

Kansas Big Water

*Presented by the
U.S. Geological Survey*

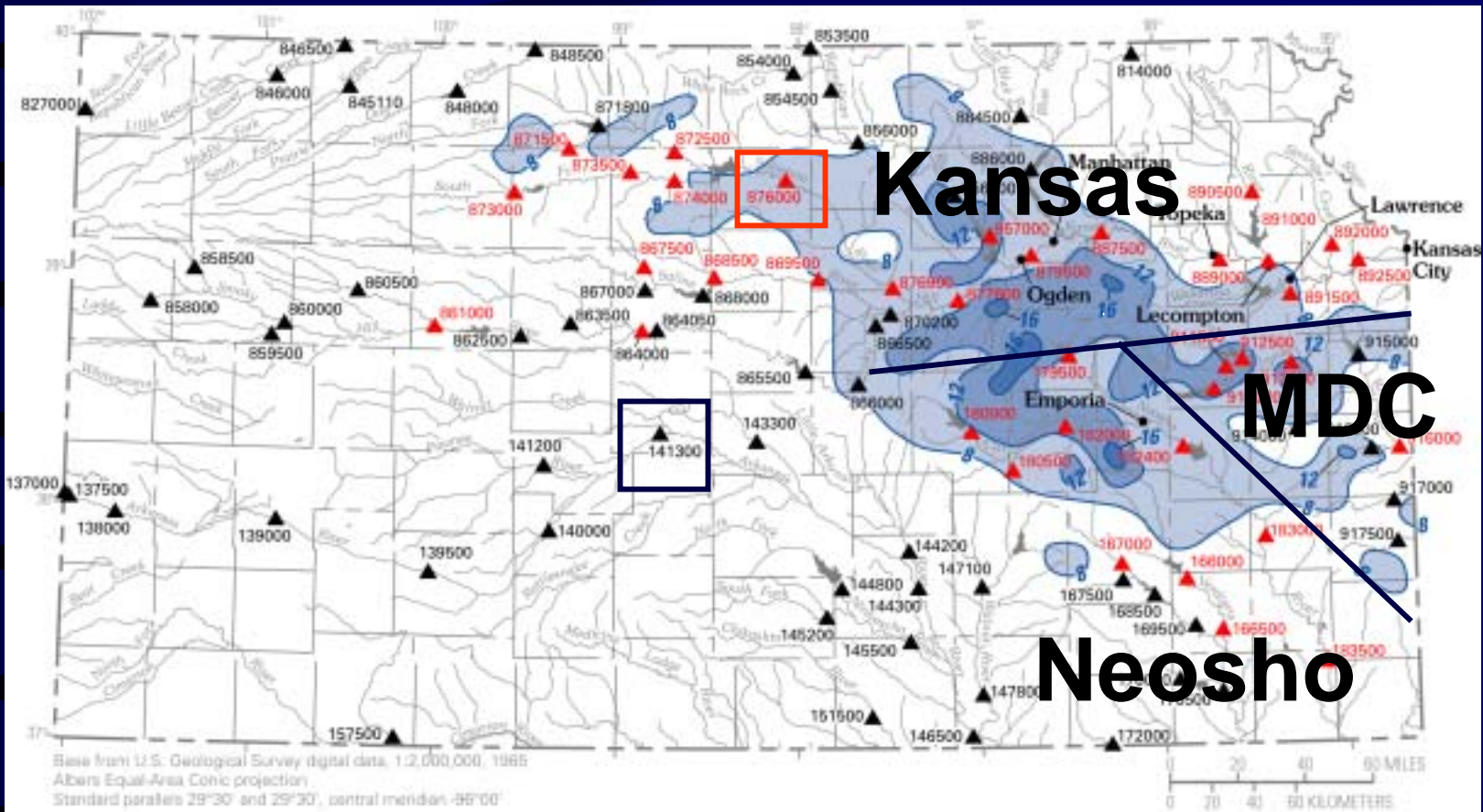


1951 Memories





Figure 1. Women and children evacuated from ruined North Topeka were carried ashore at the north end of Topeka Avenue bridge by rescue workers (photograph courtesy of Topeka Capital Journal).



Base from U.S. Geological Survey digital data, 1:2,000,000, 1985
 Albers Equal-Area Conic projection
 Standard parallels 29°30' and 29°30', central meridian 96°00'

EXPLANATION

- 12— Lines of equal total rainfall, July 9–13, 1951—
Interval 4 inches
- 147100 ▲ Streamflow-gaging station and number
- 166200 ▲ Streamflow-gaging station and number—
Peak of record in 1951



