Growing

GIS

2018 Eastern Regional TNGIC Forum

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Hosted By: NETGIS

September 13, 2018
Eastman Lodge
Kingsport, TN

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Vendor Coordinator	Chris Pape
Attendee Coordinator	Chris Pape
Presentation Coordinator	Ann Howland
Forum Site Coordinator	David Light
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* Preregister at http://www.tngic.org/2018-regionals.htm#2018east

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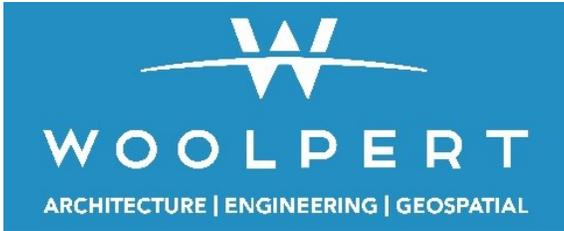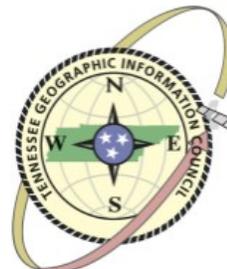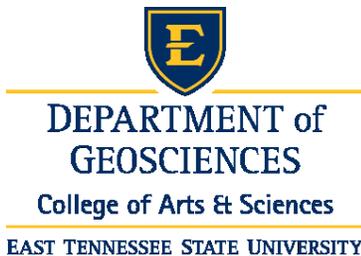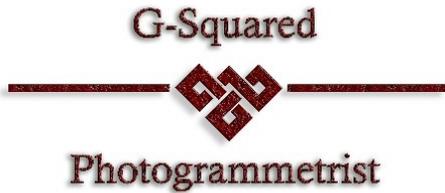
Condensed Forum Schedule

Growing GIS!

September 13, 2018

2018 East Tennessee Regional GIS Forum; Eastman Lodge, Kingsport, TN

Time	Banquet Room	Room A1/A2
8 am - 4 pm	Sept 12 - Training * Preregistration Required (Note Times of Classes Vary)	
6 - 9:00 pm	Sept 12 - Wednesday evening social – Picnic Shelter #9 Beyond Eastman Lodge * Preregistration is required.	
7:15 - 8:00	Vendor Setup – Banquet Room	
8:00 - 9:00	Registration – Lobby Vendors Open!	
	Banquet Room	**Room A1/A2**
9:00 - 9:10	Banquet Room: Opening by Forum Committee Chair, David Light. Welcome from Kingsport Alderman Colette George	
9:10 - 9:40	Banquet Room: Keynote Speaker – Stacey Whaley, Sevier County GIS Director GIS Data in Support Efforts Before and After Disasters Strike	
9:45 – 10:15	Matthew Williamson - Using ESRI's Drone2Map Software to Update Imagery, Monitor Capital Projects, & Create 3D Models	Mark Crow – How Do You Spell GIS? A Beginners Guide to Geographic Information Systems
10:15-10:45	Banquet Room: George Heleine - What's New with the USGS National Geospatial Program?	Joseph Harris - Geospatial Analysis of Land Subsidence on Industrial Complexes in the Lower Mississippi River Industrial Corridor
10:45-11:00	Vendor Area Open – Morning Snack	
11:00-11:30	David Carter - LiDAR – Making it EZ to Use	Ben Baker - Creating & Maintaining Countywide Hydrants Layer for Emergency Services
11:30-12:00	Kim McDonough - GISP 2018: The Road to and Through an Exam	Justin Graham - Technology & Tools for Roadway Asset Management & Data Collection
12:00-1:30	Banquet Room - Lunch Catered by Braeden's Barbeque Presentations by – Woolpert, SecureNav, and ESRI	
1:30 - 2:00	Link Elmore & Ellen Lester - Using ESRI Operations Dashboards for Database Monitoring and Program Administration	Randal Hale - Building a Free and Open Source GEO Server
2:00 - 2:30	Michael Camponovo & Kurt Butefish - TGA Open Data Portal and Geospatial Outreach Update	William Tollefson & Andrew Joyner - Developing the Tennessee Climate Office: Climate Data Services and Applications
2:30 - 3:00	Meghan Russell - Utilizing NASA Earth Observations & NOAA Climate Data Records to Monitor Drought & Precipitation Patterns for Coffee Agric…	Andrew Joyner & William Tollefson - Utilizing Advanced Geospatial Technologies for Data-Driven Hazard Mitigation Planning
3:00 - 3:30	Vendor Area Open - Afternoon Snack	
3:30 - 4:00	Raja Das, Michael Shoop, Jake Tittle - Johnson City MTPO: A Five Year Vehicular Crash Analysis Using Geospatial Analytic Methods	Ashleigh Reeves - Effects of Subsidence & Sea Level Rise on Coastal Storm Surge Inundation, Extent, & Economic Loss Along the United States Gulf Coast
4:00 - 4:30	ESRI – Ian Feathers – An Introduction to ArcGIS Indoors	
4:30 - 5:00	CLOSING SESSION, MAP GALLERY WINNERS & DOOR PRIZES and Vendor Teardown	

