



# Geographic Information Advisory Council

September 8, 2015

10:00 AM – 12:00 PM

Kentucky Association of Counties Conference Room  
400 Englewood Drive, Frankfort, KY

**Chair**  
James Fowler

**Members**  
Rusty Ashcraft  
Brad Bates  
David Couch  
John Covington  
Doug Curl  
Todd Ewing  
Buddhi Gyawali  
Audrey Haynes  
Will Holmes  
Joshua Karrick  
Elisabeth King  
Ann Miller  
Steve Pigg  
Shari Randle  
Roger Recktenwald  
Tom Rossman  
Donna Schartung  
Paul Schrader  
Jason Scriber  
Robert Stout  
Bob Stewart  
Steven Vest

**Legislative Liaison**  
Scott Hamilton

**Executive Director**  
Carla Hawkins

**Welcome & Announcements**.....Jim Fowler  
*Chair*

**Kentucky's Geospatial Strategic Plan**..... Roger Recktenwald & Drew Andrews  
*Committee Co-Chairs*

**KYAPED Update & Overview** .....Kent Anness  
*Division of Geographic Information*

**"Processing LiDAR Data to Map Sinkholes in Kentucky"** .....Junfeng Zhu & Doug Curl  
*Kentucky Geological Survey*

**"GIS at the Community Level"** .....Paul Schrader, Tom Moreland, Clay White  
*City of Berea*

**State Boundary Update**.....Kim Anness  
*Division of Geographic Information*

**Kentucky GIS Conference (October 12-14) and  
KY Association of Mapping Professionals (KAMP) Report** ..... Lance Morris  
*President*

**GIS/Mapping Exclusions to Surveying** ..... Curt Bynum  
*Louisville-Jefferson County Information Consortium (LOJIC)*

**Division of Geographic Information (DGI)** ..... Tom Rossman  
*Director*

**New Business**

### Upcoming Event Dates

KLC Conference	September 29-October 2
NSGIC Conference	October 5-9
KY GIS Conference	October 12-14
KAPS Conference	October 14-16
KACO Conference	November 18-20

### Kentucky Geographic Information Advisory Council

669 Chamberlin Avenue Frankfort, KY 40601 (502) 564-6231

<http://technology.ky.gov/gis/Pages/GIAC.aspx>

# Geographic Information Advisory Council

## 9-8-15 MEETING MINUTES

Kentucky Association of Counties, 400 Englewood Drive, Frankfort

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### MEMBERS ATTENDING:

1. Rusty Ashcraft (*Kentucky Chamber of Commerce*)
2. Doug Curl (*Kentucky Geological Survey*)
3. Todd Ewing (*Department of Military Affairs*)
4. Carla Hawkins for Jim Fowler (*Commonwealth Office of Technology*)
5. Scott Hamilton (*Legislative Research Commission*)
6. Joshua Karrick (*Kentucky Chapter American Planning Association*)
7. Ann Miller (*Kentucky League of Cities*)
8. Steve Pigg (*Energy & Environment Cabinet*)
9. Roger Recktenwald (*Kentucky Association of Counties*)
10. Tom Rossman (*Finance & Administration Cabinet*)
11. Donna Schartung (*Kentucky Board of Registered Geologists*)
12. Paul Schrader (*Kentucky Association of Professional Surveyors*)
13. Lindy Casebier for Bob Stewart (*Tourism, Arts & Heritage Cabinet*)
14. Dana Jenkins for Robert Stout (*Department of Agriculture*)
15. Steven Vest (*Cabinet for Economic Development*)

### GUESTS:

William Andrews (*KGS*), Kent Anness (*DGI*), Kim Anness (*DGI*), John Barnes (*COT*), Curt Bynum (*LOJIC*), Denver Collett (*GAPS*), Ashley Isaacs (*COT*), Jeremy Sandifer (*KSU*), Clay White (*City of Berea*), Roberta Young (*secretary*), Junfeng Zhu (*KGS*), Demetrio Zourarakis (*DGI*)

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### **I. Welcome & Announcements**

- Meeting called to order at 10:00 by Carla Hawkins, serving as chair for Jim Fowler
- Meeting minutes from 6/9/15 (handout) were distributed & reviewed; motion entered by Rusty Ashcraft to adopt minutes, motion seconded by John Covington, all members approved, minutes were adopted as written

### **II. Kentucky's Geospatial Strategic Plan (William Andrews)**

- Handout: Preliminary Plans for 2016 Geospatial Strategic Plan
- 2010 Geospatial Strategic Plan has been successful and should be reviewed and updated to move farther ahead for greater progress
- Similar feedback mechanisms used in 2010 will be utilized again with continued emphasis on involvement by any and all entities to represent the full breadth of geospatial enterprise
- Additional news forthcoming, and listening sessions will be held at Kentucky GIS Conference

### **III. KYAPED Update (Kent Anness)**

- 77% of state completed
- 2015 data collection limited by unavoidable weather factors; collected data should be available by Thanksgiving
- 2016 areas of interest have been identified with preliminary funding commitments that will cover approximately 1/3 of the proposed areas – acquisition footprint to be finalized before next meeting
- Remaining areas are unfortunately the most expensive due to variances in elevation which require flight adjustments and realignments of flight patterns

