

National Weather Service Forecast Office Mission & Operations



Hydrology Seminar – Nov 2011
Janet Spurgeon – Service Hydrologist
NWS Weather Forecast Office Wichita, KS



NWS Hydrologic Services

NWS is the primary source for rainfall forecast, and Hydrologic Watches & Warnings.

Home > National Digital Forecast Database, produced by NOAA's National Weather Service. Public comments and suggestions are encouraged.

Warnings & Forecasts | Graphical Forecasts | National Maps | Radar | Water | Air Quality | Satellite | Climate

Graphical Forecasts - Wichita, KS

Public Fire Weather

Daily View | Weekly View | Loops

Image List | Page Help | Metric Units | Key

Go to Region | View Images | Get Text Forecast

Mouse over the table below to change the forecast image.

	0.50	1.00	1.50	2.00	2.50
Wed Night	<-12Hrs	+12Hrs >			
Max/Min Temperature	Low				
Probability of Precip	12 hr. probability				
Weather	7pm	10pm	1am	4am	
Temperature	7pm	10pm	1am	4am	
Dewpoint	7pm	10pm	1am	4am	
Sky Cover	7pm	10pm	1am	4am	
Amount of Precip	QPF	QPF			
Snow Amount	-				
Apparent Temperature	7pm	10pm	1am	4am	
Relative Humidity	7pm	10pm	1am	4am	
Wind Speed & Direction	7pm	10pm	1am	4am	
Wind Gust	7pm	10pm	1am	4am	

6Hr Precip.Amt(in) Ending Thu Oct 27 2011 7AM CDT
(Thu Oct 27 2011 12Z)
NWS Wichita, KS
Graphic Created Oct 25 9:05AM CDT

Next

<http://www.weather.gov/wichita>

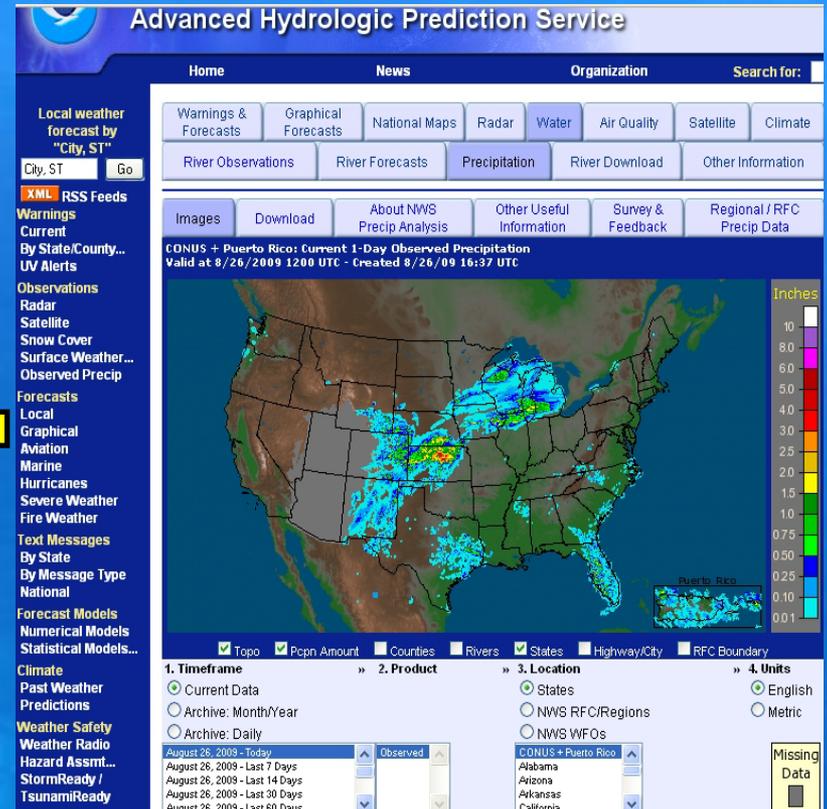
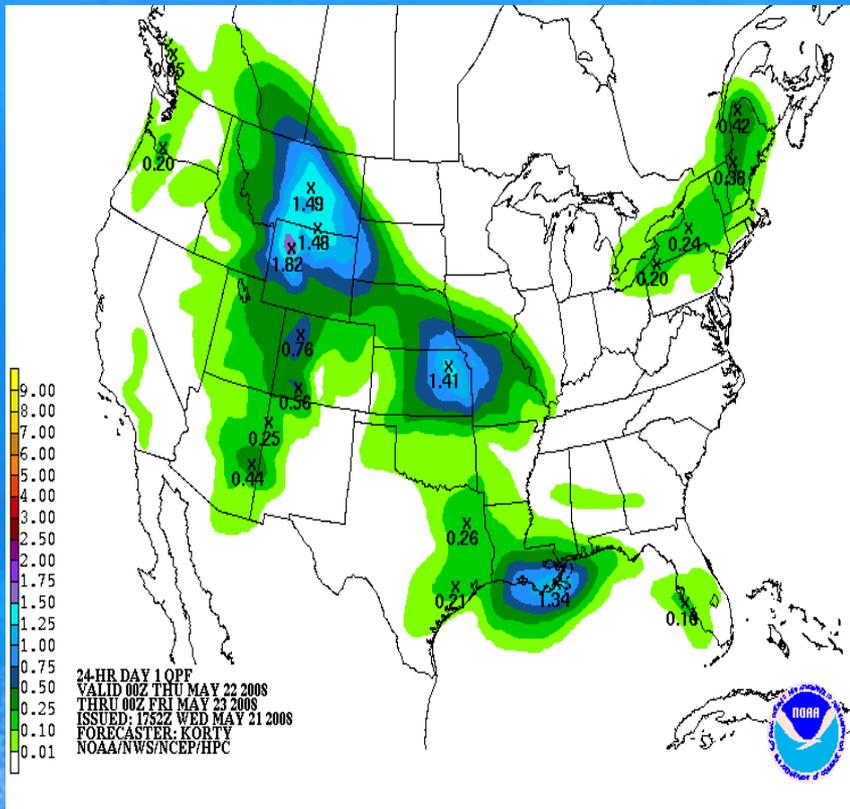
Local Graphical QPF Forecast



