



TUESDAY, SEPTEMBER 19, 2017
MOORE NORMAN TECHNOLOGY CENTER
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Welcome to the 20th Anniversary OKSCAUG Conference!

If there is one word that can describe the last twenty years of the GIS industry, it's CHANGE. From ArcView 3x to ArcGIS Pro and from DOS command line to mobile and web apps, the technology has introduced incredible advancements to broaden the use of GIS. As GIS Professionals, we continue to learn and adapt along with the software.

One thing that you can always count on is OKSCAUG. For 20 years, OKSCAUG has served our membership with an annual conference to provide training and networking opportunities. As an organization, we try to adapt as well to provide the most back to YOU, the backbone of what makes OKSCAUG as strong and as vibrant as ever. Whether you have been around for 20 years or are just beginning your GIS career, OKSCAUG has something to offer.

We should all be proud to be here today; 20 years is quite impressive. Let's do what we do best – learn, collaborate, and have fun!

- 2017 OKSCAUG Steering Committee

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OKSCAUG Chair
Regional SCAUG Vice President
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OKSCAUG Past Chair
Regional SCAUG President
City of Ardmore, Oklahoma

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OKSCAUG Co-Conference Coordinator
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- when it has to be right



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OKSCAUG HISTORY

Jann Hook and Sara Cobb

When we were all just beginning with GIS getting our little systems going, there weren't a lot of users (relative to other states) so there were very few resources or people to learn from around here. It was the Oklahoma Water Resources Board's (OWRB) Data General Account Rep (their first GIS system came from an EPA grant with a DG workstation and Arcinfo) that put Jann Hook in touch with the Texas Arcinfo Users Group (TAIUG) president to inquire about crashing their annual conference. They were fine with it. It turned out to be beneficial and she could see that the GIS users in Oklahoma needed a similar organization here to connect users (plus it was a fun group!). It was at one of the first or second conferences that Jann attended that they started discussing TAIUG becoming a regional group and opening membership to other states in ESRI's San Antonio region. So far, only Oklahoma (Jann Hook with OWRB) had expressed interest but it was just a matter of time before the other states started catching up. Jann became the "semi-official" Oklahoma rep for the group.

There were two options: 1) start an Oklahoma Arcinfo users group, or 2) become part of a larger, regional group. The latter offered significant advantages in terms of having almost none of the organizational startup issues with the IRS, etc. However, we wanted to be sure Oklahoma users' needs were met and we did not get lost in the larger organization.

Obviously the decision needed to be made by those interested in becoming members. It was in conjunction with an ESRI short seminar in the fall of 1996 that Jann and ESRI tacked on an "AIUG organization interest" meeting. Leann Gilley, the TAIUG president came up to talk about TAIUG becoming a regional group and extended an invitation to join. It was a large turnout but attendees weren't very vocal as Jann recalls and they decided to ask for volunteers to be on a steering committee to look at the options. (Sara Cobb from the City of Edmond remembers the meeting and believes the attendees were not allowed to leave until there were 4-5 volunteers.) Sara agreed to be on the steering committee with Jann Hook and so did John Pitts with Topographic Mapping, Rich Davis with City of Oklahoma City, Rachel Noon with Philips Petroleum, Al Rae with USGS and Jayne Salisbury from OSU. The steering committee developed and reviewed the charter and ByLaws.

The initial charter was the Oklahoma ESRI User Group (OEUG) chapter of the Texas Arcinfo Users Group. From there in early 1997, it turned into the Oklahoma Chapter of the South Central Arc User Group. The goal of the organization was to provide an exchange of information about ESRI and their software products. It was here in the

charter that the group would hold at least one meeting per calendar year. Hence the inaugural 1997 Oklahoma ARC User Conference was held September 18th at Metro Tech in OKC.

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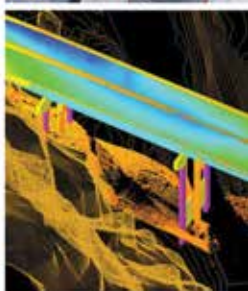
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20 Years of Attendance

Sara Cobb
 Joyce Green
 Larry Knapp
 David Wheelock

Gary Smith 13
 James Allen 12
 Stacia Canaday 12
 Michelle Matthews 12
 Mike Morrison 12
 Leah Nash 12

15+ Years of Attendance

Jun Gao 19
 Rick Hoffstatter 19
 David Smith 19
 Bob Springer 19
 Sohail Hasanjee 18
 Cliff Montgomery 18
 Mike Sexton 18
 Tim Thummel 18
 Matthew Winston 18
 Terry Faggins 17
 Junior Garcia 17
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Mike Davis 12
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 Jenni Hoang 11
 Greg Kirby 11
 Luis Sanchez 11
 Jason Veale 11
 Mary Jane Dossett 11
 Katy Rich 11
 Kathy Spivey 11
 Ami Arthur 10
 Adam Drannon 10
 Will Gustafson 10
 Kathy Hines 10
 Pamela Journey 10
 Murali Katta 10
 Chris Ksepka 10
 Scott March 10
 Tony McCord 10
 Melissa Scott 10
 Ty Simmons 10
 Angie Taylor 10
 Kelby Thomasson 10
 Sherri Tilley 10
 Janelle Williams 10
 Kate Burch 10
 Todd Fagin 10
 Dewayne Mitchell 10
 Brad Nesom 10
 Robert Sandbo 10
 Chuck Sloan 10
 Anna Waggoner 10
 Brent Wilson 10
 Scott Woodruff 10

10+ Years of Attendance

Barbara Gibson 14
 Kevin Koon 14
 Azhar Mahmood 14
 Gary Orr 14
 Ray Bottger 13
 Jana Harris 13
 Carrie Landgraf 13
 Ian Peebles 13
 Tracy Scopel 13
 Thomas Tollett 13
 Weidong Ran 13



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2017 CONFERENCE SCHEDULE

7:30 AM - 8:30 AM	Breakfast / Exhibitor Visit
8:30 AM - 9:45 AM	Welcome and Keynote Address Speaker: Lieutenant Ronald J. Vaughn, Sr. Firefighter & Paramedic Dallas Fire Rescue Department
9:45 AM - 10:15 AM	BREAK / Exhibitor Visit

10:20 AM - 10:50 AM

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ESRI

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ESRI

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	Networking

12:55 PM - 1:25 PM

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ESRI

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BREAK / Exhibitor Visit

2:45 PM - 3:15 PM

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4:00 PM - 4:30 PM

Closing Remarks / Door Prizes



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KEYNOTE SPEAKER



Ronald J Vaughn Sr.
Dallas Fire Rescue

Ronald J Vaughn Sr. is a Lieutenant with the Dallas Fire Rescue Department and he has been a Firefighter and Paramedic with the department for 22 years. Lieutenant Vaughn is currently assigned as the departments GIS Specialist. His duties include providing Mapping Solutions for resource management, Pre Incident Planning, Data Analysis and Statistical Information for Fire Department personnel.

Lieutenant Vaughn has received several departmental commendations and he has won the Dallas Fire Rescue Paramedic of the Year award. He has also won the Dori Miller Veterans of Foreign Wars Paramedic of the Year award and the Dori Miller Fire Fighter of the Year award.

