



TNGIC Middle Tennessee Fall Regional Forum

Detailed Agenda

8:30 – 9:00 am	Registration Opens
9:00 – 9:20 am	TNGIC Welcome
	<i>Natalie Robbins & Paul Dudley – TNGIC Middle TN Forum Planning Chairs</i>
9:20 – 9:45 am	The State of TN Open Data Portal and Project Updates
	<i>Paul Dudley, Suzanne White - State of Tennessee, Department of Finance and Administration, STS-GIS Services</i>
	Learn about the geospatial data, web services, and applications available through Tennessee's Open GIS Portal and how they can support mapping and analysis. This session will highlight key statewide datasets, where to find them, and recent additions to the portal. It will also provide an update on Tennessee's participation in the USGS 3D National Topography Model (3DNTM) initiative and progress toward developing the state's next generation lidar and hydrography data.
BREAK	
10:00 – 10:25 am	Spatial Analysis and Geospatial Dashboard for Hepatitis C Treatment in Tennessee
	<i>Peter Adediji – Tennessee Department of Health</i>
	Tennessee's burden of hepatitis C (HCV) is among the highest in the U.S. and acute infections increased 44.8% from 2022 to 2023 despite the availability of curative therapies. A cross-sectional spatial analysis of individuals with HCV and confirmed treating providers was performed using ArcGIS Pro to identify gaps in treatment access. Drive-time analysis was used to categorize counties into high (< 30 minutes), moderate (30-45 minutes), and low (≥ 46 minutes) treatment accessibility groups. Geographic patterns were evaluated by global Moran's I and Getis-Ord Gi* hotspot analysis. Treatment deserts were defined as areas with both high HCV burden and poor access to treatment. To translate findings into practice, an ArcGIS Online dashboard was developed to support real-time provider search, navigation, and linkage to care across Tennessee.
10:25 – 10:50 am	Investigating a summer solstice sunrise alignment with airborne LiDAR at Russell Cave National Monument archaeological site, Alabama
	<i>Mark Abolins - Middle Tennessee State University</i>
	Publicly available lidar provides a way to investigate relationships between archaeological sites and distinctive landscape features. This study combines terrain analysis, solar calculations, and field observations to examine a natural summer solstice sunrise alignment at Russell Cave National Monument in Alabama. A USGS 3DEP digital terrain model with one-meter resolution was analyzed in ArcGIS Pro to characterize more than 2.3 million topographic depressions within 18 kilometers of the cave. Depression area and depth were evaluated alongside slope and aspect. Only 22 depressions met the cave entrance sinkhole's area and depth thresholds; among these, its setting beneath a steep slope facing the solstice sunrise was unique. These findings demonstrate how elevation data and spatial analysis can identify unusual landscape configurations relevant to archaeological interpretation.



10:50 – 11:15 am	Designing a Simple Open-Source Georeferencing Application to Unlock the Potential of Historical Maps
	<i>Andrew Wunderlich - Tennessee Geological Survey</i>
	TGS maintains thousands of scanned maps documenting geologic observations, drillholes, mining history, and geochemical/mineralization data. More than 15,000 documents have been scanned, described, and stored through a TGS-USGS preservation effort, but most maps lack geospatial indexing. Users must therefore rely on keyword metadata rather than spatial search. This presentation introduces a lightweight, open-source Python application for creating and editing spatial footprints for scanned maps. The tool streamlines georeferencing and provides a quick method of "footprint" production to improve spatial discovery and reuse of legacy maps. The app supports raster images and PDFs, affine georeferencing, and a "synthetic affine" approach for rapid guided placement when control information is limited. Users can digitize areas of interest; export polygons to open and Esri-compatible formats; create and edit ArcGIS Online feature and web tile layers; and generate GeoTIFFs for use in a GIS.
11:15 – 11:40 am	Tennessee Historical Marker Legacy Data Analysis and Feature Class Development
	<i>Bianca Cain – Middle Tennessee State University</i>
	Funded by the Tennessee Historical Commission, students working at the Fullerton Laboratory for Spatial Technology have compiled a database of over 2,000 historical marker location entries to produce an interactive historic marker state map in ArcGIS. Through the process of building public-facing products in a high-value state project and preparing legacy data, it has been noted that, in the absence of authoritative digital data from agencies, the public will make databases, such as the crowd-sourced historical marker database. The challenges surrounding making use of those sources will be noted, as well as the differences in authoritative data between agencies and crowd sourced databases.
LUNCH	
12:40 – 1:05 pm	GIS at the UT Center for Local Planning: A Coat of Many Colors
	<i>JP Finnegan – UT Center for Local Planning</i>
	The newly formed UT Center for Local Planning was created to serve as one of the state's principal resources and primary facilitators for advancing effective land use planning, zoning, and growth management across Tennessee. Part of CLP's core functions include Technical Assistance and Mapping. This initial talk introduces the agency and expands on the foundation of GIS in CLP, including its main duties, functions, and active projects since its inception only a few months ago.
1:05 – 1:30 pm	Utilizing ArcGIS and Power BI for Streamlined Data Collection and Paginated Reporting
	<i>Aaron Stevens - Tennessee Department of Transportation</i>
	TDOT has deployed several solutions that utilize both ArcGIS products and Power BI for a more efficient and streamlined workflow for generating paginated reports. ArcGIS applications provide excellent tools for creating, collecting, manipulating, and refining geospatial datasets. Although reporting tools are available as part of the ArcGIS platform, Power BI provides a much more intuitive and configurable environment for generating standardized paginated reports for business operations.
1:30 – 1:55 pm	Case Studies in Using GIS to Attract Economic Development
	<i>Helen Orlet and Ashleigh Glasscock– OHM Advisors</i>