NWS Hydrologic Services

HPC guidance for future precip. amounts ingested into models

Observed precipitation used in RFC models

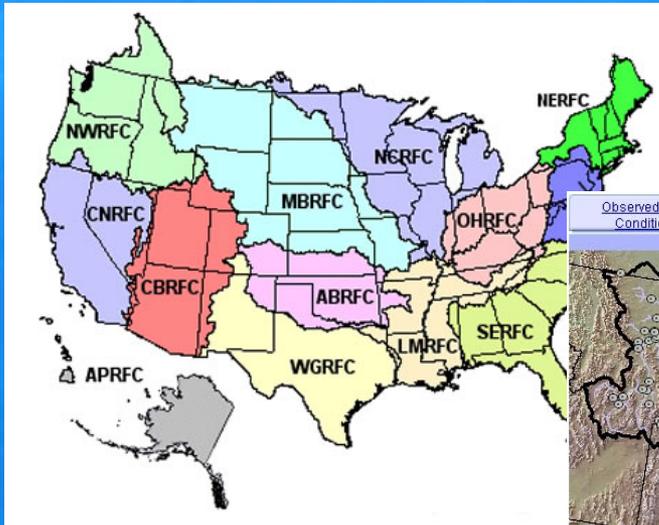


<http://www.hpc.ncep.noaa.gov>

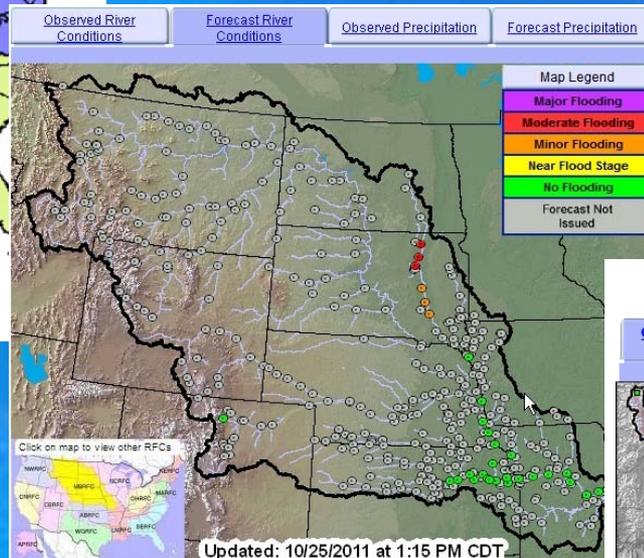
<http://water.weather.gov>

NWS Hydrologic Services

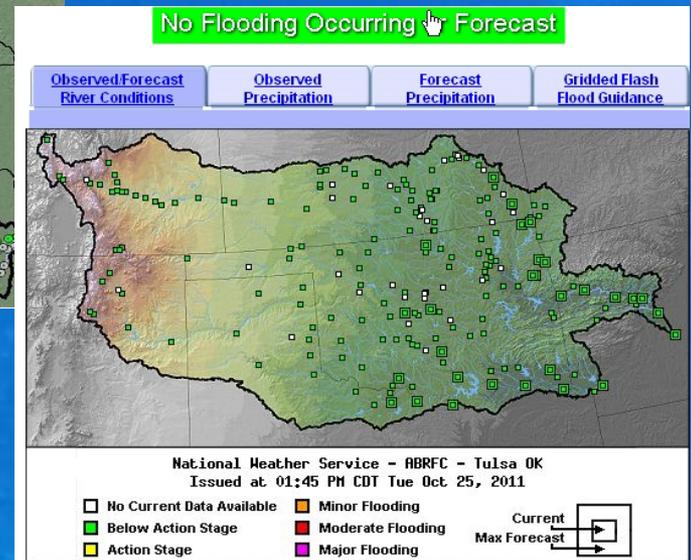
NWS is the primary source for rainfall forecast, and Hydrologic Watches & Warnings.



<http://www.crh.noaa.gov/mbrfc>



<http://www.srh.noaa.gov/abrfc>



Advanced Hydrologic Prediction Service

<http://www.weather.gov>

National Oceanic and Atmospheric Administration's

National Weather Service

Site Map

News

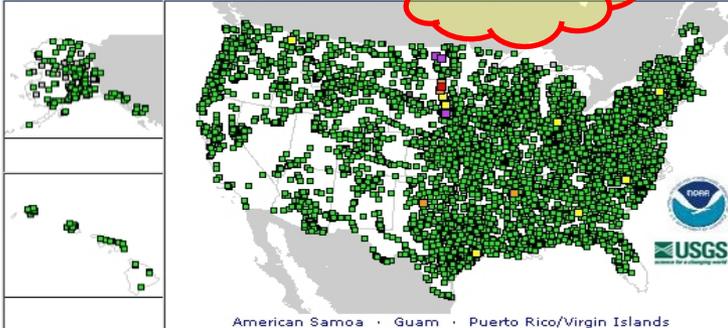
Organization

Home > Water

Warnings & Forecasts | Graphical Forecasts | National Maps | Radar | Water | Air Quality | Satellite | Climate

River Observations | River Forecasts | Precipitation | **River Download** | Other Information

All Locations Go **Click The Map To Zoom In.**



American Samoa · Guam · Puerto Rico/Virgin Islands

4368 Total Gauges
8 Locations in Flood

256 Gauges: Observations older than 24 hours
12 Gauges: Out of Service

3 Gauges: Major Flooding
1 Gauge: Moderate Flooding
4 Gauges: Minor Flooding
10 Gauges: Near Flood Stage
4082 Gauges: No Flooding

Last map update: Tue, Aug, 25, 2009 at 01:54:17 pm EDT.



