF FAILURE EXISTS.
- * THE NEAREST DOWNSTREAM TOWN IS ADA...LOCATED 1/4 MILE FROM THE DAM. PEOPLE IN THE LOW LYING AREAS BELOW ADA DAM SHOULD KEEP ABREAST OF THE SITUATION AND STAY ALERT TO CHANGING CONDITIONS... INCLUDING POSSIBLE EVACUATIONS.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

A FLASH FLOOD WATCH MEANS THAT CONDITIONS MAY DEVELOP THAT LEAD TO FLASH FLOODING. FLASH FLOODING IS A VERY DANGEROUS SITUATION.

YOU SHOULD MONITOR LATER FORECASTS AND BE PREPARED TO TAKE ACTION SHOULD FLASH FLOOD WARNINGS BE ISSUED.

DAM SAFETY EXPERTS...WITH STATE AND LOCAL EMERGENCY SERVICES... ARE MONITORING THE DAM AND WILL ISSUE A PUBLIC STATEMENT AS CONDITIONS WARRANT. PLAN NOW SO YOU WILL KNOW WHAT TO DO IN AN EMERGENCY. KEEP INFORMED BY LISTENING TO LOCAL RADIO AND TELEVISION FOR STATEMENTS AND POSSIBLE WARNINGS. FOLLOW THE ADVICE OF PUBLIC SAFETY OFFICIALS.

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4. Flood Watch for Forecast Points.

4.1 Example #1 - Flood Watch for Three Forecast Points (FFA). NCEP models and HPC guidance indicate the possibility of three to four inches of rainfall over the southwest corner of Wisconsin. Local emergency managers have requested that WFO Milwaukee/Sullivan provide point-specific flood watches for the Milwaukee River when significant flooding is possible but not certain enough to meet the “imminent” criteria for issuance of flood warnings. At about 11:20 a.m. on January 25, forecasters issue a flood watch for three forecast points.

WGUS63 KMKE 251721
FFAMKE

URGENT - IMMEDIATE BROADCAST REQUESTED
FLOOD WATCH
NATIONAL WEATHER SERVICE MILWAUKEE/SULLIVAN WI
1121 AM CST TUE JAN 25 2005

...FLOOD WATCH IN EFFECT FOR THE FOLLOWING LOCATIONS ON THE MILWAUKEE RIVER IN SOUTHEAST WISCONSIN...

MILWAUKEE RIVER AT WAUBEKA AFFECTING OZAUKEE COUNTY.
MILWAUKEE RIVER AT CEDARBURG AFFECTING OZAUKEE COUNTY.
MILWAUKEE RIVER AT MILWAUKEE AFFECTING MILWAUKEE COUNTY.

.THE COMBINATION OF CURRENT CONDITIONS AND A POSSIBLE THREE TO FOUR INCHES OF RAINFALL LATE THIS AFTERNOON MAY SEND THE MILWAUKEE RIVER ABOVE ITS FLOOD STAGE WITHIN THE NEXT 48 HOURS. THESE WATCHES WILL BE IN EFFECT UNTIL THEY ARE CANCELLED OR REPLACED WITH A WARNING OR ADVISORY.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

A FLOOD WATCH MEANS THAT FLOODING IS POSSIBLE BUT NOT IMMINENT.

THE LATEST STAGES AND FORECASTS FOR RIVERS AND STREAMS CAN BE FOUND AT OUR WEB PAGE AT [HTTP://WWW.CRH.NOAA.GOV/CGI-BIN/AHPS.CGI?MKX](http://www.crh.noaa.gov/cgi-bin/ahps.cgi?mkx).

&&

WIZ060-252321-
/O.NEW.KMKE.FL.A.0001.050125T1721Z-050127T1800Z/
/WAUW3.0.RS.000000T0000Z.000000T0000Z.000000T0000Z.OO/
1121 AM CST TUE JAN 25 2005

THE NATIONAL WEATHER SERVICE IN MILWAUKEE HAS ISSUED A
* FLOOD WATCH FOR
THE MILWAUKEE RIVER AT WAUBEKA.
* UNTIL 1200 PM THURSDAY.
* AT 1000 AM CST THE STAGE WAS 4.5 FEET.
* MINOR FLOODING IS POSSIBLE.
* BANKFULL STAGE IS 8.5 FEET.
* FLOOD STAGE IS 9.5 FEET.
* FORECAST...IF CURRENT PRECIPITATION FORECASTS HOLD...FLOOD STAGE MAY BE REACHED AT ABOUT 800 PM TONIGHT AND THE RIVER MAY CREST AT ABOUT 10.0 FEET AT 200 AM WEDNESDAY.

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WIZ060-252321-
 /O.NEW.KMKE.FL.A.0002.050125T1721Z-050127T1800Z/
 /CEDW3.0.RS.000000T0000Z.000000T0000Z.000000T0000Z.OO/
 1121 AM CST TUE JAN 25 2005

THE NATIONAL WEATHER SERVICE IN MILWAUKEE HAS ISSUED A
 * FLOOD WATCH FOR
 THE MILWAUKEE RIVER AT CEDARBURG.
 * UNTIL 1200 PM THURSDAY.
 * AT 1000 AM CST THE STAGE WAS 7.2 FEET.
 * MINOR FLOODING IS POSSIBLE.
 * BANKFULL STAGE IS 10.0 FEET.
 * FLOOD STAGE IS 11.0 FEET.
 * FORECAST...IF CURRENT PRECIPITATION FORECASTS HOLD...FLOOD STAGE
 MAY BE REACHED AT ABOUT 500 AM WEDNESDAY AND THE RIVER MAY CREST
 AT ABOUT 11.5 FEET AT ABOUT 900 AM WEDNESDAY.

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WIZ060-252321-
 /O.NEW.KMKE.FL.A.0003.050125T1721Z-050127T1800Z/
 /MEEW3.0.RS.000000T0000Z.000000T0000Z.000000T0000Z.OO/
 1121 AM CST TUE JAN 25 2005

THE NATIONAL WEATHER SERVICE IN MILWAUKEE HAS ISSUED A
 * FLOOD WATCH FOR
 THE MILWAUKEE RIVER AT MILWAUKEE.
 * UNTIL 1200 PM THURSDAY.
 * AT 1000 AM CST THE STAGE WAS 2.5 FEET.
 * MINOR FLOODING IS POSSIBLE.
 * BANKFULL STAGE IS 6.0 FEET.
 * FLOOD STAGE IS 7.0 FEET.
 * FORECAST...IF CURRENT PRECIPITATION FORECASTS HOLD...FLOOD STAGE
 MAY BE REACHED AT ABOUT 500 PM WEDNESDAY AND THE RIVER MAY CREST
 AT ABOUT 7.2 FEET AT ABOUT 900 PM WEDNESDAY

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RIVER FORECASTS ARE AVAILABLE FOR SOME BUT NOT ALL RIVER GAGING
 LOCATIONS. IN THIS AREA...A RIVER FORECAST COVERS 7 DAYS AND TAKES
 INTO ACCOUNT PREDICTED PRECIPITATION FOR THE FIRST 24 HOURS.

(STAGES
 IN FT.)

LOCATION	FLOOD STAGE	BANK- FULL STAGE	LATEST OBSERVED STAGE/TIME	FORECAST STAGESFOR 7 AM.....						
				WED	THU	FRI	SAT	SUN	MON	TUE
WAUBEKA	9.5	8.5	4.6 1000 AM	8.5	5.9	4.8	4.6	4.5	4.5	4.5
CEDARBURG	11.0	10.0	7.36 0615 AM	11.4	9.0	8.1	7.6	7.5	7.4	7.4
MILWAUKEE	7.0	6.5	2.5 1000 AM	2.6	6.9	5.8	5.0	4.3	3.7	3.2

...BELOW IS PREDICTED PRECIPITATION INFORMATION...

(CEDW3) PREDICTED 6-HOUR RAINFALL AMOUNTS
 CEDARBURG: 7 AM-1 PM 0.00
 CEDARBURG: 1 PM-7 PM 3.00
 CEDARBURG: 7 PM-1 AM 0.50
 CEDARBURG: 1 AM-7 AM 0.00

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Note and Explanation:-

(1) Note how the dependence of forecast stages on forecast precipitation is clearly indicated.

5. Flash Flood Warning (FFW) and Associated Follow-up Products (FFS).

5.1 Example #1 - Flash Flood Warning (FFW). Situation - radar shows thunderstorms with heavy rain moving northwest across central Long Island, NY. WFO New York City/Upton forecasters, using the flash flood monitoring and prediction system, note the likelihood of flash flooding in small streams in southwest Suffolk County and decide to issue a flash flood warning at 12:55 p.m. EDT (1655Z). The resulting product is the most common type of flash flood warning issued by the NWS - a flash flood warning for an area.

WGUS51 KOKX 141655
FFWOKX
NYC103-142000-
/O.NEW.KOKX.FF.W.0005.000814T1655Z-000814T2000Z/
/00000.0.ER.000000T0000Z.000000T0000Z.000000T0000Z.OO/

BULLETIN - EAS ACTIVATION REQUESTED
FLASH FLOOD WARNING
NATIONAL WEATHER SERVICE NEW YORK NY
1255 PM EDT MON AUG 14 2000

THE NATIONAL WEATHER SERVICE IN UPTON HAS ISSUED A

* FLASH FLOOD WARNING FOR...
SOUTHWEST SUFFOLK COUNTY IN SOUTHEASTERN NEW YORK STATE...

* UNTIL 400 PM EDT

* AT 1254 PM NATIONAL WEATHER SERVICE DOPPLER RADAR INDICATED
THUNDERSTORMS MOVING NORTHWEST TOWARD THE WARNED AREA. RAINFALL
RATES FROM 2 TO 3 INCHES PER HOUR WILL CAUSE FLASH FLOODING OF
LOW LYING AND POOR DRAINAGE AREAS. THE HEAVY RAINS SHOULD END BY
200 PM EDT AND IT WILL TAKE ANOTHER HOUR OR TWO FOR THE FLOODING
TO DISSIPATE.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

DO NOT DRIVE YOUR VEHICLE INTO AREAS WHERE THE WATER COVERS THE
ROADWAY. MOVE TO HIGHER GROUND IMMEDIATELY.

REPORT SEVERE WEATHER TO THE NEAREST LAW ENFORCEMENT AGENCY. THEY
WILL RELAY YOUR REPORT TO THE NATIONAL WEATHER SERVICE FORECAST
OFFICE IN UPTON.

&&

LAT...LON 4153 7264 4131 7255 4138 7190 4159 7198

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Notes and Explanations:-

(1) In flash flood warnings, the Event Beginning Date/Time is always the same as the product issuance time, so in this case the former (000814T1655Z) corresponds to 12:55 p.m. EDT on Monday, August 14, 2000.

(2) Note how that even though forecaster predicts the end of heavy rain by 2:00 p.m., she allows another two hours for the flash flooding to dissipate. Therefore, the Event Ending Date/Time is 000814T2000Z (4:00 p.m. on Monday, August 14 2000).

5.2 Example #2 - Flash Flood Statement: Follow-up to Flash Flood Warning (FFS).

Situation - 35 minutes after the flash flood warning was issued for Suffolk County, the forecaster at WFO Upton issues a flash flood statement to provide updated information on the event.

WGUS71 KOKX 141730
FFSOKX

FLASH FLOOD STATEMENT
NATIONAL WEATHER SERVICE NEW YORK NY
130 PM EDT MON AUG 14 2000

NYC103-142000-
/O.CON.KOKX.FF.W.0005.000000T0000Z-000814T2000Z/
/00000.0.ER.000000T0000Z.000000T0000Z.000000T0000Z.OO/
SUFFOLK NY-
130 PM EDT MON AUG 14 2000

...THE FLASH FLOOD WARNING REMAINS IN EFFECT FOR SOUTHWEST SUFFOLK COUNTY IN SOUTHEASTERN NEW YORK STATE UNTIL 400 PM EDT...

AT 130 PM EDT...WEATHER SERVICE DOPPLER RADAR INDICATED A CLUSTER OF THUNDERSTORMS PRODUCING VERY HEAVY RAIN IN AN AREA FROM BRENTWOOD WEST TO DEER PARK AND NORTH TO ABOUT INTERSTATE 495. THUNDERSTORMS ARE MOVING NORTH TOWARDS HUNTINGTON STATION AND LLOYD POINT. RADAR ESTIMATES INDICATE 2 INCHES HAVE FALLEN. LAW ENFORCEMENT OFFICERS IN THE AREA REPORT SEVERAL ROADS ARE COVERED WITH WATER AND ARE TEMPORARILY IMPASSIBLE.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

DO NOT DRIVE YOUR VEHICLE INTO AREAS WHERE THE WATER COVERS THE ROADWAY. MOVE TO HIGHER GROUND IMMEDIATELY.

REPORT SEVERE WEATHER TO THE NEAREST LAW ENFORCEMENT AGENCY. THEY WILL RELAY YOUR REPORT TO THE NATIONAL WEATHER SERVICE IN UPTON.

&&

LAT...LON 4153 7264 4131 7255 4138 7190 4159 7198

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5.3 Example #3 - Flash Flood Statement: Cancellation of Flash Flood Warning (FFS).

Situation - A half hour before the flash flood warning was scheduled to expire, WFO Upton issues a flash flood statement to cancel the warning and summarize reported impacts.

WGUS71 KOKX 141930
FFSOKX

FLASH FLOOD STATEMENT
NATIONAL WEATHER SERVICE NEW YORK NY
330 PM EDT MON AUG 14 2000

NYC103-141945-
/O.CAN.KOKX.FF.W.0005.000000T0000Z-000814T2000Z/
/00000.0.ER.000000T0000Z.000000T0000Z.000000T0000Z.OO/
SUFFOLK NY-
330 PM EDT MON AUG 14 2000

...THE FLASH FLOOD WARNING HAS BEEN CANCELLED FOR SOUTHWEST SUFFOLK COUNTY IN NEW YORK...

NATIONAL WEATHER SERVICE DOPPLER RADAR INDICATES THAT THE THUNDERSTORMS HAVE MOVED WELL OUT OF THE AREA AND INTO THE LONG ISLAND SOUND. NO HEAVY RAINFALL HAS OCCURRED IN THE WARNING AREA FOR OVER AN HOUR. THE MOST SERIOUS FLOODING OCCURRED ON JEFFERSON AVENUE NEAR THE BRENTWOOD COUNTRY CLUB WHERE SEVERAL HOMES WERE FLOODED AND A BRIDGE WAS DAMAGED. WATER WAS REPORTED OVER THE ROADWAY AT SEVERAL LOCATIONS IN DEER PARK AND HUNTINGTON STATION. FLOODING HAS SUBSIDED AND THE FLOOD THREAT NO LONGER EXISTS... BUT PONDING OF WATER ON ROADWAYS MAY CONTINUE AT A FEW LOCATIONS AS FLOOD WATERS RECEDE.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

REMAIN CAUTIOUS WHEN DRIVING IN LOW LYING AREAS...AND REPORT ANY FLOODED ROADWAYS TO THE NEAREST LAW ENFORCEMENT AGENCY. THEY WILL RELAY YOUR REPORT TO THE NATIONAL WEATHER SERVICE FORECAST OFFICE IN UPTON.

&&

LAT...LON 4153 7264 4131 7255 4138 7190 4159 7198

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Note and Explanation:

(1) Note how even though the warning is being cancelled a half hour early at 3:30 p.m. (1930Z), the time indicated in the Event Ending Date/Time is still 2000Z.

5.4 Example #4 - Flash Flood Warning for a Three-County Area (FFW). Situation - radar shows a slow moving band of heavy rainfall moving east across north central Ohio. WFO Cleveland forecasters note the likelihood of flash flooding in portions of Lorain, Medina, and Summit Counties and decide to issue a flash flood warning at 3:15 a.m. EDT (715Z).

WGUS51 KCLE 210715
FFWCLE
OHC093-103-153-211200-
/O.NEW.KCLE.FF.W.0017.040521T0715Z-040521T1200Z/
/00000.0.ER.000000T0000Z.000000T0000Z.000000T0000Z.OO/

BULLETIN - EAS ACTIVATION REQUESTED
FLASH FLOOD WARNING
NATIONAL WEATHER SERVICE CLEVELAND OH
315 AM EDT FRI MAY 21 2004

THE NATIONAL WEATHER SERVICE IN CLEVELAND HAS ISSUED A

* FLASH FLOOD WARNING FOR...
LORAIN COUNTY IN NORTH CENTRAL OHIO...
MEDINA COUNTY IN NORTHEAST OHIO...
SUMMIT COUNTY IN NORTHEAST OHIO...

* UNTIL 800 AM EDT

* AT 304 AM EDT WEATHER SERVICE RADAR INDICATED THUNDERSTORMS WITH HEAVY RAINS IN THE AREA. WITH THE GROUND NEARLY SATURATED...FLOODING IS LIKELY.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

NEVER DRIVE OR WALK INTO FLOODED AREAS.

&&

LAT...LON 4113 8224 4130 8238 4117 8147 4097 8147

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5.5 Example #5 - Flash Flood Statement: Follow up to Flash Flood Warning With Cancellation and Continuation Segments (FFS). Situation – at 4:30 a.m., radar shows that the band of heavy rainfall has shifted eastward in north central Ohio. WFO Cleveland forecasters decide to cancel the flash flood warning in Lorain County and continue the flash flood warning in the two counties that are further east - Medina and Summit.

WGUS71 KCLE 210830
FFSCLE

FLASH FLOOD STATEMENT
NATIONAL WEATHER SERVICE CLEVELAND OH
430 AM EDT FRI MAY 21 2004

OHC093-210845-
/O.CAN.KCLE.FF.W.0017.000000T0000Z-040521T1200Z/
/00000.0.ER.000000T0000Z.000000T0000Z.000000T0000Z.OO/
LORAIN OH-
430 AM EDT FRI MAY 21 2004

...THE FLASH FLOOD WARNING HAS BEEN CANCELLED FOR LORAIN COUNTY IN NORTH CENTRAL OHIO...

AT 425 AM EDT WEATHER SERVICE RADAR INDICATED THUNDERSTORMS HAVE MOVED EASTWARD OUT OF THE COUNTY AND FLASH FLOODING HAS SUBSIDED. SOME MINOR FLOODING WAS REPORTED ON HIGHWAY 18 JUST EAST OF WELLINGTON...BUT IT QUICKLY SUBSIDED.

LAT...LON 4108 8198 4125 8198 4117 8147 4097 8147

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OHC103-153-211200-
/O.CON.KCLE.FF.W.0017.000000T0000Z-030521T1200Z/
/00000.0.ER.000000T0000Z.000000T0000Z.000000T0000Z.OO/
MEDINA OH-SUMMIT OH-
430 AM EDT FRI MAY 21 2004

...A FLASH FLOOD WARNING REMAINS IN EFFECT FOR MEDINA AND SUMMIT COUNTIES UNTIL 800 AM EDT...

THUNDERSTORMS WITH HEAVY RAIN HAVE CAUSED FLOODING IN PORTIONS OF MEDINA AND SUMMIT COUNTIES THIS MORNING. RADAR ESTIMATES INDICATED FROM 1 TO 2 INCHES HAD FALLEN FROM ABOUT 200 AM THROUGH 420 AM. THIS CAUSED FLOODING ON LAUREL ROAD IN BRUNSWICK WHERE TWO HOMES WERE FLOODED. FLOODING WAS ALSO REPORTED ON NORTH CARPENTER ROAD. ADDITIONAL FLOODING IS LIKELY IN OTHER LOCATIONS ACROSS THE AREA.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

DO NOT TO DRIVE WHERE WATER COVERS THE ROAD. WATER DEPTH MAY BE TOO GREAT TO ALLOW YOUR CAR...TRUCK OR SPORT UTILITY VEHICLE TO CROSS SAFELY.