North Lawrence, Kansas, July 13, 1951



Kansas City Industrial District, July 13, 1951



Airport

Marais des Cygnes River in Ottawa, Kansas, July 11, 1951



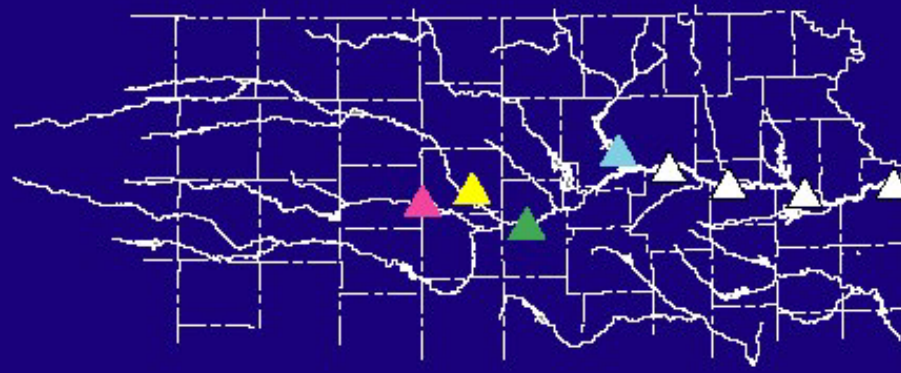
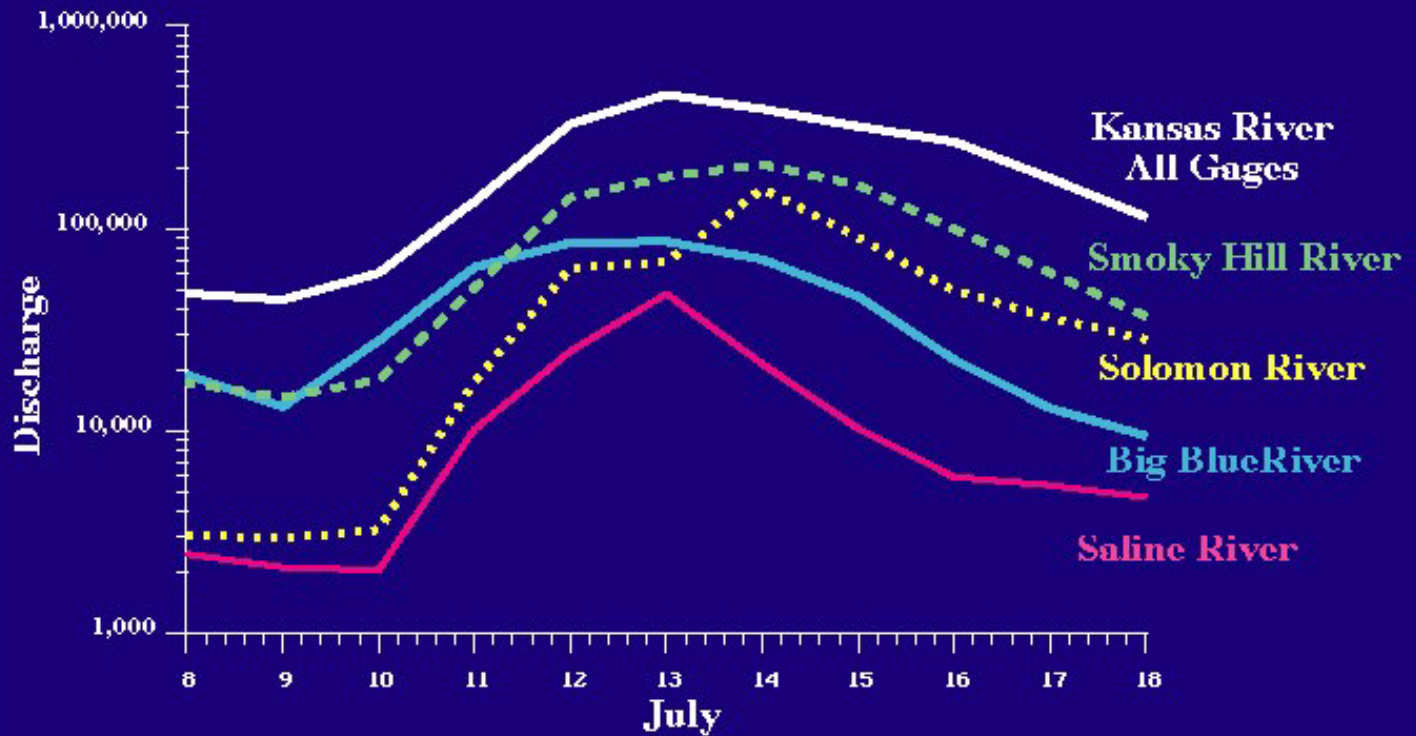
Neosho River at Parsons, Kansas, 1943
67,000 CFS



In 1951 the water was 11 feet deeper -- 410,000 CFS

Flood Peaks in Kansas River Basin

Flood peaks in the Kansas River Basin did not occur in the usual downstream order.





Transportation across the State came to a standstill.



**Fire trucks
could not
reach the
blaze as
a result of
the high
water.**

**Everyone had to deal with the mud
and all that was in it.**



The infrastructure of utilities and roads was disrupted for months.