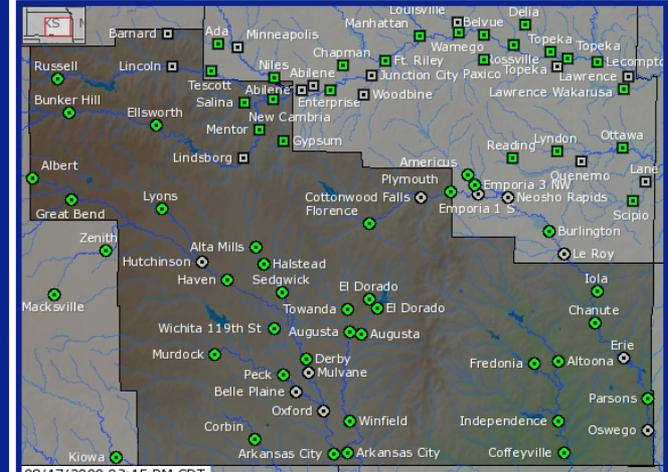
National Weather Service Advanced Hydrologic Prediction Service

Home News Organization Search for:

ALERT! A Flood Watch is in effect for portions of the area. View all valid statements/warnings or choose a specific point or river to get the details for that location.

Weather Forecast Office Wichita, KS

River Observations | River Forecasts Within 48 Hours | Precipitation | Download



Print / Save Map

Map Legend
 Hydrograph Available
 Probability and Hydrograph Available
 Major Flooding
 Moderate Flooding
 Minor Flooding
 Near Flood Stage
 No Flooding
 Observation More Than 24 Hours Old
 Out of Service

Local weather forecast by "City, ST" City, ST Go

Adjacent Areas:

National Conditions
 Rivers
 Satellite
 Climate
 Observed Precip

Local Conditions
 Warnings
 Weather Forecast
 Radar

AHPS Documentation
 User Guide

What is AHPS?
 Facts
 Our Partners

Feedback/Questions
 Provide Feedback
 Ask Questions



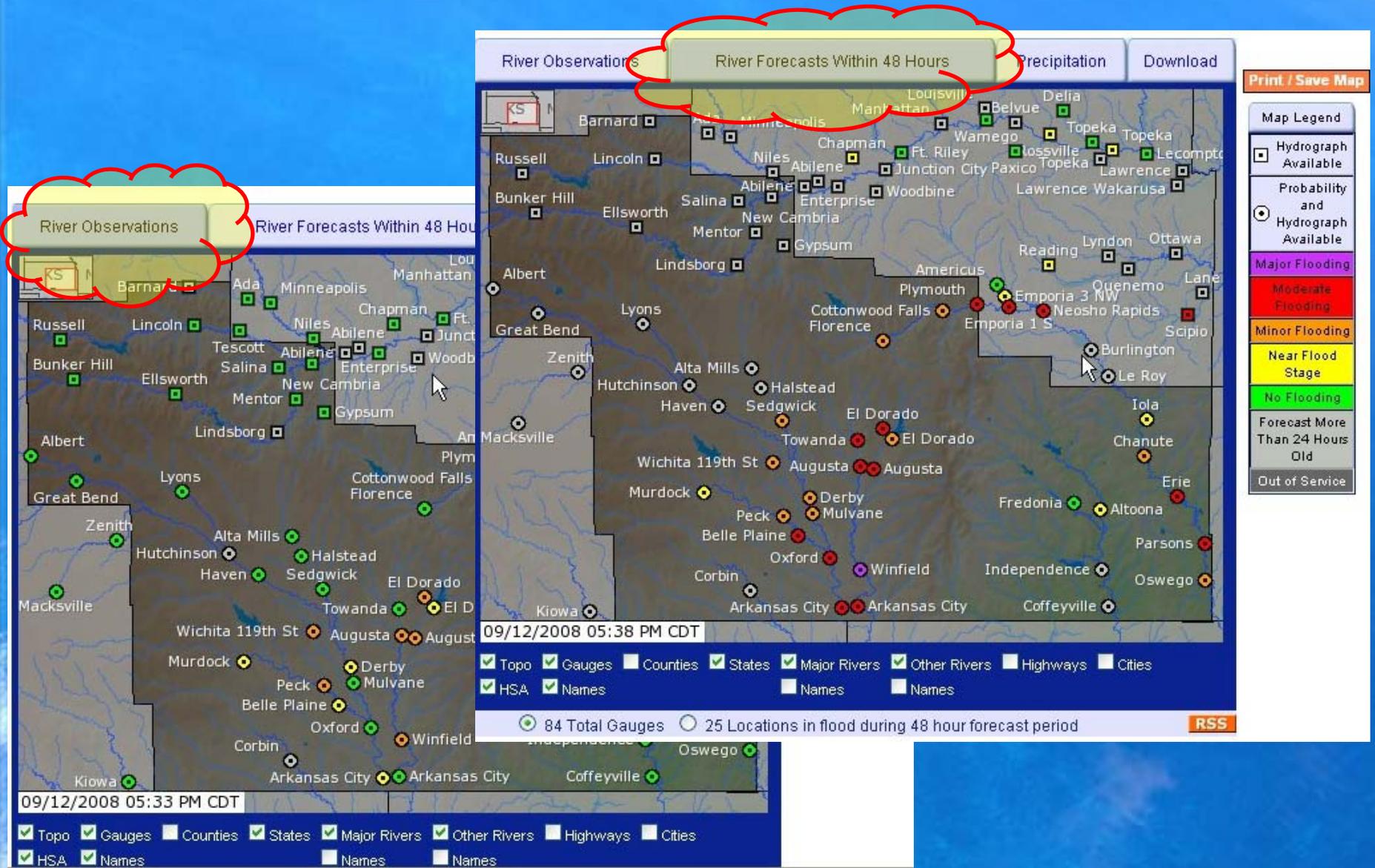
08/17/2009 03:15 PM CDT
 Topo Gauges Counties States Major Rivers Other Rivers Highways Cities
 HSA Names Names Names