General Information

- Most forum activities will be held in the Banquet Room of the Eastman Lodge. Break-out sessions will be held in either the Banquet Room or Rooms A1/A2.
- Parking is free and available at the Eastman Lodge facility.
- Map Gallery will be in Room F. Maps will be accepted the day of the forum only for the Viewer's Choice category. Bring your own easel and foam board, if you don't have map presented on an easel, it will only be considered for the Viewer's Choice category.
- Lunch will be provided by Braeden's Barbeque in the Banquet Room to pre-registered attendees.
- Be sure to stick around for the closing session, NETGIS will be giving away several door prizes that you won't want to miss!
- If anyone has any comments or suggestions regarding this Forum or topics you would like to see discussed at our next forum, please email them to our **Forum Chair, David Light; dlight@eastman.com**
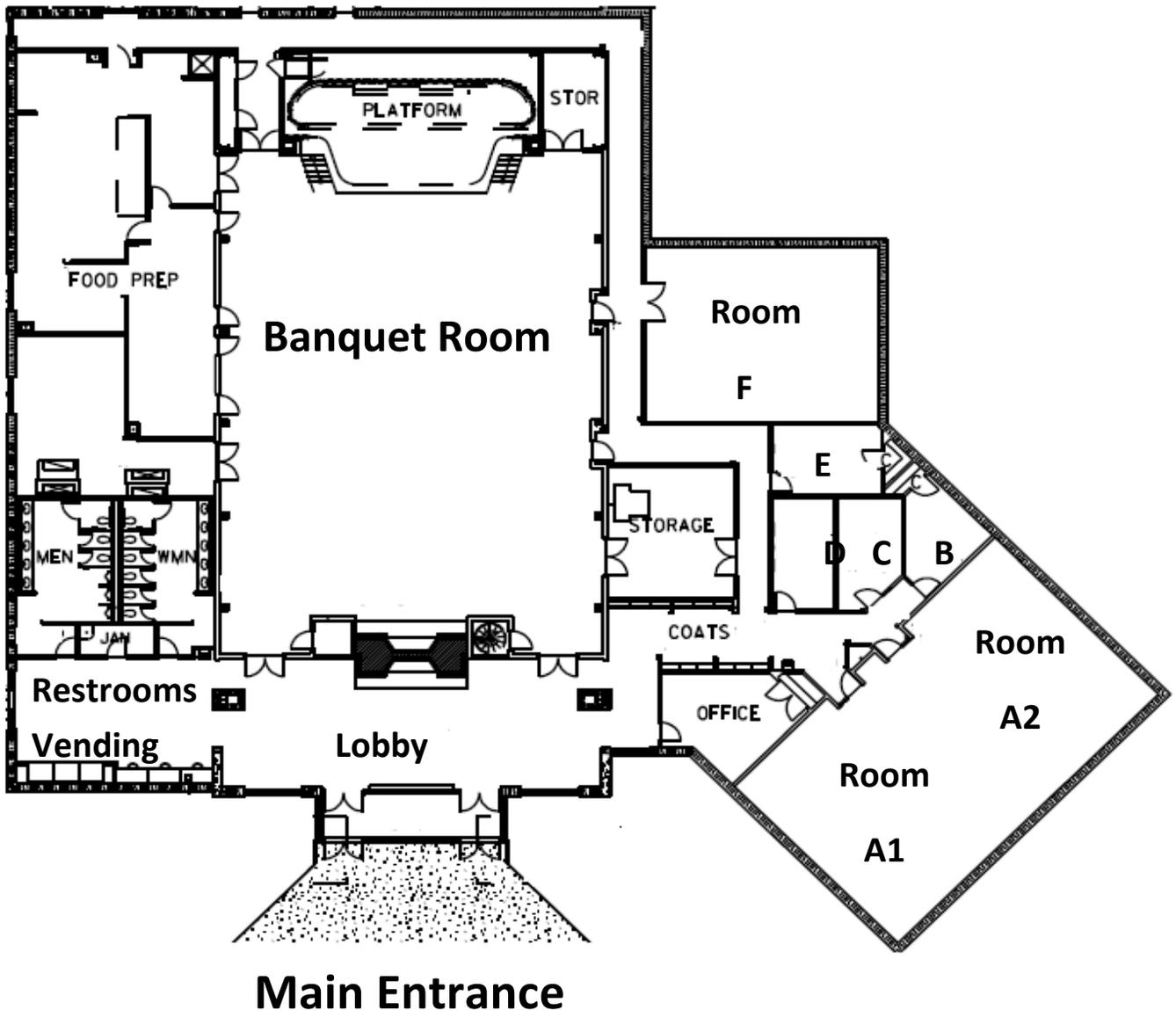
Keynote Speaker

Stacey Whaley

Director of Geographical Informational Systems for Sevier County, TN

"GIS Data in Support Efforts Before and After Disasters Strike"

Biography:

Stacey Whaley is the Director of Geographical Informational Systems for Sevier County Government. She is a lifetime resident of Sevier County, TN and proud to call the Great Smoky Mountains her home. She has been in the field of GIS since 2009. She is currently the Chair of Sevier County's Local Emergency Planning Commission, Chair of Sevier County's Leadership Tomorrow, member of the Tennessee Geographical Information Council, and 2018 ESRI Special Achievement in GIS award recipient.

Presentation Schedule

BANQUET ROOM: 9:45 – 10:15

Title: Using ESRI's Drone2Map Software to Update Imagery, Monitor Capital Projects, and Create 3D Models

Name(s): Matthew Williamson

Bio(s): Mr. Matthew Williamson, PE graduated from the Georgia Institute of Technology in 2005, has over 13 years of experience working in a variety of civil engineering disciplines. He has participated in all phases of design of wastewater collection systems, as well as site development, for both commercial and residential developments. His specific areas of concentration include the design of gravity sewers, pump stations, geographic information systems, work order tracking, asset management systems, development of comprehensive wastewater master plans, hydrology studies, erosion control, and grading and drainage plans. Mr. Williamson currently serves as the Director of Engineering for West Knox Utility District in Knoxville, Tennessee.

Abstract/Description: Unmanned Aerial Systems (UAS) or Drones for short have been all over the media in the last couple of years due to their ever-expanding use. In June of 2016, ESRI released their first version of their Drone2Map software. Shortly after that, West Knox Utility District (WKUD) began its Drone program using a DJI Phantom 4 with the intent to capture imagery and video of some large capital projects. This presentation will discuss how WKUD got its drone program "off the ground" and go through the various ways the program has evolved over the last two years. Finally, several use cases for Drone2Map will be shown to illustrate the way that WKUD is leveraging its drone program and the technology that is provided by ESRI's products.