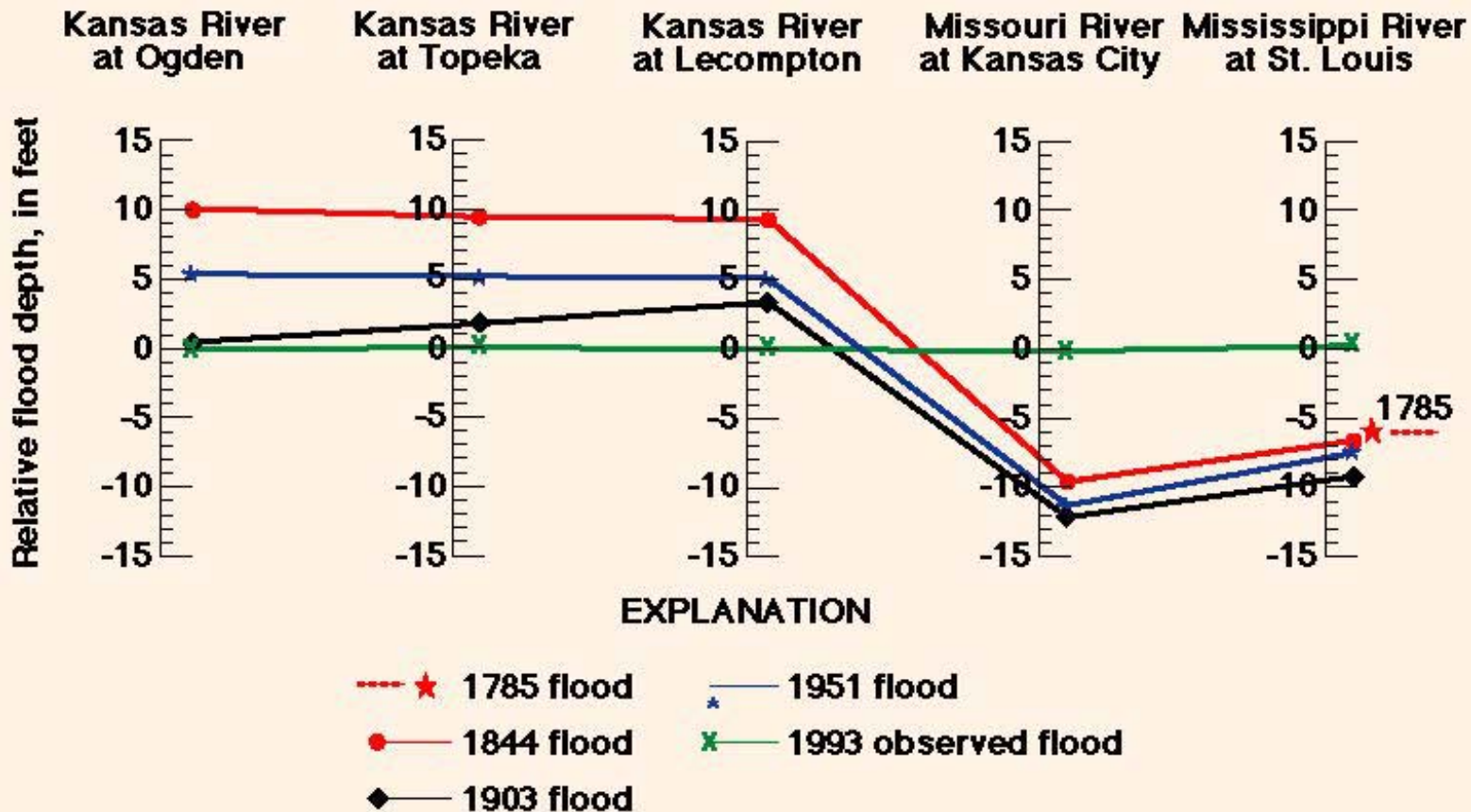


**Prime
farmland
was
scoured
and
mounds
of sand
left
behind.**





Comparing the flood depths of 1993 with 1951, 1844, and 1785



The Great Flood of 1844 had few victims.