&&

LAT...LON 4108 8198 4125 8198 4117 8147 4097 8147

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Notes and Explanations:

- (1) The first segment cancels the warning for one county (Lorain) and the second segment continues the warning for the other two counties in the original warning (Medina and Summit)
- (2) The product expiration time in the UGC line for the cancellation segment (845Z) indicates that it is to be purged 15 minutes after product issuance, while the product expiration time in the UGC line for the continuation segment is the same as the Event Ending Time (1200Z).
- (3) Note the new Lat/Lon polygon coordinates for the revised warning area. These coordinates are repeated in both the cancellation and continuation segments.

5.6 Example #6 - Flash Flood Warning: Dam Failure (FFW). Situation - At 10 a.m. CDT, WFO Goodland receives a report from the U.S. Bureau of Reclamation that Bonny Dam is failing due to an expanding leak at the base of the dam. Bonny Dam is an earth fill structure on the South Fork Republican River, just upstream from the Colorado/Kansas state line. Because the river below the dam flows northeast, the warning must cover a town in eastern Colorado, a town in the northwest corner of Kansas, and two towns in southwest Nebraska.

WGUS53 KGLD 221508
FFWGLD
COC125-KSC023-NEC057-087-230015-
/O.NEW.KGLD.FF.W.0003.020422T1508Z-020423T0015Z/
/00000.U.DM.000000T0000Z.000000T0000Z.000000T0000Z.OO/

BULLETIN - EAS ACTIVATION REQUESTED
FLASH FLOOD WARNING
NATIONAL WEATHER SERVICE GOODLAND KS
1008 AM MDT MON APR 22 2002

THE NATIONAL WEATHER SERVICE IN GOODLAND HAS ISSUED A

* FLASH FLOOD WARNING FOR...
THE SOUTH FORK REPUBLICAN RIVER BELOW BONNY DAM IN...
SOUTHEASTERN YUMA COUNTY IN NORTHEAST COLORADO...
THIS INCLUDES THE CITY OF HALE
CHEYENNE COUNTY IN NORTHWEST KANSAS...
THIS INCLUDES THE CITY OF ST FRANCIS
SOUTHEASTERN DUNDY COUNTY IN SOUTHWEST NEBRASKA...
THIS INCLUDES THE CITY OF BENKELMAN
WESTERN HITCHCOCK COUNTY IN SOUTHWEST NEBRASKA...
THIS INCLUDES THE CITY OF STRATTON

* UNTIL 615 PM MDT /715 PM CDT/

* AT 1000 AM MDT /11 AM CDT/ NATIONAL WEATHER SERVICE AND THE UNITED STATES BUREAU OF RECLAMATION REPORTS THAT BONNY DAM HAS FAILED... EXTREME FLASH FLOODING IS DEVELOPING BELOW THE DAM DUE TO RAPID EROSION OF THE STRUCTURE.

* THE ESTIMATED TIME FOR THE LEADING EDGE OF THE FLOOD WAVE TO REACH THE CITY OF HALE IS 1030 AM MDT...FOR ST. FRANCIS 1248 PM MDT... FOR BENKELMAN 338 PM MDT AND FOR STRATTON 6 PM MDT.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

MOVE FAR AWAY FROM THE SOUTH FORK REPUBLICAN RIVER AND DO NOT STAY IN AREAS SUBJECT TO FLOODING WHEN WATER BEGINS RISING. THIS IS A VERY DANGEROUS SITUATION BELOW BONNY DAM. ALL PEOPLE LIVING ALONG OR LOCATED NEAR THE SOUTH FORK REPUBLICAN AND REPUBLICAN RIVERS SHOULD BEGIN EVACUATION...AND MOVE TO HIGHER GROUND IMMEDIATELY.

&&

LAT...LON 3868 10233 3871 10187 3909 10187 3904 10209 3903 10234

\$\$

Notes and Explanations:

(1) In flash flood warnings which include point-specific hydrologic forecast information or provide information on flash flooding which is not the direct result of heavy precipitation (e.g., a dam failure), the flood severity code in the H-VTEC string is set to "U" if the flood severity is unknown.

5.7 Example #7 - Flash Flood Statement: Follow up to Flash Flood Warning For A Dam Failure (FFS). Situation - Bonny Dam failed 30 minutes ago and the WFO provides updated information on the downstream moving flood wave with a single-segment flash flood statement.

WGUS73 KGLD 221638
FFSGLD

FLASH FLOOD STATEMENT
NATIONAL WEATHER SERVICE GOODLAND KS
1038 AM MDT MON APR 22 2002

COC125-KSC023-NEC057-087-230015-
/O.CON.KGLD.FF.W.0003.000000T0000Z-020423T0015Z/
/00000.U.DM.000000T0000Z.000000T0000Z.000000T0000Z.OO/
YUMA CO-CHEYENNE KS-DUNDY NE-HITCHCOCK NE-
1038 AM MDT MON APR 22 2002

...THE FLASH FLOOD WARNING FOR THE FAILURE OF BONNY DAM ON THE SOUTH FORK REPUBLICAN RIVER REMAINS IN EFFECT IN NORTHEAST COLORADO... NORTHWEST KANSAS AND SOUTHWEST NEBRASKA...

THE FLOOD WAVE CAUSED BY FAILURE OF BONNY DAM REACHED THE TOWN OF HALE COLORADO AT 1030 AM MDT. LOCAL POLICE REPORTED A 30 TO 40 FOOT HIGH FLOOD WAVE SWEEPING THROUGH THE TOWN...CAUSING NEAR TOTAL DAMAGE TO ALL STRUCTURES AT LOWER ELEVATIONS NEAR THE RIVER.

THE ESTIMATED TIME FOR THE LEADING EDGE OF THE FLOOD WAVE TO REACH ST. FRANCIS KS IS 1248 PM MDT...FOR BENKELMAN NE 338 PM MDT AND FOR STRATTON NE ABOUT 600 PM MDT.

THE NEXT DOWNSTREAM RESERVOIR...SWANSON RESERVOIR BEHIND TRENTON DAM IN HITCHCOCK COUNTY NEBRASKA...HAS BEEN VERY LOW DUE TO THE RECENT DROUGHT. AUTHORITIES BELIEVE THAT TRENTON DAM WILL BE ABLE TO CONTAIN THE FLOOD WATERS FROM FAILED BONNY DAM...SO FAILURE OF TRENTON DAM IS NOT A THREAT AT THIS TIME. HOWEVER...WATER RELEASES HAVE BEEN STARTED FROM TRENTON DAM TO ENSURE THE SAFETY OF THE DAM. THEREFORE RIVER LEVELS WILL BE A FOOT OR SO HIGHER THAN THEY HAVE

BEEN IN THE SOUTH FORK REPUBLICAN RIVER BELOW TRENTON DAM AND IN THE
REPUBLICAN RIVER BELOW WHERE THE TWO RIVERS JOIN.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

THIS IS A VERY DANGEROUS SITUATION BELOW BONNY DAM. MOVE FAR AWAY
FROM THE SOUTH FORK REPUBLICAN RIVER AND DO NOT STAY IN AREAS SUBJECT
TO FLOODING WHEN WATER BEGINS RISING. ALL PEOPLE LIVING ALONG OR
LOCATED NEAR THE SOUTH FORK REPUBLICAN RIVER SHOULD EVACUATE...
AND MOVE TO HIGHER GROUND IMMEDIATELY!

&&

LAT...LON 3868 10233 3871 10187 3909 10187 3904 10209 3903 10234

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5.8 Example #8 - Flash Flood Warning for an Area Where Observations and Forecasts Can Be Provided for a Point (FFW). Situation - radar shows heavy precipitation training over the southern Kansas City area. Forecasters at Pleasant Hill WFO know that a storm with this rainfall amount, intensity, and areal coverage will cause flash flooding on Brush Creek in the Kansas City Plaza area. During the next few minutes, they intend to run the site-specific forecast application to obtain specific forecasts, but for now they issue a standard "areal" flash flood warning to alert the public as quickly as possible.

WGUS53 KEAX 092349
FFWEAX
MOC095-100200-
/O.NEW.KEAX.FF.W.0007.010809T2349Z-010810T0445Z/
/00000.0.ER.000000T0000Z.000000T0000Z.000000T0000Z.OO/

BULLETIN - EAS ACTIVATION REQUESTED
FLASH FLOOD WARNING
NATIONAL WEATHER SERVICE KANSAS CITY/PLEASANT HILL MO
649 PM CDT THU AUG 9 2001

THE NATIONAL WEATHER SERVICE IN PLEASANT HILL HAS ISSUED A

- * FLASH FLOOD WARNING FOR...
JACKSON COUNTY IN WEST CENTRAL MISSOURI...
SPECIFICALLY FOR BRUSH CREEK AT WARD PARKWAY IN KANSAS CITY MO
- * UNTIL 1145 PM CDT
- * AT 649 PM CDT...RADAR ESTIMATED 3 TO 4 INCHES OF RAIN HAS FALLEN
OVER THE BRUSH CREEK WATERSHED SINCE LATE THIS AFTERNOON.
- * RUNOFF FROM THIS RAINFALL WILL CAUSE BRUSH CREEK AT WARD PARKWAY
TO RISE ABOVE FLOOD STAGE. THE CURRENT STAGE AT THE BRUSH CREEK AT
WARD PARKWAY GAGE IS 43 FEET...BUT IS EXPECTED TO RISE RAPIDLY.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

NEVER DRIVE WHERE WATER COVERS THE ROAD. WATER DEPTH MAY BE TOO GREAT
TO ALLOW YOUR CAR...TRUCK OR SUV TO CROSS SAFELY.

&&

LAT...LON 3901 9456 3887 9439 3889 9426 3902 9413 3918 9432

\$\$

5.9 Example #9 - Flash Flood Statement: Follow-up to Flash Flood Warning for an Area Where Observations and Forecasts Can Be Provided for a Point (FFS). Situation - eleven minutes after the initial flash flood warning was issued, a flash flood statement is issued to follow-up the previous warning. This flash flood statement includes point-specific forecast information at the end after the standard flash flood statement text. This point-specific information would have to be copied from the site-specific application output and manually moved to the bottom of the WarnGen-created product.

WGUS73 KEAX 100000
FFSEAX

FLASH FLOOD STATEMENT
NATIONAL WEATHER SERVICE KANSAS CITY/PLEASANT HILL MO
700 PM CDT THU AUG 9 2001

MOC095-100200-
/O.CON.KEAX.FF.W.0007.000000T0000Z-010810T0445Z/
/00000.0.ER.000000T0000Z.000000T0000Z.000000T0000Z.OO/
JACKSON MO-
700 PM CDT THU AUG 9 2001

...A FLASH FLOOD WARNING REMAINS IN EFFECT UNTIL 1145 PM CDT FOR JACKSON COUNTY...SPECIFICALLY FOR BRUSH CREEK AT WARD PARKWAY IN KANSAS CITY MISSOURI.

RAINFALL HAS ENDED OVER THE BRUSH CREEK WATERSHED...WITH TOTALS REACHING 4 INCHES IN PRAIRIE VILLAGE KANSAS. RUNOFF WILL WORK ITS WAY DOWN BRUSH CREEK THROUGH TONIGHT...WITH HIGHEST FLOWS DURING THE NEXT THREE HOURS.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

MOTORISTS ARE REMINDED NOT TO DRIVE WHERE WATER COVERS THE ROAD. WATER DEPTH MAY BE TOO GREAT TO ALLOW YOUR CAR...TRUCK OR SPORT UTILITY VEHICLE TO CROSS SAFELY.

&&

LAT...LON 3901 9456 3887 9439 3889 9426 3902 9413 3918 9432

\$\$

MOC095-100200-
700 PM CDT THU AUG 9 2001
KWPM7

FOR BRUSH CREEK AT WARD PARKWAY...

- * AT 700 PM THE LATEST STAGE WAS 46 FEET.
- * MODERATE FLOODING IS FORECAST.
- * FLOOD STAGE IS 47 FEET.
- * FORECAST...FLOOD STAGE WILL BE REACHED AT ABOUT 730 PM. A MAXIMUM STAGE OF 49 FEET IS EXPECTED AT ABOUT 830 PM. THE CREEK WILL FALL BELOW FLOOD STAGE AT ABOUT 1145 PM.
- * IMPACT...AT 48 FEET...WARD PARKWAY AND JOHNSON DRIVE NEAR THE WARD PARKWAY BRIDGE ARE UNDER WATER. IN ADDITION...OTHER BRIDGES AND ROADS UPSTREAM AND DOWNSTREAM OF THE PLAZA FEDERAL FLOOD CONTROL PROJECT ARE FLOODED.

\$\$

5.10 Example #10 - Flash Flood Warning for an Ice Jam. Situation – A large ice jam is reported on a river. From a description of the rapidly developing flooding by a spotter, the WFO decides to issue a flash flood warning.

WGUS43 KDMX 111650
FFWDMX
IAC045-163-112300-
/O.NEW.KDVN.FF.W.0001.090211T1650Z-090211T2300Z/
/00000.0.IJ.000000T0000Z.000000T0000Z.000000T0000Z.OO/

BULLETIN - EAS ACTIVATION REQUESTED
FLASH FLOOD WARNING
NATIONAL WEATHER SERVICE QUAD CITIES IA IL
1050 AM CST FRI FEB 11 2009

THE NATIONAL WEATHER SERVICE IN QUAD CITIES HAS ISSUED A

- * FLASH FLOOD WARNING FOR...
AN ICE JAM IN...
SOUTHERN CLINTON COUNTY IN EAST CENTRAL IOWA...
NORTHERN SCOTT COUNTY IN EAST CENTRAL IOWA...
- * UNTIL 500 PM CST
- * AT 1050 AM CST...AN ICE JAM WAS REPORTED ON THE WAPSIPINICON RIVER AT ALLENS GROVE COUNTY PARK NEAR DONAHUE. WATERS ARE ADVANCING RAPIDLY AWAY FROM THE RIVER IN BOTH DIRECTIONS.
- * MOSTLY AGRICULTURAL LAND IS BEING AFFECTED...BUT IF THE ICE JAM SHOULD FAIL SUDDENLY...A RAPID RISE ON THE WAPSIPINICON RIVER COULD MOVE DOWNSTREAM AND AFFECT MCCAUSLAND.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

ICE JAM FLOODING CAN OCCUR SUDDENLY AND ADVANCE INTO AN AREA FROM AN UNUSUAL DIRECTION. IF YOU SEE WATER APPROACHING...MOVE AWAY FROM THE RIVER TO HIGHER GROUND.

&&

LAT...LON 4174 9067 4176 9068 4178 9059 4176 9043 4174 9043 4176 9053

\$\$

5.11 Example #11 – Flash Flood Statement: Follow-up to Flash Flood Warning for an Ice Jam. Situation – Inundation of land upstream from the ice jam has slowed down, so the threat now focuses on downstream areas which are likely to be flooded when the ice jam breaks. The WFO issues a flash flood statement continuing the flash flood warning.

WGUS43 KDMX 111900
FFSDMX
FLASH FLOOD STATEMENT
NATIONAL WEATHER SERVICE QUAD CITIES IA IL
100 PM CST FRI FEB 11 2009

IAC045-163-112300-
/O.CON.KDVN.FF.W.0001.000000T0000Z-090211T2300Z/
/00000.0.IJ.000000T0000Z.000000T0000Z.000000T0000Z.OO/
CLINTON IA-SCOTT IA-

...A FLASH FLOOD WARNING FOR AN ICE JAM REMAINS IN EFFECT UNTIL 500 PM CST FOR SOUTHERN CLINTON COUNTY AND NORTHERN SCOTT COUNTY

IN EAST CENTRAL IOWA...

THE ICE JAM ON THE WAPSIPINICON RIVER AT ALLENS GROVE COUNTY PARK NEAR DONAHUE MAY BE SHOWING SIGNS OF BREAKUP...BUT IT IS STILL UNCLEAR WHETHER IT WILL FAIL SUDDENLY OR GRADUALLY. THEREFORE... THE FLASH FLOOD WARNING IS BEING CONTINUED UNTIL THE DANGER HAS ENDED.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

ICE JAM FLOODING CAN OCCUR SUDDENLY AND ADVANCE INTO AN AREA FROM AN UNUSUAL DIRECTION. IF YOU SEE WATER APPROACHING...MOVE AWAY FROM THE RIVER TO HIGHER GROUND.

&&

LAT...LON 4174 9067 4176 9068 4178 9059 4176 9043 4174 9043 4176 9053

\$\$

5.12 Example #12 - Flash Flood Warning for Debris Flows. Situation – Moderate to heavy rains begin moving into an area affected by large brush/forest fires during the previous dry season. Forecasters at WFO Sacramento decide to issue a flash flood warning which will highlight the imminent threat to the recent burn areas.

WGUS46 KSTO 021745
FFWSTO
CAC007-063-103-022345-
/O.NEW.KSTO.FF.W.0001.090302T1745Z-090302T2345Z/
/00000.0.ER.000000T0000Z.000000T0000Z.000000T0000Z.OO/

BULLETIN - EAS ACTIVATION REQUESTED
FLASH FLOOD WARNING
NATIONAL WEATHER SERVICE SACRAMENTO CA
945 AM PST MON MAR 2 2009

THE NATIONAL WEATHER SERVICE IN SACRAMENTO HAS ISSUED A

- * FLASH FLOOD WARNING FOR...
THE BURN AREAS OF NORTHEASTERN BUTTE COUNTY IN NORTHERN CALIFORNIA...
THIS INCLUDES THE CITIES OF PULGA AND BRUSH CREEK RS
THE BURN AREAS OF WESTERN PLUMAS COUNTY IN NORTHERN CALIFORNIA...
THIS INCLUDES THE CITIES OF QUINCY AND CHESTER
THE BURN AREAS OF EAST CENTRAL TEHAMA COUNTY IN NORTHERN CALIFORNIA...
- * UNTIL 345 PM PST MONDAY
- * AT 942 AM PST...NATIONAL WEATHER SERVICE DOPPLER RADAR INDICATED MODERATE TO HEAVY RAIN MOVING INTO THE NORTHEASTERN FOOTHILLS... WHICH MAY TRIGGER DEBRIS FLOWS IN BURN AREAS FROM A LINE OF STORMS MOVING OVER THE WARNED AREA.
- * LOCATIONS IN THE WARNING AREA INCLUDE BUT ARE NOT LIMITED TO TWAIN... STORRIE...STIRLING CITY...SENECA...PAXTON...MOCCASIN...MILL CREEK...LOVELOCK...LAKE ALMANOR...DE SABLE POWERHOUSE...CARIBOU... BUTTE MEADOWS...BUCKS LAKE...BELDEN AND ALMANOR

DEBRIS FLOWS ARE POSSIBLE IN THE VICINITY OF THESE BURN SCARS AND CAN IMPACT TRAVEL ALONG AREA ROADWAYS...ESPECIALLY ALONG HIGHWAY 70...THE NORTH FORK FEATHER RIVER CANYON AND THE MIDDLE FORK FEATHER RIVER CANYON. DEBRIS FLOWS MAY ALSO AFFECT HIGHWAYS 32 AND 89.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

DEBRIS FLOWS...INCLUDING MUD AND ROCK SLIDES ARE EXPECTED WITH THIS HEAVIER RAINFALL. DEBRIS FLOWS CAN POTENTIALLY TRAP AND KILL PEOPLE CAUGHT IN THEIR PATHS.

&&

LAT...LON 4031 12141 4033 12113 3988 12074 3967 12101
3984 12128 3960 12152 4013 12176

\$\$

CKP/JBB

Notes and Explanations:

(1) the procedures in NWS Instruction 10-922 allow any kind of descriptive wording to be used before and after the county names in the first bullet, hence "The burn areas of" was included in front of the county names.

