

PROBABILISTIC HYDROLOGIC OUTLOOK  
NATIONAL WEATHER SERVICE QUAD CITIES IA IL  
1147 AM CST THU FEB 13 2020

...ELEVATED RISK FOR FLOODING THIS SPRING...

.2020 SPRING FLOOD OUTLOOK...

THIS IS THE FIRST OF THREE PLANNED SPRING FLOOD OUTLOOKS FOR 2020 FOR THE NWS QUAD CITIES HYDROLOGIC SERVICE AREA, WHICH COVERS PORTIONS OF EASTERN IOWA, NORTHWEST AND WEST CENTRAL ILLINOIS, AND EXTREME NORTHEAST MISSOURI. RIVERS INCLUDED IN THIS OUTLOOK ARE THE MISSISSIPPI RIVER AND ITS TRIBUTARIES FROM ABOVE DUBUQUE, IOWA TO BELOW GREGORY LANDING, MISSOURI. THE PRIMARY TRIBUTARY SYSTEMS INCLUDE THE MAQUOKETA, WAPSIPINICON, CEDAR, IOWA, SKUNK, NORTH SKUNK, AND DES MOINES RIVERS IN IOWA; THE FOX RIVER IN MISSOURI; AND THE PECATONICA, ROCK, GREEN, AND LA MOINE RIVERS IN ILLINOIS. THIS OUTLOOK IS FOR THE TIME PERIOD FROM MID FEBRUARY THROUGH MID MAY.

.FLOOD OUTLOOK OVERVIEW...

A WET FALL OF 2019 SET THE STAGE FOR ELEVATED FLOODING POTENTIAL FOR SPRING 2020. VERY WET SOIL CONDITIONS REMAIN ACROSS A LARGE PORTION OF THE UPPER MIDWEST, WITH RIVER LEVELS RUNNING WELL ABOVE NORMAL FOR LATE WINTER, AND WELL ABOVE NORMAL SNOW WATER EQUIVALENT ACROSS THE NORTHERN HALF OF THE UPPER MISSISSIPPI RIVER WATERSHED.

CURRENT CONDITIONS SUGGEST THAT THE POTENTIAL FOR REACHING FLOOD STAGE IS ABOVE NORMAL FOR NEARLY ALL RIVERS ACROSS EASTERN IOWA, NORTHWEST AND WEST CENTRAL ILLINOIS, AND NORTHEAST MISSOURI. THE HIGHEST CONCERN FOR FLOODING THIS SEASON IS ON THE MISSISSIPPI RIVER, AS CURRENT FACTORS SUGGEST THAT REACHING FLOOD STAGE IS EXPECTED, WITH HIGH PROBABILITIES OF REACHING MAJOR FLOOD STAGE FROM DUBUQUE, IA THROUGH KEOKUK, IA.

THE EVENTUAL SEVERITY OF ANY FLOODING WILL DEPEND ON ADDITIONAL PRECIPITATION, THE RATE OF SNOWMELT, AND SPRING-TIME RAINS. THERE WILL ALSO BE A RISK FOR LONG DURATION FLOODING THIS SEASON IF SOIL MOISTURE ACROSS THE REGION STAYS VERY WET.

KEY POINTS:

- \* THE HIGHEST CONCERN FOR FLOODING THIS SPRING IS ON THE MISSISSIPPI RIVER, WHERE THE RISK OF MAJOR FLOODING IS MUCH ABOVE NORMAL. HOWEVER, CONFIDENCE IS LOW AT THIS TIME IN EXACTLY HOW SEVERE FLOODING WOULD BE AT SPECIFIC LOCATIONS.
- \* POTENTIAL FOR WIDESPREAD MINOR FLOODING IS ABOVE NORMAL FOR ALL RIVERS IN THE AREA.
- \* ADDITIONAL HEAVY SNOWFALL, A RAPID SNOW MELT, AND HEAVY SPRING RAINS WOULD INCREASE THE THREAT FOR MORE SEVERE FLOODING. CONVERSELY, LITTLE OR NO ADDITIONAL SNOWFALL, A PROLONGED MELT, AND LIGHTER SPRING RAINS WOULD DECREASE THE FLOOD THREAT.
- \* IF HIGH SOIL MOISTURE LEVELS PERSIST, THE THREAT FOR LONG-DURATION MISSISSIPPI RIVER FLOODING WILL INCREASE.

