

ROLLA WATER RESOURCES LUNCHEON SEMINAR

**Thursday, November 5, 2009
11:45 a.m. - 1:00 p.m.**

**LUNCHEON LOCATION:
U.S. GEOLOGICAL SURVEY
1400 INDEPENDENCE ROAD
ROLLA, MO 65401**

Development of Dam Breach Inundation Studies Using Advanced Remote Sensing (LiDAR) for Emergency Action Planning

By

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Accurate dam breach analyses and inundation maps are critical components for developing useful Emergency Action Plans (EAPs) for downstream environment zones. Recent national guidance suggests EAP development as a top priority for all high hazard dams. The Missouri Department of Natural Resources Water Resources Center (WRC) has created a methodology to utilize high resolution LiDAR data to enhance breach inundation mapping. The WRC is using LIDAR in conjunction with ArcView, HEC-RAS and GeoRAS, to perform these analyses.

The flood produced by a dam breach is very different from that produced by a rainfall event. A dam breach and subsequent flood wave develop over a relatively short time and flow dynamically through the downstream environment rather than a steady state backwater calculation. The primary product of an analysis is a map of the downstream area illustrating the extent of the maximum water surface during the flood. As the project progresses, the completed inundation maps will be transferred to the dam owner and county emergency managers for additional development of the site EAP. Once part of an EAP, the inundation map will be used in creating an evacuation map, which incorporates access and egress routes, critical infrastructure, and emergency planning. For work to be effective, cooperation is necessary between the WRC, dam owners, and emergency responders, along with input from the public. Once several of these analyses are completed for a particular county, public meetings are proposed to bring together stakeholders for discussion and education. In the event of a dam failure, it is critical that emergency managers focus their limited resources where they are needed most. The objective of accurate inundation mapping is to facilitate this focus. A case study involving a high hazard dam will be presented to demonstrate the dam breach and inundation mapping methodology.

---Next Luncheon---

**Thursday, January 21, 2010 11:45 AM – 1:00 PM
Speaker to Be determined**

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>