5.13 Example #13 – Flash Flood Statement: Follow-up to Flash Flood Warning for Debris Flows. Situation – Moderate to heavy rains continue over an area affected by large brush/forest fires during the previous dry season, with an especially heavy area of rainfall approaching. Forecasters at WFO Sacramento issue a flash flood statement continuing the warning and providing updated information on the situation.

WGUS46 KSTO 022045
FFSSTO
FLASH FLOOD STATEMENT
NATIONAL WEATHER SERVICE SACRAMENTO CA
1245 PM PST MON MAR 2 2009

CAC007-063-103-022345-
/O.CON.KSTO.FF.W.0001.000000T0000Z-090302T2345Z/
/00000.0.ER.000000T0000Z.000000T0000Z.000000T0000Z.OO/
BUTTE CA-PLUMAS CA-TEHAMA CO-

...A FLASH FLOOD WARNING REMAINS IN EFFECT UNTIL 345 PM PST MONDAY FOR THE BURN AREAS OF NORTHEASTERN BUTTE COUNTY...WESTERN PLUMAS COUNTY AND EAST CENTRAL TEHAMA COUNTY IN NORTHERN CALIFORNIA...

NATIONAL WEATHER SERVICE DOPPLER RADAR CONTINUES TO INDICATE MODERATE TO HEAVY RAIN IN THE NORTHEASTERN FOOTHILLS. ONE MINOR DEBRIS FLOW HAS BEEN REPORTED ON STATE HIGHWAY 70 ABOUT 5 MILES NORTH OF PULGA. A SECOND BAND OF HEAVY RAINS MAY TRIGGER ADDITIONAL DEBRIS FLOWS IN BURN AREAS ESPECIALLY ALONG HIGHWAY 70...THE NORTH FORK FEATHER RIVER CANYON...THE MIDDLE FORK FEATHER RIVER CANYON... HIGHWAY 32 AND HIGHWAY 89.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

DEBRIS FLOWS CAN POTENTIALLY TRAP AND KILL PEOPLE CAUGHT IN THEIR PTHS. DO NOT DRIVE INTO AN AREA WHERE A THREAT FOR DEBRIS FLOWS HAS BEEN IDENTIFIED.

&&

LAT...LON 4031 12141 4033 12113 3988 12074 3967 12101
3984 12128 3960 12152 4013 12176

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6. Flood Warning For Forecast Points (FLW) and Associated Follow-up Products (FLS).

6.1 Example #1 - Flood Warning for Forecast Points: Initial Issuance (FLW). Situation - At 12:00 noon on Friday April 6, WFO Newport/Morehead City issues a new flood warning for three forecast points in its HSA.

WGUS42 KMHX 061600
FLWMHX

BULLETIN - IMMEDIATE BROADCAST REQUESTED
FLOOD WARNING
NATIONAL WEATHER SERVICE NEWPORT/MOREHEAD CITY NC
1200 PM EDT FRI APR 6 2001

...THE NATIONAL WEATHER SERVICE IN NEWPORT HAS ISSUED A FLOOD WARNING FOR THE FOLLOWING RIVERS IN NORTH CAROLINA...

NEUSE RIVER AT KINSTON AFFECTING CRAVEN AND LENOIR COUNTIES.
TAR RIVER AT GREENVILLE AFFECTING PITT COUNTY.
ROANOKE RIVER NEAR WILLIAMSTON AFFECTING MARTIN COUNTY.

.HEAVY RAINFALL LAST NIGHT IN EASTERN NORTH CAROLINA HAS CAUSED THE ALREADY HIGH NEUSE...TAR...AND ROANOKE RIVERS TO RISE NEAR OR ABOVE FLOOD STAGE. THESE RIVERS RISE AND FALL VERY SLOWLY...SO THE EXACT DURATION OF THIS FLOOD IS DIFFICULT TO PREDICT AND MINOR FLOODING WILL PERSIST FOR SEVERAL DAYS.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

SAFETY MESSAGE...NEVER DRIVE CARS...TRUCKS OR SPORT UTILITY VEHICLES THROUGH FLOODED AREAS. THE WATER MAY BE TOO DEEP FOR SAFE PASSAGE.

ADDITIONAL INFORMATION IS AVAILABLE AT
[HTTP://AHPS.ERH.NOAA.GOV/CGI-BIN/AHPS.CGI?MHX](http://ahps.erh.noaa.gov/cgi-bin/ahps.cgi?mhx).

THE NEXT STATEMENT WILL BE ISSUED THIS EVENING AT 1000 PM.

&&

NCC049-107-070200-
/O.NEW.KMHX.FL.W.0001.010407T1300Z-000000T0000Z/
/KINN7.1.ER.010407T1300Z.010412T0100Z.000000T0000Z.NO/
1200 PM EDT FRI APR 6 2001

THE NATIONAL WEATHER SERVICE IN NEWPORT HAS ISSUED A
* FLOOD WARNING FOR
THE NEUSE RIVER AT KINSTON.
* FROM SATURDAY MORNING UNTIL FURTHER NOTICE.
* AT 900 AM EDT FRIDAY THE STAGE WAS 13.5 FEET.
* FLOOD STAGE IS 14.0 FEET.
* MINOR FLOODING IS FORECAST.
* FORECAST...FLOOD STAGE WILL BE REACHED AT 900 AM SATURDAY. MAXIMUM STAGE WILL BE 15.0 FEET AT 900 PM EDT WEDNESDAY. THE RIVER MAY REMAIN ABOVE FLOOD STAGE FOR SEVERAL WEEKS.
* IMPACT...AT 14 FEET...WATER WILL BEGIN TO OVERFLOW INTO LOWLANDS ADJACENT TO THE NEUSE RIVER.

\$\$

NCC147-070200-
/O.NEW.KMHX.FL.W.0002.010406T1600Z-010410T1000Z/
/PGVN7.1.ER.010406T0400Z.010408T1200Z.010410T1000Z.NO/
1200 PM EDT FRI APR 6 2001

THE NATIONAL WEATHER SERVICE IN NEWPORT HAS ISSUED A

- * FLOOD WARNING FOR
THE TAR RIVER AT GREENVILLE.
- * UNTIL TUESDAY MORNING.
- * AT 1100 AM EDT FRIDAY THE STAGE WAS 14.9 FEET.
- * FLOOD STAGE IS 13.0 FEET.
- * MINOR FLOODING IS OCCURRING AND MINOR FLOODING IS FORECAST.
- * FORECAST...MAXIMUM STAGE WILL BE 16.0 FEET AT 800 AM SUNDAY. THE RIVER WILL FALL BELOW FLOOD STAGE AT 600 AM TUESDAY.
- * IMPACT...AT 16 FEET...WIDESPREAD LOW LAND FLOODING ADJACENT TO THE TAR RIVER OCCURS. FARMLAND WILL BEGIN TO FLOOD ACROSS PITT COUNTY.

\$\$

NCC117-070200-

/O.NEW.KMHX.FL.W.0003.010407T0000Z-000000T0000Z/
/WLLN7.1.ER.010407T0000Z.010410T0000Z.000000T0000Z.NO/
1200 PM EDT FRI APR 6 2001

THE NATIONAL WEATHER SERVICE IN NEWPORT HAS ISSUED A

- * FLOOD WARNING FOR
THE ROANOKE RIVER NEAR WILLIAMSTON.
- * FROM FRIDAY EVENING UNTIL FURTHER NOTICE.
- * AT 900 AM EDT FRIDAY THE STAGE WAS 9.8 FEET.
- * FLOOD STAGE IS 10.0 FEET.
- * MINOR FLOODING IS FORECAST.
- * FORECAST...FLOOD STAGE WILL BE REACHED AT 800 PM FRIDAY. FORECAST MAXIMUM STAGE IS 10.6 FEET AT 800 PM MONDAY. THE RIVER MAY REMAIN ABOVE FLOOD STAGE FOR A WEEK OR MORE.
- * IMPACT...AT 10 FEET...MINOR LOWLAND FLOODING ADJACENT TO THE ROANOKE RIVER WILL BEGIN.

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Notes and Explanations:

- (1) Each segment has its own event tracking number. This makes it easy to issue and track updates, cancellations, etc. for each forecast point in subsequent products.
- (2) Kinston was forecast to go above flood stage at 9 a.m. EDT Saturday April 7 and Williamston was forecast to go above flood stage at 8 p.m. EDT Friday April 6, so their respective Event Beginning Date/Times were (010407T1300Z) and (010407T0000Z). These same times were entered for the Flood Begin Date/Times in the H-VTEC string for each point.
- (3) For Greenville, the flood warning was issued after the fact – i.e., the river was already above flood stage at time of issuance – so the Event Beginning Date/Time in the P-VTEC string was set to the time of product issuance (010406T1600Z, see NWSI 10-1703, section 4.2.6). However, the Flood Begin Date/Time in the H-VTEC string was set to the actual time flooding started (assume gage showed it was 12 hours earlier at 12 a.m. midnight on April 6 = 010406T0400Z).
- (4) Maximum stages for Kinston, Greenville, and Williamston were forecast to occur at 9 p.m. Wednesday, 8 a.m. Sunday, and 8 p.m. Monday respectively, so the Flood Crest Date/Times in the corresponding H-VTEC strings were 010412T0100Z, 010408T1200Z, and 010410T0000Z.
- (5) For Kinston and Williamston, the end time of the flood (i.e., time below flood stage) was unknown at the time of product issuance. Therefore, the Event Ending Date/Time in the P-VTEC string and the Flood End Date/Time in the H-VTEC string were set to 000000T0000Z for both points and the second bullet for these points reads “UNTIL FURTHER NOTICE.”
- (6) The forecast for Greenville was to go below flood stage at 6 a.m. on Tues. April 10, 2001, so the Event Ending Date/Time in the P-VTEC string and the Flood End Date/Time in the H-VTEC string were set to 010410T1000Z and the second bullet reads “UNTIL TUESDAY MORNING.”

6.2 Example #2 - Flood Statement: Follow-up to Flood Warning For Forecast Points

(FLS). Situation - At 10 p.m. on April 6, WFO Newport/Morehead City issues a flood statement to follow up the flood warning issued ten hours earlier.

WGUS82 KMHX 070200
FLSMHX

FLOOD STATEMENT

NATIONAL WEATHER SERVICE NEWPORT/MOREHEAD CITY NC
1000 PM EDT FRI APR 6 2001

...THE FLOOD WARNING CONTINUES FOR THE FOLLOWING RIVERS IN
NORTH CAROLINA...

NEUSE RIVER AT KINSTON AFFECTING CRAVEN AND LENOIR COUNTIES.
TAR RIVER AT GREENVILLE AFFECTING PITT COUNTY.
ROANOKE RIVER NEAR WILLIAMSTON AFFECTING MARTIN COUNTY.

.LAST NIGHTS HEAVY RAINFALL HAS CAUSED THE NEUSE...TAR...AND ROANOKE
RIVERS TO RISE SLIGHTLY ABOVE FLOOD STAGE. THESE RIVERS RISE AND FALL
VERY SLOWLY...SO THE EXACT DURATION OF THIS FLOOD IS DIFFICULT TO
PREDICT AND MINOR FLOODING WILL PERSIST FOR SEVERAL DAYS.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

SAFETY MESSAGE...NEVER DRIVE CARS...TRUCKS OR SPORT UTILITY VEHICLES
THROUGH FLOODED AREAS. THE WATER MAY BE TOO DEEP FOR SAFE PASSAGE.

ADDITIONAL INFORMATION IS AVAILABLE AT
[HTTP://AHPS.ERH.NOAA.GOV/CHI-BIN/AHPS.CGI?MHX](http://ahps.erh.noaa.gov/chi-bin/ahps.cgi?mhx).

THE NEXT STATEMENT WILL BE ISSUED SATURDAY MORNING AT 1000 AM EDT.

&&

NCC049-107-071400-
/O.CON.KMHX.FL.W.0001.010407T1300Z-000000T0000Z/
/KINN7.1.ER.010407T1300Z.010412T0100Z.000000T0000Z.NO/
1000 PM EDT FRI APR 6 2001

THE FLOOD WARNING CONTINUES FOR
THE NEUSE RIVER AT KINSTON.

- * FROM SATURDAY MORNING UNTIL FURTHER NOTICE.
- * AT 900 PM EDT FRIDAY THE STAGE WAS 13.7 FEET.
- * FLOOD STAGE IS 14.0 FEET.
- * MINOR FLOODING IS FORECAST.
- * FORECAST...FLOOD STAGE WILL BE REACHED AT 900 AM EDT SATURDAY.
MAXIMUM STAGE WILL BE 15.0 FEET AT 900 PM EDT WEDNESDAY. THE RIVER
MAY REMAIN ABOVE FLOOD STAGE FOR SEVERAL WEEKS.
- * IMPACT...AT 14 FEET...WATER WILL BEGIN TO OVERFLOW INTO LOWLANDS
ADJACENT TO THE NEUSE RIVER.

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NCC147-071400-
/O.CON.KMHX.FL.W.0002.000000T0000Z-010410T1000Z/
/PGVN7.1.ER.010406T0400Z.010408T1200Z.010410T1000Z.NO/
1000 PM EDT FRI APR 6 2001

THE FLOOD WARNING CONTINUES FOR
THE TAR RIVER AT GREENVILLE.

- * UNTIL TUESDAY MORNING.
- * AT 900 PM EDT FRIDAY THE STAGE WAS 15.3 FEET.
- * FLOOD STAGE IS 13.0 FEET.

* MINOR FLOODING IS OCCURRING AND MINOR FLOODING IS FORECAST.
* FORECAST...MAXIMUM STAGE WILL BE 16.0 FEET AT 800 AM EDT SUNDAY.
THE RIVER WILL FALL BELOW FLOOD STAGE AT 600 AM EDT TUESDAY.
* IMPACT...AT 16 FEET...WIDESPREAD LOW LAND FLOODING ADJACENT TO THE
TAR RIVER OCCURS. FARMLAND WILL BEGIN TO FLOOD ACROSS PITT COUNTY.

\$\$

NCC117-071400-
/O.CON.KMHX.FL.W.0003.000000T0000Z-000000T0000Z/
/WLLN7.1.ER.010407T0000Z.010410T0000Z.000000T0000Z.NO/
1000 PM EDT FRI APR 6 2001

THE FLOOD WARNING CONTINUES FOR
THE ROANOKE RIVER NEAR WILLIAMSTON.
* UNTIL FURTHER NOTICE.
* AT 900 PM EDT FRIDAY THE STAGE WAS 10.0 FEET.
* FLOOD STAGE IS 10.0 FEET.
* MINOR FLOODING IS OCCURRING AND MINOR FLOODING IS FORECAST.
* FORECAST...MAXIMUM STAGE WILL BE 10.6 FEET AT 800 PM EDT MONDAY. THE
RIVER MAY REMAIN ABOVE FLOOD STAGE FOR A WEEK OR MORE.
* IMPACT...AT 10 FEET...MINOR LOWLAND FLOODING ADJACENT TO THE RIVER
BEGINS.

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Notes and Explanations:

- (1) For Kinston, the Event Beginning Date/Time in the P-VTEC string is still 010407T1300Z because flood stage has not yet been reached there. For Greenville and Williamston, the Event Beginning Date/Times in the P-VTEC strings are 000000T0000Z because the product is being issued to provide updated information after the event has already begun at these points.
- (2) Since the forecast times for the flood at all three forecast points have not changed, all other Date/Times are unchanged from the initial flood warning product.
- (3) For Williamston, "MINOR FLOODING IS OCCURRING" has been added to the third bullet because flood stage was reached there.

6.3 Example #3 - Flood Statement: Continuation of Flood Warning for Two Forecast Points, Cancellation of Flood Warning for One Forecast Point (FLS). Situation - At 10 p.m. Monday evening on April 9th (3 days since the initial flood warning), Greenville has fallen below flood stage a bit earlier than expected, and the full forecast for Williamston is now known (i.e., models now show the time when the river will fall below flood stage). However, the Event Ending Date/Time is still beyond the forecast period for Kinston. The following product cancels the flood warning for Greenville and continues the flood warning for Kinston and Williamston.

WGUS82 KMHX 100200
FLSMHX

FLOOD STATEMENT
NATIONAL WEATHER SERVICE NEWPORT/MOREHEAD CITY NC
1000 PM EDT MON APR 9 2001

...THE FLOOD WARNING IS CANCELLED FOR THE FOLLOWING RIVER IN NORTH
CAROLINA...

TAR RIVER AT GREENVILLE AFFECTING PITT COUNTY.

...THE FLOOD WARNING CONTINUES FOR THE FOLLOWING RIVERS IN
NORTH CAROLINA...

NWSM 10-923 SEPTEMBER 8, 2009

NEUSE RIVER AT KINSTON AFFECTING CRAVEN AND LENOIR COUNTIES.
ROANOKE RIVER NEAR WILLIAMSTON AFFECTING MARTIN COUNTY.

.THE TAR RIVER HAS DROPPED BELOW FLOOD STAGE WHILE THE NEUSE AND
ROANOKE RIVERS ARE SLOWLY FALLING. THESE RIVERS RISE AND FALL VERY
SLOWLY...SO THE EXACT DURATION OF THIS FLOOD IS DIFFICULT TO PREDICT
AND MINOR FLOODING WILL PERSIST FOR SEVERAL DAYS.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

SAFETY MESSAGE...NEVER DRIVE CARS...TRUCKS OR SPORT UTILITY VEHICLES
THROUGH FLOODED AREAS. THE WATER MAY BE TOO DEEP FOR SAFE PASSAGE.

ADDITIONAL INFORMATION IS AVAILABLE AT
[HTTP://AHPS.ERH.NOAA.GOV/CHI-BIN/AHPS.CGI?MHX/](http://ahps.erh.noaa.gov/chi-bin/ahps.cgi?mhx/).

THE NEXT STATEMENT WILL BE ISSUED TUESDAY MORNING AT 1000 AM EDT.

&&

NCC147-100215-
/O.CAN.KMHX.FL.W.0002.000000T0000Z-010410T1000Z/
/PGVN7.1.ER.010406T0500Z.010408T1300Z.010410T0000Z.NO/
1000 PM EDT MON APR 9 2001

THE FLOOD WARNING IS CANCELLED FOR
THE TAR RIVER AT GREENVILLE.
* AT 900 PM EDT MONDAY THE STAGE WAS 12.9 FEET.
* FLOOD STAGE IS 13.0 FEET.
* FELL BELOW FLOOD STAGE AT 800 PM MONDAY.
* FORECAST...A SLOW DECLINE SHOULD CONTINUE...WITH THE RIVER
FALLING TO 12 FEET BY 800 PM WEDNESDAY.

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NCC049-107-101400-
/O.CON.KMHX.FL.W.0001.000000T0000Z-000000T0000Z/
/KINN7.1.ER.010407T1300Z.010412T0100Z.000000T0000Z.NO/
1000 PM EDT MON APR 9 2001

THE FLOOD WARNING CONTINUES FOR
THE NEUSE RIVER AT KINSTON.
* FOR THE NEXT SEVERAL DAYS.
* AT 900 PM EDT MONDAY THE STAGE WAS 14.6 FEET.
* FLOOD STAGE IS 14.0 FEET.
* MINOR FLOODING IS OCCURRING AND MINOR FLOODING IS FORECAST.
* FORECAST...MAXIMUM STAGE WILL BE 15.1 FEET AT 900 PM EDT WEDNESDAY.
THE RIVER MAY REMAIN ABOVE FLOOD STAGE FOR 1 TO 2 WEEKS.
* IMPACT...AT 14 FEET...WATER OVERFLOWS INTO LOWLANDS ADJACENT TO THE
NEUSE RIVER.