MANY FACTORS HAVE BEEN CONSIDERED WHEN EVALUATING THE OVERALL FLOOD RISK FOR THE UPCOMING SPRING SEASON. THE COMBINATION OF THESE INFLUENCES FACTOR INTO THE FINAL DETERMINATION. THE PRIMARY FACTORS LEADING TO THIS YEARS ABOVE NORMAL FLOOD RISK ARE:

- \* AN EXPANSIVE PORTION OF THE UPPER MISSISSIPPI RIVER WATERSHED IS OBSERVING EXTREMELY WET SOIL CONDITIONS. THE FLOOD RISK WILL REMAIN ELEVATED UNTIL SOILS DRY OUT.
- \* SNOWPACK VARIES ACROSS THE REGION. A SUBSTANTIAL SNOWPACK IS IN PLACE ACROSS THE NORTHERN HALF OF THE UPPER MISSISSIPPI RIVER WATERSHED, WHILE WATERSHEDS FOR LOCAL IOWA, ILLINOIS, AND MISSOURI RIVERS HAVE LIMITED SNOW COVER.

FOR FURTHER DETAILS ON ALL FACTORS CONSIDERED, SEE BELOW.

.SEASONAL PRECIPITATION SUMMARY:

FOR THE WINTER SEASON, DECEMBER THROUGH MID-FEBRUARY, MUCH OF THE LOCAL AREA HAS OBSERVED NEAR TO BELOW NORMAL PRECIPITATION. THIS HAS LED TO LOWER THAN NORMAL SNOW COVER ACROSS EASTERN IOWA, WESTERN ILLINOIS AND NORTHEAST MISSOURI. ON THE OTHER HAND, FURTHER NORTH IN NORTHERN IOWA, MINNESOTA, AND WISCONSIN INTO THE HEADWATERS OF SOME OF THE LOCAL RIVERS, PRECIPITATION HAS BEEN ABOVE NORMAL FOR THE WINTER MONTHS. THE PRECIPITATION THIS WINTER HAS EITHER CONTRIBUTED TO BUILDING THE SNOWPACK, OR HAS KEPT RIVER LEVELS HIGH AS THE PRECIPITATION EITHER FELL AS RAIN OR WAS SNOW THAT HAS ALREADY MELTED, WITH THE RUNOFF ALREADY MAKING INTO THE RIVERS.

THE OBSERVED WINTER PRECIPITATION RAISES THE RISK FOR FLOODING ON THE MISSISSIPPI RIVER, AS WELL AS RIVERS THAT HAVE HEADWATERS UP INTO MINNESOTA, NORTHERN IOWA, AND WISCONSIN. THESE RIVERS INCLUDE THE ROCK RIVER IN ILLINOIS, AND THE IOWA, CEDAR, AND WAPSIPINICON RIVERS IN IOWA.

.SNOW COVER AND LIQUID WATER CONTENT:

MISSISSIPPI RIVER - INCREASED RISK  
LOCAL RIVERS - DECREASED RISK

THE SNOWPACK ACROSS THE NORTHERN PARTS OF THE REGION DEEPENED DURING THE SECOND PORTION OF THE WINTER MONTHS, WITH THESE AREAS OBSERVING ABOVE NORMAL LIQUID WATER CONTENT. THE WATERSHEDS FOR THE LOCAL RIVERS ARE OBSERVING BELOW NORMAL SNOW COVER, LESSENING THE RISK FOR FLOODING DUE TO SNOWMELT RUNOFF. UNLESS LOCAL SNOWPACK BUILDS SIGNIFICANTLY, ANY LOCAL RIVER FLOODING WILL BE THE RESULT OF SPRING RAINS.

THE HIGHEST RISK FOR FLOODING DUE TO THE CURRENT SNOWPACK WILL BE ALONG THE MAINSTEM MISSISSIPPI RIVER, WHERE EVEN A FAVORABLE SNOWMELT IS STILL EXPECTED TO LEAD TO SOME DEGREE OF FLOODING. THE RATE OF THE SNOWMELT WILL BE A KEY CONTRIBUTOR TO THE SEVERITY OF FLOODING THAT OCCURS.