### **IV. Guest Presentation: Processing LiDAR Data to Map Sinkholes in Kentucky**

(Doug Curl & Junfeng Zhu, Kentucky Geological Survey)

- LiDAR = light detection and ranging, and relies upon laser scanners, GPS, and inertial measuring units (rotation and velocity of plane)
- Kentucky karst areas - over 50% underlined by rocks with potential for karst development
- Sinkholes are a geologic hazard and are the most common hazard of karsts (e.g. Corvette Museum in Bowling Green which swallowed eight cars) – see sinkhole map at <http://www.uky.edu/KGS/gis/sinkpick.htm>
- Most common use of LiDAR is in measuring topography of the earth's surface from which DEMs are developed
- 5 ft. DEMs are much more detailed than older USGS 10 ft. DEMs – enables greater ability to identify sinkholes
- From DEMs, depressions can be developed and converted to polygons which can be inspected to reveal possible sinkholes
- Much of the sinkhole identification is accomplished through GIS via the depression extraction tool in ArcGIS
- Last year, 101 LiDAR-detected potential sinkholes were inspected and 90 confirmed sinkholes were identified

- Field data collected and verified by KGS collector – see Use Case on Sinkhole Verification in Water Resources section of KGS website - <https://www.uky.edu/KGS/water/>
- Data then transferred to a GIS via ESRI collector tool – online tutorial available on ESRI site to show how to set up collector – to verify LiDAR-detected sinkholes
- Collector is an ESRI-developed mobile app for Android or iOS which is available through ArcGIS Online account and allows collection of points, lines, or areas so user can work offline in disconnected environment

**V. Guest Presentation: GIS at the Community Level**  
(Paul Schrader & Clay White, City of Berea)

- Surveying’s earliest efforts focused on identifying property and parcel data for property tax compliance
- Public works relies upon GIS and survey data to identify culvert size and limitations, and for its sidewalk inventory and maintenance budget (identification of gaps, etc.)
- GIS can be used to assist with stormwater MS4 (EPA mandated) requirements for watersheds and stormwater systems; police departments (crime scene mapping, visualizations, accident reconstruction)
- Fire departments rely upon ISO ratings, and home insurance rates depend upon fire hydrant and fire station distribution
- ArcGIS collector has been used to develop damage assessment map with real-time data for EMA; EMA/CSEPP use GIS data to manage decontamination sites.
- Moreover, multiple departments are aided by many useful applications of GIS, and many more could benefit if they knew how easily GIS could be implemented in their efforts
- Berea Municipal Utilities (BMU) serves approximately 50,000 residential customers (water, sewer, electric)
  - BMU uses GIS for work orders, asset inventory, billing, and leak development
  - Early efforts which depended upon blueprints and paper maps and are now served by ArcGIS and Arc Reader, and BMU is moving toward web mapping and mobile mapping (e.g. collector app) on laptops in field vehicles
  - GPS and camera used to collect survey-grade data which is fed into a GIS where it is stored with point data, detailed specs, and photo (waterlines, manhole covers, electric poles)
  - Next steps will focus on sending out mapping data (using collector app) for utility shutoff, etc.

**VI. State Boundary Update** (Kim Anness)

- Prior to 1980, river was considered the boundary line, but as shifting occurs and water levels change, it became possible for Kentucky to claim parts of Indiana and Ohio
- In 1980, the Supreme Court ruled that the low-water level would determine state boundaries, whereby Kentucky gains some land, but lost more for a net loss of 1,191 acres
- In July 2015, DGI updated all boundary layers in KYVector and added record-level metadata, but some layers still need to be updated (e.g. legislative districts).
- DGI will provide update to US Census Bureau in 2016 so all boundary data will be aligned between state and federal sources
- GIAC Standards Committee will soon begin review of record-level metadata

**VII. KAMP Update** (Curt Bynum)

- Kentucky GIS Conference registration is open
- Handouts distributed – conference program/agenda, keynote addresses, workshop program, ESRI Learning Lab
- KAMP is continuing to grow and has teamed with the Kentucky Geographic Alliance to create a mentor program for students and teachers, including a \$1000 annual scholarship

**VIII. GIS/Surveying Definition** (Curt Bynum)

- Surveying Committee comprised of KAPS and KAMP members collaborated to develop an understanding of what is covered by the definition of land surveying (KRS 322.010) and what is not covered
- Handout: “Mapping Sciences/GIS” in Kentucky Engineer Magazine, Vol 52, Spring 2015, pp 10-11
- Kentucky is not planning to codify the agreement as a KAR or KRS but will work to educate GIS professionals and surveyors on what each domain covers
- Additionally, a strongly-worded disclaimer regarding the usage of GIS-level data will be implemented (a GIS map may be authoritative but not necessarily survey-accurate)

**IX. Division of Geographic Information (DGI) Update (Tom Rossman)**

- The division continues to provide GIS support to the Cabinet for Economic Development
- Several staff from the division will be attending the upcoming conference and will continue to assist KAMP's efforts in developing another successful event

**X. Closing Notes/Adjournment**

- December meeting will be scheduled, and members will be notified
- Donna Schartung entered motion to adjourn, Ann Miller seconded the motion, all approved, meeting adjourned by Carla Hawkins at 12:00 p.m.

*Adopted by council membership during 12-1-15 quarterly meeting.*