Lieutenant Vaughn has an AA from Trinity Valley College in Athens, Texas and a BA from Lyon College in Batesville, Arkansas. He is currently working towards a Master's Degree in Emergency Management.

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USER PRESENTATIONS

1. Advancing Groundwater Protection Goals with Survey123

Charles O'Malley – Oklahoma Water Resources Board

The Oklahoma Water Resources Board cooperates with the Well Driller and Pump Installer Advisory Council in order to create comprehensive standards that govern the licensing of commercial water well drillers and set minimum construction standards for the industry. The key goal of the Well Driller and Pump Installer Program (WDPI) is to protect groundwater from potential pollution by ensuring the integrity of water well construction. WDPI uses a two-fold approach to accomplish this goal – routine inspections and educational outreach.

This year WDPI began using Survey123 with mobile devices to collect routine inspection data. Along with expediting data collection, this eliminates the need for cumbersome clipboards and paper forms in the field. Having inspection data in digital form makes the data more readily usable. Inspection reports can be automatically generated and WDPI can gain insight on areas of well construction the industry needs to improve. These needs can then be targeted with appropriate educational outreach, and violations of water well construction standards can be addressed.

2. Back To The Future Bathymetry – In 3D!

Using ArcGIS Pro for Visualization of Oklahoma Lakes

Scott Roberson – Oklahoma Water Resources Board

The Oklahoma Water Resources Board's bathymetric mapping program utilizes ArcGIS Desktop and related technology to determine the current storage capacities of the state's reservoirs. TINs created for area and volume calculations can be brought into ArcGIS Pro Scene to visualize a lake in three dimensions. In addition, georeferenced historical aerial photos can be added to the project to facilitate 3D visualization of the approximate topography of the area before the lake was constructed.

This presentation will show lake bathymetry in ArcGIS Pro 3D Scene, historical aerial imagery in 3D, and examples of video "flybys" of the lakes and surrounding area created in Scene.

3. Big Impacts, Low Costs

Jeremy Planteen – Oklahoma Department of Transportation

In late 2015, ODOT built out an extensive web-based GIS data portal using the

ArcGIS Online system. Since its widescale deployment in early 2016, the ODOT Map & Data Portal has had a transformative effect on the way people access our data and how the agency does business. Boasting over 150 different subject based web mapping applications and over 200 unique datasets, the Portal has significantly streamlined numerous business processes, including construction project planning, risk assessment, and executive decision making. In addition to internal use, the Portal also contains Construction Project update and other information directly relevant to the general public and the media. Consultants and others now also have direct access to the most current published data via ArcGIS Online REST services, eliminating the need for static shapefiles and the possibility of out of date information.

With an initial cost of under \$20,000 and total development time of under a week, the Portal saved the Department over \$1 million in its first full year of operation, and that number is expected to climb as more applications are added and processes are migrated to the web environment.

4. Cartography in the Digital World: Why it Matters

Michael P. Larson – OSU Cartography Services

A map can be loosely defined as a graphical representation of a portion of the world's surface. Its ability to synthesize, symbolize, and simplify geospatial information make it a powerful communication tool. Because of this, maps are frequently the end product of a GIS. While software has improved its ability to perform cartographic tasks, academic instruction in cartography has been in decline. This has led to many GIS users not effectively leveraging their maps to their full cartographic potential. This presentation will examine where cartography has come from, how we got to where we are now, and take a peek into the future.

5. City of Edmond 2017 Traffic Study Survey

Casey L. Moore – City of Edmond

Christy R. Batterson – City of Edmond

Ian M. Peebles, GISP – City of Edmond

The City of Edmond continues to monitor traffic patterns, congested areas, and intersections of concern within the community. Every two years, the City of Edmond Marketing and Public Relations Department administers a traffic study survey, encouraging citizens to participate and identify traffic hot spots or areas they feel needs improvement. Finalizing the results from the survey requires data processing and mapping, is a cumbersome task. The final results are then distributed to the appropriate City Departments where the data can be examined for future traffic planning.

The Marketing and Public Relations Department worked with the GIS team to establish a simple solution for collecting, processing, and mapping data from the 2017 traffic study. This presentation discusses the role of the Marketing and Public Relations Department in encouraging public participation, feedback, and producing the final results. The GIS Team discusses the technical aspect of the traffic study by explaining methods for creating the study, data collection techniques, and the solution for mapping final results.

Marketing and Public Relations Department and the GIS team leveraged ESRI technology such as JavaScript API, ArcGIS Online and ArcGIS Desktop with Spatial Analyst to achieve high public participation and clear results.

6. Cooperative Water Planning with Interactive GIS

Saba Tahmassebi, Ph.D., P.E. – Oklahoma Department of Environmental Quality
Matt Wormus – Oklahoma Department of Environmental Quality

The Oklahoma Department of Environmental Quality (DEQ) and the Oklahoma Water Resources Board (OWRB) developed an interactive GIS map to assist water systems in evaluating cooperative water planning options. The application is designed for local water districts and groups to spatially evaluate water quality and water resources when considering regionalization projects. This presentation will talk about how the Agencies shared data and technology to develop this product; how this project met common local water planning issues in Oklahoma; and walk participants through this screening tool.

7. Developing a Web Mapping Application for State Parks

Chang-Heng (Hank) Yang – Department of Geography, Oklahoma State University

This presentation will discuss the development of an in-house web mapping application focusing on trails in Oklahoma State Parks. The web GIS uses the ArcGIS JavaScript API, can be securely accessed via web browser and is mobile device-friendly. The application is being created for administrative decision-making and potentially public use. The State Park trails data and associated attributes have been collected by GPS and are managed using the ArcGIS suite. Trail information, accessible and dynamically visualized via the web GIS, include trail mileage, trail name, surface type, inspection date, and trail use details related to hiking, mountain bike, horse riding, sightseeing, and handicap accessibility. The application is also designed to process statistical trail information on-the-fly, which is presented through dynamic charts and tables. For example, bar charts can show trail mileage either by park, trail use, trail situation, trail name, state region, etc. with interactive interfaces. This improves the ability of park officials to evaluate and conserve trail resources.



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8. GIS in Economic Development

Ashley Hicks – Greater Oklahoma City Chamber

This presentation will cover how GIS is used within the Economic Development Division of the Greater Oklahoma City Chamber. Special emphasis will be given to show how story maps help to track recent and upcoming developments taking place in the market.

9. Highly Accurate Data, the State Plane Grid, and Surface Coordinates

Wesley T. Keller – City of Universal City

Frequently GIS Analysts and Technicians must work with engineering or survey data. Engineers and surveyors utilize and produce data with a high degree of accuracy. One of the ways they work with this data is to put the information on a “surface” which is a modification of a common coordinate system grid. This is done with the use of a “scale factor” which accounts for the scale error introduced by being located away from the points or lines of tangency or secancy in the map projection used in the common system. This combined scale factor also accounts for scale error produced by being elevated above or below sea level. These techniques are frequently used for the State Plane Coordinate System on engineering and survey projects. Years of experience have shown me that many GIS people are unaware of these scale factors and the

difference between State Plane coordinates and the so called “surface” coordinates. This presentation is a demonstration of how these techniques are used and is intended for GIS-centric people. The demonstration will focus on how the techniques can be applied in ArcGIS Desktop.