.FROST DEPTH: DECREASED RISK

ON AVERAGE, TEMPERATURES HAVE BEEN ABOVE NORMAL ACROSS THE REGION THIS WINTER, WITH ONLY LIMITED PERIODS OF EXTREME COLD. THE LACK OF LONG PERIODS OF EXTREME COLD RESULTED IN A BELOW NORMAL FROST DEPTHS FOR PORTIONS OF THE UPPER MIDWEST. FROST DEPTHS ACROSS MINNESOTA AND WISCONSIN ARE GENERALLY 6 INCHES TO 2 FEET, WHICH WILL REMAIN A

CONCERN FOR ANY FLOODING ON THE MISSISSIPPI RIVER. ACROSS IOWA, ILLINOIS, AND NORTHEAST MISSOURI, FROST DEPTHS ARE SHALLOWER THAN NORMAL, WITH OBSERVATIONS SHOWING FROZEN GROUND LESS THAN 6 INCHES FOR MUCH OF THE AREA.

THE DEPTH OF FROZEN GROUND NOT ONLY CONTRIBUTES TO THE FLOOD RISK BY SIMPLY IMPLYING ANY FROZEN GROUND WILL CAUSE EFFICIENT RUNOFF FROM SNOWMELT OR RAINFALL, BUT THE DEPTH OF FROZEN GROUND IS ALSO A FACTOR TO HOW LONG IT MIGHT TAKE FOR THE GROUND TO THAW. THE LONGER THE GROUND STAYS FROZEN, THE LONGER TIME IT WILL TAKE BEFORE THE GROUND CAN BEGIN TO DRY OUT, THUS LENGTHENING THE PERIOD OF TIME CONDITIONS REMAIN AT A HIGHER THREAT FOR EXTREME RUNOFF DUE TO FROZEN GROUND OR HIGH SOIL MOISTURE.

.RIVER CONDITIONS: INCREASED RISK

RIVER LEVELS ARE HIGH FOR THIS TIME OF YEAR ACROSS MUCH OF THE UPPER MIDWEST AS PERIODS OF RAIN OR MELTING SNOW HAVE KEPT THE RIVERS FROM REACHING BASELINE LEVELS THIS WINTER. ACCORDING TO THE US GEOLOGICAL SURVEY, THE ENTIRE REGION IS EXPERIENCING ABOVE NORMAL STREAMFLOWS (HIGH RIVER LEVELS) FOR LATE WINTER, WITH MANY RIVERS OBSERVING FLOWS MUCH ABOVE NORMAL READINGS (>90 PERCENT OF NORMAL).

THE SIGNIFICANCE OF HIGH STREAMFLOWS TO FLOOD RISK IS THAT A RIVER WITH HIGHER WATER LEVELS WILL HAVE LESS SPACE FOR ADDITIONAL WATER. AS A RESULT, FLOOD LEVELS CAN BE REACHED WITH LESSER RUNOFF THAN IT WOULD TAKE GIVEN NORMAL RIVER LEVELS FOR LATE WINTER/EARLY SPRING.

.SOIL MOISTURE: INCREASED RISK

WET SOILS HAVE PERSISTED THROUGH THE WINTER MONTHS AS MOISTURE FROM LAST FALL WAS LOCKED INTO THE SOILS DURING THE COLD SEASON. THERE ARE AREAS WHERE THE SOILS REMAINED THAWED THROUGH PORTIONS OF THE WINTER, BUT STAYED WET DUE TO RAIN OR SNOWMELT WITH LITTLE OR NO EVAPORATION OCCURRING TO ALLOW DRYING OF THE SOILS.

THE WETTEST SOILS ARE CURRENTLY OBSERVED ACROSS MINNESOTA, WISCONSIN, NORTHERN IOWA AND NORTHERN ILLINOIS AS OF MID-FEBRUARY. SOILS ARE SLIGHTLY LESS WET FROM SOUTHERN AND EAST CENTRAL IOWA AND NORTHERN MISSOURI INTO WEST CENTRAL ILLINOIS.

THE THREAT FOR RIVER RISES FROM SNOWMELT OR SPRING RAINFALL RUNOFF DUE TO VERY WET SOILS IS HIGH FOR THE MISSISSIPPI RIVER AS THE ENTIRE WATERSHED IS EXPERIENCING VERY WET TO SATURATED SOILS. THIS MEANS VERY LITTLE RUNOFF WILL BE ABLE TO BE ABSORBED BY THE SOILS SO RUNOFF FROM BOTH SNOWMELT AND RAINFALL WILL EFFICIENTLY MOVE INTO THE RIVER SYSTEMS. LOCAL WATERSHEDS WILL ALSO HAVE AN ELEVATED RISK FOR HIGH RUNOFF FROM SNOWMELT OR RAINFALL THIS SPRING. THESE WATERSHEDS ARE OBSERVING VERY WET SOILS ACROSS THE UPPER PARTS OF THE WATERSHEDS. HOWEVER THE LOWER PARTS OF THE WATERSHEDS HAVE SLIGHTLY LESS MOISTURE.