Santa Fe Trail 1844



**Lawrence, Kansas, 1903, looking north,
Massachusetts St. Bridge has just washed out.**



Reducing Future Flood Losses

Levees

Flood-Control Reservoirs

Flood-Insurance Requirements

Flood Forecasting

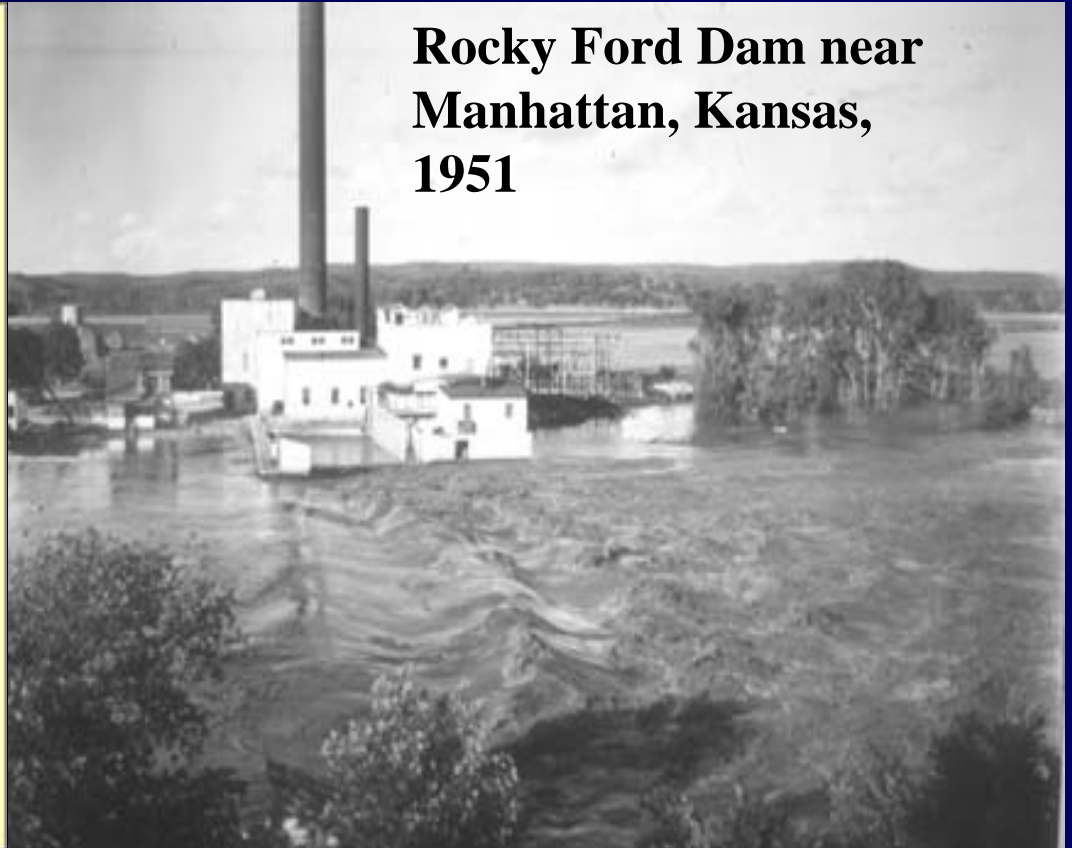
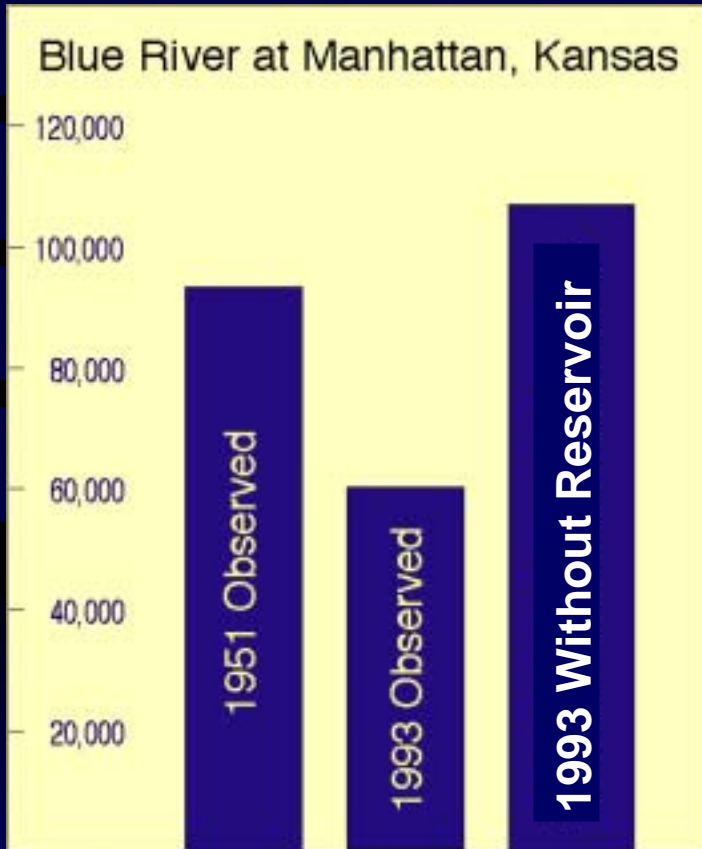
**Levees protect some areas but
make flooding deeper in others.**



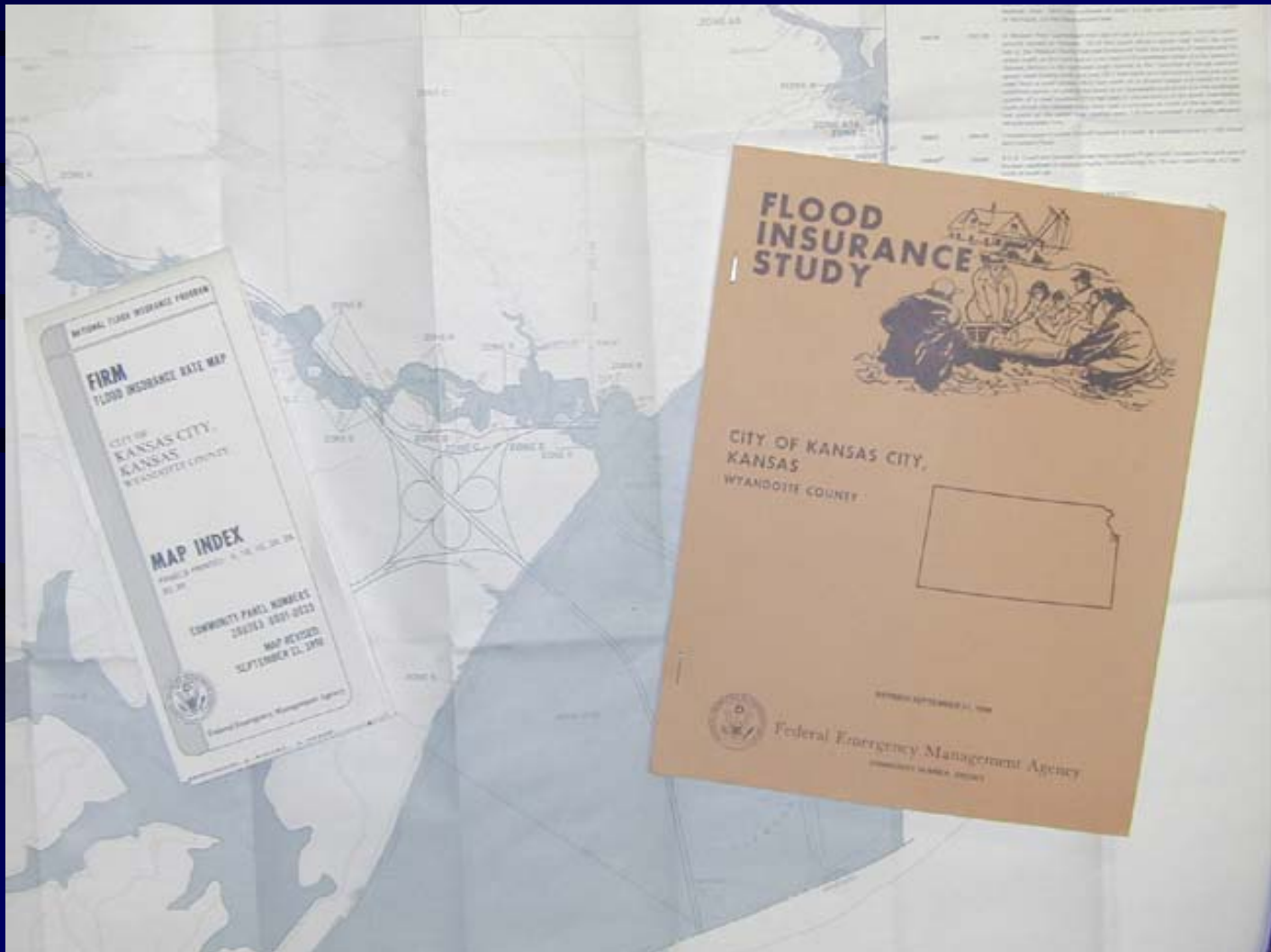
**Flood-control reservoirs reduce flooding
downstream. Tuttle Creek Lake, July 1993**