10. Mixing your Mapping with the Creative Cloud

Brian Scott O’keefe – City of Tulsa

GIS is a blended artform, it could even be called “drawing with databases.” The new ArcGIS Maps for Adobe Creative Cloud introduces Adobe tools to not just the map making / cartographically skilled users but for the next generation of 3D printers as well as Graphics Artists and Illustrators. It turns maps, and mapping objects, into usable objects in the multimedia world of our future. One small step for GIS professionals, one giant leap for the graphically inclined.

11. NHD Plus High Resolution (NHDPlus HR)

Claire DeVaughan – U.S. Geological Survey

The NHDPlus High Resolution (NHDPlus HR) is a scalable geospatial hydrography framework built from the high resolution National Hydrography Dataset, nationally complete Watershed Boundary Dataset, and 1/3 arc-second (10 meter ground spacing) 3D Elevation Program data. The NHDPlus HR brings modeling and assessment down to a local neighborhood level, while nesting seamlessly into the national context. The NHDPlus HR is comprised of a nationally seamless network of stream reaches, elevation-based catchment areas, flow surfaces, and value-added attributes that enhance stream network navigation, analysis, and data display. However, users will find that the NHDPlus HR, which increases the number of features nationally from about three million in the NHDPlus Version 2 to over 30 million, provides richer, more current content that also can be used at a variety of scales. When completed, the NHDPlus HR will provide a common geospatial framework that is open and accessible for use by everyone, including government, citizens, and industry. This presentation will provide information on the timeline for the development of NHDPlus HR in Oklahoma, and opportunities to improve the data via NHDPlus HR Beta review/quality control.

12. Traffic Sign Inventory and Maintenance

Christy Batterson – The City of Edmond

Nick Tonias, P.E. – The CEDRA Corporation

Many municipalities have developed GIS databases for their traffic signs. Many more are interested in developing a GIS based traffic sign inventory. Traffic signs serve a

vital safety function and they are after all municipal owned assets. Like any other municipal asset, traffic signs are subject to repair and/or replacement. As such, it becomes important to know the location of the traffic signs and their condition.

The Federal Highway Administration's Manual on Uniform Traffic Control Devices (MUTCD) is the standard for conformance of signs, signals, markings and other devices intended to regulate, warn or guide traffic. As many municipalities know regulations require them to ensure MUTCD standard's are satisfied.

Given the above, it makes sense that GIS technology can be employed to develop a spatial database to inventory and maintain traffic signs. This presentation discusses how the City of Edmond developed its Traffic Sign Inventory database, incorporating MUTCD standards, and maintains the database in an ArcGIS environment. Topics to be covered include: (a) an overview of developing the traffic sign inventory, (b) the traffic sign inventory database design, (c) the traffic sign inventory collection process and (d) the process for maintaining and updating the database.

This presentation is a case study of the City's efforts in developing a GIS based traffic sign database and a project the City undertook with The CEDRA Corporation to automate the updating and maintenance of the database.

13. Transparency and Masking in ArcMap 10.x and ArcGIS Pro Clay Barrett – OSU Cartography Services

As the GIS Specialist at OSU Cartography Services overseeing the digital update of the American Association of Geologists' Geological Highway Map Series, I have learned a few things about the nuances of software interactions I would like to share. The production process for these maps involve some advanced cartography which had been achieved by exporting the final GIS product to Adobe Illustrator. With the availability of ArcGIS Pro, these tasks can be completed without exporting to Illustrator. Specific tasks discussed are: transparency, annotation text masking, and the process of moving 10.x projects into Pro upon completion for these tasks.

14. Web GIS Applications for Campus Operations and Safety Naci Dilekli – Center for Spatial Analysis, University of Oklahoma

The Center for Spatial Analysis has developed a variety of services in support of campus operations and safety at the University of Oklahoma (OU). This presentation will provide an overview of custom applications for the Office of Emergency Preparedness and Department of Risk Management at OU using the ArcGIS JavaScript API. These include a campus population visualization, a property classification to facilitate annual crime reporting in compliance with federal Clery Act requirements, and an asset management application for campus life, health, and safety systems.

15. Williams Usage of ArcGIS Monitor Steve McCarthy – Williams

Would you drive a car that doesn't have a dash with a speedometer and gauges? That's what it felt like architecting and supporting the Williams enterprise GIS without ArcGIS Monitor. Williams has been lucky to be able to use ArcGIS Monitor in conjunction with ESRI Professional Services for 3 years to tune, test, and monitor our ESRI ArcGIS environment. The new ESRI ArcGIS System Monitor application is coming out sometime in the third quarter of 2017. It was previously the System Monitor tool internal to the ESRI Professional Services tool and made available for users to download. We use this tool along with ESRI Professional Services to leverage the most out of Williams's investment in GIS and IT infrastructure, and improve our system operation while reducing administration costs. Another added benefit is the ability to share this information with directors, managers, developers and users through published web reports. This presentation will walk you through how Williams uses and shares this tool throughout the Williams Enterprise GIS.

16. Working Together for Next Generation 9-1-1 GIS Mike Davis – ACOG Jessica P Frye, ENP – Geo-Comm, Inc.

GIS requirements in a Next Generation 9-1-1 solution can be complicated and overwhelming. Working together to establish plans and procedures for GIS before implementing NG911 is a must. The responsibility of preparing GIS data for NG911 is not solely the responsibility of the GIS professional; it takes many local and regional entities working together to accomplish the work. Join this session as we examine how to identify and engage all the necessary entities to ensure the GIS requirements for NG911 are met before implementation.

17. Standardizing Labels for the 8 Year Workplan Maps Samuel Coldiron – ODOT Nathan Smith – ODOT

ODOT's 8 Year Workplan Maps needed to be produced with a very specific label format. This includes a centered project description and pertinent project information aligned in columns. The source data was provided in an Excel format which was formatted for proper labeling and then joined to project geometry. Python code was used in the label expression to achieve perfectly aligned labels.

18. GIS Saves Lives!!! A Look at NexGen 911 and the Need for Accurate GIS Lance Terry – OEM

911 in the United States has evolved over the years but the technology still relies on a 60 year old backbone. People communicate using several different medians and 911 has to adapt in order to take full advantage in the technical advances from the private sector. The National Emergency Number association has developed a standard for the Next Generation of 911 (NexGen 911). Oklahoma is making plans to move from the antiquated 911 technology to a NexGen 911 network. The goal of NexGen 911 is to provide the Emergency Communications Operator with a “dispatchable address” at time the call is answered. Uber and Pizza hut can find a person faster than public safety and changes are needed to meet public expectation and save lives. NexGen will use GIS as the core routing tool and we will need the GIS professionals in the State to help 911 Emergency Communications Operators help responders find callers faster so lives can be saved.

19. It's Not Fun to Be Lost: Implementing the Navigator App at Williams Dustin Miller – Williams

No one likes to be lost and it can be especially frustrating and costly for a pipeline tech trying to accomplish safe and efficient pipeline operations in rugged terrain. In Esri's Navigator app, we saw an opportunity to solve a common problem our field techs were experiencing. This presentation will cover the initial project to replace several legacy solutions with one enterprise application, including project methodology, initial pilot implementation, lessons learned and next steps.