.ICE JAM FLOODING: LOWER RISK

THE WARMER WEATHER THIS WINTER HAS LIMITED DEVELOPMENT OF THICK RIVER ICE. ALTHOUGH COLDER TEMPERATURES IN MID-JANUARY DID CAUSE

SOME ICE JAM IMPACTS ON THE MISSISSIPPI AND ROCK RIVERS, ALL RIVERS OBSERVED DIMINISHED ICE COVER BY MID-FEBRUARY. MANY AREA RIVERS ARE PRESENTLY OBSERVING LITTLE OR NO ICE COVER. COLDER AIR WILL LIKELY RETURN YET THIS WINTER, SO ICE DEVELOPMENT AND BUILD-UP IS STILL POSSIBLE. HOWEVER, WITHOUT A LONG PERIOD OF EXTREME COLD, THE RISK FOR DEVELOPMENT OF THICK RIVER ICE WILL BE LOW. THIS KEEPS THE RISK FOR SPRING BREAK-UP ICE JAMS LOW.

.WEATHER OUTLOOKS:

ON AVERAGE, WARMER TEMPERATURES ARE EXPECTED THROUGH THE REMAINDER OF FEBRUARY AND INTO MARCH, WITH HIGH PROBABILITIES FOR ABOVE NORMAL TEMPERATURES THROUGH THE ENTIRE UPPER MIDWEST DURING THE LAST WEEK OF FEBRUARY. WITH HIGH TEMPERATURES AVERAGING AROUND THE FREEZING MARK OVER THE FOLLOWING WEEKS, THE IMPACT TO THE SNOWPACK, AND IF IT WILL CAUSE RIVER RISES WILL DEPEND ON HOW WARM DAILY HIGHS GET, AND IF LOWS DROP BELOW FREEZING DURING THE OVERNIGHT HOURS.

RISES ABOVE FREEZING DURING THE DAY, WITH BELOW FREEZING TEMPERATURES AT NIGHT, WOULD PROMOTE A SLOW SNOWMELT AND BE FAVORABLE TOWARD LIMITING THE FLOOD RISK.

PRECIPITATION OUTLOOKS FOR THE NEXT 2 WEEKS TO THREE MONTHS KEEP THE HIGHEST RISK FOR ABOVE NORMAL PRECIPITATION GENERALLY TO THE SOUTH AND EAST OF THE REGION, BUT AVERAGING ABOVE NORMAL FOR MUCH OF THE UPPER MISSISSIPPI RIVER WATERSHED.

ABOVE NORMAL TEMPERATURES WITH BELOW NORMAL PRECIPITATION WOULD BE FAVORABLE FOR A LESSER RISK FOR FLOODING.

.SUMMARY:

- \* MISSISSIPPI RIVER - HIGH CONFIDENCE ON MINOR FLOODING. THE RISK FOR REACHING EACH CATEGORY OF FLOODING IS MUCH ABOVE NORMAL, HOWEVER THERE IS LOW CONFIDENCE ON PEAK SEVERITY OF ANY FLOODING THAT WILL OCCUR.
- \* LOCAL RIVERS - ABOVE NORMAL RISK FOR WIDESPREAD MINOR FLOODING, WITH NEAR NORMAL RISK FOR REACHING HIGHER SEVERITY FLOOD LEVELS. SOILS ARE WET, BUT SNOW COVER IS LIMITED SO THE FLOODING RISK WILL DEPEND ON ADDITIONAL SNOWS THIS SEASON OR HEAVY SPRING RAINS.
- \* A SCENARIO TO REDUCE THE FLOOD RISK THIS SPRING WOULD BE LITTLE ADDITIONAL WINTER PRECIPITATION AND A GRADUAL SNOWMELT, FOLLOWED BY ABOVE NORMAL TEMPERATURES AND BELOW NORMAL PRECIPITATION.
- \* ANY OF THE FOLLOWING SCENARIOS WOULD INCREASE THE FLOOD RISK: THE SNOWPACK CONTINUING TO BUILD, A COOL AND WET SPRING, A LATE AND QUICK SNOWMELT, AND WET CONDITIONS CONTINUING THROUGH SPRING.

.NUMERICAL RIVER OUTLOOKS...