ROOM A1/A2: 9:45 – 10:15

Title: How Do You Spell GIS? A Beginners Guide to Geographic Information Systems

Name(s): Mark Crow PLS, GISP

Bio(s): Mark has over 18 years of professional land surveying and GIS experience. He works on a wide range of GIS, surveying, and engineering related projects including water, wastewater, and storm water.

Abstract/Description: Geographic Information Systems include a dizzying array of technologies, which can seem intimidating to those who are learning about it for the first time. This presentation will help explain what GIS means, how it is used, and why it is so important to today's connected world.

BANQUET ROOM: 10:15 - 10:45

Title: What's new with the USGS National Geospatial Program?

Name(s): George Heleine, National Map Liaison

Bio(s): George Heleine is the U.S. Geological Survey National Map Liaison to Mississippi, Alabama, Tennessee and Georgia and is in the USGS Water Science Center in Jackson, Mississippi. George has been with the USGS for over 30 years starting his career in Rolla, MO with the Digital Cartographic Section before coming to the USGS. George was employed by Union76 Oil Company in the exploration of oil reserves in the Illinois basin. He provides leadership and advocates geographic information by fostering meaningful partnerships as a technical expert in applications support and data integration by providing and establishing working partnerships with stakeholders needs in support of *The National Map*.

Abstract/Description: As one of the cornerstones of the U.S. Geological Survey's (USGS) National Geospatial Program, The National Map (TNM) is a collaborative effort among the USGS and other Federal, State, and local partners to improve and deliver topographic information for the Nation. It has many uses ranging from recreation to scientific analysis to emergency response. The National Map is easily accessible for display on the Web, as products and services, and as downloadable data. This presentation will provide a wide range of updates on current activities of the USGS National Geospatial Program. Topics will include the 3D Elevation Program (3DEP), National Hydrography Dataset (NHD), The National Map data download functions, TNM services for mobile mapping efforts, US Topo, and TopoView.

ROOM A1/A2: 10:15 – 10:45

Title: Geospatial Analysis of Land Subsidence on Industrial Complexes in the Lower Mississippi River Industrial Corridor
Name(s): Joseph B. Harris
Bio(s): Joseph Harris is the Lab Coordinator for the Geoinformatics and Disaster Science (GADS) Lab at East Tennessee State University (ETSU) and adjunct faculty at ETSU and Southern New Hampshire University. Joseph teaches several GIS and GIS related classes including Introduction to Geographic Information Systems, Geostatistics and Data Analysis, Remote Sensing and Imagery, and Spatial Analysis. Joseph served as a hazard mitigation analyst for the Stephenson Disaster Management Institute at Louisiana State University where he helped develop over 60 hazard mitigation plans at the county level, and he is currently participating in the development of the initial hazard mitigation plans for ETSU and Tufts University as the GADS Lab Coordinator at ETSU. Joseph is also a PhD Candidate in the Department of Geography and Anthropology at Louisiana State University.

Abstract/Description: Spatial interpolation methods were analyzed to determine the best fit for subsidence rates and to create a predictive surface for the lower Mississippi River Industrial corridor (LMRIC). Empirical Bayesian kriging, ordinary kriging, universal kriging, and Inverse Distance Weighted interpolation methods were applied to the 2004 National Oceanic and Atmospheric Administration (NOAA) published Technical Report #50 dataset and cross validation methods were utilized to determine the accuracy of each method. Digital elevation models for the years 2025, 2050, and 2075 were developed based on the predictive surface of subsidence rates using the results from the empirical Bayesian kriging interpolation method. Results indicate that by 2025, 30.9% of landmass in the LMRIC will be below 0 m NAVD88, with 41.9% below 0 m NAVD88 by 2050, and 53.5% by 2075. Eighteen of the 153 industrial complexes located in the LMRIC are estimated to be below 0 m NAVD88 by the year 2075.

VENDOR AREA OPEN – Morning Snack   10:45 – 11:00

BANQUET ROOM: 11:00 - 11:30

Title: *LiDAR – Making it EZ to Use*
Name(s): David Carter, PE, PLS
Bio(s): David is a 1982 Civil Engineering graduate from the University of Kentucky. Right out of college, he went to work for Commonwealth Technology, Inc. (CTI) in Lexington, KY, where he worked for 7 years. While at CTI, he obtained his Professional Engineer's registration and his Professional Land Surveyor's registration. In 1989, he co-founded CDP Engineers and then MapSync Company in 1994. He currently serves as President and CEO of CDP Engineers (CDP) and spends much of his time developing products related to Geospatial Solutions, 3D Scanning & Framework, utilizing LiDAR data and many other related items. David's passion for computers and technology began right after college when he was introduced to IBM and Compaq PC's. He led the conversion from paper to computer aided drafting at Commonwealth Technology in the early 1980's

and began to create productivity applications using AutoCAD, BASIC, and spreadsheets to take advantage of the new technology. This passion for integrating technology into surveying and engineering workflows continues today. David has been married for 34 years to his wife, Kathy and they have been blessed with 4 children and 2 grandchildren.