85 Total Gauges 0 Zero Locations In Flood

RSS



Flood Forecast Points Observed/Forecast



River Observations

River Forecasts Within 48 Hours

River Observations

River Forecasts Within 48 Hours

Precipitation

Download

Print / Save Map

Map Legend

Hydrograph Available

Probability and Hydrograph Available

Major Flooding

Moderate Flooding

Minor Flooding

Near Flood Stage

No Flooding

Forecast More Than 24 Hours Old

Out of Service

09/12/2008 05:38 PM CDT

- Topo
- Gauges
- Counties
- States
- Major Rivers
- Other Rivers
- Highways
- Cities
- HSA
- Names
- Names
- Names

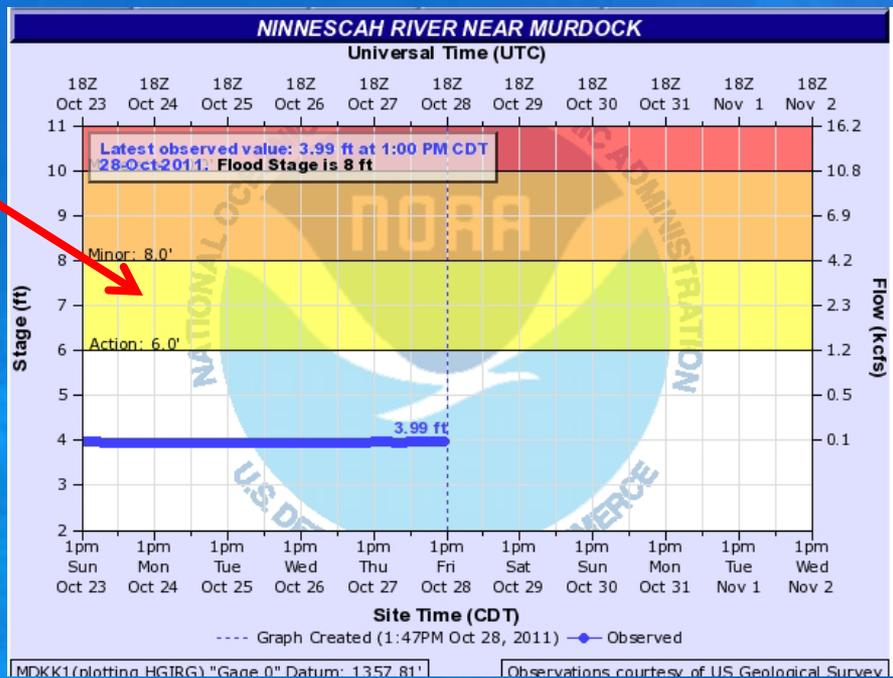
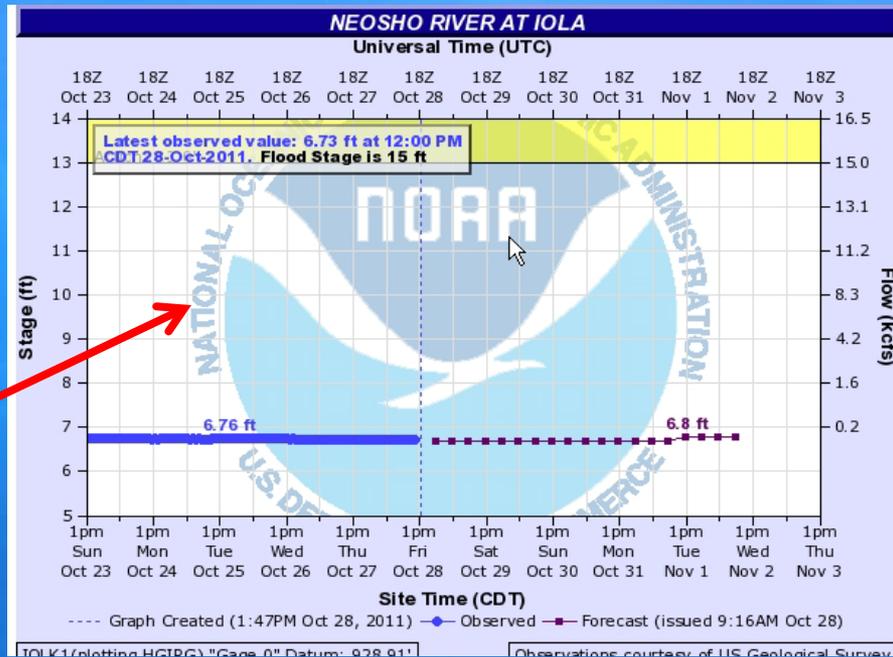
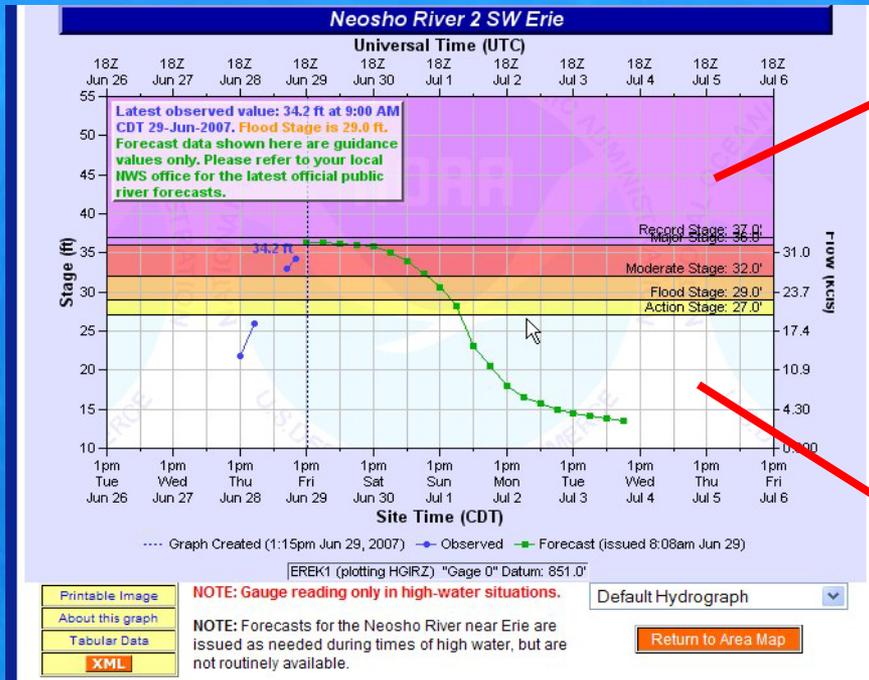
84 Total Gauges 25 Locations in flood during 48 hour forecast period