THIS OUTLOOK PROVIDES LONG-RANGE PROBABILISTIC RIVER OUTLOOKS FOR RIVER BASINS IN THE NWS QUAD CITIES SERVICE AREA. THIS OUTLOOK IS DIVIDED INTO THREE PARTS, THE FIRST PART FOR THE PROBABILITIES OF MINOR, MODERATE AND MAJOR FLOODING, THE SECOND PART FOR HIGH WATER AND THE FINAL PART FOR LOW WATER.

IN TABLE 1 BELOW, THE CURRENT (CS) AND HISTORICAL (HS) OR NORMAL PROBABILITIES OF EXCEEDING MINOR, MODERATE AND MAJOR FLOOD STAGES ARE LISTED FOR THE VALID TIME PERIOD.

CS VALUES INDICATE THE PROBABILITY OF REACHING A FLOOD CATEGORY BASED ON CURRENT CONDITIONS.

HS VALUES INDICATE THE PROBABILITY OF REACHING A FLOOD CATEGORY BASED ON HISTORICAL OR NORMAL CONDITIONS.

WHEN THE VALUE OF CS IS GREATER THAN HS, THE PROBABILITY OF EXCEEDING THAT LEVEL IS HIGHER THAN NORMAL. WHEN THE VALUE OF CS IS LESS THAN HS, THE PROBABILITY OF EXCEEDING THAT LEVEL IS LOWER THAN NORMAL.

...TABLE 1--PROBABILITIES FOR MINOR, MODERATE AND MAJOR FLOODING...  
VALID PERIOD: 02/17/2020 - 05/17/2020

				CURRENT AND HISTORICAL CHANCES OF EXCEEDING FLOOD CATEGORIES AS A PERCENTAGE (%)					
CATEGORICAL				MINOR		MODERATE		MAJOR	
LOCATION	FLOOD STAGES (FT)			CS	HS	CS	HS	CS	HS
-----	MINOR	MOD	MAJOR	---	---	---	---	---	---
:MISSISSIPPI RIVER									
DUBUQUE LD11	16.0	17.0	20.5	>95	46	>95	35	87	11
DUBUQUE	17.0	18.0	21.5	>95	51	>95	44	91	13
BELLEVUE LD12	17.0	18.0	20.0	>95	34	>95	26	86	11
FULTON LD13	16.0	18.0	20.0	>95	49	>95	31	90	13
CAMANCHE	17.0	18.5	20.5	>95	46	>95	32	90	13
LE CLAIRE LD14	11.0	12.0	13.5	>95	48	>95	33	92	17
ROCK ISLAND LD15	15.0	16.0	18.0	>95	54	>95	48	>95	22
ILL. CITY LD16	15.0	16.0	18.0	>95	53	>95	43	95	21
MUSCATINE	16.0	18.0	20.0	>95	56	>95	43	95	20
NEW BOSTON LD17	15.0	16.5	18.5	>95	57	>95	51	>95	28
KEITHSBURG	14.0	15.5	17.0	>95	56	>95	44	>95	23
GLADSTONE LD18	10.0	12.0	14.0	>95	57	>95	43	91	21
BURLINGTON	15.0	16.5	18.0	>95	56	>95	44	92	24
KEOKUK LD19	16.0	17.5	19.0	>95	43	94	31	80	21
GREGORY LANDING	15.0	18.0	25.0	>95	60	>95	39	30	<5
:MAQUOKETA RIVER									
MANCHESTER HWY 20	14.0	17.0	20.0	15	17	12	13	6	<5
MAQUOKETA	24.0	26.0	28.5	10	17	<5	14	<5	5
:WAPSIPINICON RIVER									
INDEPENDENCE	12.0	13.0	15.0	11	6	6	6	<5	<5
ANAMOSA SHAW RD	14.5	18.0	21.5	27	21	8	9	<5	<5
DE WITT 4S	11.0	11.5	12.5	86	68	81	64	54	45
:NORTH SKUNK RIVER									
SIGOURNEY	16.0	18.0	21.0	60	57	38	42	7	10
:SKUNK RIVER									
AUGUSTA	15.0	17.0	20.0	45	43	28	32	12	14