Abstract/Description: We have developed low-cost software tools to easily and quickly accomplish the following tasks:

- Easily determine which LiDAR tile(s) you need for your project
- Quickly download multiple LiDAR tiles from the USGS National map or individual state websites
- Simultaneously, colorize the LiDAR tiles
- Clip out the portion you need to import for your project in order to reduce the file size
- Import the clipped files into any CAD or GIS platform
- Create contours
- Create an accurate 3D model
- Provide tools for measuring, drawing cross-sections and profiles, among other things

ROOM A1/A2: 11:00 - 11:30

Title: **Creating and Maintaining Countywide Hydrants Layer for Emergency Services**
Name(s): **Ben Baker, GISP**
Bio(s): Ben was first introduced to GIS as an Environmental Studies major at Slippery Rock University in Pennsylvania. He graduated with a minor in Geographic Information Technology and decided to further explore that field of study via a Master's program at West Virginia University. He graduated from WVU in 2012 with an M.A. in Geography, concentrating in GIS and Remote Sensing. Ben's research focused on comparing object-based and pixel-based classification methods of land cover change detection related to natural gas development in southwestern Pennsylvania, leading to a publication in the *International Journal of Remote Sensing*.

While in school, Ben worked as a GTA, teaching GIS 350/550 labs and as a summer intern at the West Virginia GIS Technical Center. After graduating, Ben worked for 5 years at Dieffenbauch & Hritz LLC, a private civil engineering firm in Morgantown, WV. While there, he started a GIS Department and worked with the Survey Department to develop a pipeline as-built service. Ben received his GISP certification in 2014.

Needing a change of pace and scenery, the Bakers moved to Tennessee where has Ben worked for Hamblen County from 2017-2018 focusing on cadastral mapping and 9-1-1 addressing. In March of 2018, Ben assumed his current role as the GIS Manager of the Morristown-Hamblen GIS Partnership.

Abstract/Description: When First Responders are called to an incident, seconds matter. Accurate GIS data can be leveraged to assist these crews before they even arrive on-scene. This talk will discuss the challenges of compiling a countywide dataset of hydrants for use by the 9-1-1 dispatch center and Emergency Services. The general lifecycle of this project included gathering the data, importing/digitizing the data into a common format, verifying the accuracy of each hydrant location, and then providing the data in a usable format to project stakeholders. The presenter will also review the challenges involved in the undertaking of such a project, as well as the challenges of keeping the data accurate and current moving forward.

BANQUET ROOM: 11:30 - 12:00

Title: GISP 2018: The Road To and Through an Exam
Name(s): Kim McDonough, GISP
Bio(s): Kim has been involved in GIS since his first course in Computer Cartography in 1981. He started out working in the Computer Cartography Lab for the School of Forest Resources at N.C. State Univ. from 1983 until 1986. In 1986, he moved back to his home town of Nashville, TN initially working in design review at the Planning Department for 4 years and then back into full time GIS work in 1990, where he managed the GIS until 2004. At that time, he moved to the Tennessee Department of Transportation and currently serves as the Senior IT Manager for GIS within the IT Division there. He has been involved with the Tennessee Geographic Information Council (TNGIC) since its beginning and served on its Board of Directors and was President in 1997. He has also had the pleasure and honor to serve as the inaugural president of one newest URISA chapters Cumberland. He has also served on the boards of URISA and the GISCI and was elected as president-elect of URISA in 2017.

Abstract/Description: With the creation of an exam in 2015, the GISP certification moved to a whole new level. This presentation will explain the process that lead up to the Exam and the current process and requirements for obtaining your GISP today.

ROOM A1/A2: 11:30 - 12:00

Title: Technology and Tools for Roadway Asset Management and Data Collection
Name(s): Justin Graham
Bio(s): A graduate of the University of Tennessee, Justin has over 15 years of experience implementing GIS solutions for Federal, State and Local Government clients as well as Energy, Water and Wastewater utilities.

Abstract/Description: Technology now allows municipalities and state governments to quickly assess the condition of their roads, capture a tremendous amount of data and prioritize budgets with little effort. By driving at posted speed limits, data collectors can capture the defects on the road surface as well as images capable of producing an accurate GIS of assets within the corridor. After feature extraction and calculations, agencies can quickly enhance their GIS with inlets, sidewalks, ramps, signs, signals, guardrails and much more as well as get a condition rating score for every road segment. This information can be inserted into a planning tool to help prioritize budgets, set budgets and understand how the assets degrade over time. Add in a work order management system and you can complete the asset management cycle. This presentation will cover those technologies and demo a local project (Kingsport, TN) where these technologies were put to use.

BANQUET ROOM: 12:00 – 1:30 LUNCH with Guest Speakers:

Platinum Forum Sponsors: Woolpert, SecureNav, & ESRI

BANQUET ROOM: 1:30-2:00

Title: Using ESRI Operations Dashboards for Database Monitoring and Program Administration
Name(s): Link Elmore & Ellen Lester, City of Johnson City
Bio(s): Link Elmore is the Geospatial Manager for Johnson City where he oversees Enterprise GIS, Cartegraph, and the UAV (drone) program. Link grew up in Knoxville where he attended UT and later received a master's degree in Geography from Virginia Tech. He previously taught at Emory and Henry College and worked at the Virginia Department of Mines, Minerals, and Energy. Link enjoys cycling and spending time with his wife and two teenage boys.

Ellen Lester is the Geospatial Programmer for Johnson City where her main focuses are python scripting, web app and dashboard configuration, and web GIS administration. She is originally from Christiansburg, VA and graduated with a bachelor's degree in Geography from Virginia Tech.

Abstract/Description: As Enterprise GIS systems expand to include more data, editors, web maps, services, and GIS dependent applications and programs, it can be hard to keep track of everything. Johnson City uses ESRI's Operations Dashboards to monitor who is connecting to and editing authoritative data and how that data and other GIS resources are being used to benefit city departments. This presentation will provide an overview of indicators used to track system and program statuses and the workflows and tools Johnson City uses to access and synthesize database system tables, editing history, web product usage, project statuses and more. These monitoring solutions feature a combination of python scripts and ESRI Dashboards both of which will be discussed.