20. 911 and GIS: Working Together to Build the Data for Both Applications Charles Brady, III GISP – City of Ardmore

In the GIS world it is often said to “Build Once and Share Often” when it comes to building GIS data but sometimes that comes with challenges. This presentation will discuss some of the ways that the City of Ardmore and Carter County have worked together, compromised, and overcome hurdles to share their data between the City and their 911 center.

21. Survey123 Complex Data Structure Creation Christopher L. Rogers – Oklahoma Department of Public Safety

In this presentation I will show you how you can use Survey123 as an alternative to ArcGIS Pro to create complex geo-data structures and upload them to your ArcGIS Online Accounts for use in your projects. Esri's Survey123 has evolved to the point

where it can create and join highly complex Feature Data Service Layers by simply using the XLSForm Standards as implemented by Esri's Survey123 product. Whether you need a simple single feature data service layer or you need multiple relational feature data service layers, Survey123 can help you automatically create these by simply designing a Survey123 form and uploading it to your ArcGIS Online Account.

22. Workforce Situational Awareness Project

Christopher L. Rogers – Oklahoma Department of Public Safety

When emergency service calls come they come quickly for the Oklahoma Highway Patrol and Communications Officers and time is of the essence. When a call for service is received on a severe motor vehicle collision or a potential impaired driver, situational awareness of available emergency and law enforcement resources is crucial. That's where Esri's Workforce solution comes in! With Workforce Communications Officers are able to receive near real-time situational awareness information regarding the resources available to respond to critical service calls. When a call for service is placed by a citizen, Communication Officers have a way to quickly and efficiently know where their available resources are. By knowing where critical resources are located, they are able to dispatch the closest or best suited resource to the service call location tremendously improving response time enhancing lifesaving opportunities during the "Golden Hour". This presentation will demonstrate the OHP's real-time situational awareness application built using Esri's Workforce and Web AppBuilder products to create a Common Operating Picture (COP) between dispatchers and deployed resources.

23. NEPA Crazy: A Walking Trail Project

Pamela Journey, GISP – Cross Timbers Consulting, LLC

What does it feel like when the ribbon is cut on a completed road project? For those who have been involved with the process, it is a feeling of jubilation and accomplishment, maybe a little showing-off. Few people know the trials and tribulations that go into a completed road construction project. From the preliminary design plans to the biological and archaeological surveys, from the consultation letters to waiting for concurrence, from the development of the EA to the official review, from the FONSI to improved infrastructure, a road construction project is an intricate and adventurous, and often lengthy, process. This presentation takes the audience through the journey of a quarter mile walking trail construction project. Discover what it means to be in a "stuffed olive" situation, the process of procurement, the cost of using someone else's dirt, and the satisfaction of serving the community.



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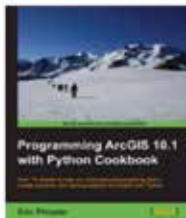
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POSTER PRESENTATIONS

1. Alexander Posey and the North Canadian Posey's Hole

Raymond Irwin – Muskogee (Creek) Nation

Rebecca Coleman – Muskogee (Creek) Nation

Alexander Posey gained international fame as a humorist, poet, and journalist in the period of land allotment as Oklahoma transitioned from Indian Territory into statehood. Over one hundred years later, his work is still studied for both historical context and artistic appreciation. Ironically, he drowned in the North Canadian River, an area he loved to write about and explore. The exact location of his death has been lost to history. Today it is covered by a lake. Known as Posey's Hole, many odd events happened there before Lake Eufaula was impounded.

Our first poster covers the locations and events that shaped Posey's life.

The second poster reveals the spot of his death that we rediscovered with historical maps and through analysis of narratives. We found a contributing factor in that May and June 1908 brought major flooding to the area, making normal river crossings dangerous. It also tells of the rumored hauntings and other strange occurrences we uncovered in our research to pin-point the exact location of Posey's Hole.

2. Bathymetry and Capacity of Shawnee Reservoir, Oklahoma, 2016

Chad E. Ashworth – U.S. Geological Survey

S. Jerrod Smith – U.S. Geological Survey

Kevin A. Smith – U.S. Geological Survey

The U.S. Geological Survey (USGS), in cooperation with the City of Shawnee, performed a bathymetric survey of Shawnee Reservoir (locally known as Shawnee Twin Lakes) in 2016 and released the bathymetric-survey data in 2017. The purposes of the bathymetric survey were to (1) develop a detailed bathymetric map of the reservoir and (2) determine the relations between stage and reservoir storage capacity and between stage and reservoir surface area. The bathymetric map may serve as a baseline to which temporal changes in storage capacity, due to sedimentation and other factors, can be compared. The stage-storage relation may be used in the reporting of real-time Shawnee Reservoir storage capacity at USGS station 07241600 to support water-resource management decisions by the City of Shawnee.

Shawnee Reservoir consists of two lakes connected by an equilibrium channel. The southern lake (Shawnee City Lake Number 1) was impounded in 1935, and the northern lake (Shawnee City Lake Number 2) was impounded in 1960. Shawnee Reservoir serves as a municipal water supply, and water is transferred about 9 miles by gravity to a water treatment plant in Shawnee, Oklahoma. Secondary uses of the

reservoir are for recreation, fish and wildlife habitat, and flood control. Shawnee Reservoir has a normal-pool elevation of 1,069.0 feet above North American Vertical Datum of 1988 (NAVD 88). The auxiliary spillway, which defines the flood-pool elevation, is at an elevation of 1,075.0 feet above NAVD 88.

3. Built Environment Health and Wellness Index

Kiran Duggirala – Tulsa City-County Health Department

Luisa Krug – Tulsa City-County Health Department

The goal of this project was to develop a health and wellness index in order to evaluate health outcomes and the built environment in Oklahoma City-County and Tulsa County. This project was done as a partnership between the Oklahoma City-County Health Department, the City of Oklahoma City, and the Tulsa Health Department. ArcGIS network analyst was used to identify areas around built environments for population calculations. The health index formula standardizes variables in nine categories (education, income, maternal and child health, mental health, mortality, health care access, crime, infectious disease, and built environment) so that they are all given equal weight in a composite index. The index represents the average of the standardized ratios of all nine component variables. The index ranges from 0 to 100 with a higher number indicating greater health burden. This formula was adapted from both the County Health Rankings and Urban Hardship Index and finalized in collaboration with all partners. The health and wellness index identified zip codes in Oklahoma City-County and Tulsa County that are disproportionately burdened with poor health outcomes. The built environment portion of the index is also the first step to exploring the relationship between the environment in which people live and life expectancy—the general trend shows that as the built environment index goes up, life expectancy decreases. This project provided an opportunity to evaluate health outcomes in both Oklahoma City and Tulsa. As the two largest metro areas in Oklahoma, it is important to understand the health outcomes and challenges facing each area and how they relate to each other. This project is an excellent starting place for further collaboration and coordination between efforts to improve the built environment and other indicators that strongly influence health in both communities.