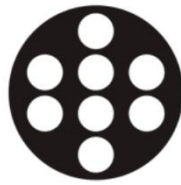
	A rural Tennessee county needed a better way to showcase development-ready properties and provide reliable information to prospective businesses, developers, and site selectors. With grant-supported funding, OHM Advisors partnered with local economic development leaders to develop a custom ArcGIS-based web application that combines utility mapping, site data, parcel information, and interactive tools into a single platform. This presentation will explore how rural counties can use GIS to attract economic development on their own terms by guiding growth in ways that support community goals. Attendees will learn how ArcGIS can help communities market opportunities, share data, support grant applications, strengthen planning decisions, and engage stakeholders.
BREAK	
2:10 – 2:35 pm	Uncovering the Distribution of NOAA Weather Radios Across Putnam County <i>Davis Roberts – Putnam County Emergency Management Agency</i> This study defines the areas that should be specifically targeted in future weather radio distribution events by determining which areas were not reached by the most recent PCEMA distribution events, the estimated percentage of the population being warned by PCEMA-distributed radios based on the distribution data, and access to other warning methods, namely smartphones. Results of this study represent the absolute minimum number of Putnam County residents being warned by weather radios, as this data only represents the first radio distribution and not residents already owning weather radios.
2:35 – 3:00 pm	The Circle of Life: Keeping an Asset Management Plan Updated <i>Alex Barrett and Benjamin Lundberg - Murfreesboro Water Resources Department, LJA</i> In Spring 2025, Murfreesboro's Water Resources Department (MWRD) completed an Asset Management Plan (AMP) in accordance with guidance issued by the TDEC. A key component of TDEC's guidance is the maintenance of a geospatially enabled inventory, requiring the digital mapping of utility assets within GIS. We examine methodologies and best practices for maintaining a dynamic & continuously updated AMP. These include workflows that leverage updated asset data such as install dates, material, and inspection records, to support automated assessments of asset condition and performance. These data are used to calculate and update asset management metrics, such as Condition, Level of Service (LOS), Likelihood of Failure (LOF), and Criticality. Automated data processing and AMP updates are performed through scripting developed within Esri's ArcGIS Pro and Experience Builder applications. This enables improved data quality, consistency, and long-term sustainability of asset management practices.
3:00 – 3:25 pm	The New State Parks Era's Tour <i>Andrew McDonagh, Leah Fuller, Margaret Morse, John Smith, and Alex Garretson - Tennessee State Parks</i> It starts with a map and lives on through maps. 2026 marked the end of the New State Parks Era for Tennessee - 14 Parks dedicated during the Lee Administration. Our team will take you on a journey of how GIS was used throughout this period, including initial proposals, site evaluations on the ground and with LiDAR, Site Analysis for development plans, cartographic products, public engagement, managing data for 70 Parks, and bringing the data into the real world through our website, mobile application and third-party systems.
3:25 – 3:45 pm	Closing Remarks and Door Prizes



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