ROOM A1/A2: 1:30 – 2:00

Title: Building a Free and Open Source GEO Server
Name(s): Randal Hale
Bio(s): Randal Hale is the owner of North River Geographic Systems, Inc. NRGS works with a wide variety of clients from small governments to private companies. We work mostly with Free and Open Source Software for GIS (FOSS4G) to provide answers for clients. We also install FOSS4G tools for clients to upgrade their geospatial system. Currently he volunteers with the QGIS.us users group and will hopefully be either canoeing or hiking if he is not sitting in front of a computer.

Abstract/Description: This talk will walk you through taking three components and building a server capable of storing and serving geospatial data. We will use in this talk (and demo) QGIS, PostGIS, and Geoserver. QGIS is a desktop GIS that will let you analyze and worth with a wide array of data. PostGIS is a spatial database that will allow you to store and analyze Data. Geoserver is an open source server that will allow you to publish web services. All three components can make for a robust server to collect and hold data. You can store your shape files, leverage imagery, and make edits and maintain an enterprise geospatial environment.

BANQUET ROOM: 2:00-2:30

Title: TGA Open Data Portal and Geospatial Outreach Update
Name(s): Michael Camponovo and Kurt Butefish
Bio(s): Michael is the GIS Outreach Coordinator for the Geography Department at UT Knoxville and teaches the Introduction to GIS course. Michael focuses his outreach efforts on promoting geospatial technology to K-12 students, teaching teachers how to incorporate geospatial technology into their classrooms, and using hands-on tools to recruit students into geography. Prior to his work at UT, Michael worked for the Earth Data Analysis Center at the University of New Mexico where he managed natural hazard mitigation projects, produced data for the New Mexico Geospatial Clearinghouse, and conducted geospatial outreach. Michael earned a GIS Certificate from Roane State Community College, a BS in Agriculture from TN Tech, and a MS in Geography from UNM.

Kurt Butefish is Coordinator for the not-for-profit Tennessee Geographic Alliance (TGA) www.tngeographicalliance.org , whose primary mission is to advance geographic literacy in Tennessee. The Alliance is housed in the Department of Geography at the University of Tennessee. He has BA (1984) and MS (1986) degrees in Geography from the University of Tennessee. Kurt became TGA Coordinator in June 2000 after 14 years in business development at the Intergraph Corporation. He is currently on the Board of Directors of TNGIC and serves on the Education Committee, where he is Board Liaison.

Abstract/Description: The GIS Outreach Committee has been working with the K-12 community in Tennessee to expand the role of geospatial technology in the classroom. By hosting workshops, leading professional development, and producing classroom content, the committee is making more educators aware of the free resources they can use in their classrooms. The committee also visits classrooms and other educational settings to work directly with students to increase their awareness of and interest in geospatial technology. Join us to learn about our newest resource, the TGA Open Data Portal and learn how you can support your local educators.

ROOM A1/A2: 2:00-2:30

Title: Developing the Tennessee Climate Office: Climate Data Services and Applications
Name(s): William Tollefson, Andrew Joyner
Bio(s): William Tollefson is a Lecturer in Geosciences at East Tennessee State University and is the GIS Coordinator for the Geoinformatics and Disaster Science (GADS) Lab. Wil teaches multiple GIS classes (e.g., Intro to Geospatial Technology, Digital Mapping with GIS, Open Source GIS, Intro to GIS, Earth and Society, UAV Applications) and serves as the Outreach Coordinator for the Department of Geosciences. He is also co-developing the Tennessee Climate Office at ETSU. He has a background in meteorology, climatology, and geospatial analysis, which he uses to provide expertise in hazard mapping and analysis for hazard mitigation planning.

Andrew Joyner is an Assistant Professor in the Department of Geosciences and Director of the Geoinformatics and Disaster Science (GADS) Lab at East Tennessee State University, with research and teaching interests in geographic information systems and mapping, hazard mitigation planning, climatology, biogeography, and public health. Andrew teaches multiple GIS classes (e.g., Advanced GIS, GIS Projects, Ecological Niche Mapping & Modeling, and Hazard Mapping) and is the Graduate GIS Certificate Coordinator at ETSU. Additionally, Andrew is currently developing multi-campus hazard mitigation plans for ETSU and Tufts University, and previously developed the Louisiana state hazard mitigation plan (2014) and Louisiana State University multi-campus hazard mitigation plan (2010-2013). He is also developing the Tennessee Climate Office (TCO), to be hosted by ETSU as a climate data service for the state.

Abstract/Description: Tennessee has a diverse climate that varies greatly from west to east, with wide-ranging daily impacts on many parts of our economy including emergency management, agriculture, transportation, tourism, recreation, and the environment. Currently, Tennessee is one of only two states in the country without an official state climate office, thus a major void exists regarding the development of readily available climate data and services. The mission of the 'in-development' Tennessee Climate Office is to provide climate-related services to state, local, and federal agencies, businesses, and the citizens of Tennessee. Through three primary 'mission' areas, the Office will study Tennessee's climate and inter-annual variability, and assist state agencies on extreme weather vulnerability assessments, climate-environment interaction issues, and the integration of climate information into current applications. Example GIS-based tools and data products will be presented.

BANQUET ROOM: 2:30-3:00

Title: Utilizing NASA Earth Observations and NOAA Climate Data Records to Monitor Drought and Precipitation Patterns for Coffee Agriculture Management in Guatemala, Honduras, and El Salvador.
Name(s): Meghan Russell
Bio(s): I am a senior at the University of Tennessee, Knoxville studying Geography with a double concentration in Climate & Climate Change and Geospatial Information and Technology. I am passionate about working with GIS to address real-world issues. I recently participated in the NASA DEVELOP National Program, where my team and I used NASA Earth Observations and NOAA Climate Data Records to evaluate ENSO in Central America. My presentation will be composed of findings from this research.