Tuttle Creek Lake significantly reduced the 1993 flood on the Blue River at Manhattan, Kansas.



Federal Emergency Management Agency, Flood Insurance Studies keep flood-plain development to a minimum



Flash-flood warnings and flood-crest predictions are generated by the National Weather Service and disseminated through radio, television, and other warning systems

**NHZ002>003-005-007VTZ004-007-010-012-272200-
RIVER FLOOD STATEMENT
NATIONAL WEATHER SERVICE TOPEKA, KS
1115 AM CDT FRI JULY 26 1993**

...A FLOOD WARNING REMAINS IN EFFECT FOR THE KANSAS RIVER...

KANSAS RIVER...

NEAR LECOMPTON THE RIVER STAGE IS AT 22.5 FEET AT 1030 AM AND IS CONTINUING TO RISE. THE RIVER WILL CREST WITHIN 24 HOURS NEAR AS STAGE OF 26.5 FEET. FLOOD STAGE AT LECOMPTON IS 17 FEET.

DO NOT DRIVE THROUGH FLOOD AREAS. MONITOR NOAA WEATHER RADIO... OR YOUR LOCAL NEWS STATION FOR UPDATED INFORMATION FROM THE NATIONAL WEATHER SERVICE

CAP/NWS TOPEKA KS



**All these methods
of reducing flood losses
require hydrologic data.**

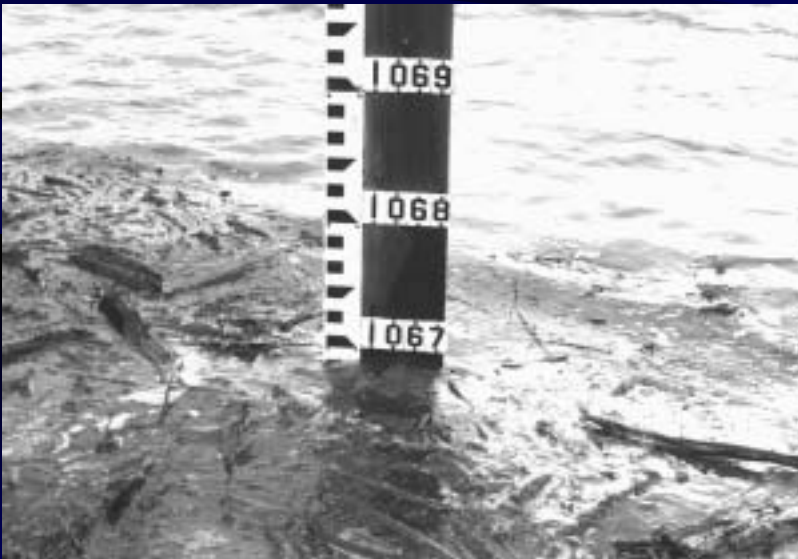
**The U.S. Geological Survey is the
premier agency for the collection
of hydrologic data and the
analysis of that data.**