:CEDAR RIVER										
VINTON	15.0	18.0	19.0	:	21	15	8	6	7	<5
PALO BLAIRS FERRY	12.5	15.5	17.0	:	24	20	8	6	<5	<5
CEDAR RAPIDS	12.0	14.0	16.0	:	31	26	16	13	9	7
CEDAR BLUFF	16.0	20.0	26.0	:	28	28	9	7	<5	<5
CONESVILLE	13.0	15.0	16.5	:	81	52	27	25	9	7
:IOWA RIVER										
MARENGO	15.0	17.0	19.0	:	84	69	53	45	6	5
IOWA CITY	23.5	24.5	26.0	:	<5	6	<5	<5	<5	<5
LONE TREE	16.0	18.5	22.0	:	10	16	<5	7	<5	<5
COLUMBUS JCT	23.0	25.0	26.5	:	17	13	9	5	<5	<5
WAPELLO	21.0	25.0	27.5	:	51	44	9	6	<5	<5
OAKVILLE	11.0	15.0	20.0	:	49	44	8	5	<5	<5
:ENGLISH RIVER										
KALONA	14.0	16.0	18.0	:	56	55	31	33	10	15
:DES MOINES RIVER										
KEOSAUQUA	22.0	25.0	27.0	:	15	9	<5	<5	<5	<5
ST FRANCISVILLE	18.0	22.0	25.0	:	60	37	9	6	<5	<5
:FOX RIVER										
WAYLAND	15.0	18.0	20.0	:	24	25	8	9	<5	<5
:PECATONICA RIVER										
FREEPORT	13.0	14.0	16.0	:	59	34	32	17	<5	<5
:ROCK RIVER										
COMO	12.5	15.5	18.0	:	34	21	5	8	<5	<5
JOSLIN	12.0	14.0	16.5	:	80	51	56	30	19	16
MOLINE	12.0	13.0	14.0	:	77	51	62	32	35	23
:GREEN RIVER										
GENESE0	15.0	16.5	18.0	:	21	19	11	9	7	6
:LA MOINE RIVER										
COLMAR	20.0	22.0	24.0	:	71	66	56	47	30	21

LEGEND

CS = CONDITIONAL SIMULATION (CURRENT OUTLOOK)

HS = HISTORICAL SIMULATION

FT = FEET

IN TABLE 2 BELOW, THE 95 THROUGH 5 PERCENT COLUMNS INDICATE THE PROBABILITY OF EXCEEDING THE LISTED STAGE LEVELS (FT) FOR THE VALID TIME PERIOD.

...TABLE 2--EXCEEDANCE PROBABILITIES...

LOCATION	CHANCE OF EXCEEDING STAGES						
	AT SPECIFIC LOCATIONS						
	VALID PERIOD: 02/17/2020 - 05/17/2020						
	95%	90%	75%	50%	25%	10%	5%
:MISSISSIPPI RIVER							
DUBUQUE LD11	18.8	20.0	21.7	23.2	26.4	29.0	30.4
DUBUQUE	20.6	21.8	23.7	25.2	27.7	30.2	31.5

BELLEVUE LD12	18.4	19.5	21.1	22.3	24.3	26.3	27.5
FULTON LD13	19.0	20.0	21.7	23.1	26.1	28.6	30.3
CAMANCHE	19.5	20.5	22.3	23.7	26.6	29.1	30.9
LE CLAIRE LD14	13.2	14.0	15.3	16.8	19.7	22.4	24.4
ROCK ISLAND LD15	18.1	18.8	20.3	21.6	24.2	26.6	28.0
ILL. CITY LD16	18.0	18.8	20.6	22.9	25.7	27.8	29.1
MUSCATINE	20.0	20.7	22.3	24.3	26.7	28.6	29.8
NEW BOSTON LD17	19.2	20.0	21.4	23.0	25.5	27.3	28.4
KEITHSBURG	17.0	17.6	18.6	20.2	23.0	25.1	25.6
GLADSTONE LD18	13.6	14.1	15.3	17.3	20.6	22.7	23.2
BURLINGTON	17.8	18.5	19.5	21.4	24.6	25.9	26.2
KEOKUK LD19	17.2	18.3	19.6	21.5	24.9	26.6	27.3
GREGORY LANDING	18.3	19.2	20.8	22.9	25.8	27.1	27.8
:MAQUOKETA RIVER							
MANCHESTER HWY 20	8.1	8.3	9.1	10.3	12.8	17.7	20.5
MAQUOKETA	15.1	15.6	17.0	18.4	20.2	24.2	25.7
:WAPSIPINICON RIVER							
INDEPENDENCE	6.6	7.1	7.6	8.4	9.5	12.1	14.4
ANAMOSA SHAW RD	9.4	10.2	11.3	12.6	14.6	17.5	19.6
DE WITT 4S	9.8	10.8	11.9	12.6	12.9	13.6	13.8
:NORTH SKUNK RIVER							
SIGOURNEY	12.8	13.4	15.0	17.3	18.8	20.1	21.4
:SKUNK RIVER							
AUGUSTA	7.0	9.2	11.2	14.5	17.3	20.4	22.3
:CEDAR RIVER							
VINTON	10.4	10.5	11.5	13.1	14.8	16.7	19.6
PALO BLAIRS FERRY	9.2	9.3	10.2	11.3	12.4	14.3	16.7
CEDAR RAPIDS	8.0	8.1	9.2	10.6	12.3	15.4	20.0
CEDAR BLUFF	10.9	11.4	12.7	14.3	16.9	19.8	23.5
CONESVILLE	12.0	12.6	13.4	14.2	15.2	16.4	17.6
:IOWA RIVER							
MARENGO	13.0	14.1	16.0	17.1	17.9	18.8	19.0
IOWA CITY	15.3	15.9	18.2	19.4	19.6	19.7	22.0
LONE TREE	10.8	11.6	13.1	14.2	14.7	16.1	18.4
COLUMBUS JCT	15.9	17.1	18.7	19.9	21.3	24.2	26.4
WAPELLO	17.5	18.6	20.0	21.0	22.0	24.7	26.9
OAKVILLE	7.8	8.8	10.1	11.0	11.9	14.4	16.4
:ENGLISH RIVER							
KALONA	10.0	11.1	13.1	14.7	16.4	18.0	18.7
:DES MOINES RIVER							
KEOSAUQUA	16.2	17.8	18.6	19.8	20.8	22.3	24.2
ST FRANCISVILLE	14.0	16.0	16.9	18.2	19.9	21.4	24.0
:FOX RIVER							
WAYLAND	5.4	6.2	8.9	12.0	14.7	17.5	18.9
:PECATONICA RIVER							
FREEPORT	11.7	11.9	12.4	13.3	14.2	15.2	15.7
:ROCK RIVER							
COMO	8.6	8.8	9.9	12.1	13.1	14.4	15.6

