THE
LONE STAR
A URISA Texas Publication Issue 2 ● Winter 2017

President's Message

Howdy!

I'm excited to be reaching out to you as the new President of URISA Texas. We have a great collection of GIS Professionals across Texas, and I want URISA Texas to help bring us all together, advance all of our knowledge and skills, grow our support network, and of course have fun along the way. I can't wait to see where 2017 takes us!

Quite a bit of activity has been going on behind the scenes with the URISA Texas Chapter recently. We are putting a lot of effort and energy in revamping the chapter, so you should be seeing even more communication and activities from us over the next year.

We have a wonderful new Board of Directors in place for 2017. A successful organization needs a team of dedicated volunteers to drive the organization forward, so my big thanks to the following Board Members who are dedicating their time and energy to URISA Texas:

- **President:** Chris Akin, GISP - Dunaway Associates, Fort Worth
- **Vice President:** Brian King, GISP - Freese and Nichols, Austin
- **Past President:** Sumant Mallavaram - Esri, San Antonio
- **Treasurer:** Tina Hansen, GISP - City of North Richland Hills
- **Secretary:** Olesya Powers - City of Mesquite
- **At-Large:**
  - Tina Rust, GISP - HNTB, Dallas
  - Gus Nodwell - IntegraShare Solutioneering, Houston
  - Ellen Nodwell - IntegraShare Dimensions Incorporated, Houston
  - Patrick Young, GISP - AECOM, Dallas
  - Phillip Davis - Del Mar College, Corpus Christi

Contents:

We held a Face-to-Face Board of Directors Meeting on Saturday, February 25th. A HUGE thank you to everyone for giving up a Saturday to think strategy and planning. I want you all to know that everything - and I mean everything! - was on the table for review and discussion during our meeting:

- Overhauling our internal organizational structure;
- Enhancing outreach and communication;
- Ensuring we are well represented across geographies and industries;
- Coordinating with other Texas GIS organizations;
- Evaluating corporate sponsorships and chapter membership;
- Preparing a survey to understand your needs;
- And of course, enhancing our events and offerings to you, the GIS Professionals across Texas.

We had a pizza-fueled 6 hour meeting, and we had enough to talk about for another 6 hours! It was amazing to see such wonderful discussion and collaboration!

We are going to be focusing on our events and communication even more this year. Stay tuned for more Mappy Hours, workshops, luncheons, and of course our Monthly Speaker Series webinars. We want to bring GIS professionals together to educate, network, and even a bit of commiserating so you know you're not alone!

And of course, we want to hear from you. This is YOUR organization. We are just the ones working to make it happen. I personally want URISA Texas to be the professional association of GIS practitioners across Texas. Let us know what events, workshops, trainings, and other offerings would appeal to you! And if you know others working with GIS in Texas, please have them join our mailing list on our website at www.urisatexas.org.

URISA Texas is primarily supported by corporate sponsors. If your organizations would like to help advance the Texas GIS profession, please contact us at urisatexas@gmail.com to discuss sponsorship opportunities.

Last, but certainly not least, we are always looking for more volunteers to help get involved. Feel free to email me directly at cakin@dunaway-assoc.com or call my cell at (817) 975-6980, and I'm sure I can find a way to have you help contribute!

Here's to an exciting and spatial 2017!

Chris Akin, GISP
URISA Texas President

Geoarchiving

By: Tina Hansen

Geoarchiving is the formalized process of saving and managing geospatial content in a digital records repository. This is of interest to local, state, and federal governments as each pursues ways to save and share historical digital data, including geospatial data. The Digital Preservation Coalition Watch Report* summarized the importance of preserving this data:

"Geospatial data are becoming an increasingly important component in decision making processes and planning efforts across a broad range of industries and information sectors. The amount and variety of data is rapidly increasing and, while much of this data is at risk of being lost or becoming unusable, there is a growing recognition of the importance of being able to access historical geospatial data, now and in the future, in order to be able to examine social, environmental and economic processes and changes that occur over time."