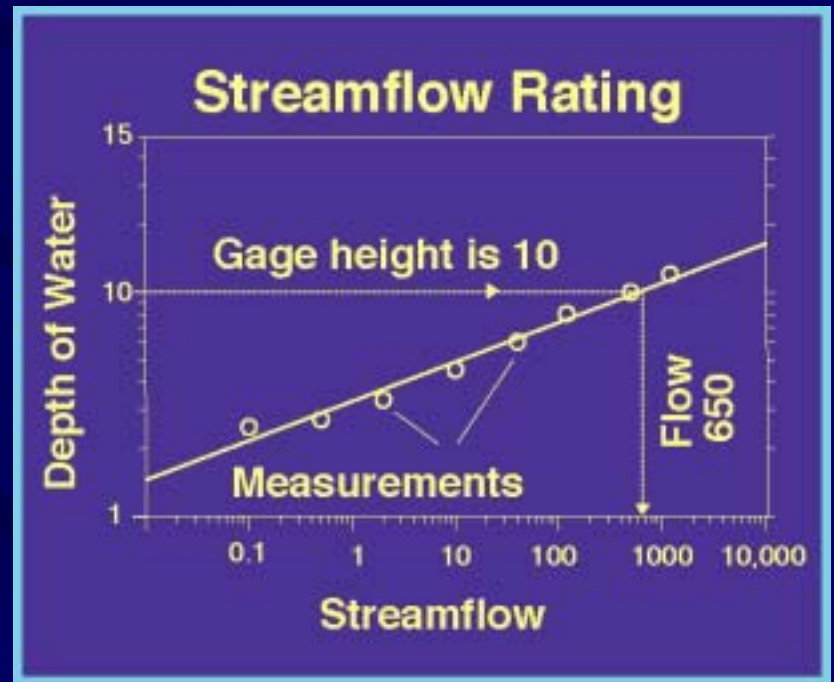
1903



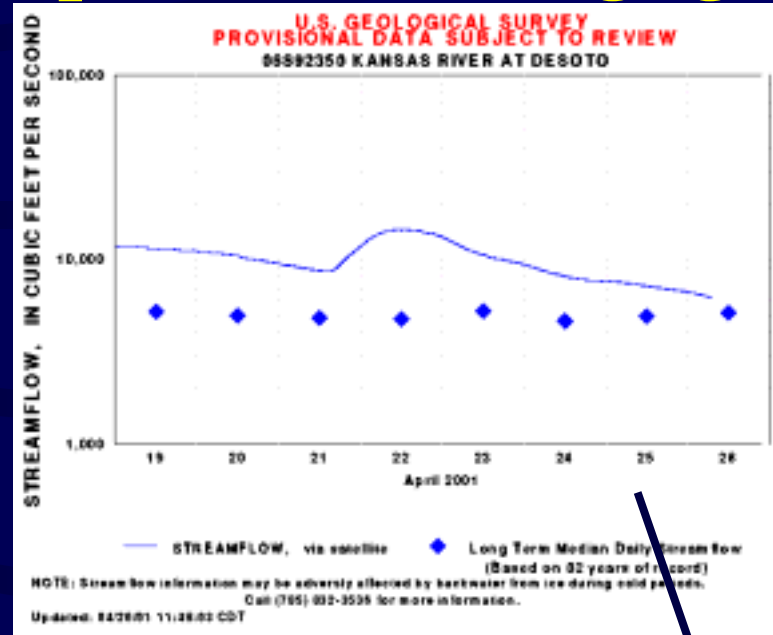
2001



Depth of water

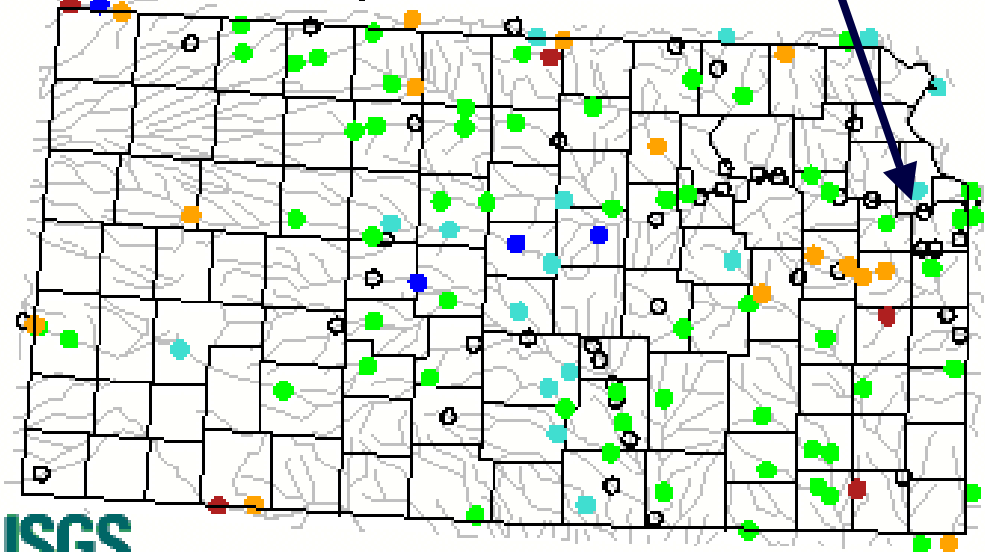


<http://ks.water.usgs.gov>

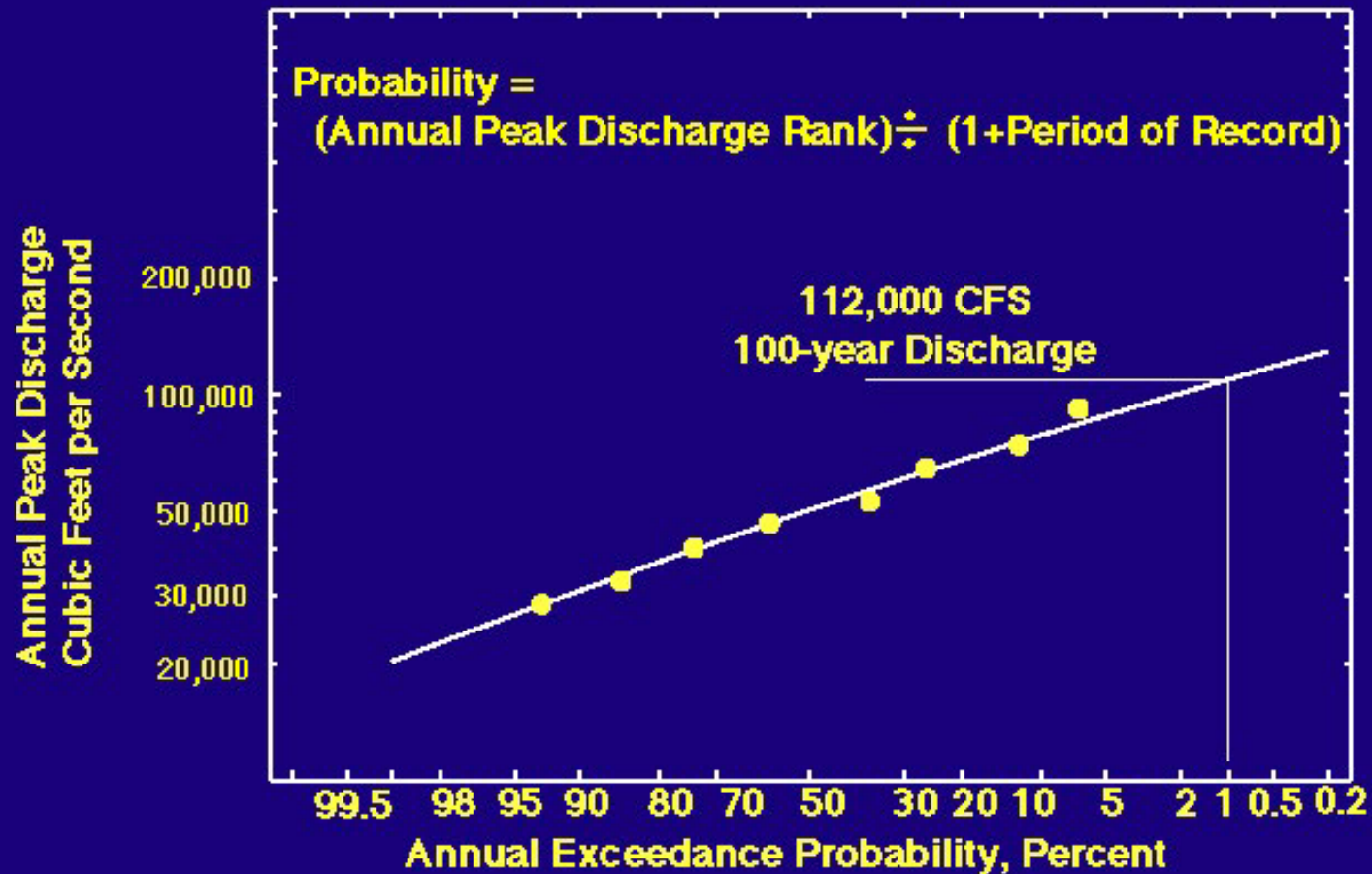


A satellite link from the river to the USGS office