JOSLIN	11.1	11.4	12.6	14.5	15.8	17.7	18.3
MOLINE	11.0	11.3	12.1	13.4	14.5	15.8	16.4
:GREEN RIVER							
GENESEO	7.0	8.3	11.2	13.0	14.7	17.1	18.5
:LA MOINE RIVER							
COLMAR	12.3	16.2	19.0	22.5	24.4	25.4	26.9

IN TABLE 3 BELOW, THE 95 THROUGH 5 PERCENT COLUMNS INDICATE THE PROBABILITY OF FALLING BELOW THE LISTED STAGE LEVELS (FT) FOR THE VALID TIME PERIOD.

...TABLE 3--NON-EXCEEDANCE PROBABILITIES...

LOCATION	CHANCE OF FALLING BELOW STAGES AT SPECIFIC LOCATIONS						
	VALID PERIOD: 02/17/2020 - 05/17/2020						
	95%	90%	75%	50%	25%	10%	5%
:MISSISSIPPI RIVER							
DUBUQUE LD11	5.9	5.8	5.7	5.6	5.2	5.0	5.0
DUBUQUE	8.4	8.3	8.3	8.2	8.0	7.9	7.9
BELLEVUE LD12	6.2	6.1	5.9	5.6	5.2	4.9	4.9
FULTON LD13	6.4	6.3	6.0	5.7	5.2	5.0	4.9
CAMANCHE	9.7	9.7	9.6	9.4	9.3	9.2	9.1
LE CLAIRE LD14	5.6	5.5	5.4	5.3	5.0	4.9	4.9
ROCK ISLAND LD15	7.2	7.1	7.1	6.8	6.3	5.9	5.7
ILL. CITY LD16	5.7	5.7	5.7	5.5	5.1	4.8	4.7
MUSCATINE	7.6	7.5	7.5	7.4	7.1	6.8	6.7
NEW BOSTON LD17	6.9	6.8	6.8	6.4	5.9	5.4	5.1
KEITHSBURG	8.2	8.1	8.1	8.0	7.4	7.1	6.8
GLADSTONE LD18	3.6	3.5	3.5	3.4	3.0	2.7	2.5
BURLINGTON	9.8	9.7	9.7	9.5	9.1	8.8	8.6
KEOKUK LD19	6.5	6.5	6.3	6.2	5.9	5.4	5.2
GREGORY LANDING	7.8	7.8	7.6	7.4	7.0	6.9	6.8
:MAQUOKETA RIVER							
MANCHESTER HWY 20	4.3	4.3	4.3	4.3	4.3	4.3	4.3
MAQUOKETA	10.8	10.8	10.8	10.8	10.7	10.6	10.5
:WAPSIPINICON RIVER							
INDEPENDENCE	5.0	5.0	5.0	5.0	5.0	5.0	5.0
ANAMOSA SHAW RD	5.6	5.6	5.6	5.6	5.6	5.5	5.5
DE WITT 4S	6.3	6.2	6.1	6.1	6.0	6.0	5.9
:NORTH SKUNK RIVER							
SIGOURNEY	4.9	4.8	4.6	4.6	4.5	4.4	4.2
:SKUNK RIVER							
AUGUSTA	3.8	3.7	3.5	3.4	3.2	2.5	2.4
:CEDAR RIVER							
VINTON	3.3	3.3	3.3	3.3	3.2	2.9	2.8
PALO BLAIRS FERRY	3.8	3.8	3.8	3.7	3.6	3.3	3.3
CEDAR RAPIDS	4.4	4.4	4.4	4.3	4.3	4.1	4.1
CEDAR BLUFF	5.0	5.0	5.0	4.9	4.8	4.5	4.4
CONESVILLE	7.1	7.1	7.1	7.0	6.8	6.3	6.2



