

ROLLA WATER RESOURCES LUNCHEON SEMINAR

Thursday, May 6, 2010
11:45 a.m. - 1:00 p.m.
U.S. GEOLOGICAL SURVEY
1400 INDEPENDENCE ROAD
ROLLA, MO 65401

Gage Data on the Mississippi River—A Long Look Back in Time

Richard J. Huizinga, P.E.
U.S. Geological Survey

The streamgage at St. Louis, Missouri, has one of the longest continuous periods of record of any gage in the U.S., with daily stage and discharge values dating back to January 1, 1861. This length of record provides a valuable tool by which various impacts on the river system can be evaluated. In recent years, some concerns have been raised about the effect of river control structures on stage and flow in the Mississippi River. Certain researchers have found what appear to be trends of rising stage for a given discharge with time.

Therefore, an examination of data from two continuous stage and discharge streamgages and one continuous stage-only gage on the Middle Mississippi River was made to determine stage-discharge relation changes through time and to investigate cause-and-effect mechanisms through evaluation of hydraulic geometry, channel elevation and water-surface elevation data. Data from discrete, direct measurements at the streamgages at St. Louis, Missouri, and Chester, Illinois, during the period of operation by the U.S. Geological Survey from 1933 to 2008 were examined for changes with time. The daily stage and discharge values from the streamgage at St. Louis were examined throughout the historic period of record before operation by the U.S. Geological survey (1861-1933) for potential trends. Daily stage values from the streamgages at St. Louis (1861-2008) and Chester (1891-2008) and the stage-only gage at Cape Girardeau, Missouri (1896-2008), throughout the historic period of record also were examined for changes with time.

This talk will present the results of this research, and discuss the possible cause-and-effect mechanisms for the changes with time that were found.

Biography: Richard J. Huizinga, P.E., began his career with the U.S. Geological Survey as a student researcher in 1991, and has nearly 20 years experience with surface-water hydraulics and bridge scour. He received his B.S. in Civil Engineering from the Missouri University of Science and Technology (Missouri S&T, formerly the University of Missouri-Rolla) in 1991, and his M.S. in Hydrology and Hydraulics from Missouri S&T in 1993. He is a member of the American Society of Civil Engineers, and is a registered Professional Engineer in Missouri and Kansas.

---Next Luncheon---

Thursday, September 16, 2010 11:45 AM – 1:00 PM

We need speakers for next year. If you have a suggested topic, please contact Robert Holmes (bholmes@usgs.gov)

Park in the USGS south lot (free parking) and enter the visitor entrance in the southwest corner of the building. For those of you attending the meeting from outside Rolla, you can find directions to the USGS Rolla Center at: <http://mcmcweb.er.usgs.gov/>. The Rolla Water Resources Luncheon is a Brown Bag Lunch event. For those unfamiliar with the area and disinclined to brown bag it, you can find takeout options offerings among the Rolla restaurants found at: <http://mcmcweb.er.usgs.gov/rollamap09ext.pdf>