\$\$

NCC117-101400-
/O.EXT.KMHX.FL.W.0003.000000T0000Z-010413T0200Z/
/WLLN7.1.ER.010407T0000Z.010410T0000Z.010413T0200Z.NO/
1000 PM EDT MON APR 9 2001

...FLOOD WARNING NOW IN EFFECT UNTIL THURSDAY EVENING...

THE FLOOD WARNING CONTINUES FOR
THE ROANOKE RIVER NEAR WILLIAMSTON.
* UNTIL THURSDAY EVENING.
* AT 900 PM EDT MONDAY THE STAGE WAS 10.5 FEET.
* FLOOD STAGE IS 10.0 FEET.

- * MINOR FLOODING IS OCCURRING AND MINOR FLOODING IS FORECAST.
- * FORECAST...THE RIVER HAS PEAKED AND WILL BEGIN A SLOW FALL...
FALLING BELOW FLOOD STAGE THURSDAY EVENING.
- * IMPACT...AT 10 FEET...MINOR LOWLAND FLOODING ADJACENT TO THE
ROANOKE RIVER OCCURS.

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Notes and Explanations:

- (1) For Greenville, the event had been forecast to end at 1000Z on April 10, but when this product was issued at 0200Z on April 10, the river had already fallen below flood stage two hours before product issuance. Therefore, the time the event was originally forecasted to end (010410T1000Z) is used in the Event Ending Date/Time of the P-VTEC string and the time that the river actually fell below flood stage (010410T0000Z) is used in the Flood End Date/Time of the H-VTEC string (see NWSI 10-1703, Section 4.2.7).
- (2) In the second segment, "FOR THE NEXT SEVERAL DAYS" is used for the long-term duration phrase, because the forecaster now has a general idea that the flooding will end in a matter of days rather than a more distant time frame implied by "UNTIL FURTHER NOTICE."
- (3) The third segment (Roanoke River at Williamston) illustrates a special case – an event ending time is being forecast for the first time for a long-duration flood at a location for which previous FLS products used ten zeros for the Event Ending Date/Time in the P-VTEC string. The river is now forecast to fall below flood stage at about 10 p.m. on Thursday evening April 12 (0200Z on April 13). Therefore, the third segment uses the EXT action code instead of CON and its format is otherwise the same as a continuation segment, except a special headline is used to announce that an ending time has been determined and the Event Ending Date/Time in the P-VTEC string and the Flood End Date/Time in the H-VTEC string now have an actual date and time instead of ten zeros. After this special EXT segment is issued, the next flood statement for this forecast point product would revert to using a CON segment until the flood ends, unless the event ending time changes again, which would require the process to be repeated.

6.4 Example #4 - Flood Warning for Forecast Points: Initial Issuance (FLW).

Situation – unexpectedly heavy rainfall occurs overnight just to the east of Des Moines, IA. At 10:30 a.m. on Friday May 9, WFO Des Moines issues a new flood warning for three forecast points.

WGUS43 KDMX 091530
FLWDMX

BULLETIN - IMMEDIATE BROADCAST REQUESTED
FLOOD WARNING
NATIONAL WEATHER SERVICE DES MOINES IA
1030 AM CDT FRI MAY 9 2003

...THE NATIONAL WEATHER SERVICE IN DES MOINES HAS ISSUED A FLOOD
WARNING FOR THE FOLLOWING RIVERS IN CENTRAL IOWA...

PRECAUTIONARY/PREPAREDNESS ACTIONS...

SAFETY MESSAGE...NEVER DRIVE CARS...TRUCKS OR SPORT UTILITY VEHICLES
THROUGH FLOODED AREAS. STAY TUNED TO DEVELOPMENTS BY LISTENING TO
NOAA WEATHER RADIO.

ADDITIONAL INFORMATION IS AVAILABLE AT WWW.CRH.NOAA.GOV/DMX/AHPS.

THE NEXT STATEMENT WILL BE ISSUED BY 1000 PM FRIDAY EVENING.

&&

IAC049-100300-
 /O.NEW.KDMX.FL.W.0011.030509T1530Z-030512T0300Z/
 /VNMI4.1.ER.030509T0400Z.030509T0900Z.030512T0300Z.NO/
 1030 AM CDT FRI MAY 9 2003

THE NATIONAL WEATHER SERVICE IN DES MOINES HAS ISSUED A
 * FLOOD WARNING FOR
 THE RACCOON RIVER AT VAN METER.
 * UNTIL SUNDAY EVENING.
 * AT 9 AM CDT FRIDAY THE STAGE WAS 16.4 FEET...AN INCREASE OF
 10.8 FEET SINCE 9 AM YESTERDAY MORNING.
 * FLOOD STAGE IS 13.0 FEET.
 * MINOR FLOODING IS OCCURRING AND MINOR FLOODING IS FORECAST.
 * RECENT ACTIVITY...FLOOD STAGE WAS REACHED AT 11 PM THURSDAY
 NIGHT AND THE RIVER CRESTED AT 16.5 FEET 4 AM FRIDAY MORNING.
 * FORECAST...THE RIVER WILL FALL BELOW FLOOD STAGE SUNDAY EVENING.
 * IMPACT...AT 16.0 FEET...THE UTICA TRAIL ROAD SOUTHWEST OF
 BOONVILLE AND SOUTH OF COUNTY ROAD F90 BEGINS TO FLOOD.

&&

LOCATION	FLD	OBSERVED	24 HR	FORECASTS (7 AM)		
	STG	STG DAY/TIME	CHG	SAT	SUN	MON
RACCOON RIVER BASIN VAN METER	13.0	16.4 9 AM	10.8	15.3	14.0	11.0

\$\$

IAC153-100300-
 /O.NEW.KDMX.FL.W.0012.030509T1530Z-030512T0900Z/
 /DEMI4.2.ER.030509T0900Z.030510T0900Z.030512T0900Z.NO/
 1030 AM CDT FRI MAY 9 2003

THE NATIONAL WEATHER SERVICE IN DES MOINES HAS ISSUED A
 * FLOOD WARNING FOR
 THE RACCOON RIVER AT DES MOINES FLEUR DRIVE.
 * UNTIL MONDAY MORNING.
 * AT 9 AM CDT FRIDAY THE STAGE WAS 13.9 FEET...AN INCREASE OF
 12.8 FEET SINCE 9 AM YESTERDAY MORNING.
 * FLOOD STAGE IS 12.0 FEET.
 * MINOR FLOODING IS OCCURRING AND MODERATE FLOODING IS FORECAST.
 * FORECAST...THE RIVER WILL CREST AT 15.1 FEET AT 4 AM SATURDAY
 MORNING AND FALL BELOW FLOOD STAGE AT 4 AM MONDAY MORNING.
 * IMPACT...AT 15 FEET...FLOODING OCCURS OVER MUCH OF SOUTHWEST 28TH
 STREET BETWEEN VALLEY DRIVE AND THE RAILROAD TRACKS.

&&

LOCATION	FLD	OBSERVED	24 HR	FORECASTS (7 AM)		
	STG	STG DAY/TIME	CHG	SAT	SUN	MON
RACCOON RIVER BASIN DES MOINES FLEUR DRIVE	12.0	13.9 9 AM	12.8	14.8	13.2	11.5

\$\$

IAC153-100300-
 /O.NEW.KDMX.FL.W.0013.030509T2100Z-030510T2100Z/
 /DESI4.1.ER.030509T2100Z.030510T0300Z.030510T2100Z.NO/
 1030 AM CDT FRI MAY 9 2003

THE NATIONAL WEATHER SERVICE IN DES MOINES HAS ISSUED A
 * FLOOD WARNING FOR
 THE DES MOINES RIVER AT DES MOINES SE 6TH.
 * FROM THIS AFTERNOON UNTIL SATURDAY AFTERNOON.
 * AT 900 AM EDT FRIDAY THE STAGE WAS 23.7 FEET...AN INCREASE OF
 13.2 FEET SINCE 900 AM YESTERDAY MORNING.
 * FLOOD STAGE IS 24.0 FEET.
 * MINOR FLOODING IS FORECAST.
 * FORECAST...FLOOD STAGE WILL BE REACHED AT 400 PM FRIDAY. THE RIVER
 WILL REMAIN NEAR FLOOD STAGE UNTIL MID-AFTERNOON SATURDAY.
 * IMPACT...AT 24 FEET...WEST RIVERSIDE DRIVE IS FLOODED.

&&

LOCATION	FLD	OBSERVED	24 HR FORECASTS (7 AM)			
	STG	STG DAY/TIME	CHG	SAT	SUN	MON
DES MOINES RIVER BASIN						
DES MOINES SE 6TH	24.0	23.7 9 AM	13.2	24.1	23.9	22.5

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Notes and Explanations:

- (1) Note how the overview headline/synopsis section of this product omits the summary of forecast points and affected counties, with the goal of having only the text starting with SAFETY MESSAGE..., ADDITIONAL INFORMATION IS..., and THE NEXT STATEMENT... set to be read by NOAA Weather Radio - All Hazards after the end of the bullets in each segment.
- (2) Both Raccoon River forecast points were already in flood when the product was issued, so the Event Beginning Date/Time in the P-VTEC strings for each point is set to the current product issuance time – i.e., 030509T1530Z. However, the Event Beginning Date/Time in the H-VTEC strings is set to the actual time in the past that flooding started at each point (assume 11 p.m. May 8 = 030509T0400Z for Raccoon River at Van Meter and 4 a.m. May 9 = 030509T0900Z for Raccoon River at Des Moines Fleur Drive).
- (3) Note how optional descriptions of the change in stage since a previous reading are provided in the observed stage bullets for all three forecast points in this product.
- (4) The forecaster expects the flood warnings at Van Meter, Des Moines Fleur Drive, and Des Moines SE 6th to be in effect until 10 p.m. Sunday evening, 4 a.m. Monday morning, and 4 p.m. Saturday morning respectively. Therefore, the corresponding time/day phrase used for these points in the second bullet is “Sunday evening,” “Monday morning,” and “Saturday afternoon.”
- (5) Note how tabular observed/forecast values are provided in each segment, separated by &&.
- (6) Note how the second and third segments have the same UGC – they are in the same county.

6.5 Example #5 - Flood Statement: Continuation of Flood Warning for Two Forecast Points, Cancellation of Flood Warning for One Forecast Point (FLS).

Situation - At 10:00 p.m. on Friday May 9, WFO Des Moines issues a flood statement to follow up the previously issued flood warning for three forecast points in its HSA.

WGUS83 KDMX 100300
 FLSDMX

FLOOD STATEMENT
 NATIONAL WEATHER SERVICE DES MOINES IA
 1000 PM CDT FRI MAY 9 2003

...THE FLOOD WARNING CONTINUES FOR THE RACCOON RIVER AT VAN METER AND THE RACCOON RIVER AT DES MOINES FLEUR DRIVE. THE FLOOD WARNING IS

NWSM 10-923 SEPTEMBER 8, 2009

CANCELLED FOR THE DES MOINES RIVER AT DES MOINES SE 6TH...

PRECAUTIONARY/PREPAREDNESS ACTIONS...

SAFETY MESSAGE...NEVER DRIVE CARS...TRUCKS OR SPORT UTILITY VEHICLES THROUGH FLOODED AREAS. STAY TUNED TO DEVELOPMENTS BY LISTENING TO NOAA WEATHER RADIO.

ADDITIONAL INFORMATION IS AVAILABLE AT WWW.CRH.NOAA.GOV/DMX/AHPS.

THE NEXT STATEMENT WILL BE ISSUED SATURDAY MORNING.

&&

IAC049-101500-
/O.CON.KDMX.FL.W.0011.000000T0000Z-030512T0300Z/
/VNMI4.1.ER.030509T0400Z.030509T0900Z.030512T0300Z.NO/
1000 PM CDT FRI MAY 9 2003

THE FLOOD WARNING CONTINUES FOR
THE RACCOON RIVER AT VAN METER.
* UNTIL SUNDAY EVENING.
* AT 900 PM CDT FRIDAY THE STAGE WAS 15.9 FEET...A DECREASE OF
0.5 FOOT SINCE 900 AM THIS MORNING.
* FLOOD STAGE IS 13.0 FEET.
* MINOR FLOODING IS OCCURRING AND MINOR FLOODING IS FORECAST.
* RECENT ACTIVITY...THE RIVER REACHED FLOOD STAGE AT 11 PM THURSDAY
NIGHT AND CRESTED AT 16.5 FEET 400 AM FRIDAY MORNING.
* FORECAST...THE RIVER WILL CONTINUE TO RECEDE STEADILY AND FALL
BELOW FLOOD STAGE SUNDAY EVENING.
* IMPACT...AT 16.0 FEET...THE UTICA TRAIL ROAD SOUTHWEST OF BOONVILLE
AND SOUTH OF COUNTY ROAD F90 BEGINS TO FLOOD.

&&

LOCATION	FLD		OBSERVED STG DAY/TIME	24 HR CHG	FORECASTS (7 AM)		
	STG	STG			SAT	SUN	MON
RACCOON RIVER BASIN VAN METER	13.0	15.9	9 PM	9.1	15.2	13.9	11.0

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IAC153-101500-
/O.CON.KDMX.FL.W.0012.000000T0000Z-030512T0900Z/
/DEMI4.2.ER.030509T0900Z.030510T0900Z.030512T0900Z.NO/
1000 PM CDT FRI MAY 9 2003

THE FLOOD WARNING CONTINUES FOR
THE RACCOON RIVER AT DES MOINES FLEUR DRIVE.
* UNTIL MONDAY MORNING.
* AT 900 PM CDT FRIDAY THE STAGE WAS 14.3 FEET...AN INCREASE OF
0.4 FOOT SINCE 900 AM THIS MORNING.
* FLOOD STAGE IS 12.0 FEET.
* MINOR FLOODING IS OCCURRING AND MODERATE FLOODING IS FORECAST.
* FORECAST...THE RIVER WILL CREST AT 15.1 FEET AT 400 AM SATURDAY
MORNING AND FALL BELOW FLOOD STAGE AT 400 AM MONDAY MORNING.
* IMPACT...AT 15 FEET...FLOODING OCCURS OVER MUCH OF SOUTHWEST 28TH
STREET BETWEEN VALLEY DRIVE AND THE RAILROAD TRACKS.

&&

LOCATION	FLD		OBSERVED STG DAY/TIME	24 HR CHG	FORECASTS (7 AM)		
	STG	STG			SAT	SUN	MON
RACCOON RIVER BASIN DES MOINES FLEUR DRIVE	12.0	14.3	9 PM	10.2	14.6	13.1	11.3

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IAC153-100400-
 /O.CAN.KDMX.FL.W.0013.000000T0000Z-030510T2100Z/
 /DESI4.N.ER.000000T0000Z.000000T0000Z.000000T0000Z.NO/
 1000 PM EDT FRI MAY 9 2003

THE FLOOD WARNING IS CANCELLED FOR
 THE DES MOINES RIVER AT DES MOINES SE 6TH.
 * AT 900 PM CDT FRIDAY THE STAGE WAS 23.8 FEET...AN INCREASE OF
 0.1 FOOT SINCE 900 AM THIS MORNING.
 * FLOOD STAGE IS 24.0 FEET.
 * FORECAST...THE RIVER WILL STAY BELOW FLOOD STAGE THROUGH THE
 CURRENT EVENT AND GRADUALLY RECEDE TO 23.5 FEET BY MONDAY MORNING
 * IMPACT...AT 24 FEET...WEST RIVERSIDE DRIVE IS FLOODED.

&&

LOCATION	FLD	OBSERVED	24 HR		FORECASTS (7 AM)		
	STG	STG DAY/TIME	CHG	SAT	SUN	MON	
DES MOINES RIVER BASIN DES MOINES SE 6TH	24.0	23.8 9 PM	11.2	23.9	23.7	23.5	

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Notes and Explanations:

- (1) Even though VTEC rules call for cancellation segments to go before continuation segments, the segment canceling the flood warning for Des Moines SE 6th occurs after the continuation segments for Van Meter and Des Moines Fleur Drive. This is because Des Moines SE 6th is downstream from Van Meter and Des Moines Fleur Drive and the WFO wants its flood products to reflect this upstream to downstream hierarchy.
- (2) Note how an optional recent activity bullet was included for the Raccoon River at Van Meter indicating when flood stage was exceeded and when the crest was reached.
- (3) Note the zeroed out H-VTEC string for Des Moines SE 6th. This is because the river never reached flood stage there, so the flood warning was cancelled for that location.
- (4) Note how tabular observed/forecast values are provided in each segment, separated by &&.

6.6 Example #6 - Flood Warning for Forecast Points: Initial Issuance (FLW).

Situation – Overnight heavy rainfall in southwest Washington near the mouth of the Columbia River has elevated flows on the lower Cowlitz River. At the same time, the lower Columbia River is expected to slightly exceed flood stage due to high tides. At 10:00 a.m. on Tuesday, December 5, WFO Portland, Oregon issues a flood warning for three forecast points.

WGUS46 KPQR 051800
 FLWPQR

BULLETIN - IMMEDIATE BROADCAST REQUESTED
 FLOOD WARNING
 NATIONAL WEATHER SERVICE PORTLAND OR
 1000 AM PST TUE DEC 5 2000

...THE NATIONAL WEATHER SERVICE IN PORTLAND HAS ISSUED A FLOOD
 WARNING FOR THE FOLLOWING RIVERS IN SOUTHWEST WASHINGTON...

COWLITZ RIVER AT CASTLE ROCK AFFECTING COWLITZ COUNTY.
 COWLITZ RIVER AT KELSO AFFECTING COWLITZ COUNTY.
 COLUMBIA RIVER AT LONGVIEW AFFECTING COWLITZ AND COLUMBIA COUNTIES.

NWSM 10-923 SEPTEMBER 8, 2009

.OVERNIGHT RAINS OF 2 TO 4 INCHES IN SOUTHWEST OREGON COUPLED WITH 1 TO 2 INCHES FORECAST FOR TODAY WILL PRODUCE FLOODING ON THE LOWER COWLITZ RIVER. A SEPARATE MINOR FLOODING PROBLEM EXISTS ON THE TIDAL COLUMBIA DUE TO ALREADY HIGH FLOWS MOVING DOWN THE RIVER COUPLED WITH HIGH TIDES.

RIVER STAGE FORECASTS ARE BASED ON OBSERVED AND FORECAST RAINFALL AND TEMPERATURES. IF ACTUAL RAINFALL AND TEMPERATURES VARY FROM THE FORECAST VALUES...THE RIVER STAGE WILL VARY ACCORDINGLY. NATIONAL WEATHER SERVICE RIVER FORECASTS INCLUDE CURRENT AND PLANNED RESERVOIR RELEASES.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

FOR THE LATEST RIVER STAGES AND FORECASTS VISIT OUR WEB PAGE AT WWW.WRH.NOAA.GOV/PORTLAND/PUBLIC_HYDRO/.

THE NEXT STATEMENT WILL BE ISSUED BY 1000 PM THIS EVENING.

&&

WAC015-060600-
/O.NEW.KPQR.FL.W.0077.001207T1000Z-001208T1400Z/
/CASW1.1.ER.001207T1000Z.001207T1800Z.001208T1400Z.NO/
1000 AM PST TUE DEC 5 2000

THE NATIONAL WEATHER SERVICE IN PORTLAND HAS ISSUED A

- * FLOOD WARNING FOR
THE COWLITZ RIVER AT CASTLE ROCK.
- * FROM LATE WEDNESDAY NIGHT UNTIL FRIDAY MORNING.
- * AT 800 AM PST TUESDAY THE STAGE/FLOW WAS 46.8 FEET / 59000 CFS.
- * FLOOD STAGE/FLOW IS 48.0 FEET / 65000 CFS.
- * MINOR FLOODING IS FORECAST.
- * FORECAST...THE RIVER IS EXPECTED TO RISE THROUGH THE NIGHT...
REACHING FLOOD STAGE AROUND 200 AM THURSDAY. IT WILL CONTINUE TO
RISE THROUGH THE MORNING HOURS AND CREST NEAR 51.5 FEET LATE
THURSDAY MORNING AND REMAIN ABOVE FLOOD STAGE THROUGH THE DAY.
- * IMPACT...ABOVE 51 FEET...EXPECT FLOODING OF BUILDINGS AND
RESIDENTIAL AREAS WEST OF THE RIVER IN THE VICINITY OF CASTLE
ROCK. ALSO...EXPECT WIDESPREAD FLOODING OF LOW LYING PASTURE AND
FARMLAND.
- * FLOOD HISTORY...THE FORECAST CREST COMPARES TO A CREST OF 50.6 FEET
ON JANUARY 9 1990.