As GIS professionals, we are familiar with enterprise-based methods of archiving spatial data – saving data backups on premise or in the cloud, or taking date-stamped historical snapshots of our geodatabase data, or both. We are also familiar with other repositories such as data warehouses and hosted resources like Esri's Open Data platform.

Challenges

There are many unique challenges to saving geospatial data, including determining just what to preserve. It is clear what the primary considerations in geoarchiving are: Deciding what is of enduring value, continued usefulness, or significance; finding formats that will preserve the data into the future; providing a storage environment that allows access for analysis and research; implementing an inventory work flow, and so on.

Geospatial content also presents data packaging challenges. This is because the content of geospatial data is so often a product of related files, the tools applied, data formats used - both open and proprietary, analysis, presentation, and any temporal views associated with the spatial data. To preserve a single layer, such as legislative districts in 2016, appears a simple matter. However it becomes apparent this isn't the case when you add the layer to other data in a mapping tool that allows the user to combine it with demographic and health data, resulting in new information and new visual presentations.

Developing Best Practices

In recent years, the federal government recognized the value in preserving digital geospatial data – the federal Office of Budget and Management described geospatial data as a 'capital asset.' Using state and university partnerships, several federally initiated projects started seriously studying and reporting on geospatial data preservation. The Federal Geographic Data Committee (FGDC) launched its National Spatial Data Infrastructure (NSDI) program in 1994, a federal and state partnership charged with figuring out how to preserve "at risk" superseded geospatial content. The Geospatial Multistate Archive and Preservation Partnership (GeoMAPP) project was created to focus and report on the "what and how" of this type of archiving. Another federal partnership, the National Geospatial Digital Archive (NGDA) was formed as a collaboration of state and university libraries. The primary objective of this initiative was to create a "national federated network committed to archiving geospatial imagery and data" (http://www.ngda.org/).

While the NSDI is largely interested in leveraging geospatial data to better understand our world, other organizations are more closely concerned with the nuts and bolts of saving digital content, including geospatial data. The Library of Congress is interested in 'preserving significant geospatial data' through its National Digital Information Infrastructure and Preservation Program (NDIIPP). This program launched the National Digital Stewardship Alliance (NDSA) in 2010, a collaborative volunteer organization. Its commitment is toward "managing digital content for current and long-term use" (http://ndsa.org/values/).

There was significant work done in addressing the challenges inherent in saving geospatial

content, however, most of these grant-funded efforts seem to have met their objectives or closed, including the NGDA archiving initiative. These data from the NGDA have been absorbed into other government or university archives. Also in recent years, the USGS – citing tightening budgets –closed and archived the final USGS National Atlas (1997-2014 Edition) now accessed in the www.data.gov website. The US National Map (https://nationalmap.gov/) continues to be the nation's basemap relying on partnerships at the local, state, and federal levels and with industries.

Web postings suggest there are few current reports on the status of new work specific to the process of geospatial archiving. However, efforts at geoarchiving are alive and repositories are growing, terabyte by terabyte. Several universities, many involved in the original collaboration that formed the defunct NGDA, have created a data sharing consortium. Like many other universities, this consortium maintains a shared metadata repository under GitHub's OpenGeoMetadata collaborative organization. Today, various states, university libraries, and local consortiums continue to maintain digital repositories that include geospatial data, often using the standards and practices developed or modified through the federal initiatives.

Preserving Your Historical Data

You may be considering some kind of archiving of your own enterprise data or already have a repository in place. A couple sources that can help in planning an archiving approach are the Technology Watch Report* mentioned earlier and the 'GeoMAPP Key Findings and Best Practices' **document. Both are listed with website locations below. Any preservation of historical geospatial data must address several issues, not the least being space and accessibility. If space is a critical factor, some services that support geospatial/digital archiving include GeoBlacklight, DSpace, Socrata, and Open Data. Depending on your needs, another consideration is university libraries that may support geospatial data in their digital repositories.

My thanks: To Douglas Burns, GIS Librarian at the University of North Texas, for providing the above list of archive services and for so generously responding to my inquiry about geospatial digital archiving! And to Jon Jablonski, Head, Map and Imagery Laboratory, University of California at Santa Barbara, who shared with me what his university and others are doing to preserve geospatial data.