Abstract/Description: Spatial interpolation methods were analyzed to determine the best fit for subsidence rates and to create a predictive surface for the lower Mississippi River Industrial corridor (LMRIC). Empirical Bayesian kriging, ordinary kriging, universal kriging, and Inverse Distance Weighted interpolation methods were applied to the 2004 National Oceanic and Atmospheric Administration (NOAA) published Technical Report #50 dataset and cross validation methods were utilized to determine the accuracy of each method. Digital elevation models for the years 2025, 2050, and 2075 were developed based on the predictive surface of subsidence rates using the results from the empirical Bayesian kriging interpolation method. Results indicate that by 2025, 30.9% of landmass in the LMRIC will be below 0 m NAVD88, with 41.9% below 0 m NAVD88 by 2050, and 53.5% by 2075. Eighteen of the 153 industrial complexes located in the LMRIC are estimated to be below 0 m NAVD88 by the year 2075.

ROOM A1/A2: 2:30-3:00

Title: Utilizing Advanced Geospatial Technologies for Data-driven Hazard Mitigation Planning
Name(s): Andrew Joyner, William Tollefson; [Co-authors: Joseph Harris, Andrew Worley]
Bio(s): Andrew Joyner is an Assistant Professor in the Department of Geosciences and Director of the Geoinformatics and Disaster Science (GADS) Lab at East Tennessee State University, with research and teaching interests in geographic information systems and mapping, hazard mitigation planning, climatology, biogeography, and public health. Andrew teaches multiple GIS classes (e.g., Advanced GIS, GIS Projects, Ecological Niche Mapping & Modeling, and Hazard Mapping) and is the Graduate GIS Certificate Coordinator at ETSU. Additionally, Andrew is currently developing multi-campus hazard mitigation plans for ETSU and Tufts University, and previously developed the Louisiana state hazard mitigation plan (2014) and Louisiana State University multi-campus hazard mitigation plan (2010-2013). He is also developing the Tennessee Climate Office (TCO), to be hosted by ETSU as a climate data service for the state.

William Tollefson is a Lecturer in Geosciences at East Tennessee State University and the GIS Coordinator for the Geoinformatics and Disaster Science (GADS) Lab. Wil teaches multiple GIS classes (e.g., Intro to

Geospatial Technology, Digital Mapping with GIS, Open Source GIS, Intro to GIS, Earth and Society, UAV Applications) and serves as the Outreach Coordinator for the Department of Geosciences. He is also co-developing the Tennessee Climate Office at ETSU. He has a background in meteorology, climatology, and geospatial analysis, which he uses to provide expertise in hazard mapping and analysis for hazard mitigation planning.

Abstract/Description: Hazard mitigation planning requires collaboration across multiple agencies, departments, and technological fields. East Tennessee State University (ETSU) developed the Geoinformatics and Disaster Science (GADS) Lab to address a clear gap in hazard mitigation plan development at the university level. Methodologies and products for two HMPs will be discussed: one for ETSU and one for Tufts University. We describe novel and advanced geospatial technologies to build and utilize geodatabases for infrastructure assessment, risk/vulnerability assessment, Hazus modeling, interactive web-map production, and final plan development, resulting in dynamic and accessible deliverables. We also discuss post-project database development and maintenance.

BANQUET ROOM: VENDOR AREA OPEN – Afternoon Snack   3:00 – 3:30

BANQUET ROOM: 3:30-4:00

Title: Utilizing Advanced Geospatial Technologies for Data-driven Hazard Mitigation Planning
Name(s): Raja Das, Michael Shoop, & Jake Tittle
Bio: Raja Das specializes in geo-hazard studies using remote sensing and GIS techniques and currently pursuing a Master's degree in Geospatial Analysis at ETSU. In addition, Raja is working on landslide susceptibility modeling and risk assessment in the Great Smoky Mountain National Park.

Michael Shoop is a former GIS Analyst for Bechtel and is currently working on a Master's degree in Geospatial Analysis at ETSU.

Jake Tittle is a GIS Analyst with Johnson City's Water/Sewer Engineering department and is also working on a Master's degree in Geospatial Analysis at ETSU.

Abstract/Description: The study applies geospatial analytical methods to better understand vehicular accident occurrences within the Johnson City MTPO and MPA service area along roadways and intersections. The approach employs historic crash incident data collected by the Tennessee Department of Transportation (TDOT) from 2013 through 2017 in addition to local GIS information.   Methodologies including network kernel density estimations by volume and crash incidents weighted by average daily traffic volumes identify area roadways and intersections most prone to vehicular accidents. Consistently, the highest crash volumes and weighted rankings point to State of Franklin Road within Johnson City as the most accident-prone roadway amongst others in the service area. The study identifies other areas roadways and intersections with high crash occurrences in addition to describing each analytical methodology.

ROOM A1/A2: 3:30-4:00

Title: Effects of subsidence and sea level rise on coastal storm surge inundation, extent, and economic loss along the United States Gulf Coast

Name(s): Ashleigh Reeves, Joseph B. Harris, and Timothy A. Joyner

Bio: Ashleigh Reeves is a recent graduate having completed a master's degree in Geosciences with an emphasis on Geospatial Analysis at East Tennessee State University with research interests in geographic information systems, understanding households' risk perception and expected response actions. Ashleigh's thesis involved working on a collaborative research project with the Universities of Washington, Hawaii, California (Berkeley), SUNY Buffalo, Marquette, and Duke as well as the USGS Hawaiian and California Volcano Observatories conducting interviews with various stakeholders to identify misconceptions that contribute to inefficient organizational responses in evacuations and to better understand how to communicate risk information. She has experience working with volcanoes, coastal storm surge, and wildfires.