RSS

09/12/2008 05:33 PM CDT

- Topo
- Gauges
- Counties
- States
- Major Rivers
- Other Rivers
- Highways
- Cities
- HSA
- Names
- Names
- Names

Improved Graphics for AHPS Hydrographs

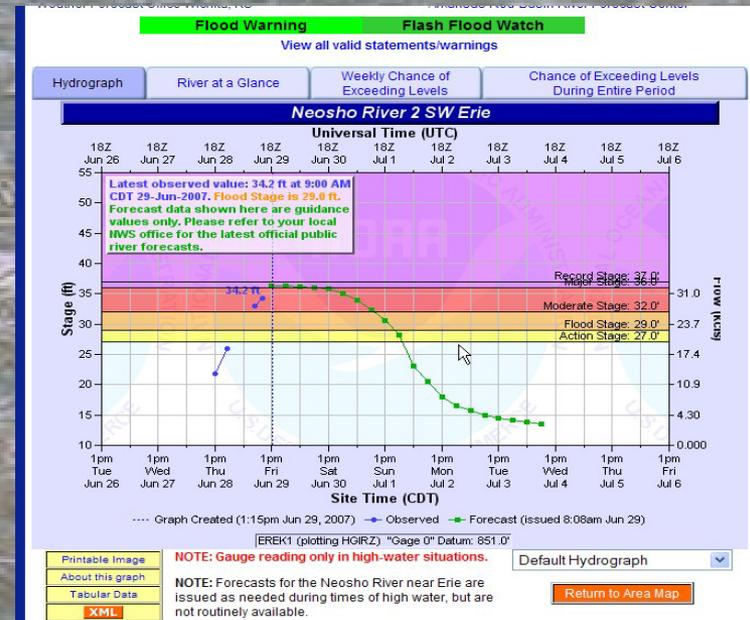


RFC provides guidance & WFO QCs data and sends the official river forecasts.

WFO-RFC Coordination/Collaboration

- WFO QPF different from HPC QPF
- High COOP precip reports
- Significant changes in river forecasts
- Non-routine updates

EMs may request Contingency Forecasts



River Stage Data from USGS & COE Web

Tulsa District
U.S. Army Corps of Engineers

CONTENTS

- [Daily Report of Reservoir conditions](#)
- [Lake Information Recording \(text-only\)](#)
- [Real-time Gage Data for Reservoirs and Stream Gages](#)
- [Real-time Gage Data for All Stations](#)
- [Real-time Hydropower Data for Power Projects](#)
- [Southwestern Power Administration Hydropower Release Schedule](#)
- [Calculated Evaporation at Tulsa District Lakes](#)
- [Historical Power Generation](#)
- [Station Quality Assurance and Maintenance](#)

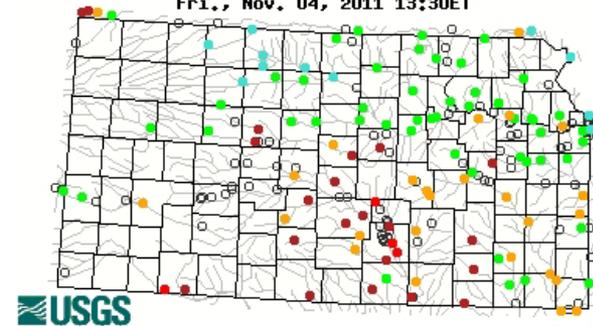
Click on a basin to get a zoomed-in view.

Lakes and river gages are selectable from the zoomed-in view.

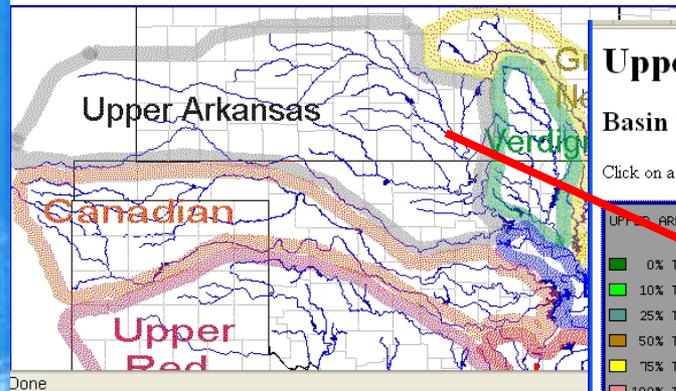
Daily Streamflow Conditions

Select a site to retrieve data and station information.

Fri., Nov. 04, 2011 13:30ET



<http://waterdata.usgs.gov/ks/nwis/rt>



Upper Arkansas River Basin

Basin Map

Click on a lake or stream gage symbol to get graphical station data.