4. A Comparison of Means of Travel to Work by Census Block Group in Central Oklahoma

Charlotte Adcock – Association of Central Oklahoma Governments (ACOG)

Jennifer Sebesta – Association of Central Oklahoma Governments (ACOG)

Over the years, the interest in alternative means of transportation has grown in America. ACOG's recent surveys for the long range transportation plans have shown local support for more bicycle, pedestrian, and public transportation infrastructure in the region. That support is beginning to show, not just in the growing regional

infrastructure, but also with means of travel to work. ACOG staff compared 2010 and 2015 5-year American Community Survey data for the Central Oklahoma region and found that, overall, these alternative forms of transportation are on the rise. At the Oklahoma SCAUG, ACOG staff will share these comparative maps with attendees.

5. Forecasting Growth by Transit Oriented Development Using Spatial Analysis Nimish Dharmadhikari – INCOG

There are an increasing number of new public transit project developments in the United States and all over the world. These projects are developed for the main goal of the traffic congestion mitigation. At the same time these transit projects help with another form of development called Transit Oriented Development (TOD). TOD proposes a different set of zoning policies with the mixed use, high density developments to maximize the access to the faster public transit system. TODs are gaining popularity to address some of the urban problems such as affordable housing, air pollution, and sprawl. Cities are planning TODs in conjunction with their light rail systems, bus rapid systems, or metro-rail systems. They expect the TODs to be the future growth corridors. This research proposes a methodology to forecast the growth happening with TODs. We use spatial analysis techniques to study the current land use and the future potential. This method will be useful for the cities to study the potential of the TOD they are proposing. It will also generate a map of the growth centers and potential growth corridors to focus.

6. GIS for FEMA Discovery: Flood Risk in the Little River Watershed David J. Littlejohn – Meshek & Associates, LLC

GIS plays a key role in the FEMA Discovery process by effectively managing spatial data and communicating flood risk through web maps, thematic figures, and reports. Discovery was recently completed for the Little River Watershed as the first phase in FEMA's Risk MAP program. This poster highlights the information gathered, processes developed, and conclusions reached to advance flood risk mitigation efforts for communities in central Oklahoma.

7. GIS utilization within MCN Cemetery Recordation Gano Perez Jr. – Muscogee (Creek) Nation Historic & Cultural Preservation Department

The Cemetery Program consists of a 4 man crew dedicated to preserving and documenting tribal church and family cemeteries within the tribal jurisdiction of the Muscogee (Creek) Nation which consists of whole and partial segments of 11 Oklahoma counties. The data collected in the field is then applied within the GIS server

to create geospatial records of location, condition and cultural significance within each cemetery. Services include removing debris, mowing, resetting headstones, cutting trees, stump-grinding, brush clearing, and on a case by case basis a fence may be installed if necessary to prevent livestock from entering cemetery and accidentally moving headstones. The application process gathers information and once permitted on the cemetery site further documentation is gathered using Trimble dataloggers and heavy site form and sketch documentation of each and every headstone and notes are made for possible or suspected unmarked burials.

8. Identifying Places to Play in Tulsa County through Shared Use

Kiran Duggirala – Tulsa City-County Health Department

Chad Call – Tulsa City-County Health Department

Luisa Krug – Tulsa City-County Health Department

In 2015, 33.0 percent of Tulsa County adults reported no leisure time physical activity in the previous month, which was higher than United States rate of 25.4 percent. This lack of physical activity can be influenced by limited access to physical activity opportunities and can lead to poor health outcomes.

The goal of this project was to increase access to physical activity by implementing shared use strategies at Tulsa County schools. Shared use strategies aim to increase access to physical activity by encouraging school playgrounds to become a place to play after school hours, especially in areas where people do not have access to a park. This project was implemented as part of the Plan4Health grant, which the Tulsa Health Department, Pathways to Health, and the Oklahoma Chapter of the American Planning Association received in 2015.

Our objective was to increase access to physical activity for Tulsa County residents by forming and promoting shared use agreements in four public schools districts in Tulsa County (Jenks, Tulsa, Union, and Broken Arrow).

Initially, a ‘play desert’ criteria was developed in order to evaluate areas of Tulsa County where people did not have access to a park while also looking at socioeconomic factors that also play a role in access to physical activity and overall health outcomes. Once this criteria was developed and these areas were identified, school surveys and physical audits were conducted to evaluate current shared use capacity and potential. School districts, as well as individual schools, were then approached in order to propose unlocking the schools’ playgrounds in order to promote shared use and physical activity. Park assessment and usage tools were utilized to evaluate usage and physical condition of the playgrounds.

9. Mobile GIS Data Collection and Reporting: A Stormwater Case Study



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Chris Hill – Meshek & Associates, LLC
Jason Kleps – Meshek & Associates, LLC

Many Oklahomans rely on their community's stormwater systems to keep them safe from flooding during Oklahoma's severe weather. At the municipal level, stormwater management involves the use of many different datasets including mapped FEMA floodplains, landuse planning/permitting, capital improvement planning (CIP), and infrastructure maintenance. GIS provides the tools to make work easier for communities that wish to effectively maintain their stormwater program.

Oklahoma communities are leveraging GIS to help them manage these datasets and to improve the efficiency of handling their drainage systems. One of the more important aspects of a community's stormwater program is inventorying the condition of the existing stormwater infrastructure. Leveraging GIS tools for data collection, processing, and visualization can help local officials make informed decisions about how to better maintain their system. With the support of GIS, the City of Tulsa has developed a program for inventorying and reporting on the condition of the storm sewer system and their open channels. This poster will highlight the methodology, technology, and mapping utilized to inspect the condition of the City's stormwater infrastructure using Collector for ArcGIS and hosted WebGIS services.

10. OHADP Inventory Web App Madeline Dillner – Oklahoma Corporation Commission

This is the latest news on the Oklahoma Historical Aerial Digitization Project! Since 2014, the Oklahoma Corporation Commission has been constantly working to create ways to make their vast collection of scanned and georeferenced historical aerial photographs easily accessible to the public. In 2015, the Office of Geographic Information agreed to make all of the OCC's photos available on an FTP site, with login credentials freely available. For the past couple years, there have been multiple ways to access a desired photo set. Photos from sets that were scanned and separated by township could be found by going through OKMaps' Data Viewer. Information (including FTP site links) for all existing photos sets could be found in a 1,000-record Inventory spreadsheet updated periodically by the Oklahoma Corporation Commission. Now, this new installment turns the data-rich but unwieldy Inventory spreadsheet into a layer in a streamlined, easy-to-update, easy-to-use ArcGIS Online web app. Like the OKMaps Data Viewer, this web app allows you to use a map to search for spatially-specific data. And, like the Inventory spreadsheet, the data contained in the layer's attribute table is complete—it contains information on every Oklahoma photo set the OCC is aware of from across the nation. With the new OHADP Inventory web app, you now have the best of both worlds.

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11. OSU Cartography Services Work on the Geological Highway Map Series

Hayden Harrison – OSU Cartography Services

Lauren Wood – OSU Cartography Services

Clay Barrett – OSU Cartography Services

Michael Larson – OSU Cartography Services

This poster details the ongoing partnership between the American Association of Geologists Foundation and OSU Cartography Services in updating and reprinting the American Association of Geologists' (AAPG) Geological Highway Map Series publications. This partnership, now eight years old, began with working on Petroleum production documents under the Boone Pickens Digital Geology Fund reserved for use by AAPG members. The Geological Highway Map projects are more accessible and available for public purchase. Examples of the work being done and which region's maps are complete will be displayed.