Abstract/Description: Subsidence is a perpetual coastal and geological process which amplifies the impacts of relative sea level rise, flooding, and erosion in coastal ecosystems. The structure of state and federal coastal management laws plays a significant role in how vulnerable coastal communities proactively respond to sea level rise and subsidence. While mitigation plans have become more common in communities throughout Louisiana and Mississippi following Hurricane Katrina, the impacts that relative sea level rise may have on tropical cyclone storm surge are not always addressed in these plans. However, the Louisiana state mitigation plan utilized various modelling methods to predict future potential economic losses caused by sea level rise and subsidence, in conjunction with additional coastal loss predictions from the Coastal Protection and Restoration Authority's Coastal Master Plan. This study builds on the efforts of Louisiana's hazard mitigation plan by quantifying the increase in direct economic loss to the built environment in parishes and counties in southern Louisiana and Mississippi from increased tropical cyclone storm surge inundation related to relative sea level rise. FEMA's Hazus-MH software was used to conduct a reanalysis of Hurricanes Katrina, Rita, and Gustav for present-day sea level, as well as for the 10-, 25-, and 50-year relative sea level rise projections. Lake Canal and Grand Isle tidal station data were used to calculate sea level rise projections, and rates of vertical displacement acquired from NOAA's Technical Report 50 were used to calculate subsidence rates. Economic loss projections developed in this study may assist many communities in quantifying possible future disaster impacts from tropical cyclone storm surge and subsidence.

BANQUET ROOM: 4:00-4:30   Esri Presentation

Title: An Introduction to ArcGIS Indoors

Name(s): Ian Feathers

Bio: Ian Feathers serves as Solution Engineer at Esri for the 3D Geodesign/Indoor GIS team. He holds an MS in Geography from The University of Tennessee – Knoxville. He is an active geomentor in East Tennessee and member of the Tennessee Geographic Information Council and Appalachian Trail Conservancy. Ian is a published songwriter and member of the Americana Music Association, also serving as a Crossfit L1 Coach at Iron Mountain Crossfit in Abingdon VA.

Abstract/Description: ArcGIS Indoors is a complete indoor mapping system for assembling, managing, and sharing building and campus information. Use the ArcGIS Indoors system for location discovery and wayfinding, asset management, operational data analysis, and crowdsource reporting to keep the indoor environment functional.

BANQUET ROOM: 4:30-5:00   Closing Session, Map Gallery Winners, & Door Prizes

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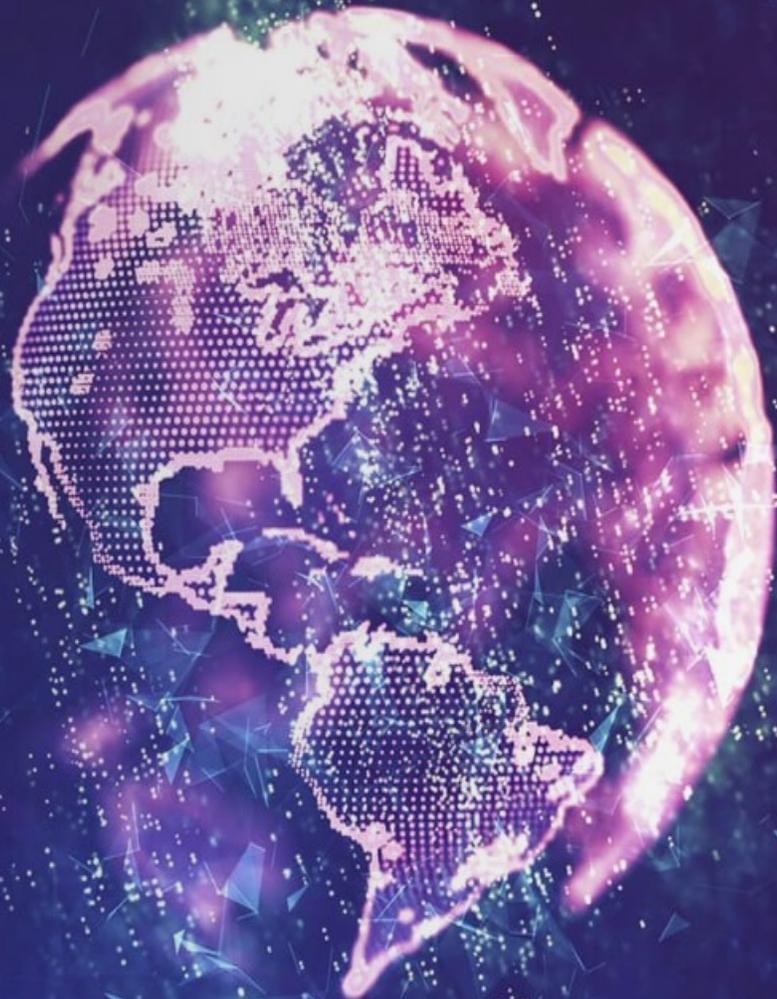
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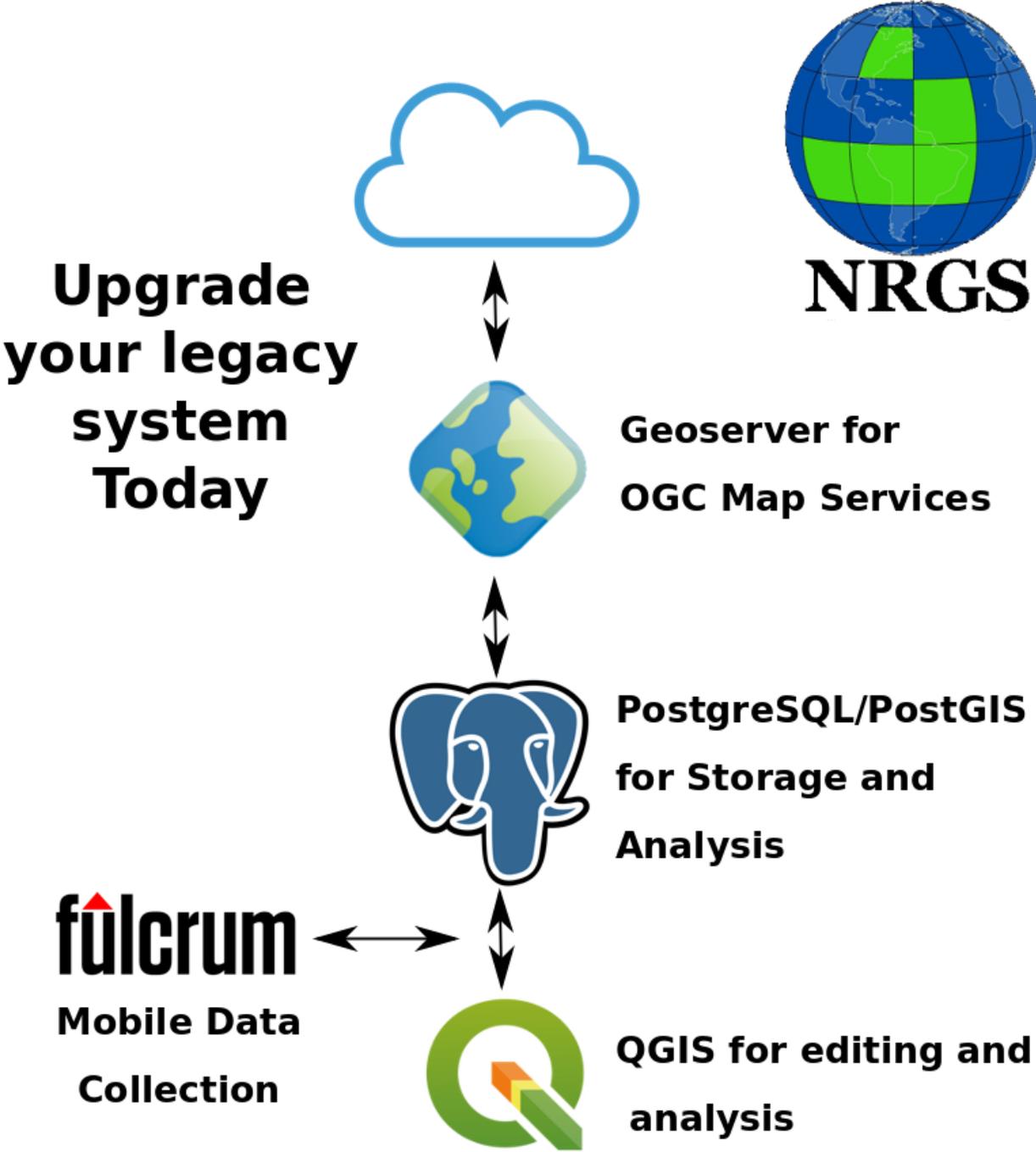
https://northrivergeographic.com
rjhale@northrivergeographic.com