<http://www.swt-wc.usace.army.mil/>

Prepare for the Big Event

WFO Local Experts



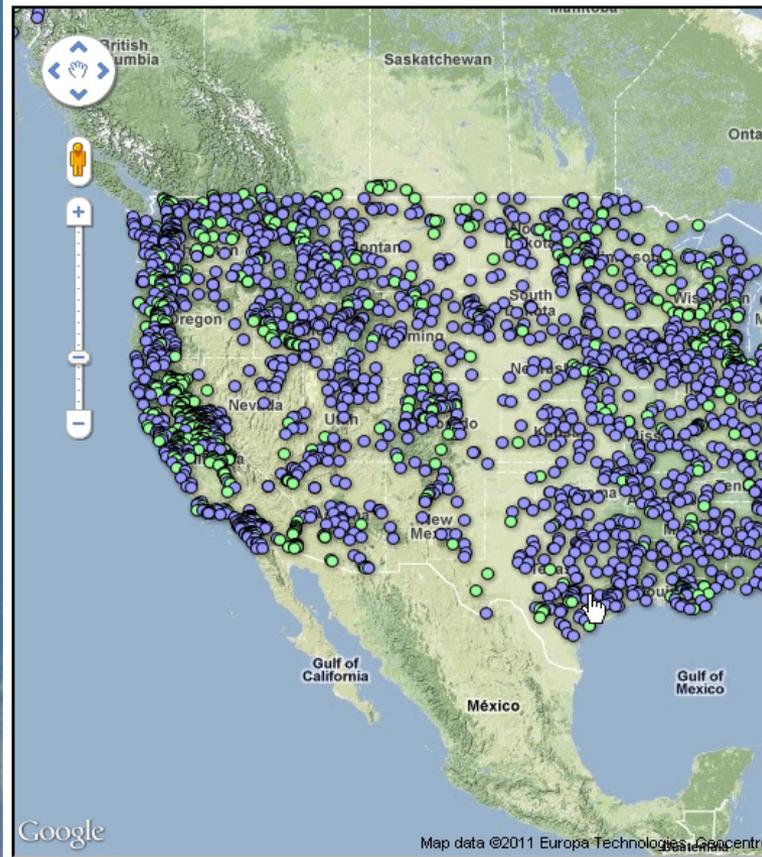
Types of Gages



River Gage Problems? EMs can use Contact Map for USGS & NWS

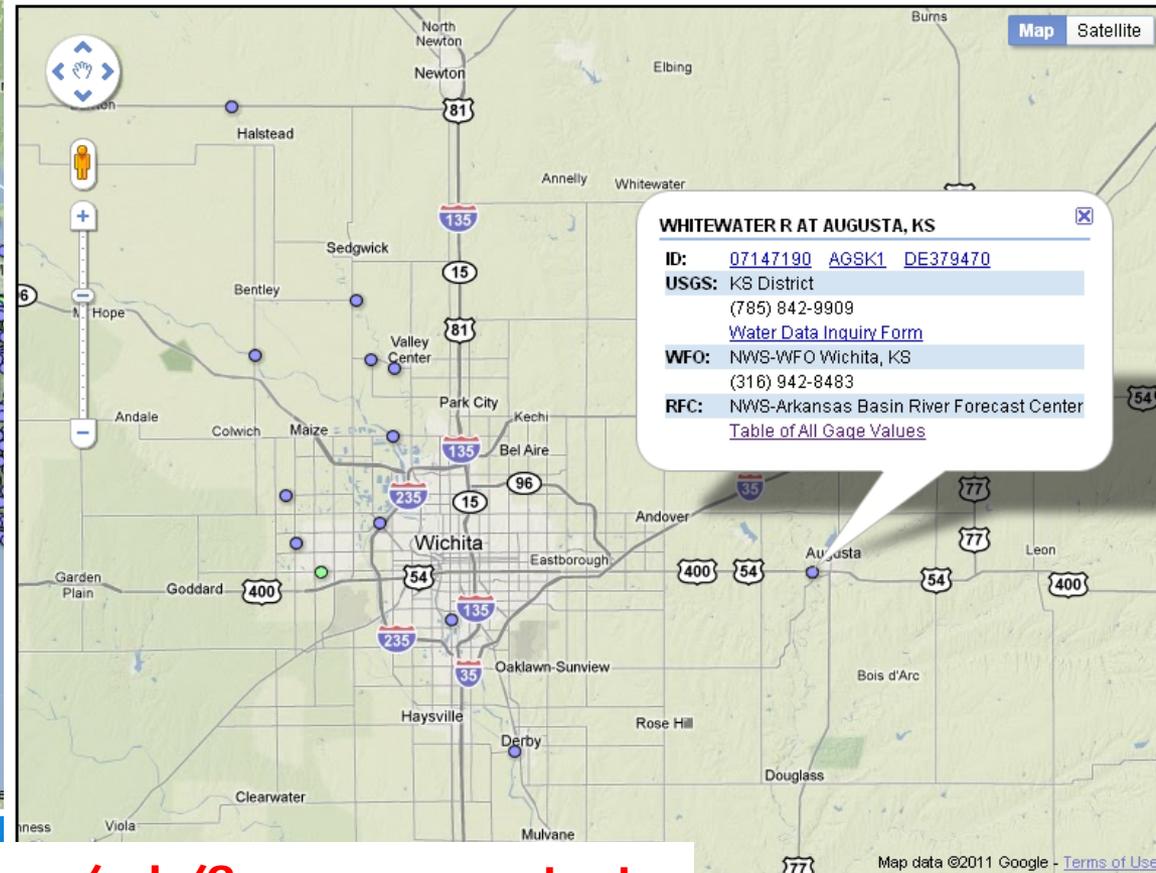
USGS Stream Gage Contact Map

This map displays USGS stream gage-specific contact information for the NWS Weather Forecast Water Science Centers; either can be contacted to report gage issues. The stream gage list was updated on August 5, 2011. A table containing gage data can be [accessed here](#).