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WAC015-060600-
/O.NEW.KPQR.FL.W.0078.001207T1400Z-001208T1800Z/
/KELW1.1.ER.001207T1400Z.001207T2200Z.001208T1800Z.NO/
1000 AM PST TUE DEC 5 2000

THE NATIONAL WEATHER SERVICE IN PORTLAND HAS ISSUED A

- * FLOOD WARNING FOR
THE COWLITZ RIVER AT KELSO.
- * FROM THURSDAY MORNING UNTIL FRIDAY MORNING.
- * AT 900 AM PST TUESDAY THE STAGE/FLOW WAS 20.2 FEET / 90000 CFS.
- * FLOOD STAGE/FLOW IS 21.5 FEET / 100000 CFS.
- * MINOR FLOODING IS FORECAST.
- * FORECAST...THE RIVER IS EXPECTED TO RISE THROUGH THE NIGHT AND
WEDNESDAY...REACHING FLOOD STAGE AROUND 600 AM THURSDAY. IT WILL
CONTINUE TO RISE THROUGH THE MORNING HOURS AND CREST NEAR 25.0 FEET
EARLY THURSDAY AFTERNOON AND REMAIN ABOVE FLOOD STAGE THROUGH THE
DAY.

- * IMPACT...ABOVE 24.5 FEET...FLOODING OF A FEW RESIDENTIAL AREAS IN THE KELSO VICINITY BEGINS. ALSO...EXPECT WIDESPREAD FLOODING OF PASTURE LAND AND LOW LYING ROADS.
- * FLOOD HISTORY...THE FORECAST CREST COMPARES TO THE CRESTS OF 24.3 FEET ON JUNE 10 1948 AND 23.14 FEET ON NOVEMBER 19 1983.

\$\$

ORC009-WAC015-060600-
/O.NEW.KPQR.FL.W.0079.001206T0300Z-001207T1600Z/
/LOPW1.1.FT.001206T0300Z.001207T1400Z.001207T1600Z.NO/
1000 AM PST TUE DEC 5 2000

- THE NATIONAL WEATHER SERVICE IN PORTLAND HAS ISSUED A
- * FLOOD WARNING FOR
THE COLUMBIA RIVER AT LONGVIEW.
 - * FROM THIS EVENING UNTIL THURSDAY MORNING.
 - * AT 800 AM PST TUESDAY THE STAGE WAS 9.8 FEET.
 - * FLOOD STAGE IS 12.0 FEET.
 - * MINOR FLOODING IS FORECAST.
 - * FORECAST...THE RIVER IS EXPECTED TO CREST NEAR 12.0 FEET AROUND 700 PM THIS EVENING...AND AT 12.5 FEET AROUND 600 AM THURSDAY... CORRESPONDING WITH HIGH TIDES AT LONGVIEW.
 - * IMPACT...ABOVE 12.0 FEET...EXPECT MINOR FLOODING OF UN-LEVEED LOW LYING FARMLAND NEAR THE COLUMBIA.
 - * FLOOD HISTORY...FLOODING AT THE FORECAST CREST OF 12.5 FEET IS QUITE COMMON AND OCCURS ON THE AVERAGE ABOUT EVERY TWO YEARS.

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Notes and Explanations:

- (1) Note that the observation and flood stage bullets include both stage and flow.
- (2) The Columbia River at Longview is expected to have two peaks above flood stage, coinciding with tidal maximums. The Event Beginning Date/Time and Flood Begin Date/Time for this segment correspond to when flood stage is exceeded before the first peak and the Event Ending Date/Time and Flood End Date/Time correspond to when the river is expected to drop below flood stage after the second peak.
- (3) Note how flood history bullets describe past events comparable to the crest stage forecast.

6.7 Example #7 - Flood Warning for Forecast Points: Flood Category Increase (FLW).

Situation – Very heavy rains over the southwest Washington during the morning of December 5 have greatly increased surface runoff in the lower Cowlitz basin. At 4:00 p.m. on December 5 (6 hours after the initial flood warning), a flood warning is issued for Castle Rock and Kelso to announce an increase in forecast flood severity from minor to major flooding.

WGUS46 KPQR 060000
FLWPQR

BULLETIN - IMMEDIATE BROADCAST REQUESTED
FLOOD WARNING
NATIONAL WEATHER SERVICE PORTLAND OR
400 PM PST TUE DEC 5 2000

...FORECAST FLOODING CHANGED FROM MINOR TO MAJOR SEVERITY AND INCREASED IN DURATION FOR THE FOLLOWING LOCATIONS ON THE COWLITZ RIVER...

NWSM 10-923 SEPTEMBER 8, 2009

COWLITZ RIVER AT CASTLE ROCK AFFECTING COWLITZ COUNTY.
COWLITZ RIVER AT KELSO AFFECTING COWLITZ COUNTY.

.VERY HEAVY RAINS OF 3 TO 4 INCHES SINCE EARLY THIS MORNING WILL
INCREASE THE SEVERITY OF FLOODING ON THE LOWER COWLITZ RIVER.

RIVER STAGE FORECASTS ARE BASED ON OBSERVED AND FORECAST RAINFALL
AND TEMPERATURES. IF ACTUAL RAINFALL AND TEMPERATURES VARY FROM THE
FORECAST VALUES...THE RIVER STAGE WILL VARY ACCORDINGLY. NATIONAL
WEATHER SERVICE RIVER FORECASTS INCLUDE CURRENT AND PLANNED
RESERVOIR RELEASES.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

FOR THE LATEST RIVER STAGES AND FORECASTS VISIT OUR WEB PAGE AT...
WWW.WRH.NOAA.GOV/PORTLAND/PUBLIC_HYDRO/.

THE NEXT STATEMENT WILL BE ISSUED BY 1000 PM THIS EVENING...OR EARLIER
IF FURTHER UPDATES ARE NEEDED.

&&

WAC015-060600-
/O.EXT.KPQR.FL.W.0077.001207T1000Z-001209T1400Z/
/CASW1.3.ER.001207T1000Z.001207T1800Z.001209T1400Z.NO/
400 PM PST TUE DEC 5 2000

...FORECAST FLOODING INCREASED FROM MINOR TO MAJOR AND FLOOD WARNING
EXTENDED UNTIL SATURDAY MORNING...

THE FLOOD WARNING CONTINUES FOR

THE COWLITZ RIVER AT CASTLE ROCK.

- * FROM LATE WEDNESDAY NIGHT UNTIL SATURDAY MORNING.
- * AT 300 PM PST TUESDAY THE STAGE/FLOW WAS 47.2 FEET / 61000 CFS.
- * FLOOD STAGE/FLOW IS 48.0 FEET / 65000 CFS.
- * MAJOR FLOODING IS FORECAST.
- * FORECAST...THE RIVER IS EXPECTED TO RISE THROUGH THE NIGHT AND
WEDNESDAY... REACHING FLOOD STAGE AROUND 200 AM THURSDAY. IT WILL
CONTINUE TO RISE THROUGH THE MORNING HOURS AND CREST NEAR 54.0 FEET
LATE MORNING THURSDAY AND REMAIN ABOVE FLOOD STAGE UNTIL SATURDAY
MORNING.
- * IMPACT...ABOVE 51 FEET...EXPECT FLOODING OF BUILDINGS AND
RESIDENTIAL AREAS WEST OF THE RIVER IN THE VICINITY OF CASTLE ROCK.
ALSO...EXPECT WIDESPREAD FLOODING OF LOW LYING PASTURE AND FARMLAND.
AT 54 FEET...EXPECT WIDESPREAD FLOODING OF BUSINESS AND RESIDENTIAL
AREAS...ESPECIALLY WEST OF THE RIVER IN THE FOUR CORNERS AREA AND
ALONG HWY 411. ALSO EXPECT WIDESPREAD FLOODING OF FARM AND PASTURE
LAND. LEVEES HAVE HISTORICALLY BEEN THREATENED OF OVERTOPPING AT
THIS AND HIGHER LEVELS.
- * FLOOD HISTORY...THE FORECAST CREST COMPARES TO THE CRESTS OF 52.95
FEET ON MAY 18 1980 AND 55.16 FEET ON NOVEMBER 11 1995.

\$\$

WAC015-060600-
/O.EXT.KPQR.FL.W.0078.001207T1400Z-001209T2200Z/
/KELW1.3.ER.001207T1400Z.001207T2200Z.001209T2200Z.NO/
400 PM PST TUE DEC 5 2000

...FORECAST FLOODING INCREASED FROM MINOR TO MAJOR SEVERITY AND
FLOOD WARNING EXTENDED UNTIL SATURDAY AFTERNOON...

THE FLOOD WARNING CONTINUES FOR

THE COWLITZ RIVER AT KELSO.

- * FROM THURSDAY MORNING UNTIL SATURDAY MORNING.
- * AT 300 PM PST TUESDAY THE STAGE/FLOW WAS 20.6 FEET / 93000 CFS.
- * FLOOD STAGE/FLOW IS 21.5 FEET / 100000 CFS.
- * MAJOR FLOODING IS FORECAST.
- * FORECAST...THE RIVER IS EXPECTED TO RISE THROUGH THE NIGHT AND WEDNESDAY...REACHING FLOOD STAGE AROUND 600 AM THURSDAY. IT WILL CONTINUE TO RISE THROUGH THE MORNING HOURS AND CREST NEAR 27.0 FEET LATE AFTERNOON THURSDAY AND REMAIN ABOVE FLOOD STAGE UNTIL EARLY SATURDAY AFTERNOON.
- * IMPACT...ABOVE 24.5 FEET...FLOODING OF A FEW RESIDENTIAL AREAS IN THE KELSO VICINITY BEGINS. ALSO...EXPECT WIDESPREAD FLOODING OF PASTURE LAND AND LOW LYING ROADS. ABOVE 26.5 FEET...SOME FLOODING OF BUSINESS AND RESIDENTIAL AREAS OCCURS IN KELSO. NUMEROUS ROAD CLOSURES CAN BE EXPECTED. THE TOPS OF LEVEES ARE APPROACHED AT THIS LEVEL.
- * FLOOD HISTORY...THE FORECAST CREST COMPARES TO THE CREST OF 27.0 FEET ON NOVEMBER 3 1995.

\$\$

Notes and Explanations:

- (1) Note how the Flood Warning (FLW) identifier is used in a product which is following up a previously issued FLW, but the event tracking numbers are the same as those in the previously issued product for both segments.
- (2) Note that the overview headline and individual segment headlines announce both an increase in forecast flood severity and an extension of the flood warning.
- (3) Note - EXT is used for the VTEC action code when a category increase also involves a warning extension.
- (4) Note how the text of the flood history bullets has been revised to reflect the higher stage forecasts.

6.8 Example #8 - Flood Warning for Forecast Points: Non-Flood Point Included (FLW).

Situation – WFO Birmingham, AL issues a flood warning product covering a series of three forecast points on the Tombigbee River. However, only the first and third forecast points are expected to exceed flood stage. The second point is included to give users a complete “picture” of the river reach. Such non-flood forecast points use HY.S for the VTEC phenomena/significance code and would follow the same format if they were included in flood statements.

WGUS44 KBMX 221604
FLWBMX

BULLETIN - IMMEDIATE BROADCAST REQUESTED
FLOOD WARNING
NATIONAL WEATHER SERVICE BIRMINGHAM, AL
1003 AM CST WED DEC 22 2004

...THE NATIONAL WEATHER SERVICE IN BIRMINGHAM HAS ISSUED A FLOOD WARNING FOR THE UPPER TOMBIGBEE RIVER ABOVE GAINESVILLE...

.HEAVY RAINFALL OF 1 TO 2 INCHES WITH LOCALLY HIGHER AMOUNTS IS FORECAST OVER THE TOMBIGBEE BASIN DURING THE NEXT 24 HOURS. THIS FORECAST RAINFALL IS EXPECTED TO SEND THE UPPER TOMBIGBEE RIVER INTO FLOOD AND A FLOOD WARNING IS IN EFFECT ABOVE THE GAINESVILLE DAM. HOWEVER...FROM GAINESVILLE DOWNSTREAM LEVELS ARE FORECAST TO ONLY RISE TO NEAR OR A LITTLE BELOW FLOOD STAGE... AND ANY OVERFLOW ALONG THIS PORTION IS EXPECTED TO BE MINOR.

NWSM 10-923 SEPTEMBER 8, 2009

IT IS EMPHASIZED THAT THESE FORECASTS ARE BASED ON THE EXPECTED RAINFALL THE NEXT 24 HOURS. IF MORE RAINFALL THAN WHAT IS FORECAST OCCURS...IT MAY BECOME NECESSARY TO REVISE THESE FORECAST UPWARD.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

SAFETY MESSAGE...ALL PERSONS WITH INTERESTS ALONG THE RIVER SHOULD MONITOR THE LATEST FORECASTS...AND TAKE NECESSARY PRECAUTIONS TO PROTECT LIFE AND PROPERTY FROM RISING RIVER LEVELS.

A FLOOD STATEMENT WILL BE ISSUED BY THURSDAY MORNING...OR SOONER IF CONDITIONS WARRANT.

&&

ALC107-230000-
/O.NEW.KBMX.FL.W.0097.041224T0300Z-041227T0300Z/
/AVLA1.1.ER.041224T0300Z.041225T0900Z.041227T0300Z.NO/
1003 AM CST WED DEC 22 2004

THE NATIONAL WEATHER SERVICE IN BIRMINGHAM HAS ISSUED A
* FLOOD WARNING FOR
THE TOMBIGBEE RIVER AT THE LOWER BEVILL LOCK AND DAM.
* FROM THURSDAY EVENING UNTIL SUNDAY EVENING.
* AT 6 AM CST WEDNESDAY THE STAGE WAS 110 FEET.
* BANKFULL STAGE IS 120 FEET.
* FLOOD STAGE IS 122 FEET.
* MINOR FLOODING IS FORECAST.
* FORECAST...THE RIVER WILL RISE ABOVE FLOOD STAGE THURSDAY EVENING AND CREST AT 125.5 TO 126 FEET EARLY SATURDAY MORNING. THE RIVER WILL FALL BELOW FLOOD STAGE SUNDAY EVENING.
* IMPACT...AT 122 FEET...CATTLE IN LOW-LYING AREAS OF SOUTHERN PICKENS COUNTY SHOULD BE MOVED TO HIGHER GROUND. CATTLE ARE CUTOFF IN LOWLANDS OF SOUTHERN PICKENS COUNTY AT STAGES ABOVE 122 FEET.

\$\$

ALC063-119-230000-
/O.ROU.KBMX.HY.S.0000.000000T0000Z-000000T0000Z/
/GNSA1.N.ER.000000T0000Z.000000T0000Z.000000T0000Z.OO/
1003 AM CST WED DEC 22 2004

FORECAST INFORMATION FOR
THE TOMBIGBEE RIVER AT THE LOWER GAINESVILLE LOCK AND DAM.
* AT 6 AM WEDNESDAY THE STAGE WAS 78.6 FEET.
* BANKFULL STAGE IS 101 FEET.
* FLOOD STAGE IS 101 FEET.
* FORECAST...NO SIGNIFICANT OVERFLOW IS EXPECTED. THE RIVER WILL CREST NEAR 98.5 FEET SATURDAY MORNING.
* IMPACT...AT 101 FEET...FLOODING OF LOW LYING AGRICULTURAL AND WOODED LANDS IN THE AREA OCCURS.

\$\$

ALC065-091-119-230000-
/O.NEW.KBMX.FL.W.0098.041226T1800Z-041227T0000Z/
/DLDA1.1.ER.041226T1800Z.041226T1800Z.041227T0000Z.NO/
1003 AM CST WED DEC 22 2004

THE NATIONAL WEATHER SERVICE IN BIRMINGHAM HAS ISSUED A
* FLOOD WARNING FOR
THE TOMBIGBEE RIVER AT THE LOWER DEMOPOLIS LOCK AND DAM.
* FROM SUNDAY AFTERNOON UNTIL SUNDAY EVENING.

- * AT 7 AM WEDNESDAY THE STAGE WAS 43.6 FEET.
- * BANKFULL STAGE IS 68 FEET.
- * FLOOD STAGE IS 68 FEET.
- * MINOR FLOODING IS FORECAST.
- * FORECAST...THE RIVER WILL CREST NEAR 68 FEET MID DAY SUNDAY AND FALL SLOWLY AFTER THAT TIME.
- * IMPACT...AT 68 FEET...FLOODING OF LOWLANDS IN THE AREA OCCURS AND CATTLE SHOULD BE MOVED TO HIGHER GROUND.

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&&

LOCATION	FLD OBSERVED		24 HR CHG	FORECASTS (7 AM)			
	STG	STG DAY/TIME		THU	FRI	SAT	SUN
TOMBIGBEE RIVER BASIN							
LOWER BEVILL L&D	122	110.0 6 AM	7.1	117.0	122.0	126.0	124.0
LOWER GAINESVILLE L&D	101	78.6 6 AM	2.3	83.0	92.0	98.5	96.0
LOWER DEMOPOLIS L&D	68	43.6 7 AM	1.4	44.0	45.0	52.0	68.0

\$\$

Notes and Explanations:

(1) Note how observed/forecast values for all three segments are provided together at the end of the product. After the \$\$ terminating the last segment, a && appears to designate that a different data type follows, and another \$\$ appears at the end of the tabular data indicating the end of the product.

6.9 Example #9 - Flood Warning for Forecast Points: Non-RFC Supported Point

(FLW). Situation – a band of heavy rainfall affects a portion of southwest Michigan. The heaviest rainfall occurs over above a portion of the upper Grand River basin where no stream gages with automated telemetry exist and no support from RFCs is provided. Fortunately, the service hydrologist has established a forecast point where observations can be read manually from a bridge pier and forecasts can be interpolated from upstream and downstream forecasts from the RFC. A flood warning is issued with a few special features to help users understand that updates may not be as timely as they would be for other forecast points.

BULLETIN - IMMEDIATE BROADCAST REQUESTED
 FLOOD WARNING
 NATIONAL WEATHER SERVICE GRAND RAPIDS MI
 341 PM EST WED DEC 20 2006

...THE NATIONAL WEATHER SERVICE IN GRAND RAPIDS HAS ISSUED A FLOOD WARNING FOR THE FOLLOWING RIVERS IN SOUTHWEST LOWER MICHIGAN...

GRAND RIVER AT JACKSON AFFECTING JACKSON COUNTY

.THE CURRENT WEATHER IS DOMINATED BY A SLOW MOVING COLD FRONT THAT HAS RESULTED IN ABOUT AN INCH OF RAIN SINCE EARLY WEDNESDAY AFTERNOON. ANOTHER HALF INCH OF RAIN IS POSSIBLE BEFORE THE RAIN ENDS THURSDAY AFTERNOON. THE EXTENDED OUTLOOK IS FOR A STORM FROM THE SOUTHERN PLAINS TO BRING ICE AND SNOW TO THE AREA FRIDAY MORNING. SIGNIFICANT ACCUMULATION OF ICE AND SNOW ARE POSSIBLE FROM THAT EVENT.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

SAFETY MESSAGE...EVEN 6 INCHES OF FAST-MOVING FLOOD WATER CAN KNOCK YOU OFF YOUR FEET...AND A DEPTH OF 2 FEET WILL FLOAT YOUR CAR. NEVER

TRY TO WALK...SWIM...OR DRIVE THROUGH SUCH SWIFT WATER. IF YOU COME UPON FLOOD WATERS...STOP...TURN AROUND AND GO ANOTHER WAY.