12. Quantifying Historical Red River Farm Land Change Since 1970

Kushendra Shah – Noble Research Institute, LLC

Tresa Trammell – Noble Research Institute, LLC

Noble Research Institute's Red River Farm lies in the southernmost part of Oklahoma. The property is bound by the Red River. The southern part of the farm that is adjacent to the Red River has undergone a series of changes from several decades. While the publicly available data has low spatial and temporal resolution, it is difficult to accurately map the loss of land due to the gradual shift of the Red River over time. The utilization of UAS technology with high spatial and temporal resolution data helps to better understand and quantify the change of the farm. With this information, we are able to estimate the economic loss of the land change.

13. Spatial Implications of Wind Power Buildout in Oklahoma

Lauren Wood – Oklahoma State University

Stephen J. Stadler – Oklahoma State University

The purpose of this poster is to examine the geography of suitability of Oklahoma for the installation of wind farms. The placement of wind farms in Oklahoma is important so as to ascertain areas most suitable and lessen the conflicts created by these large structures. Despite the stipulations placed on wind farms by Oklahoma Senate Bill 808, the hypothesis here is that there is enough suitable area for wind farms to be installed to meet the Department of Energy 2030 vision for Oklahoma.

14. Tulsa Regional Collision Analysis Ty Simmons – INCOG

Understanding the cause of automobile-related fatality and injury collisions can shed light on potential solutions, especially when the cause is related to roadway design. The goal of this analysis is to identify roadways in the Tulsa region with the highest crash rates for fatality and injury collisions and determine if there are correlations between number of collisions and the number of lanes, lane widths, posted speed limits, and traffic volumes of those roadways. Identifying strong positive correlations may help to inform future roadway designs in the region. For the purposes of this study, roadways were ranked, based on the crash rate for fatality and injury collisions, by “segments.” Segments are defined as a stretch of roadway that is half the distance of the roadway between two intersections (not including intersections). Highways and neighborhood streets as well as roadway segments with fewer than 10,000 vehicles per day were excluded. Collision data for the years 2011 through 2015 was obtained from the ODOT Safe-T database and a crash rate by vehicle miles travel was calculated for this analysis.

15. A Vehicle Crash Analysis of the Oklahoma City Area Regional Transportation Study Hayden Harrison – Association of Central Oklahoma Governments

With a growing population of over one million inhabitants, the Oklahoma City Area Regional Transportation Study encompasses 47 communities within 6 counties including Cleveland, Oklahoma, Logan, Canadian, Grady and McClain county. The communities within the OCARTS boundary experience an average of 27,000 car crashes annually. As new drivers emerge on the road daily, it is important to understand the causes behind an accident. Using crash data provided by the Oklahoma Highway Safety Office, an analysis of the accidents within the OCARTS boundary was compiled using ESRI ArcGIS and Microsoft Excel software.



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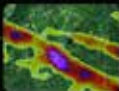
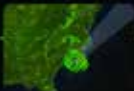
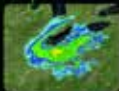


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EXHIBITOR SHOWCASE

1. Data Validation and Collaboration Made Easy through an Automated Rules Based Approach

Lori Sullivan – 1Spatial

Over the last decade a number of states and government agencies have established complete spatial data infrastructures (SDIs) or enterprise databases incorporating core digital map bases such as the land or parcel layers, road networks, administrative boundaries, topography, hydrology, etc. Due to the volume data, number of layers and in some cases time sensitive maintenance, managing the data brings many challenges. When data must be aggregated, this usually entails dealing with multiple data schemas and/or varying data quality/standards which presents many difficulties in establishing an authoritative data layers for the SDI. The process of maintaining data quality across multiple data sets is a time consuming task which increases tremendously when agencies must aggregate the data up to regional or state database such as statewide initiatives for streets, parcels, etc. Some of these challenges include integration of multiple data sets, validation and correction while maintaining metadata. In addition, the aggregation of the data for these agencies most often must maintain repeatable but be dynamic as business data needs change. This presentation will share how many agencies are overcoming these data validation, integration and management challenges by using a rules based engine to establish data validation, enhancement and aggregation in an automated, repeatable process. In lieu of complex developer's programs or scripts, intelligent software is being used to establish rules for such data integration tasks as schema standardization, data validation, data aggregation and even change detection. These rules can be applied to both geospatial and non-geospatial data across enterprise data sets. User stories will be shared as examples of successful data management and collaborations from small to large agencies. These examples will demonstrate how automation of business rules within organizations work process can save time and money for the task of maintaining accurate and up to date database across the enterprise or within a SDI collaboration.

2. Developing a 3D GIS using CityEngine

Nick Tonias, P.E. – The CEDRA Corporation

As many know, in the past few years Esri has been actively promoting 3D GIS. As a result, the interest in 3D GIS has been steadily growing. This presentation discusses how Esri's CityEngine software can be used to develop a 3D GIS using 2D GIS data. Intended for those unfamiliar with or with limited familiarity with CityEngine, this presentation provides a guide in how to create a 3D GIS using existing 2D GIS features. Covered in the presentation are the following topics:

Applications of a 3D GIS

- 2D Datasets included in a 3D GIS
- Importing Ortho-Imagery into CityEngine
- Importing 2D Datasets into CityEngine
- Developing 3D Roads from 2D Centerlines
- Developing 3D Buildings
- Discussion of CityEngine Rule Files

Additionally, this presentation addresses the typical questions that arise when considering developing a 3D GIS, those being: (a) how long does it take, (b) how difficult is it and (c) how much?

3. Gaining Insights Using Real-time Weather & the GeoEvent Processor

Matt Gaffner – Weather Decision Technologies, Inc.

ESRI's GeoEvent Extension gives users insights into when and where specific events are occurring in real-time. Naturally, real-time weather data is a powerful input that empowers GIS Analysts and Developers to generate alerts to help protect assets, keep employees safe, and drive better business decisions. Weather continuously affects everything, so the applications are endless. A tutorial will be presented on how to get started using weather in the GeoEvent Server.

4. Mobile GIS Data Collection and Reporting: A Stormwater Case Study

Chris Hill – Meshek & Associates, LLC

Jason K – Meshek & Associates, LLC

Many Oklahomans rely on their community's stormwater systems to keep them safe from flooding during Oklahoma's severe weather. At the municipal level, stormwater management involves the use of many different datasets including mapped FEMA floodplains, landuse planning/permitting, capital improvement planning (CIP), and infrastructure maintenance. GIS provides the tools to make work easier for communities that wish to effectively maintain their stormwater program.

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Room 210

Monday, September 18: 9:00 am to 4:00 pm

Tuesday, September 19: 9:30 am to 3:00 pm

The Hands-on Learning Lab (HOLL) is a training resource provided and developed by Esri Training Services. The Lab is an excellent way to introduce ArcGIS users to a variety of Esri software solutions and training opportunities while learning to use Esri software. The best part is that it is INCLUDED with conference registration!!!

The lesson topic choices are updated on a schedule matching the Esri software release schedule in order to provide new and up-to-date content.