USGS Stream Gage Contact Map

This map displays USGS stream gage-specific contact information for the NWS Weather Forecast Offices and USGS Water Science Centers; either can be contacted to report gage issues. The stream gage list was updated on August 5, 2011. A table containing gage data can be [accessed here](#).



http://www.crh.noaa.gov/crh/?n=gage_contacts



USGS Stations with Funding Issues

USGS
science for a changing world

USGS Home
Contact USGS
Search USGS

USGS Surface Water Information

◆ Home ◆ Data & Information ◆ Activities ◆ Methods & Modeling ◆ Publications ◆ Contact Us ◆ OSW Intranet

USGS Stations with Funding Issues

The following stations have been discontinued or are being considered for discontinuation or for conversion from continuous record discharge to stage-only stations. The primary reason for these actions is the lack of funding to support the continued operation of the stations. Funds for these stations are from the U.S. Geological Survey and other Federal, State, Tribal, and local agencies. For those stations that have already been discontinued, extensive efforts were made to find another funding source; however, when no funding was made available the stations had to be discontinued. For those stations at risk for discontinuation, the current funding source has indicated that it can no longer fund the station. Efforts are currently underway to identify another funding source for the operation of these stations; however, if no funding is identified, then these stations will have to be discontinued also. If you have questions about specific stations in the list below, please contact the individual identified for each State. If you have questions about the US Geological Survey National Streamflow Information Program in general please contact Mike Norris (603-226-7847; mnnorris@usgs.gov) or Robert Mason (703-648-5305; rmason@usgs.gov).

Click on a State to see State map.

Alaska	Louisiana	North Dakota
Alabama	Maine	Ohio
Arizona	Maryland	Oklahoma
Arkansas	Massachusetts	Oregon
California	Michigan	Pennsylvania
Colorado	Minnesota	Puerto Rico
Connecticut	Mississippi	Rhode Island
Delaware	Missouri	South Carolina
Florida	Montana	South Dakota
Georgia	Nebraska	Tennessee
Hawaii	Nevada	Texas
Idaho	New Hampshire	Utah
Illinois	New Jersey	Vermont
Indiana	New Mexico	Virginia
Iowa	New York	Washington
Kansas	North Carolina	West Virginia
Kentucky		Wisconsin
		Wyoming

● 0 Threatened stations operated by the USGS for which the USGS does not believe full funding will be forth coming. Or a gage for which reduced funding may

- Threatened
- Endangered
- Discontinued

<http://streamstatsags.cr.usgs.gov/ThreatenedGages/ThreatenedGages.html>

NORMAL OPERATIONAL STAFFING

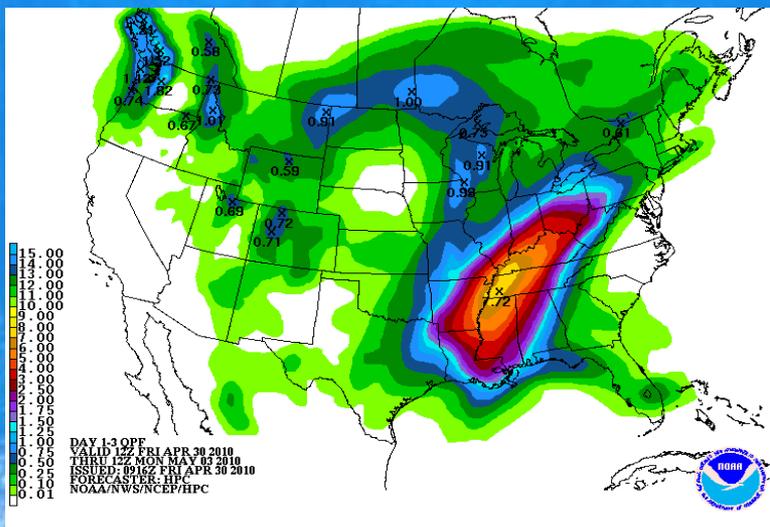
- Forecaster – Long range desk
- Forecaster – Short term desk
- HMT/Met Intern – Public desk

Other personnel available during severe weather: forecaster on extra admin shift, MIC, WCM, SOO & SH



Look Ahead at Staffing

- Anticipate severe weather & heavy rainfall. 3-Day HPC QPF.



- RFC may have modified first 12 hours of QPF from HPC – **users beware**
- Transition from severe weather to flood operations



River Flood Operations

River flood duties:

1. Reviewing River Forecast Guidance from RFCs
2. **Coordination** with RFCs
3. **Monitoring** HydroView, RiverMonitor & Flash Flood Monitor
4. **Issuing** River Flood **Warnings** & Flood **Statements**
5. Taking precip calls & disseminating via WxCoder database
6. **LSR high precip amounts** & flooding/flash flooding **reports**
7. Answering **calls** from the public and EMs
8. Possible media calls
9. Possibly conducting other duties concerning severe weather



River Flood Operations

Who works river flooding?

- Public Service desk when staffed
- Otherwise falls on forecaster
- SH available to assist or takes on responsibility especially during high impact events

All operational staff trained in hydro operations.