allows near real-time dissemination of streamflow data on the Web for 150 critical locations throughout Kansas

Thu., Apr. 26, 2001 13:04GMT



Flood-Frequency Analysis



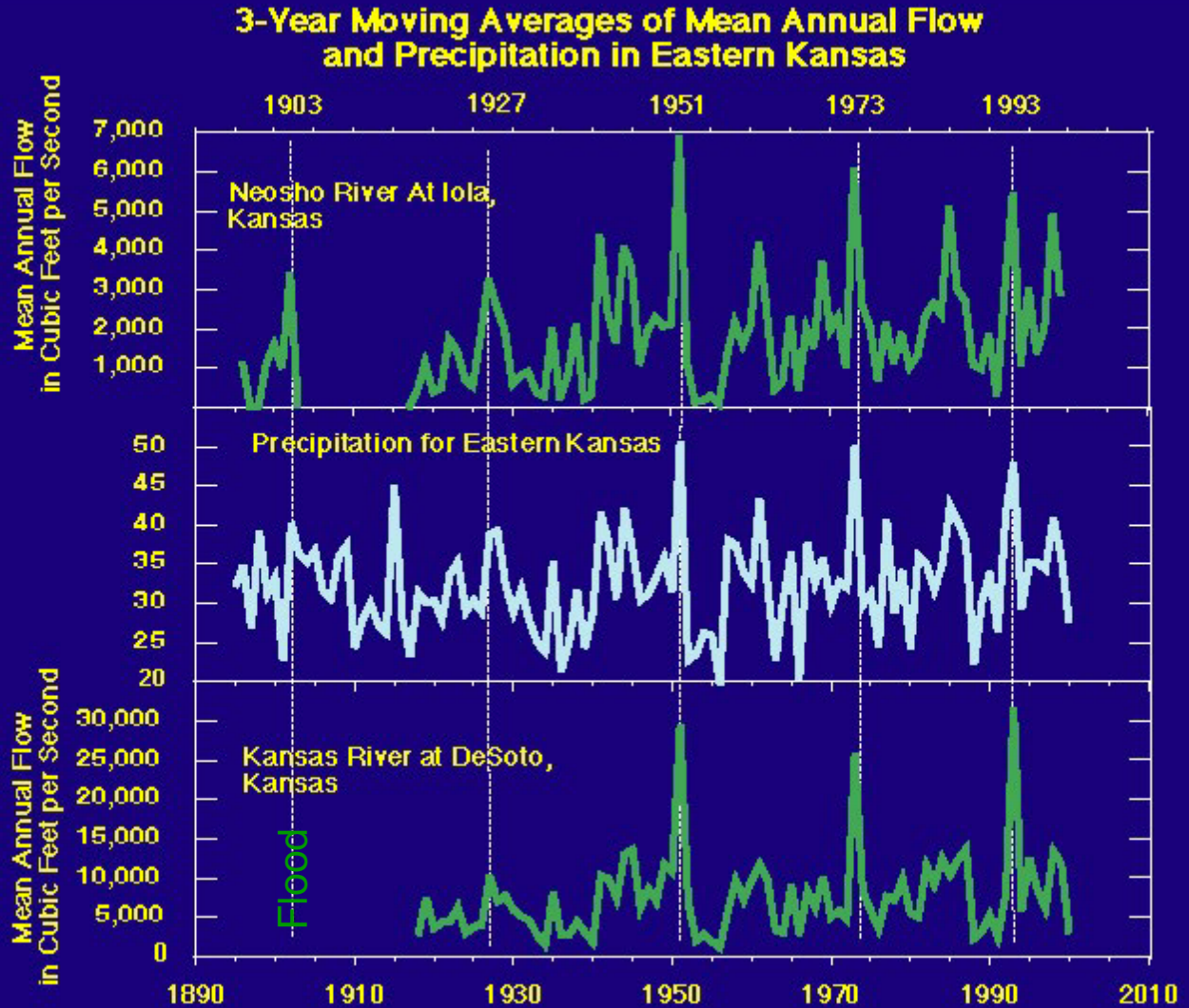
The 100-year flood has a 1% chance of happening in any 1-year period