All topics and descriptions for the ESRI HOLL can be found here: <http://www.scaug.org/2017OKSCAUG-HOLL>



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available. Since 1969, Esri has helped customers unlock the full potential of data to improve operational and business results. Today, Esri software is deployed in more than 350,000 organizations including the world's largest cities, most national governments, 75% of the Fortune 500, and more than 7,000 colleges and universities. Esri engineers the most advanced solutions for digital transformation, IoT, and location analytics to create the maps that run the world. Visit us at esri.com/news

Geomatic Resources is the premier Leica Geosystems dealer for Oklahoma, Arkansas and North Texas. Our firm was founded in 2005 with an eye towards bringing value to the product by staffing with measurement and technical professionals. Colin Fletcher has over thirty years of measurement, construction and mapping experience.

We are proud to have a staff that includes two Professional Land Surveyors and a combined 100+ years of industry experience in Surveying, Construction, GIS, Machine Control, HDS, and software solutions. We don't just provide the best products, we provide superior solutions. We are professionals backing professional products and we are proud to be a part of SCAUG!

Since 2005, Geospatial Training Services has provided high quality training opportunities for GIS professionals. Our training events are presented in a number of different formats including traditional classroom, live-online, self-paced online with access to the instructor, and self-paced. Our goal is to provide you with the training materials you need in the format you want.

Gill Reprographics

Manager – Kevin McFarlin

· We have been in business since 1987.



- We have 17 stores nationally (Oklahoma City, OK – Tulsa, OK - Dallas, TX - Fort Worth, TX - Austin, TX - San Antonio, TX - Houston, TX – Tempe, AZ – Irvine, CA – San Jose, CA – San Francisco, CA – Chicago, IL – Minneapolis, MN – Atlanta, GA - Las Vegas, NV)
- GRI works with a wide variety of customers in different fields such as Architecture, Engineering, Construction, Manufacturing, Oil & Gas, Federal/State/Local Govt., etc.
- Some our core services include digital printing, copying, scanning, document management and equipment sales.
- We sell large format copying, printing and scanning equipment.
- We are GSD Resellers for HP

The GIS Certification Institute (GISCI) is a tax-exempt not-for-profit organization that provides the geographic information systems (GIS) community with an internationally-recognized, complete certification program. GISCI offers participants from the first early years on the job until retirement, a positive method of showing value for professionals and employers in the GIS profession. There are currently over 8000 active GISPs located throughout the world.

The current GISP Certification process consists of a portfolio that describes an applicant's background in Ethics, Education, Experience, and Contributions to the Profession. That application, accompanying documentation, and payment are submitted, and the review generally takes from 30 to 45 days for approval.

The GISCI Geospatial Core Technical Knowledge ExamR has now been developed and added to the GISP Certification process. It is based on a job analysis, informed by the GIS &T Body of Knowledge, and guided by the Geospatial Technical Competency Model (GTCM). It is offered twice each year, in the Summer and Fall.

The Hexagon Imagery Program (HxIP) is orthorectified imagery that meets rigorous industry accuracy and quality standards through the use of the most sophisticated processing methodologies to provide industry professionals with a product that can be used with confidence. Enhance your GIS experience and make better decisions with the Hexagon Imagery Program (HxIP).

Land Scout was created to meet the need for streamlined project planning by bringing together a multitude of mapping resources. Land Scout is an Esri ArcGIS based mapping application which simplifies the decision-making process. The Land Scout service can be used anywhere you go, on location or in the office, utilizing a tablet or desktop. You can easily run and print reports, upload shapefiles and sketch areas of interest.

Land Scout is the sister company to Reagan Smith Energy Solutions, which is a full-service state and federal regulatory consulting firm. This unique partnership allows Land Scout to provide federal and Indian land data that was previously very difficult to obtain.

Other resources include wetland and floodplain maps and reports making developers aware of required permits. Our cultural resource layer provides data on known areas with high probability of encountering cultural resources. Our endangered species layers allow developers to see possible impacts to listed species. Well data indicates producing and abandoned wells in the area of interest.

Use Land Scout for a quick comprehensive visual resource for project planning.

The MidAmerica GIS Consortium is a network of dedicated leaders in the field of mapmaking, location services, and data development. We support the growing infrastructure of geospatial data analysis through coordination, networking, outreach and education.

The people who run MAGIC are volunteers who believe in educating

those who support this infrastructure so that they understand the industry standards, the ways in which they can ensure data authenticity, and are able to explain the integrated relationships of the tools and services in this realm.

MAGIC represents 9 states in the region. But, we are not limited to just state representation. Our network spans the gamut from local government to academia to private industry.

Meshek & Associates GIS division has assembled an exemplary staff since its inception in 1999. Our team now offers 7 certified GISPs, 3 Masters degrees, and over seventy years of combined GIS experience to our clients. Thus, we are uniquely qualified to help our clients navigate the rapidly changing world of GIS and provide cutting edge solutions that stand the test of time.

Meshek GIS services range from the basic to the advanced. Services include converting existing paper maps, CAD data, or tabular reports into an integrated GIS; performing sub-meter GPS surveys of infrastructure and environment; and, the design and deployment of advanced web-based GIS services and applications. Our knowledge, experience, and vision will ensure all of your GIS projects meet their true potential.

As a homegrown Oklahoma company, Meshek has developed a proven track record for successful GIS project design and implementation throughout our great state. Meshek is the preferred local choice for all your GIS needs.

NewEdge Services, LLC is focused on implementing GIS, Asset/Work Management Systems, Cloud Hosting, and Related Services. NewEdge provides clients with turnkey solutions for a wide variety of needs and can provide additional resources for clients on specific projects. Our experience

demonstrates our abilities, which include:

- Database design, implementation, and management (Oracle, SQL, ArcSDE)
- Custom web and mobile applications
- Hosted cloud solutions
- GIS data creation
- GIS analysis
- Hard copy map/plan inventory, cataloging, and georeferencing
- System integration
- Asset/Work management system implementation and integration
- Permitting system implementation and integration
- User training and support
- And much more...

NewEdge has strategically aligned with multiple business partners to provide our clients with implementation services for products that are leaders in their perspective fields. Our long standing business partner relationships include:

Amazon Web Services

CitySourced

Cityworks

Esri

Freeance

Geocortex by Latitude Geographics

The NewEdge team has all of the knowledge, experience and expertise needed to successfully implement all GIS related projects. Our team has been working together since 2008 and has over 100 years of combined experience in working with multiple types of data, software, and technologies that will be critical for a successful project.

Property Records Preservation, LLC -

A history of extensive data collection, research and development inspired us to create a product first in its class, which leverages the power of Amazon Web Services. Parcelinfo.io, a revolutionary approach in delivering property information, is an associated product to iProplogic.com. Continuous innovation, inspired by the evolution of technology and software design, casts Parcelinfo.io as the leading software in the industry. If property information is what you need, integrate our API today and give your clients added value and increase your revenue by capitalizing on the data delivered. Data is delivered in JSON, WKT and GeoJSON. <https://www.parcelinfo.io>

Quantum Spatial is the go-to partner for organizations that want to map, model, and better manage their world. Our end-to-end geospatial services deliver the geographic insights for advancing business goals. We provide comprehensive aerial mapping and GIS services including state-of-the-art photogrammetric, LiDAR, satellite, airborne imaging, and mapping. Our client base includes a host of airport authorities; local, county, state, regional, and federal agencies; and many of the top engineering and industrial firms in North America.