Areal Flooding Issues

- Short term desk handling these responsibilities or extra shift or admin personnel available
 - FFMP (Flash Flood Monitoring Prediction)
 - **Coordinating** with surrounding WFOs
 - Issuing & Verifying warnings
 - Contact with **county warning point**
 - Media calls?
 - Contingency Forecast
 - Updates on Forecasts, TAFs, weather graphic



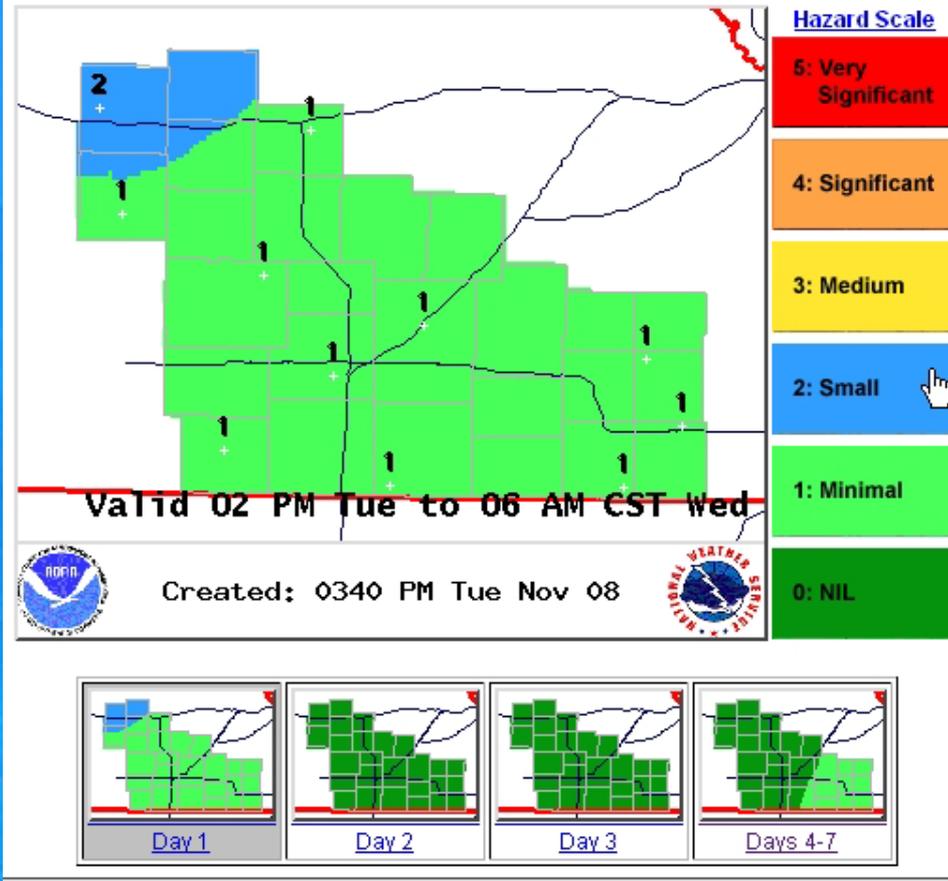
Awareness in Forecast (Un)Certainty

- Expressed in Flood Watch or ESF – Hydrologic Outlook as basin areas being affected.
 - “Within-bank rises”
 - “Significant rises”
- “RIVER FLOODING WILL BE LIKELY WITH SIGNIFICANT FLOODING POSSIBLE.”*
- Hazardous Weather Outlook



Hazardous Weather Outlook

Hazardous Weather Outlook - Day 1



Why should EMs/City Officials care about River Forecasts?

Plan ahead:

- Festivals (Walnut River Festival)
- Evacuations (Inmates, nursing homes, neighborhoods)
- Close Floodgates
- Other Mitigation Efforts- Oil spills



Communication Is the Key to Public Safety

- Your reports help the NWS to issue warnings and statements with ground truth information.
- Ground truth information is what gets everyone's attention.
- Never assume that we know everything that is happening.



Support between USGS, COE & NWS



USGS Streamgage Program DCPs

- Setup Raingage Pole Modification
- Continue real-time precip data



NWS assisting
with Streamflow
Measurement



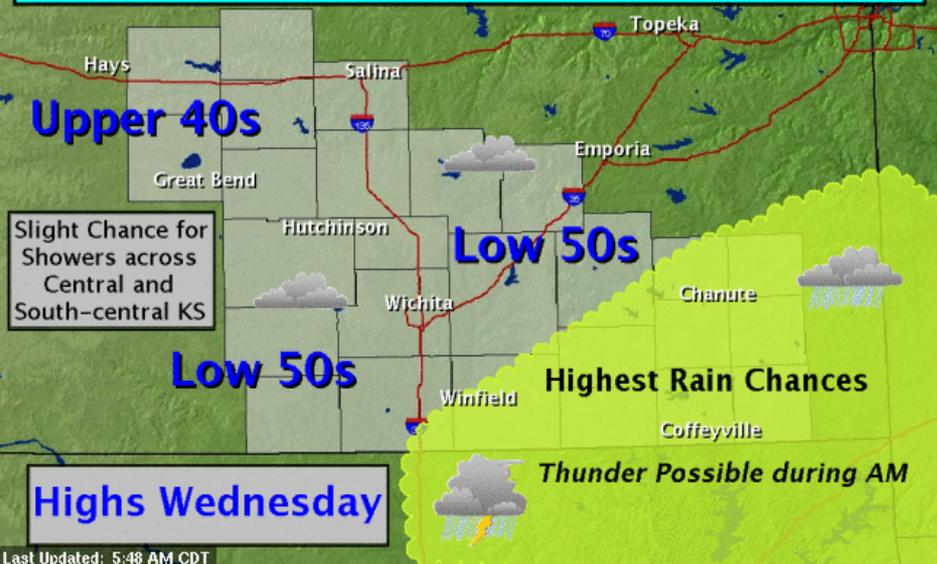
KC COE, USGS, & NWS
Surveying a new flood stage
for Smoky Hill at Mentor



Looking Ahead - Weather Story

High Impact Weather? Conference Calls

Breezy and Much Cooler on Wednesday



Tuesday, October 25, 2011

National Weather Service - Wichita, Kansas



Monday, November 7, 2011

National Weather Service - Wichita, Kansas



Questions?

Janet Spurgeon NWS Wichita, KS

316-942-8483 x493

janet.spurgeon@noaa.gov