THIS WARNING WILL BE IN EFFECT UNTIL THE RIVER FALLS BELOW ITS FLOOD STAGE.

STAY TUNED TO FURTHER DEVELOPMENTS BY LISTENING TO YOUR LOCAL RADIO...TELEVISION...OR NOAA WEATHER RADIO FOR FURTHER INFORMATION.

ADDITIONAL WEATHER AND RIVER INFORMATION CAN BE FOUND ON OUR HOMEPAGE AT WWW.WEATHER.GOV/GRR.

&&

MIC075-212241-

/O.NEW.KGRR.FL.W.0003.061221T1752Z-061223T0216Z/
/JACM4.1.ER.061221T1752Z.061221T2200Z.061222T0216Z.NR/
341 PM EST WED DEC 20 2006

THE NATIONAL WEATHER SERVICE IN GRAND RAPIDS HAS ISSUED A

- * FLOOD WARNING FOR
THE GRAND RIVER AT JACKSON.
- * FROM THURSDAY AFTERNOON UNTIL FRIDAY EVENING OR UNTIL THE WARNING IS CANCELLED.
- * AT 7 AM WEDNESDAY THE STAGE WAS 10.4 FEET.
- * FLOOD STAGE IS 14.0 FEET.
- * MINOR FLOODING IS FORECAST.
- * FORECAST...THE RIVER WILL RISE ABOVE FLOOD STAGE BY EARLY TOMORROW AFTERNOON AND CONTINUE TO RISE TO NEAR 14.3 FEET BY TOMORROW AFTERNOON. THE RIVER WILL FALL BELOW FLOOD STAGE BY TOMORROW LATE EVENING.
- * IMPACT...AT 14.0 FEET...EXPECT MINOR FLOODING OF LOW LYING AREAS.
- * FLOOD HISTORY...THIS CREST COMPARES TO A PREVIOUS CREST OF 14.2 FEET ON SEP 25 1986.

\$\$

Notes and Explanations:

Note (1) The statement “This warning will be in effect until the river falls below its flood stage” encourages local users to monitor the river for changes in flood status.

Note (2) The statement at the end of the second bullet: “or until the warning is cancelled” highlights the infrequent nature of observations for this forecast point, the uncertainty of forecast timing, and the possible resulting need to cancel the warning earlier than stated in this product.

7. Areal Flood Warning (FLW) and Associated Follow-up Products (FLS).

7.1 Example #1 - Areal Flood Warning (FLW). Situation – over 3 inches of rain fell overnight in portions of Adams County in southern Ohio. Looking at the amount of overnight rainfall coupled with the strong possibility of an additional 1 to 2 inches, a forecaster at WFO Wilmington, OH determines that this is enough to cause widespread flooding throughout Adams County. There is one forecast point in this county, but numerous small streams will also flood, so the forecaster decides to issue an areal flood warning for the entire county at 8:00 a.m.

WGUS41 KILN 241202
FLWILN

BULLETIN - IMMEDIATE BROADCAST REQUESTED
FLOOD WARNING
NATIONAL WEATHER SERVICE WILMINGTON OH
802 AM EDT THU AUG 24 2000

OHC001-241800-
/O.NEW.KILN.FA.W.0011.000824T1202Z-000825T0000Z/
/00000.0.ER.000000T0000Z.000000T0000Z.000000T0000Z.OO/
ADAMS OH-
802 AM EDT THU AUG 24 2000

THE NATIONAL WEATHER SERVICE IN WILMINGTON HAS ISSUED A

- * FLOOD WARNING FOR SMALL STREAMS IN...
ADAMS COUNTY IN SOUTHERN OHIO...
- * UNTIL 800 PM THIS EVENING
- * AT 800 AM EDT...WEATHER SERVICE DOPPLER RADAR INDICATED THAT OVER
3 INCHES OF RAIN HAD FALLEN OVER PARTS OF THE COUNTY. AN ADDITIONAL
ONE OR TWO INCHES ARE POSSIBLE THROUGHOUT THE DAY. AS A RESULT...
HIGH WATER LEVELS CAN BE EXPECTED INTO THE EVENING HOURS. SOME
LOCATIONS IN THE WARNING AREA INCLUDE WEST UNION AND BLUE CREEK.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

A FLOOD WARNING MEANS THAT FLOODING IS IMMINENT OR HAS BEEN REPORTED.
IF FLOODING IS OBSERVED...ACT QUICKLY. DO NOT STAY IN AREAS SUBJECT
TO FLOODING WHEN WATER BEGINS RISING. NEVER DRIVE CARS...TRUCKS OR
SPORT UTILITY VEHICLES THROUGH FLOODED AREAS. THE WATER MAY BE TOO
DEEP TO ALLOW FOR SAFE PASSAGE.

&&

LAT...LON 3900 8327 3904 8330 3905 8338 3901 8360 3901 8368
3863 8370 3869 8365 3866 8362 3868 8352 3866 8345 3864 8337
3863 8332 3858 8328 3860 8327

\$\$

7.2 Example #2 - Flood Statement: Follow-up to an Areal Warning: (FLS). Situation –
the previous flood warning issued for Adams County had a product expiration time six hours
after issuance and an Event Ending Date/Time twelve hours after issuance. Heavy rain and
flooding is continuing, so just before 2:00 p.m., WFO Wilmington, OH issues a flood statement
to continue the areal flood warning and provide updated flood information.

WGUS81 KILN 241755
FLSILN

FLOOD STATEMENT
NATIONAL WEATHER SERVICE WILMINGTON OH
155 PM EDT THU AUG 24 2000

OHC001-250000-
/O.CON.KILN.FA.W.0011.000000T0000Z-000825T0000Z/
/00000.0.ER.000000T0000Z.000000T0000Z.000000T0000Z.OO/
ADAMS OH-
155 PM EDT THU AUG 24 2000

...THE FLOOD WARNING REMAINS IN EFFECT UNTIL 800 PM EDT THIS EVENING FOR SMALL STREAMS IN ADAMS COUNTY...

AT 150 PM EDT...WEATHER SERVICE DOPPLER RADAR INDICATED A SECOND AREA OF HEAVY RAINFALL APPROACHING THE COUNTY AND SURROUNDING AREAS. AN ADDITIONAL HALF INCH TO INCH OF RAIN IS POSSIBLE OVER PARTS OF ADAMS COUNTY...CAUSING SMALL STREAMS TO RISE AGAIN AFTER THIS MORNINGS FLOODS. FLOODING HAS BEEN REPORTED AT SEVERAL LOCATIONS ALONG WEST UNION AND BLUE CREEKS...BUT THE STREAMS ARE CRESTING AND FLOODING SHOULD BEGIN TO DECREASE IN THE NEXT FEW HOURS AFTER THE SECOND AREA OF HEAVY RAINFALL PASSES THROUGH.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

A FLOOD WARNING MEANS THAT FLOODING IS IMMINENT OR HAS BEEN REPORTED. IF FLOODING IS OBSERVED...ACT QUICKLY. DO NOT STAY IN AREAS SUBJECT TO FLOODING WHEN WATER BEGINS RISING. NEVER DRIVE CARS...TRUCKS OR SPORT UTILITY VEHICLES THROUGH FLOODED AREAS. THE WATER MAY BE TOO DEEP TO ALLOW FOR SAFE PASSAGE.

&&

LAT...LON 3900 8327 3904 8330 3905 8338 3901 8360 3901 8368
3863 8370 3869 8365 3866 8362 3868 8352 3866 8345 3864 8337
3863 8332 3858 8328 3860 8327

\$\$

7.3 Example #3 - Flood Statement: Cancellation of an Areal Flood Warning (FLS).

Situation – in the previous flood statement continuing the flood warning for Adams County, the product expiration time was set to six hours after issuance – i.e., 0000Z or 8:00 pm. However, the flooding ended earlier than expected and the threat for more rain had ended, so at 2200Z (6:00 p.m.), WFO Wilmington, OH issues a flood statement to cancel the areal flood warning.

WGUS81 KILN 242200
FLSILN

FLOOD STATEMENT
NATIONAL WEATHER SERVICE WILMINGTON OH
600 PM EDT THU AUG 24 2000

OHC001-242300-
/O.CAN.KILN.FA.W.0011.000000T0000Z-000825T0000Z/
/00000.0.ER.000000T0000Z.000000T0000Z.000000T0000Z.OO/
ADAMS OH-
600 PM EDT THU AUG 24 2000

...THE FLOOD WARNING HAS BEEN CANCELLED FOR SMALL STREAMS IN ADAMS COUNTY...

AT 600 PM EDT...WEATHER SERVICE DOPPLER RADAR INDICATED THE SECOND AREA OF HEAVY RAINFALL HAS MOVED OUT OF THE COUNTY AND SURROUNDING AREAS. SMALL STREAMS HAVE DROPPED FROM FLOOD LEVELS...BUT HIGHER THAN NORMAL FLOWS MAY CONTINUE THROUGH EARLY THIS EVENING.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

NEVER DRIVE CARS...TRUCKS OR SPORT UTILITY VEHICLES THROUGH FLOODED AREAS. THE WATER MAY BE TOO DEEP TO ALLOW FOR SAFE PASSAGE.

&&

LAT...LON 3900 8327 3904 8330 3905 8338 3901 8360 3901 8368

3863 8370 3869 8365 3866 8362 3868 8352 3866 8345 3864 8337
3863 8332 3858 8328 3860 8327

\$\$

Notes and Explanations:

(1) Even though the flood warning is being cancelled at 2200Z (6 p.m.) on August 24, the Event Ending Date/Time remains 0000Z on August 25, per VTEC rules (NWSI 10-1703, sect. 2.2.2, CAN portion).

7.4 Example #4 - Areal Flood Warning for a River Reach (FLW). Situation – Releases from Albeni Falls Dam have kept flows along the Pend Oreille River close to flood level for several days. During the morning on June 5, a forecaster at WFO Spokane, OR receives information indicating that several factors are coming together to push the river above flood level along an extended reach. At 11:00 a.m., the forecaster decides to issue an areal flood warning covering an entire reach of the Pend Oreille River in Pend Oreille County from Albeni Falls Dam downstream (northward) to the Canadian border.

WGUS46 KOTX 051800
FLWOTX

BULLETIN - IMMEDIATE BROADCAST REQUESTED
FLOOD WARNING
NATIONAL WEATHER SERVICE SPOKANE WA
1100 AM PDT WED JUN 5 2002

WAC051-060600-
/O.NEW.KOTX.FA.W.0003.020605T1800Z-020607T0600Z/
/00000.0.RS.000000T0000Z.000000T0000Z.000000T0000Z.OO/
PEND OREILLE WA-
1100 AM PDT WED JUN 5 2002

THE NATIONAL WEATHER SERVICE IN SPOKANE HAS ISSUED A

- * FLOOD WARNING FOR...
THE PEND OREILLE RIVER IN PEND OREILLE COUNTY...
- * UNTIL 1100 PM PDT THURSDAY EVENING
- * ON THE PEND OREILLE RIVER BELOW ALBENI FALLS DAM...RELEASES FROM ALBENI FALLS DAM HAVE INCREASED TO 98000 CFS AT 1000 AM WEDNESDAY. THE FLOOD FLOW IS 100000 CFS. THE OUTFLOW FROM ALBENI FALLS DAM WILL DECREASE SLIGHTLY THISEVENING TO 92000 CFS.
- * THOUGH THE RIVER IS CURRENTLY BELOW FLOOD FLOW IMMEDIATELY BELOW THE DAM...MINOR FLOODING WILL OCCUR ALONG THE RIVER FURTHER DOWNSTREAM FROM NEWPORT TO THE CANADIAN BORDER DUE TO INFLOW FROM TRIBUTARIES AND LOCAL RAINFALL. THE CITIES OF NEWPORT...IONE... METALINE AND METALINE FALLS WILL BE AFFECTED. SEVERAL STRUCTURES WILL BE FLOODED IN NEWPORT. THE RAINFALL EXPECTED TODAY WILL ADD TO THE EXISTING HIGH FLOW.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

BOATERS AND PERSONS WITH INTERESTS ALONG THE PEND OREILLE RIVER ARE URGED TO USE EXTREME CAUTION WHEN NEAR OR ON THE RIVER. STAY TUNED TO FURTHER DEVELOPMENTS BY LISTENING TO NOAA WEATHER RADIO OR YOUR LOCAL TV OR RADIO STATIONS.

&&

LAT...LON 4895 11728 4877 11742 4825 11723 4817 11700 4821 11700
4828 11720 4845 11722 4876 11736 4895 11725

\$\$

7.5 Example #5 - Areal Flood Warning: Extension In Time (FLW). Situation – At 11:00 p.m. on Thursday evening, the forecaster realizes that the river did not recede as much as originally expected and decides to extend the areal flood warning for the Pend Oreille River in Pend Oreille County by 24 hours.

WGUS41 KOTX 070545
FLWOTX

FLOOD WARNING
NATIONAL WEATHER SERVICE SPOKANE WA
1045 PM PDT THU JUN 6 2002

WAC051-071800-
/O.EXT.KOTX.FA.W.0003.000000T0000Z-020608T0600Z/
/00000.0.RS.000000T0000Z.000000T0000Z.000000T0000Z.OO/
PEND OREILLE WA-
1045 PM PDT THU JUN 6 2002

THE NATIONAL WEATHER SERVICE IN SPOKANE HAS EXTENDED THE

- * FLOOD WARNING FOR...
THE PEND OREILLE RIVER IN PEND OREILLE COUNTY...
- * UNTIL 1100 PM PDT FRIDAY EVENING
- * ON THE PEND OREILLE RIVER BELOW ALBENI FALLS DAM...THE MOST RECENTLY REPORTED DAM RELEASE WAS 92800 CFS AT 1000 PM THURSDAY. TRIBUTARIES AND LOCAL RAINFALL HAVE ADDED TO THE DAM OUTFLOW TO RAISE THE RIVER ABOVE FLOOD FLOW OF 100000 CFS. THE OUTFLOW FROM ALBENI FALLS DAM IS FORECAST TO GRADUALLY DECREASE TO 92000 CFS BY SATURDAY MORNING AND THE RAINFALL IS EXPECTED TO END EARLY FRIDAY MORNING...SO MINOR FLOODING WILL CONTINUE UNTIL FRIDAY EVENING.
- * MINOR FLOODING CONTINUES ALONG THE RIVER DOWNSTREAM FROM NEWPORT TO THE CANADIAN BORDER. SEVERAL STRUCTURES ARE FLOODED AND SOME SAND BAGGING OPERATIONS ARE CONTINUING. ANY ADDITIONAL RAINFALL WOULD ADD TO THE EXISTING HIGH FLOW.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

BOATERS AND PERSONS WITH INTERESTS ALONG THE PEND OREILLE RIVER ARE URGED TO USE EXTREME CAUTION WHEN NEAR OR ON THE RIVER. STAY TUNED TO FURTHER DEVELOPMENTS BY LISTENING TO NOAA WEATHER RADIO OR YOUR LOCAL TV OR RADIO STATIONS.

&&

LAT...LON 4895 11728 4877 11742 4825 11723 4817 11700 4821 11700
4828 11720 4845 11722 4876 11736 4895 11725

\$\$

7.6 Example #6 – Areal Flood Warning for an Ice Jam. Situation – A large ice jam is reported on the Mad River in central Vermont. From a spotter’s description of the developing flooding, the WFO decides to issue a flood warning.

WGUS41 KBTW 120515
FLWBTW

BULLETIN - EAS ACTIVATION REQUESTED
FLOOD WARNING
NATIONAL WEATHER SERVICE BURLINGTON VT
115 AM EDT THU MAR 12 2009

VTC023-121700-
/O.NEW.KBTW.FA.W.0001.090312T0515Z-090312T1700Z/
/00000.0.IJ.000000T0000Z.000000T0000Z.000000T0000Z.OO/
115 AM EDT THU MAR 12 2009

THE NATIONAL WEATHER SERVICE IN BURLINGTON HAS ISSUED A

* FLOOD WARNING FOR...
AN ICE JAM IN...
SOUTHWESTERN WASHINGTON COUNTY IN CENTRAL VERMONT...

* UNTIL 100 PM EDT THURSDAY

* AT 103 AM EDT THE RIVER GAGE AT MORETOWN INDICATED AN ICE JAM
HAS FORMED ALONG THE MAD RIVER...WITH WATER LEVELS RISING RAPIDLY.
WATER BACKING UP BEHIND THE JAM WILL CAUSE FLOODING OF LOCAL ROADS
AND FIELDS...AND POSSIBLY ROUTE 100 IN MORETOWN.

* SOME TOWNS THAT MAY EXPERIENCE FLOODING INCLUDE...MIDDLESEX...
MORETOWN...WAITSFIELD...WARREN...SOUTH DUXBURY AND IRASVILLE.

ICE JAMS ARE VERY UNPREDICTABLE AND CAN BREAK UP...MOVE...AND JAM
AGAIN VERY QUICKLY. WATER BACKING UP BEHIND THE JAM CAN FLOOD AREAS
UNDER DEEP WATER WITH SURPRISING SPEED. FAVORED ICE JAM LOCATIONS ARE
WHERE A RIVER BENDS OR SLOWS...AT BRIDGE ABUTMENTS...OR NEAR
ISLANDS...SANDBARS AND OTHER OBSTRUCTIONS TO FLOW.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

TO REPORT FLOODING...ASK THE NEAREST LAW ENFORCEMENT AGENCY TO RELAY
YOUR REPORT TO THE NATIONAL WEATHER SERVICE FORECAST OFFICE IN
BURLINGTON.

A FLOOD WARNING MEANS THAT FLOODING IS IMMINENT OR HAS BEEN REPORTED.
ALL INTERESTED PARTIES SHOULD TAKE NECESSARY PRECAUTIONS IMMEDIATELY.

&&

LAT...LON 4420 7288 4433 7268 4428 7267 4406 7287

\$\$

7.7 Example #7 – Flood Statement: Cancellation of an Areal Flood Warning for an Ice

Jam. Situation – A report from an automated stream gage indicates that the elevation of water behind a reported ice jam has begun to decrease. Based on this and on-site observations from the local fire department, forecasters at the WFO decide to cancel the flood warning.

WGUS81 KBTW 120859
FLSBTV

FLOOD STATEMENT
NATIONAL WEATHER SERVICE BURLINGTON VT
459 AM EDT THU MAR 12 2009

VTC023-120903-

/O.CAN.KBTV.FA.W.0001.000000T0000Z-090312T1700Z/
/00000.0.IJ.000000T0000Z.000000T0000Z.000000T0000Z.OO/
WASHINGTON VT-
459 AM EDT THU MAR 12 2009

...THE FLOOD WARNING FOR AN ICE JAM HAS BEEN CANCELLED FOR
SOUTHWESTERN WASHINGTON COUNTY...

ACCORDING TO THE GAGE ON THE MAD RIVER AT MORETOWN...RIVER LEVELS
HAVE CRESTED AND ARE NOW BEGINNING TO FALL.

A SMALL ICE JAM HAS BEEN CONFIRMED BY THE MORETOWN FIRE DEPARTMENT.
MINOR FLOODING IS STILL POSSIBLE IN LOW LYING FIELDS BUT THE THREAT
HAS DIMINISHED FOR FLOODING OF NEARBY STRUCTURES AND ROADWAYS.

LAT...LON 4420 7288 4433 7268 4428 7267 4406 7287

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8. Areal Advisories (FLS).