Company Summary: RazorTek was established in 2002. We are a GeoSpatial data provider specializing in data development, data

conversion, feature extraction, map production, Georeferencing paper maps, on-site GIS training, custom GIS programming, web application, MrSid image processing, and Project Management. In addition, RazorTek is a software reseller for a variety of vendors (ESRI, LizardTech (GeoExpress) and PlanetLabs), a provider for high resolution satellite imagery (PlanetLabs and Digital Globe), aerial photography and LiDAR. At RazorTek, we pay attention to all of the details that go into all of our GeoSpatial projects, providing you the quality, performance and pricing you expect and deserve. We use the latest computer technologies, with industry standard computer applications such as ESRI, LizardTech, Terrago, MicroStation, ERDAS and Microsoft Office Suite applications and many more.

Founded in 1962, The Schneider Corporation is a leading provider of geospatial and e-government solutions to hundreds of municipal, county, state, federal, and private entities. A technology leader, Schneider provides innovative, industry-leading solutions to help organizations get the most from their limited resources, with creative product solutions such as Beacon™ and qPublic.net™ (local government information portals), Permitting™ (cloud-based permitting and work flow management), and IDAM™ (damage assessment software). Serving nearly 20% of the counties in the U.S., Schneider has a wide geographic footprint with several regional offices across the country. Schneider is a registered WBE and HUB.

Surdex Corporation is a full service photogrammetric mapping firm that supplies accurate and precise geospatial information to a diverse client base. We provide our clients with high quality mapping services to include aerial image acquisition, LiDAR acquisition and processing, digital orthophotography, planimetric and topographic mapping and data hosting.

United Geo Technologies, LLC, your geospatial service provider, offers a

wide range of services such as photogrammetry, orthophotography, parcel mapping, and geographic information systems. This small, woman owned business has extensive experience in the geospatial disciplines and our personnel includes a Certified Photogrammetrist. UGT's personnel have extensive experience in the following areas:

- Aerial Imagery Acquisition (both analog and digital)
- Airborne GPS
- Aerial Film Scanning
- CAD (MicroStation and AutoCAD)
- Contour Generation
- Digital Aerial Triangulation
- Digital Elevation Models (DEM)
- Digital Terrain Models (DTM)
- Digital Orthophotography (TIFF)
- Image Compression (MrSID, JPEG2000, ECW)
- LiDAR DTM and Contour Integration
- Parcel Mapping
- Geographic Information Services (ESRI)
- Plan and Profile
- Planimetric Feature Extraction
- UAV / Drone Image Processing
- Volume Computations

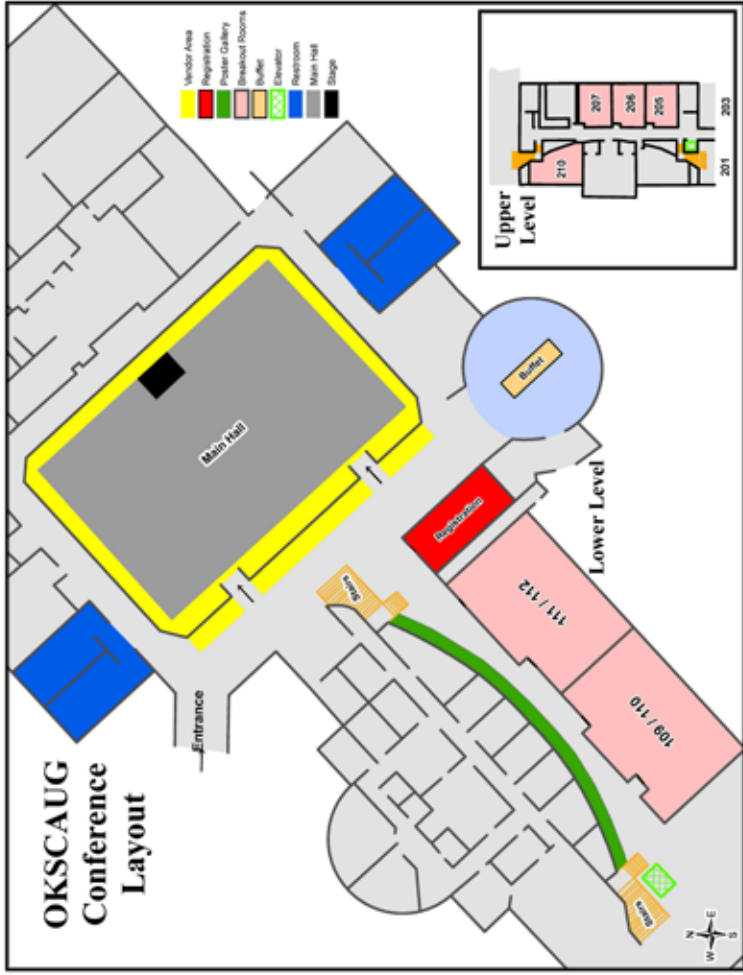
Western Data Systems is an authorized Trimble Dealer specializing in the sales, rentals, training and technical support for Survey, Mapping,

Marine, Utility, Environmental, Fleet Management and Seismic Industries. WDS was founded in 1982 and since then has concentrated on supplying top of the line Spatial Measurement and GPS related products in Texas and Oklahoma for sales and worldwide for rentals. We offer several peripheral items such as pipeline locators, ground penetrating radars, laser rangefinders, laser scanners, GPS cameras, barcoders, tablets and much more. WDS has two full Survey Supply stores in Texas and delivers wood, stakes, flags and any supply needed daily. With our extensive rental fleet we have more than enough gear to get you through any job and can ship worldwide. Our Technical Support staff is comprised of a staff that has worked in the field and can help out with any support need you have. We offer free support to both our rental and sales customers. WDS also manages the largest private VRS Network in the world. This network is available to both Survey and Mapping communities. We are adding base stations continuously and the amount of users grows each year. For a full line of our products and Services please visit our website at www.wds-us.com. With six offices across Texas and Oklahoma you are never too far from The Experts!

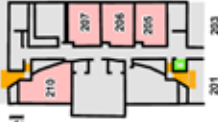
Weather Decision Technologies, Inc. is the industry leader, providing organizations with weather data via GIS-ready map services. WDT offers archive, real-time, and forecast weather data for plug-and-play use in ESRI maps and applications. In addition to providing weather data via REST endpoints from our ArcGIS Server infrastructure, WDT also offers weather data services via proprietary APIs. To further support the meteorological needs of our clients WDT employs the world-renowned WeatherOps forecast team, staffed by experts who provide global asset projection, decision support, and commodities trading insight. WDT maintains operational offices in Norman, Oklahoma and Houston, Texas.

OKSCAUG Conference Layout

- Vendor Area
- Registration
- Poster Gallery
- Breakout Rooms
- Buffet
- Elevator
- Restroom
- Main Hall
- Stage



Upper
Level



Lower Level

BENEFIT OF USERS OF ESRI'S GEOGRAPHIC INFORMATION SYSTEMS (GIS) SOFTWARE IN TEXAS,

AN ORGANIZATION DEDICATED TO THE

OKLAHOMA, LOUISIANA AND MISSISSIPPI



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