Will the Big Waters come again?

YES!

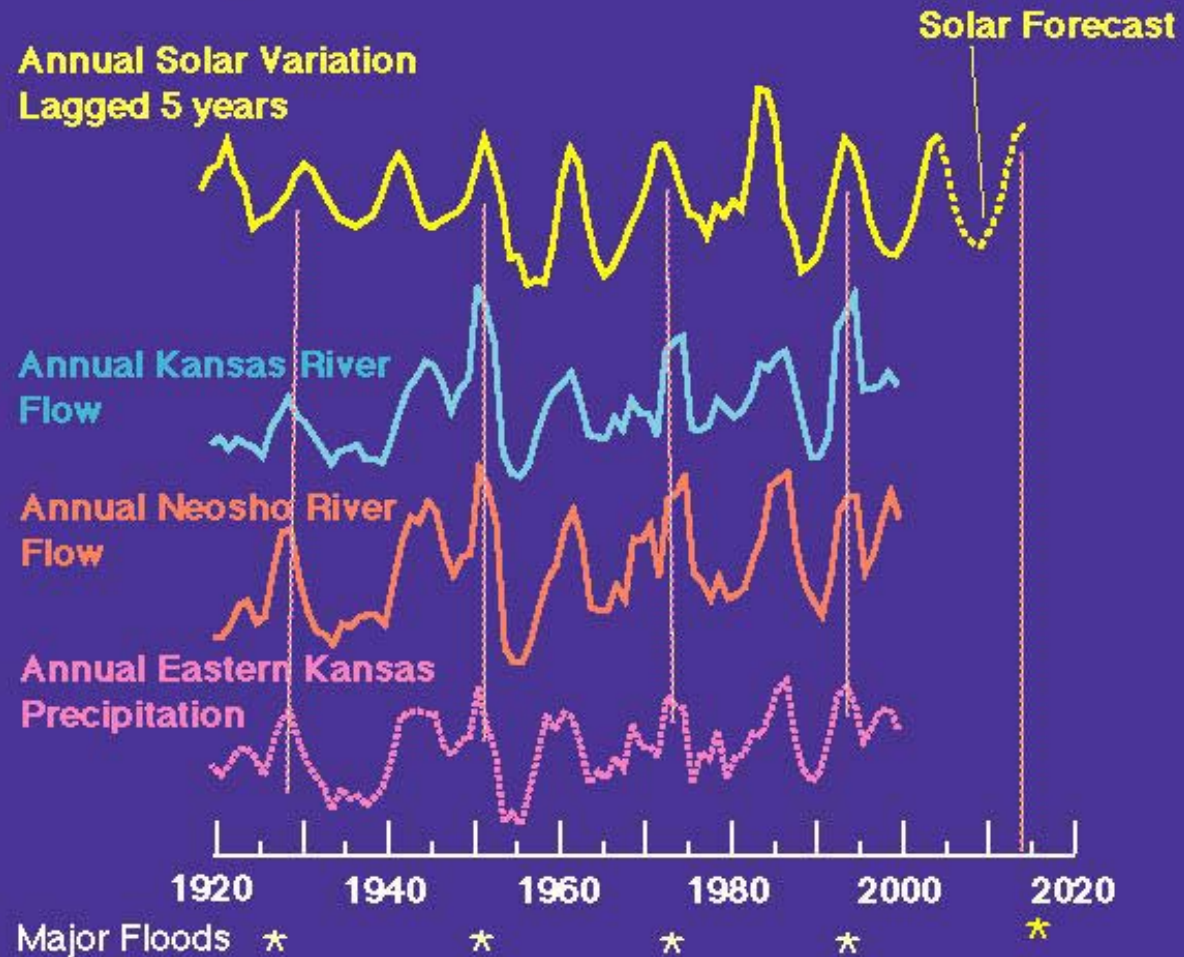
But When?

Large floods occur on the average every 22 years, while smaller floods generally occur midway between



Since solar variations are lagged 5 years and can also be forecast out for nearly a decade, we may be able to determine which years are at a high risk for major floods.

Major Flood Forecasting



Hydrologic Data, Analysis, and Research



1951



2001



science for a changing world





Visit our Web site at

<http://ks.water.usgs.gov>