TNGIC - Tennessee Geographic Information Council
http://www.tngic.org/

In January of 1990, 16 people met in Nashville and formed the Tennessee Natural Resources GIS Users Group. The preliminary purpose of this group was to share information about technology development and data to avoid duplication of effort. This group met twice a year at different locations across the state. Each meeting created a chance to share information and demonstrate what different individuals were working on, creating sessions of instructional and educational value. Realizing that the same people were attending the meetings, a decision was made to expand the effort by reaching out to others through a forum.

On December 23, 1993, the first TNGIS users' forum was held at the Garden Plaza in Murfreesboro. There were over 200 participants! The majority of participants were from the state of TN and a few from adjoining states.

From that first meeting TNGIS developed a few goals:
Create a cohesive GIS community
Improve communication between users and institutions
Promote and facilitate data sharing
Meet the needs of our customers through an interdisciplinary approach
Promote professional development
Promote data standardization
Avoid duplication of effort.

In 1994, TNGIS became what we now know as TNGIC.

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President: Jason Duke
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Vice President: David Light
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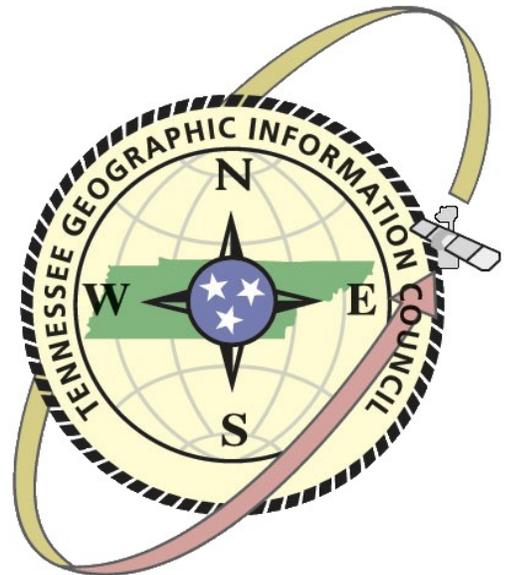
About our forum hosts NETGIS

The Northeast Tennessee GIS (NETGIS) Users Group was formed to bring together GIS/GPS users at any level in public, private, and educational sectors who are interested in geospatial technology. This group will facilitate and promote open dialogue, education at all levels, public awareness, data sharing, professional growth and representation to assist its membership in their everyday jobs.

Membership is open to any person living, working, or having interest in the North East Tennessee region and surrounding areas.

Quarterly meetings are normally held at:

Eastman Lodge
404 Bays Mountain Trail
Kingsport, TN 37660

The Board

NETGIS has three board members – contact any of them for information about this organization.

David Light – President
Eastman Chemical Company
Utilities Division
GIS Program Coordinator
Kingsport, Tennessee
dlight@eastman.com

Chris Pape – Vice President
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