8.1 Example #1 - Urban and Small Stream Flood Advisory. Situation – A forecaster at WFO San Angelo notes an area of thunderstorms across central and northern Taylor County in Texas. Based on experience with numerous similar storm systems, the forecaster decides that the likely hydrologic response would not rise to a level warranting a flood or flash flood warning, but instead issues an urban and small stream flood advisory to heighten the level of public awareness in the area.

WGUS84 KSJT 281256
FLSSJT

FLOOD ADVISORY
NATIONAL WEATHER SERVICE SAN ANGELO TX
755 AM CDT TUE MAY 28 2002

TXC441-281500-
/O.NEW.KSJT.FA.Y.0005.020528T1255Z-020528T1500Z/
/00000.N.ER.000000T0000Z.000000T0000Z.000000T0000Z.OO/
TAYLOR TX-
755 AM CDT TUE MAY 28 2002

THE NATIONAL WEATHER SERVICE IN SAN ANGELO HAS ISSUED AN

* URBAN AND SMALL STREAM FLOOD ADVISORY FOR...
TAYLOR COUNTY IN CENTRAL TEXAS...

* UNTIL 1000 AM CDT TUESDAY

* AT 750 AM CDT...WEATHER SERVICE RADAR INDICATED THUNDERSTORMS WITH
LOCALLY HEAVY RAINFALL ACROSS CENTRAL AND NORTHERN TAYLOR COUNTY.
RAINFALL BETWEEN 1 TO 2 INCHES HAS FALLEN IN ABILENE SINCE 700 AM
WITH ANOTHER ONE HALF INCH POSSIBLE THROUGH MID MORNING.

* LOW LYING AND POOR DRAINAGE AREAS ACROSS THE CITY OF ABILENE MAY
BECOME FLOODED AND IMPASSABLE.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

MOTORISTS ACROSS ABILENE SHOULD USE EXTREME CAUTION WHEN TRAVELING
ACROSS THE CITY. DO NOT ATTEMPT TO CROSS AREAS WHERE WATER OF UNKNOWN
DEPTH COVERS THE ROAD.

&&

LAT...LON 3253 10014 3208 10014 3208 9960 3253 9960

\$\$

8.2 Example #2 - Arroyo and Small Stream Advisory. Situation - A forecaster at WFO Albuquerque observes an area of thunderstorms moving into Sandoval County in New Mexico. Based on experience with numerous similar storm complexes, the forecaster decides that the likely hydrologic response would not rise to a level warranting a flood or flash flood warning, but instead issues an arroyo and small streams flood advisory to heighten the level of public awareness in the area. "Arroyo and small stream" is used in the advisory title because it more accurately captures the type of stream channels in the area.

WGUS85 KABQ 072300
FLSABQ

FLOOD ADVISORY
NATIONAL WEATHER SERVICE ALBUQUERQUE NM
500 PM MDT TUE OCT 7 2003

NMC043-080100-
/O.NEW.KABQ.FA.Y.0014.031007T2300Z-031008T0100Z/
/00000.N.ER.000000T0000Z.000000T0000Z.000000T0000Z.OO/
SANDOVAL NM-
500 PM MDT TUE OCT 7 2003

THE NATIONAL WEATHER SERVICE IN ALBUQUERQUE HAS ISSUED AN

- * ARROYO AND SMALL STREAM FLOOD ADVISORY FOR...
SOUTHERN SANDOVAL COUNTY IN NORTH CENTRAL NEW MEXICO
- * UNTIL 700 PM MDT TUESDAY
- * AT 453 PM MDT WEATHER SERVICE RADAR INDICATED WIDESPREAD MODERATE RAIN OVER SOUTHERN SANDOVAL COUNTY WITH POCKETS OF HEAVY RAIN FROM SAN YSIDRO EXTENDING SOUTHWEST INTO BERNALILLO AND CIBOLA COUNTIES. THIS LARGE AREA OF RAIN IS MOVING NORTH TO NORTHEAST AT 15 TO 20 MPH AND WILL OVERSPREAD MUCH OF SANDOVAL COUNTY THROUGH 700 PM.
- * ADDITIONAL RAINFALL AMOUNTS UP TO ONE HALF INCH WILL CONTINUE TO CAUSE RISES IN SMALL STREAMS AND NORMALLY DRY ARROYOS...AND COULD CREATE DANGEROUS FLOWS OVER LOW WATER CROSSINGS.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

HEAVY RAINFALL MAY CAUSE ARROYOS AND SMALL STREAMS TO SPILL OVER THEIR BANKS...RESULTING IN FLOODING OF LOW LYING AREAS AND ROAD INTERSECTIONS. DO NOT ATTEMPT TO DRIVE THROUGH THESE WATERS. WATER IN ARROYOS MAY TRAVEL MANY MILES AND TAKE HOURS TO REACH YOUR LOCATION FROM UPSTREAM RAIN AREAS.

&&

LAT...LON 3555 10728 3530 10728 3530 10723 3521 10718 3521 10625
3555 10625

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8.3 Example #3 - Flood Statement: Follow-up to a Small Stream Flood Advisory. Situation – This product is the seventh in a series of flood watches, flood warnings, flood

advisories, and flood statements that was issued for a hydrologic event in the WFO Portland, OR hydrologic service area. This product is a follow-up to a small stream flood advisory covering a portion of the area where waters were reported over several roadways, but didn't reach a level warranting issuance of a flood warning.

WGUS86 KPQR 150315
FLSPQR

FLOOD ADVISORY
NATIONAL WEATHER SERVICE PORTLAND OR
715 PM PST WED NOV 14 2001

...NW OREGON/SW WASHINGTON COASTAL BASINS BULLETIN NO. 7...

WAC049-069-150700-
/O.CON.KPQR.FA.Y.0054.000000T0000Z-011115T1400Z/
/00000.N.ER.000000T0000Z.000000T0000Z.000000T0000Z.OO/
PACIFIC WA-WAHKIAKUM WA-
715 PM PST WED NOV 14 2001

...THE SMALL STREAM FLOOD ADVISORY REMAINS IN EFFECT UNTIL 600 AM
CDT THURSDAY FOR PACIFIC AND WAHKIAKUM COUNTIES IN SOUTHWEST
WASHINGTON...

AT 715 PM PST...EMERGENCY OFFICIALS INDICATE WATER IS STILL OVER
SEVERAL ROADWAYS IN PACIFIC AND WAHKIAKUM COUNTIES. RUNOFF FROM
PREVIOUS HEAVY RAINFALL OVER THE AREA WILL CONTINUE TO POSE FLOODING
PROBLEMS ON SMALL STREAMS...CREEKS AND RIVERS IN THESE AREAS.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

MOTORISTS SHOULD USE EXTREME CAUTION WHEN TRAVELING IN THESE AREAS.
DO NOT ATTEMPT TO CROSS AREAS WHERE WATER OF UNKNOWN DEPTH COVERS
THE ROAD.

&&

LAT...LON 4680 12328 4680 12400 4627 12398 4623 12380 4630 12360
4627 12358 4628 12342 4612 12323 4615 12317 4640 12317
4640 12328

\$\$

8.4 Example #4 - Hydrologic Advisory for Elevated River Levels Caused By Ice Jams.

Situation – A forecaster receives a report of ice jams on two rivers. From observer reports, the ice jams are not causing inundations which reach flood levels, so he decides to issue a hydrologic advisory to elevate public awareness of the unusual hydrologic activity.

WGUS81 KCAR 212115
FLSCAR

FLOOD ADVISORY
NATIONAL WEATHER SERVICE CARIBOU ME
515 PM EDT MON APR 21 2003

MEC003-222100-
/O.NEW.KCAR.FA.Y.0004.030421T2115Z-030424T2100Z/
/00000.N.IJ.000000T0000Z.000000T0000Z.000000T0000Z.OO/
AROOSTOOK ME-
515 PM EDT MON APR 21 2003

THE NATIONAL WEATHER SERVICE IN CARIBOU HAS ISSUED A

* HYDROLOGIC ADVISORY FOR...
AN ICE JAM ON...
THE AROOSTOOK AND SAINT JOHN RIVERS IN NORTHEAST AROOSTOOK COUNTY...

* UNTIL 500 PM THURSDAY

* TWO ICE JAMS WERE OBSERVED ON THE AROOSTOOK RIVER...AND ONE ICE JAM WAS REPORTED ON THE SAINT JOHN RIVER IN NORTHEAST AROOSTOOK COUNTY MONDAY.

ON THE AROOSTOOK RIVER...THE FIRST JAM WAS DOWNSTREAM OF THE VILLAGE OF CROUSEVILLE ON STATE ROUTE 164 BETWEEN THE TOWNS OF WASHBURN AND PRESQUE ISLE. THIS JAM APPEARED TO HAVE BROKEN IN HALF OVER THE PAST 24 HOURS...SENDING THE DOWNSTREAM FLOW OF ICE SOUTHEAST THROUGH THE TOWN OF PRESQUE ISLE LATE MONDAY AFTERNOON. THIS JAM...COMBINED WITH THE SNOWMELT RUNOFF...IS CAUSING THE RIVER TO BACKUP INTO LOW LYING AREAS OF THE FLOODPLAIN...BUT DOES NOT SEEM TO BE THREATENING ANY ROADS OR PROPERTY AT THIS TIME.

ON THE AROOSTOOK RIVER...NEAR THE TOWN OF FORT FAIRFIELD...AN ICE JAM HAS FORMED IN THE RUSSELL FLATS AREA APPROXIMATELY TWO MILES DOWNSTREAM OF THE FORT FAIRFIELD BRIDGE...WHERE THE AROOSTOOK RIVER FLOWS INTO NEW BRUNSWICK. THIS JAM IS CAUSING THE RIVER TO RISE BEHIND THE JAM...BUT DOES NOT SEEM TO BE THREATENING AT THIS TIME.

ON THE SAINT JOHN RIVER...A RIVER SPOTTER HAS REPORTED AN ICE JAM FIVE TO SIX MILES DOWNSTREAM OF THE INTERNATIONAL BRIDGE IN VAN BUREN...WHERE THE ICE FLOE HAS RUN INTO THE STILL STRONG SHEET OF RIVER ICE. THIS RIVER SPOTTER ALSO NOTED THAT DOWNSTREAM OF THIS JAM THE SAINT JOHN RIVER APPEARED TO BE FREE OF ICE.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

RIVER ICE IS VERY UNPREDICTABLE...AND MAY MOVE AND JAM WITH LITTLE NOTICE. ANY ICE JAM CAN CAUSE FLOODING...AS THE ICE DAMS THE RIVER... CAUSING THE RIVER AT OR BEHIND THE JAM TO ELEVATE. STAY CLEAR OF LOW LYING AREAS NEAR ICE AFFECTED RIVERS AND MONITOR CONDITIONS CLOSELY.

&&

LAT...LON 4708 6780 4732 3825 4725 6877 4645 6840 4646 6836 4720
6865 4727 6830 4703 6785

\$\$

9. Flood Advisory for Forecast Points (FLS).

9.1 Example #1 - Flood Advisory for Multiple Forecast Points. Situation: locally heavy rainfall occurs over the Cedar River basin which is sufficient to bring the river and key tributaries close to flood stage but not high enough to warrant a flood warning. WFO Des Moines issues a flood advisory for forecast points covering the next two and a half days to notify local residents of elevated flow situation and let them know that flooding is not expected at this time.

WGUS83 KDMX 142211
FLSDMX

FLOOD ADVISORY
NATIONAL WEATHER SERVICE DES MOINES IA
511 PM CDT TUE SEP 14 2004

NWSM 10-923 SEPTEMBER 8, 2009

...THE NATIONAL WEATHER SERVICE IN DES MOINES HAS ISSUED A FLOOD ADVISORY FOR THE WINNEBAGO RIVER AT MASON CITY...SHELL ROCK RIVER AT MARBLE ROCK...CEDAR RIVER AT JANESVILLE...CEDAR RIVER AT CEDAR FALLS...AND CEDAR RIVER AT WATERLOO...

.SEVERE WEATHER WITH LOCALLY HEAVY RAINFALL OF TWO TO THREE INCHES PASSED OVER NORTHERN AND CENTRAL IOWA THIS AFTERNOON. SOME ADDITIONAL RAINFALL MAY FALL ON WEDNESDAY BUT AMOUNTS ARE EXPECTED TO BE SMALL. THE LOCATION OF THIS RAINFALL AND HOW MUCH FALLS WILL CONTROL WHETHER FUTURE RIVER FORECASTS WILL NEED TO BE CHANGED AND WARNINGS WILL NEED TO BE ISSUED.

IAC023-067-151000-
/O.NEW.KDMX.FL.Y.0006.040914T2211Z-040917T1000Z/
/MLBI4.N.ER.000000T0000Z.000000T0000Z.000000T0000Z.OO/
511 PM CDT TUE SEP 14 2004

THE NATIONAL WEATHER SERVICE IN DES MOINES HAS ISSUED A

- * FLOOD ADVISORY FOR
SHELL ROCK RIVER AT MARBLE ROCK.
- * UNTIL 500 AM CDT FRIDAY MORNING.
- * AT 400 PM TUESDAY THE STAGE WAS 3.0 FT /ESTIMATED/.
- * FLOOD STAGE IS 4.0 FEET.
- * FORECAST...THE RIVER WILL CREST AT 3.8 FEET AT 600 PM THIS EVENING AND THEN FALL TO 2.0 FEET BY THURSDAY MORNING.
- * IMPACT...AT 5.0 FEET...GATES RIVER BRIDGE TRAILER PARK IS AFFECTED AND EVACUATIONS ARE ORDERED BY MARBLE ROCK POLICE. SOME RESIDENCES MAY BE THREATENED FURTHER DOWNSTREAM TOWARD GREENE.

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IAC033-067-195-151000-
/O.NEW.KDMX.FL.Y.0007.040914T2211Z-040917T1000Z/
/MCWI4.N.ER.000000T0000Z.000000T0000Z.000000T0000Z.OO/
511 PM CDT TUE SEP 14 2004

THE NATIONAL WEATHER SERVICE IN DES MOINES HAS ISSUED A

- * FLOOD ADVISORY FOR
WINNEBAGO RIVER AT MASON CITY.
- * UNTIL 500 AM CDT FRIDAY MORNING.
- * AT 400 PM TUESDAY THE STAGE WAS 3.5 FEET.
- * FLOOD STAGE IS 7.0 FEET.
- * FORECAST...THE RIVER WILL CREST AT 6.6 FEET AT 600 PM THIS EVENING AND THEN FALL TO 4.0 FEET BY THURSDAY EVENING.
- * IMPACT...AT 8.0 FEET...EAST AND WEST CITY PARKS ARE AFFECTED DOWNSTREAM FROM THE GAGE SITE.

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IAC013-017-151000-
/O.NEW.KDMX.FL.Y.0008.040914T2211Z-040917T1000Z/
/JANI4.N.ER.000000T0000Z.000000T0000Z.000000T0000Z.OO/
511 PM CDT TUE SEP 14 2004

THE NATIONAL WEATHER SERVICE IN DES MOINES HAS ISSUED A

- * FLOOD ADVISORY FOR
CEDAR RIVER AT JANESVILLE.
- * UNTIL 500 AM CDT FRIDAY MORNING.
- * AT 400 PM TUESDAY THE STAGE WAS 1.5 FEET.
- * FLOOD STAGE IS 11.0 FEET.
- * FORECAST...THE RIVER WILL CREST AT 10.5 FEET AT 200 PM THURSDAY EVENING AND THEN FALL RAPIDLY TO 5.0 FEET BY FRIDAY MORNING.
- * IMPACT...AT 11.0 FEET...LOWLAND FLOODING OF THE CITY PARK OCCURS.

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IAC013-151000-
/O.NEW.KDMX.FL.Y.0009.040914T2211Z-040917T1000Z/
/CEDI4.N.ER.000000T0000Z.000000T0000Z.000000T0000Z.OO/
511 PM CDT TUE SEP 14 2004

THE NATIONAL WEATHER SERVICE IN DES MOINES HAS ISSUED A
* FLOOD ADVISORY FOR
CEDAR RIVER AT CEDAR FALLS.
* UNTIL 500 AM CDT FRIDAY MORNING.
* AT 1200 PM TUESDAY THE STAGE WAS 83.1 FEET.
* FLOOD STAGE IS 88.0 FEET.
* FORECAST...THE RIVER WILL CREST AT 86.5 FEET AT 100 AM EARLY FRIDAY
MORNING AND THEN FALL TO 85.5 FEET BY 500 AM FRIDAY.
* IMPACT...AT 89 FEET...COTTAGE ROW BECOMES COMPLETELY COVERED IN
SOME PLACES.

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IAC013-151000-
/O.NEW.KDMX.FL.Y.0010.040914T2211Z-040917T1000Z/
/ALO14.N.ER.000000T0000Z.000000T0000Z.000000T0000Z.OO/
511 PM CDT TUE SEP 14 2004

THE NATIONAL WEATHER SERVICE IN DES MOINES HAS ISSUED A
* FLOOD ADVISORY FOR
CEDAR RIVER AT WATERLOO.
* UNTIL 500 AM CDT FRIDAY MORNING.
* AT 400 PM TUESDAY THE STAGE WAS 5.6 FEET.
* FLOOD STAGE IS 12.0 FEET.
* FORECAST...THE RIVER WILL CREST AT 10.5 FEET AT 300 AM EARLY FRIDAY
MORNING AND THEN FALL TO 10.0 FEET BY 500 AM FRIDAY.
* IMPACT...AT 13.0 FEET...THERE IS MINOR STREET FLOODING IN
EVANSDALE ALONG WITH ABOUT 22000 ACRES FLOODED.

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9.2 Example #2 - Flood Advisory for Multiple Forecast Points: Follow-up. Situation:
elevated flow continues to move down the Cedar River basin in response to heavy rain occurring
on the previous day. Flows have decreased sufficiently at the two upstream points covered in the
original advisory to allow the advisory to be cancelled for those locations, but the advisory
continues for the three downstream forecast points.

WGUS83 KDMX 141000-
FLSDMX

FLOOD ADVISORY
NATIONAL WEATHER SERVICE DES MOINES IA
500 AM CDT WED SEP 15 2004

...THE NATIONAL WEATHER SERVICE IN DES MOINES IS CONTINUING THE FLOOD
ADVISORY FOR THE CEDAR RIVER AT JANESVILLE...CEDAR RIVER AT CEDAR
FALLS...AND CEDAR RIVER AT WATERLOO. THE FLOOD ADVISORY IS CANCELLED
FOR THE WINNEBAGO RIVER AT MASON CITY AND SHELL ROCK RIVER AT MARBLE
ROCK...

.ELEVATED STREAMFLOW IS MOVING DOWN THE CEDAR RIVER IN RESPONSE TO
YESTERDAY AFTERNOONS RAINFALL. SOME ADDITIONAL RAINFALL MAY FALL THIS
AFTERNOON BUT AMOUNTS ARE EXPECTED TO BE SMALL. THE LOCATION OF THIS
RAINFALL AND HOW MUCH FALLS WILL CONTROL WHETHER FUTURE RIVER

NWSM 10-923 SEPTEMBER 8, 2009

FORECASTS NEED TO BE CHANGED AND WARNINGS NEED TO BE ISSUED.
HOWEVER...THE RIVER IS NOT CURRENTLY EXPECTED TO EXCEED FLOOD STAGE.

IAC023-067-151100-
/O.CAN.KDMX.FL.Y.0006.000000T0000Z-040917T1000Z/
/MLBI4.N.ER.000000T0000Z.000000T0000Z.000000T0000Z.OO/
500 AM CDT WED SEP 15 2004

THE FLOOD ADVISORY IS CANCELLED FOR
SHELL ROCK RIVER AT MARBLE ROCK.
* AT 400 AM WEDNESDAY THE STAGE WAS 2.5 FT /ESTIMATED/.
* FLOOD STAGE IS 4.0 FEET.
* FORECAST...THE RIVER WILL FALL TO 2.0 FEET BY THURSDAY MORNING.