:IOWA RIVER							
MARENGO	6.9	6.9	6.9	6.8	6.8	6.5	6.3
IOWA CITY	11.1	10.9	10.7	10.5	9.4	8.8	8.8
LONE TREE	7.1	7.0	6.7	6.1	4.8	4.1	4.0
COLUMBUS JCT	11.3	11.3	11.3	11.1	10.3	9.6	9.4
WAPELLO	13.2	13.2	13.1	13.1	12.1	11.4	11.1
OAKVILLE	4.0	4.0	4.0	3.9	3.1	2.5	2.4
:ENGLISH RIVER							
KALONA	5.0	4.9	4.7	4.4	4.2	3.8	3.7
:DES MOINES RIVER							
KEOSAUQUA	13.2	13.2	13.0	12.6	11.8	11.5	11.2
ST FRANCISVILLE	10.4	10.4	10.1	9.6	8.5	8.0	7.6
:FOX RIVER							
WAYLAND	2.4	2.3	2.1	2.0	1.9	1.8	1.6
:PECATONICA RIVER							
FREEPORT	6.2	6.2	6.2	6.1	5.7	5.3	5.1
:ROCK RIVER							
COMO	5.5	5.5	5.5	5.2	4.5	4.0	3.8
JOSLIN	7.9	7.9	7.9	7.4	6.7	5.9	5.6
MOLINE	9.4	9.4	9.4	9.2	8.8	8.4	8.3
:GREEN RIVER							
GENESEO	4.7	4.4	4.1	3.9	3.6	3.3	3.2
:LA MOINE RIVER							
COLMAR	5.9	5.5	5.0	4.4	4.0	3.5	3.4

THESE LONG-RANGE PROBABILISTIC OUTLOOKS CONTAIN FORECAST VALUES THAT ARE CALCULATED USING MULTIPLE SEASON SCENARIOS FROM 30 OR MORE YEARS OF CLIMATOLOGICAL DATA, INCLUDING CURRENT CONDITIONS OF THE RIVER, SOIL MOISTURE, SNOW COVER, AND 30 TO 90 DAY LONG-RANGE OUTLOOKS OF TEMPERATURE AND PRECIPITATION. BY PROVIDING A RANGE OF PROBABILITIES, THE LEVEL OF RISK ASSOCIATED WITH LONG-RANGE PLANNING DECISIONS CAN BE DETERMINED. THESE PROBABILISTIC FORECASTS ARE PART OF THE NATIONAL WEATHER SERVICE'S ADVANCED HYDROLOGIC PREDICTION SERVICE.

VISIT OUR WEB SITE AT [WEATHER.GOV/DVN](http://WEATHER.GOV/DVN) FOR MORE WEATHER AND WATER INFORMATION AND [HTTP://WWW.WEATHER.GOV/DVN/2020\\_SPRINGFLOODOUTLOOK](http://WWW.WEATHER.GOV/DVN/2020_SPRINGFLOODOUTLOOK) FOR MORE SPECIFIC SPRING FLOOD OUTLOOK INFORMATION.

TWO UPDATES TO THE SPRING FLOOD OUTLOOK HAVE BEEN SCHEDULED. THESE OUTLOOKS WILL BE ISSUED BY 5 PM ON THE FOLLOWING DATES:

FEBRUARY 27, 2020  
MARCH 12, 2020

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