

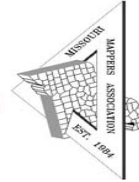
**Missouri GIS Advisory Committee's  
Advanced LiDAR Workshop  
Hosted by Washington University  
Lunch sponsored by the Missouri GIS Advisory Council (MGISAC)  
Breaks sponsored by Missouri Mappers Association**

**Agenda – August 21st, 2012  
Mallinckrodt Multipurpose rm., Danforth Campus, Washington University, St. Louis**

**Location map: <http://binged.it/R0gK7j>**



MISSOURI GEOGRAPHIC INFORMATION  
SYSTEMS ADVISORY COUNCIL



**Adv. LiDAR Workshop Registration - [http://advlidar\\_workshop\\_washu.eventbrite.com](http://advlidar_workshop_washu.eventbrite.com)  
8:30 am – 3:30 pm**

**8:30 – 9:00am – Welcome, acknowledgements and introductions** (Coffee provided by the Washington University), **Elizabeth Cook, USDA, MGISAC**

**9:00 – 10:00am - Making and Delivering Basic LiDAR Derivatives**

Your LiDAR data have been purchased, delivered, and quality assessed. So now you are ready to use them! We will cover the formats of data typically delivered by contractors and how to process these into the information required by you and your user community (both GIS and CAD). We will discuss making contours, hillshades, and slope maps, as well as how to exploit the information beyond “bare earth” provided in the point cloud (LAS files). Lastly, a few strategies for archiving and delivery of data will be covered.

**Elizabeth Cook, USDA, MGISAC**

**10:00 – 10:15am - Break – provided by MOMAPPERS**

**10:15 – 10:45am – Duck Creek Wetland Renovation: An Example of Utilizing LiDAR Data for Conservation.** Over the last 5 years we have been in the process of renovating one of our oldest wetland management areas in the state. LiDAR has given us a better understanding of the landscape by allowing us to take a broader view of the basin, identify old drainages, and simulate flooding. This progression has allowed us to integrate our engineering and management with the lay of the land, which will ultimately benefit the natural resources the use Duck Creek.

**Frank Nelson – Missouri Dept. of Conservation.**

**10:45 – 11:15am Use of LiDAR for Mapping Vegetation Height**

MoRAP has used LiDAR to create vegetation height data layers for multiple projects, including wetlands mapping in the Missouri River floodplain in the St. Louis Metro area. Vegetation height has proven to be a valuable component in differentiating vegetation structure, which is difficult to do with multispectral satellite imagery.

**Ronnie Lea, Missouri Resource Assessment Partnership (MoRAP), UMC**

**11:15 – 11:45pm Lower Meramec River Flood Path Application**

USGS has proposed using recently acquired LiDAR data for the Meramec River basin in a hydrologic model to compute initial flooding, peak flow and water depth during a flood event. Use of the LiDAR data will significantly improve existing flood forecasting by the National Weather Service, especially as existing elevation data is out of date, and does not include the 2005 federal levee at Valley Park. **Rodney Southard- USGS MO Water Science Center**

**11:45 – 12:15pm Outdoor Sound Modeling with LiDAR** - After initial deployment of our new outdoor warning system in St Louis County, we found gaps in coverage that were likely caused by terrain. Using bare earth LiDAR from the 2005 MSD flight and GIS version of the System for the Prediction of Acoustic Detectability (SPreAD-GIS) by Sarah Reed at Colorado State, we constructed a terrain and land cover based model of sound propagation from our outdoor warning system. Using the outputs of this analysis, we developed spatial profiles of the coverage site, selected alternative gap siren sites, and modeled the likely outcomes of the gap alternatives to gain approval of the purchase of additional sirens for these gaps.

**Brett Lord\_Castillo, St. Louis County Police**

**12:15 – 12:45pm Lunch provided by MGISAC (Lunch – Panera’s catered on-site)**

**12:45 – 1:15pm An overview of the 2012 Missouri LiDAR Partners project.** Topics will include a description of the project, areas covered, the technical specifications of the project deliverables, over view of the acquisition process, survey control, post processing and hydro flattening. Embedded in the discussion will be lessons learned and when to expect the data to be available. **Wade Williams, Lower Grand LiDAR Project**

**1:15 – 1:45pm Using LiDAR for Dam Breach Inundation Mapping** - The Missouri Department of Natural Resources is using LiDAR data to produce breach inundation maps for the state’s high hazard potential dams. LiDAR data in grid form are used to generate cross sections for hydraulic models, the results of which are mapped using GIS and the original grids. The completed maps are incorporated into emergency action plans, which improve emergency response in the event of an emergency. **Michael Weller, Missouri DNR, WRC**

**1:45 – 2:15pm LiDAR in ArcGIS 10.1**

Point-cloud visualization, Data conversion (creating rasters from points using ArcGIS geo-processing) LiDAR in mosaic datasets, LiDAR image services. **Greg Brunner (ESRI)**

**2:15 – 2:30pm Break – provided by MOMAPPERS**

**2:30 – 3:00pm The LiDAR Program Initiative and Contracting for LiDAR in Missouri –** Where is LiDAR available in Missouri, where did it come from, and how can I get it? While more than a third of Missouri has LiDAR today, the resolution of that data varies, from very high such as that collected in Greene County, to much lower as in Wright or Dent Counties. The LiDAR Stakeholders Consortium consisting of federal and state agencies has been taking advantage of SEMA funding for lower resolution LiDAR by adding funding to achieve LiDAR that will meet the requirements of those agencies for data that supports their programs. The consortium has further worked with MSDIS to make that data available to the public through a partnership with Washington University in St Louis. Contracting can be done through two federal contracts, - the U.S. Army Corps of Engineers – St Louis Technical Center of Expertise for Photogrammetric Mapping, or the USGS Geospatial Product and Service Contracts (GPSC); or by contracting on your own. **Ray Fox, USGS Missouri State Liaison**

**3:00-3:30pm USGS QA - How the LiDAR is evaluated**

The USGS NGTOC co-located in Rolla and Denver completes a Quality Assessment Report for every project prior to its inclusion in the National Digital Elevation Dataset (NED), the national repository of digital elevation data, and the USGS Center for LiDAR Information Coordination and Knowledge (CLICK), a repository for publically available LiDAR point cloud data. The assessment includes ensuring that all deliverables are included, compliance with the LAS file specifications, the checkpoints are well distributed both geographically and by class, vertical accuracy, metadata, and an in-depth review of the bare earth DEM. Presentation will include discussion on how the assessment is done along with examples of a final report.

**Lori Phillips, USGS – National Geospatial Technical Operations Center (NGTOC)**

**3:30pm - Closing comments – Workshop Survey reminder...**