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IAC033-067-195-151100-
/O.CAN.KDMX.FL.Y.0007.000000T0000Z-040917T1000Z/
/MCWI4.N.ER.000000T0000Z.000000T0000Z.000000T0000Z.OO/
500 AM CDT WED SEP 15 2004

THE FLOOD ADVISORY IS CANCELLED FOR
WINNEBAGO RIVER AT MASON CITY.
* AT 400 AM TUESDAY THE STAGE WAS 5.0 FEET.
* FLOOD STAGE IS 7.0 FEET.
* FORECAST...THE RIVER WILL FALL TO 4.0 FEET BY THURSDAY EVENING.

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IAC013-017-152200-
/O.CON.KDMX.FL.Y.0008.000000T0000Z-040917T1000Z/
/JANI4.N.ER.000000T0000Z.000000T0000Z.000000T0000Z.OO/
500 AM CDT WED SEP 15 2004

THE FLOOD ADVISORY CONTINUES FOR
CEDAR RIVER AT JANESVILLE.
* UNTIL 500 AM CDT FRIDAY MORNING.
* AT 400 AM WEDNESDAY THE STAGE WAS 3.7 FEET.
* FLOOD STAGE IS 11.0 FEET.
* FORECAST...THE RIVER WILL CREST AT 10.5 FEET AT 200 PM THURSDAY
EVENING AND THEN FALL RAPIDLY TO 5.0 FEET BY FRIDAY MORNING.
* IMPACT...AT 11.0 FEET...LOWLAND FLOODING OF THE CITY PARK OCCURS.

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IAC013-152200-
/O.CON.KDMX.FL.Y.0009.000000T0000Z-040917T1000Z/
/CEDI4.N.ER.000000T0000Z.000000T0000Z.000000T0000Z.OO/
500 AM CDT WED SEP 15 2004

THE FLOOD ADVISORY CONTINUES FOR
CEDAR RIVER AT CEDAR FALLS.
* UNTIL 500 AM CDT FRIDAY MORNING.
* AT 400 AM WEDNESDAY THE STAGE WAS 84.0 FEET.
* FLOOD STAGE IS 88.0 FEET.
* FORECAST...THE RIVER WILL CREST AT 86.5 FEET AT 100 AM EARLY FRIDAY
MORNING AND THEN FALL TO 85.5 FEET BY 500 AM FRIDAY.
* IMPACT...AT 89 FEET...COTTAGE ROW BECOMES COMPLETELY COVERED IN
SOME PLACES.

\$\$

IAC013-152200-
/O.CON.KDMX.FL.Y.0010.000000T0000Z-040917T1000Z/
/ALOI4.N.ER.000000T0000Z.000000T0000Z.000000T0000Z.OO/
500 AM CDT WED SEP 15 2004

THE FLOOD ADVISORY CONTINUES FOR
CEDAR RIVER AT WATERLOO.
* UNTIL 500 AM CDT FRIDAY MORNING.
* AT 400 AM WEDNESDAY THE STAGE WAS 6.7 FEET.
* FLOOD STAGE IS 12.0 FEET.
* FORECAST...THE RIVER WILL CREST AT 10.5 FEET AT 300 AM EARLY FRIDAY
MORNING AND THEN FALL TO 10.0 FEET BY 500 AM FRIDAY.
* IMPACT...AT 13.0 FEET...THERE IS MINOR STREET FLOODING IN
EVANSDALE ALONG WITH ABOUT 22000 ACRES FLOODED.

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9.3 Example #3 - Flood Advisory for Multiple Forecast Points: Extension. Situation: the Cedar River in the vicinity of Waterloo and Cedar Falls is staying near flood stage longer than originally expected. The forecaster decides to extend the flood advisory at the three remaining forecast points for another 12 hours to give the river time to recede a little more.

WGUS83 KDMX 141000
FLSDMX

FLOOD ADVISORY
NATIONAL WEATHER SERVICE DES MOINES IA
500 AM CDT WED SEP 15 2004

...THE NATIONAL WEATHER SERVICE IN DES MOINES IS EXTENDING THE FLOOD
ADVISORY FOR THE CEDAR RIVER AT JANESVILLE...CEDAR RIVER AT CEDAR
FALLS...AND CEDAR RIVER AT WATERLOO...

.ELEVATED RIVER FLOW PERSISTS IN THE CEDAR FALLS AND WATERLOO AREA
DUE TO SOME MODERATE RAINFALL THURSDAY NIGHT JUST TO THE NORTH AND
WEST OF CEDAR FALLS. THIS IS KEEPING WATER LEVELS THE CEDAR RIVER UP
A LITTLE LONGER THAN ORIGINALLY EXPECTED...SO THE FLOOD ADVISORY IS
BEING EXTENDED 12 HOURS.

IAC013-017-152200-
/O.EXT.KDMX.FL.Y.0008.000000T0000Z-040917T2200Z/
/JANI4.N.ER.000000T0000Z.000000T0000Z.000000T0000Z.OO/
500 AM CDT WED SEP 15 2004

THE FLOOD ADVISORY CONTINUES FOR
CEDAR RIVER AT JANESVILLE.
* UNTIL 500 PM CDT FRIDAY EVENING.
* AT 400 AM FRIDAY THE STAGE WAS 9.2 FEET.
* FLOOD STAGE IS 11.0 FEET.
* FORECAST...THE RIVER CRESTED AT 10.5 FEET THURSDAY EVENING AND IS
SLOWLY FALLING. IT WILL FALL TO 7.0 FEET BY SATURDAY MORNING.
* IMPACT...AT 11.0 FEET...LOWLAND FLOODING OF THE CITY PARK OCCURS.

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IAC013-152200-
/O.EXT.KDMX.FL.Y.0009.000000T0000Z-040917T2200Z/
/CEDI4.N.ER.000000T0000Z.000000T0000Z.000000T0000Z.OO/
500 AM CDT WED SEP 15 2004

THE FLOOD ADVISORY CONTINUES FOR
CEDAR RIVER AT CEDAR FALLS.

* UNTIL 500 PM CDT FRIDAY EVENING.
* AT 400 AM FRIDAY THE STAGE WAS 87.0 FEET.
* FLOOD STAGE IS 88.0 FEET.
* FORECAST...THE RIVER IS CRESTING NOW AND WILL FALL TO 85.5 FEET BY SATURDAY MORNING.
* IMPACT...AT 89 FEET...COTTAGE ROW BECOMES COMPLETELY COVERED IN SOME PLACES.

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IAC013-152200-
/O.EXT.KDMX.FL.Y.0010.000000T0000Z-040917T2200Z/
/ALOI4.N.ER.000000T0000Z.000000T0000Z.000000T0000Z.OO/
500 AM CDT WED SEP 15 2004

THE FLOOD ADVISORY CONTINUES FOR CEDAR RIVER AT WATERLOO.
* UNTIL 500 PM CDT FRIDAY EVENING.
* AT 400 AM FRIDAY THE STAGE WAS 11.4 FEET.
* FLOOD STAGE IS 12.0 FEET.
* FORECAST...THE RIVER IS CRESTING AND WILL FALL TO 10.0 FEET BY SATURDAY MORNING.
* IMPACT...AT 13.0 FEET...THERE IS MINOR STREET FLOODING IN EVANSDALE ALONG WITH ABOUT 22000 ACRES FLOODED.

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10. Hydrologic Statement (RVS).

10.1 Example #1 - Information on Notable River Conditions at a Forecast Point.

Situation: flow on the Sulphur River has been holding steady below flood level for several days. The forecaster issues a hydrologic statement to update the current and near-term forecast for the river at the town of Cooper. A forecaster could choose to issue a Flood Advisory for Forecast Points (FLS – FL.Y) in such situations if it was necessary for the product to be disseminated over NOAA Weather Radio. However, the river has been holding steady for several days and using the Hydrologic Statement (RVS) provides sufficient notification through NOAA Weather Wire and the Internet. Regional and local WFO policies ultimately determine which type of product is issued for near-flood stage situations.

FGUS84 KFWD 110117
RVSFWD
TXC119-223-120100-

HYDROLOGIC STATEMENT
NATIONAL WEATHER SERVICE FORT WORTH TX
817 PM CDT WED APR 10 2002

THIS STATEMENT UPDATES INFORMATION FOR THE FOLLOWING LOCATIONS ON THE SULPHUR RIVER...COOPER

FOR THE SOUTH SULPHUR RIVER NEAR COOPER...THE STAGE AT 715 PM WEDNESDAY WAS 15.7 FEET. FLOOD STAGE IS 16.0 FEET. THE RIVER IS FORECAST TO HOLD AROUND 15.7 FEET...JUST BELOW FLOOD STAGE FOR THE NEXT SEVERAL DAYS. IF THE RIVER REACHES OR EXCEEDS 16.0 FEET...MINOR OUT OF BANK FLOODING WILL OCCUR AND A FEW RURAL ROADS WILL BEGIN TO FLOOD. MINOR FLOODING WILL ALSO OCCUR TO FARM AND RANCH LAND ADJACENT TO THE RIVER.

&&

LOCATION	FLD	OBSERVED		FORECAST 7 PM			
	STG	STG	DAY	TIME	THU	FRI	SAT
SULPHUR RIVER COOPER	16	15.7	WED	7 PM	15.7	15.6	15.5

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10.2 Example #2 - Elevated River Levels Caused By Ice Jam. This example illustrates how the information shown in the product in section 7.4 could be provided in a hydrologic statement using a non-bulleted format. The hydrologic statement could be used for this type of elevated streamflow situation if it was not necessary for the product to be disseminated over NOAA Weather Radio – All Hazards, and it was believed that NOAA Weather Wire and the Internet would be sufficient to get the information to need-to-know officials.

FGUS81 KCAR 212111
RVSCAR
MEC003-222100-

HYDROLOGIC STATEMENT
NATIONAL WEATHER SERVICE CARIBOU ME
515 PM EDT MON APR 21 2003

...ICE JAMS PERSIST ON THE AROOSTOOK AND SAINT JOHN RIVERS...

TWO ICE JAMS WERE OBSERVED ON THE AROOSTOOK RIVER...AND ONE ICE JAM WAS REPORTED ON THE SAINT JOHN RIVER IN NORTHEAST AROOSTOOK COUNTY MONDAY.

ON THE AROOSTOOK RIVER...THE FIRST JAM WAS DOWNSTREAM OF THE VILLAGE OF CROUSEVILLE ON STATE ROUTE 164 BETWEEN THE TOWNS OF WASHBURN AND PRESQUE ISLE. THIS JAM APPEARED TO HAVE BROKEN IN HALF OVER THE PAST 24 HOURS...SENDING THE DOWNSTREAM FLOW OF ICE SOUTHEAST THROUGH THE TOWN OF PRESQUE ISLE LATE MONDAY AFTERNOON. THIS JAM...COMBINED WITH THE SNOWMELT RUNOFF...IS CAUSING THE RIVER TO BACKUP INTO LOW LYING AREAS OF THE FLOODPLAIN...BUT DOES NOT SEEM TO BE THREATENING ANY ROADS OR PROPERTY AT THIS TIME.

ON THE AROOSTOOK RIVER...NEAR THE TOWN OF FORT FAIRFIELD...AN ICE JAM HAS FORMED IN THE RUSSELL FLATS AREA APPROXIMATELY TWO MILES DOWNSTREAM OF THE FORT FAIRFIELD BRIDGE...WHERE THE AROOSTOOK RIVER FLOWS INTO NEW BRUNSWICK. THIS JAM IS CAUSING THE RIVER TO RISE BEHIND THE JAM...BUT DOES NOT SEEM TO BE THREATENING AT THIS TIME.

ON THE SAINT JOHN RIVER...A RIVER SPOTTER HAS REPORTED AN ICE JAM FIVE TO SIX MILES DOWNSTREAM OF THE INTERNATIONAL BRIDGE IN VAN BUREN...WHERE THE ICE FLOE HAS RUN INTO THE STILL STRONG SHEET OF RIVER ICE. THIS RIVER SPOTTER ALSO NOTED THAT DOWNSTREAM OF THIS JAM THE SAINT JOHN RIVER APPEARED TO BE FREE OF ICE.

RIVER ICE IS VERY UNPREDICTABLE...AND MAY MOVE AND JAM WITH LITTLE NOTICE. ANY ICE JAM CAN CAUSE FLOODING...AS THE ICE DAMS THE RIVER... CAUSING THE RIVER AT OR BEHIND THE JAM TO ELEVATE. STAY CLEAR OF LOW LYING AREAS NEAR ICE AFFECTED RIVERS AND MONITOR CONDITIONS CLOSELY.

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11. Hydrologic Summary (RVA).

11.1 Example #1 - Report for Rivers and Creeks in Hydrologic Service Area.

SRUS43 KDDC 201351
 RVADDC
 KSC007-025-045-047-051-055-057-075-129-151-195-OKC007-211400-

HYDROLOGIC SUMMARY
 NATIONAL WEATHER SERVICE DODGE CITY KS
 850 AM CDT MON MAY 20 2002

LOCATION	FS	STAGE HEIGHT	24-HR CHANGE	POOL HEIGHT	24-HR CHANGE
ARKANSAS RIVER					
COOLIDGE 1S	8	2.45	0.00		
SYRACUSE	10	3.11	0.00		
GARDEN CITY	10	5.04	0.01		
DODGE CITY	11	5.82	0.01		
KINSLEY	12	3.75	-0.02		
BUCKNER CREEK					
BURDETT 6W	16	3.73	0.00		
CIMARRON RIVER					
ELKHART 8N	8	4.01	0.00		
FORGAN 8N	7	2.44	-0.02		
CROOKED CREEK					
ENGLEWOOD	5	1.64	M		
MEDICINE LODGE RIVER					
KIOWA 2NE	10	1.36	-0.06		
PAWNEE RIVER					
BURDETT 7WNW	23	2.53	0.00		
ROZEL 1N	31	5.86	0.00		
SALINE RIVER					
WAKEENEY 5N	13	2.07	-0.01		
S.FK NINNESCAH RIVER					
PRATT 1E	8	2.78	-0.02		
SMOKY HILL RIVER					
ARNOLD 12N	7	0.69	-0.01		
CEDAR BLUFF RSVR					
SCHOENCHEN 3W	11	2.55	-0.02	2143.21	M
SCHOENCHEN 2E	11	2.23	M		

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12. River and Lake Forecast Product (RVD).

12.1 Example #1 - Lake Sites (in SHEF).

FGUS54 KLUB 081306
 RVDLUB
 TXC045-075-169-263-091300-

DAILY RIVER AND LAKE SUMMARY
 NATIONAL WEATHER SERVICE LUBBOCK TX
 805 AM CDT FRI JUN 08 2001

.B LUB 0608 DC0106080805 DH12/HP/
 :

```

:RESERVOIR/LAKE SITES
:
:           STATION          NORMAL      7AM
ID      NAME          POOL      POOL      ELEV.      24-HR:
:           :           :           :           :           :
MKZT2 :MCKENZIE LAKE      3100:      3031.69/: -0.03:
CWRT2 :WHITE RIVER LAKE   2370:      2354.38/: -0.02:
LHPT2 :LAKE ALAN HENRY    2220:      2206.35/: -0.07:
:
.END
$$

```

12.2 Example #2 - River and Lake Sites.

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FGUS51 KLWX 011706
RVDLWX
MDC001>002-009-DCC001-021700-

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DAILY RIVER AND LAKE SUMMARY
NATIONAL WEATHER SERVICE BALTIMORE MD/WASHINGTON DC
1206 PM EST THU MAR 01 2001

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.B WBC 0301 DC01030112
DH12/HG/DRH+24/HGIFF/DRH+48/HGIFF/DRH+72/HGIFF
:           STATION          FLOOD      7AM      24-HR
: ID      NAME          STAGE      STAGE      CHANGE      7AM
:                                           FORECASTS
:                                           FRI      SAT      SUN
:POTOMAC RIVER
HPFW2 :HARPERS FERRY    18.0 : 11.44/: 0.22: 11.40 /11.32 /9.75/
LITM2 :LITTLE FALLS    10.0 : 3.71/: 0.04: 3.70 / 3.60 /M /
:
.END

```

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.B WBC 0301 DH12/HP
:           FULL      WATER      OBSERVED      24-HR
: ID      LAKE NAME    POOL      ELEV.      DAY TIME      CHANGE
KERV2: JOHN H. KERR    320 : 295.6 : THU 7 AM      -0.2
:
.END

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13. Hydrometeorological Data Summary (HYx).

13.1 Example #1 - Daily Summary (HYD).

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SXUS52 KCHS 301437
HYDCHS
GAC031-043-051-103-165-179-183-191-251-267-SCC005-013-015-019-029-
035-049-052-011400-

```

DAILY HYDROMETEOROLOGICAL DATA SUMMARY
NATIONAL WEATHER SERVICE CHARLESTON SC
1036 AM EDT TUE APR 30 2002

```

.B CHS 0430 E DH07/TX/TN/TA/PPP/TSIRZX/TSIRZN/TSIRZ
:
: CHARLESTON AREA TEMPERATURES AND PRECIPITATION
:
:MAX...HIGH TEMPERATURE LAST 24 HRS  MIN...LOW TEMPERATURE LAST 24 HRS
:CUR...CURRENT TEMPERATURE          PCPN...PRECIPITATION LAST 24 HRS

```

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:
:
:          AIR TEMP          SOIL TEMP
:STATION    MAX    MIN    CUR    PCPN    MAX    MIN    CUR
:
:....SOUTH COASTAL...
:CHARLESTON ARPT :CHS      92/   56/   63/   0.01/  77/  68/
:CHARLESTON CITY :CHLS1   92/   64/   64/   0.03/  79/  66/
:BEAUFORT        :BEAS1   92/   62/   62/   0.01/  80/  67/
:SUMMERVILLE   :SMVS1   93/   52/   52/   0.00/   /   /
:JAMESTOWN       :JAMS1   91/   55/   57/   0.02/   /   /
:
:....SOUTHEAST GEORGIA...
:SAVANNAH ARPT   :SAV      93/   56/   66/   0.00/   /   /   74
:SPRINGFIELD     :SRFG1    93/   57/   57/   0.11/   /   /
:EDEN             :EDEG1    93/   55/   66/   0.00/   /   /
:ROCKY FORD       :RCFG1    91/   53/   53/    M /   /   /
:
:
: .END
:
: $$

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13.2 Example #2 - Monthly Summary (HYM).

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CSUS46 KMTR 051725
HYMMTR
CAC053-055-069-075-085-087-097-061800-

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MONTHLY HYDROMETEOROLOGICAL DATA SUMMARY
NATIONAL WEATHER SERVICE SAN FRANCISCO CA
925 AM PST FRI APR 5 2002

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. B MTR 0331 P DH24/PPM
:
: MONTHLY PRECIPITATION FOR SF BAY AREA AND CENTRAL COAST
:
ANGC1  3.69   :ANGWIN PACIFIC UNION COLLEGE
BISC1  4.62   :BIG SUR STATE PARK
FORC1  3.32   :FORT ROSS
HLDC1  3.46   :HEALDSBURG FIRE DEPT
KICC1  0.58   :KING CITY
MHMC1  3.86   :MOUNT HAMILTON
NSHC1  2.63   :NAPA STATE HOSPITAL
PANCI  0.90   :PANOCHE 2W
PRSC1  0.80   :PRIEST VALLEY
SFOCI  2.27   :SAN FRANCISCO DOWNTOWN
SCRC1  3.52   :SANTA CRUZ
STSC1  2.43   :SANTA ROSA
WVIC1  1.51   :WATSONVILLE WATERWORKS
:
: .END
:
: $$

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