* 'Technology Watch Report – Preserving Geospatial Data', DPC Technology Watch Series Report 09-01, May 2009 http://www.dpconline.org/knowledge-base/tech-watch-reports
Federal Geographic Data Committee:
https://www.fgdc.gov/organization
National Archives:
https://www.archives.gov/preservation
UCSB Map and Imagery Laboratory:
http://www.library.ucsb.edu/mil

GEOMAPP PROJECT:

**See GeoMAPP Key Findings and Best Practices, December 2011:
http://www.geomapp.net/documents.htm
Geoarchiving Glossary:
http://www.geomapp.net/using.htm

NATIONAL DIGITAL STEWARDSHIP ALLIANCE (NDSA):

2017 Conference:
http://ndsa.org/meetings/
Digital Preservation in a Box:
https://wiki.diglib.org/NDSA:Digital_Preservation_in_a_Box
"Issues in the Appraisal and Selection of Geospatial Data", an NDSA Report
http://www.digitalpreservation.gov/documents/NDSA_AppraisalSelection_report_final102413.pdf?loclr=blogsig
'Collections as Data' – Digital Content Summit 2016
http://www.digitalpreservation.gov/meetings/dcs16.html

Key words: Digital Preservation, Digital Stewardship, Geoarchiving, Geospatial Archiving

New Features in the ArcGIS JavaScript API 4.2

This blog post covers new features in the ArcGIS JavaScript API 4.2, released as part of ArcGIS 10.5. Discussed below are new widgets, smart mapping in 2D and 3D, vector tiles in 3D, support for the Arcade scripting language and more.

By: Eric Pimpler

Widgets

Widgets are reusable user-interface components that are key to providing a rich user experience. Apart from a set of ready-to-use widgets, it is now possible to create your own widgets with the API using a new widget framework. Three components are required for widget creation: TypeScript, JSX and the esri/core/Accessor class. Widgets are developed by using TypeScript, a superset of JavaScript that can be compiled to plain JavaScript. JSX is a JavaScript extension syntax that can be used online with JavaScript and that came to popularity with the React framework. Because this widget framework uses a virtual JSX DOM library, it requires TypeScript in order to make it work within JavaScript. Finally, Accessor is one of the core features of 4.x and is the base for all classes, including widgets and is used to watch for changes in an application.

This new widget framework is for optional use and not intended to be a direct replacement for all Dijits. LayerList and Print are the first two widgets that have been implemented using the new widget framework: The LayerList widget provides a way to display a list of layers, and switching their visibility on and off, while The Print widget allows users to export the current mapview for printing or saving.

Support for Arcade

In the 4.2 release of the API, the Arcade scripting language is exclusively used for custom data-driven visualizations. Users now can pass an expression to renderers and visual variables. The expression will execute for each feature, generating a symbol based on the returned value. It is possible to save expressions to layer items and web maps in ArcGIS Online or Portal for ArcGIS. In future releases, users will have the ability to use it in other contexts, such as labeling.

Point Clouds

Point cloud data can be visualized using the new PointCloudLayer. This can be done in four different ways that correspond with point cloud visualization in ArcGIS Online: with RGB values, unique values, continuous color or stretched values, or class breaks.

Elevation Query API

More precise elevation values (z-values) for points and polylines can be queried directly from an ElevationLayer with the queryElevation() method. The same can be done with the already available hitTest() method.

Smart Defaults for Location-based Visualizations

The API includes four objects new to the API for generating renderers with smart default symbols: location, color, size and univariateColorSize. This last one has been created specifically for visualizations using 3D symbols. Using the methods with one of these objects, you can perform data-driven and simple location-based visualizations. Three new widgets were added to easily explore spatial patterns in their data and update data-driven visualizations: ColorSlider, SizeSlider, and UnivariateColorSizeSlider.

Texas EGRT: A Grass Roots Concept of GIS for Emergency Response

By: Tina Rust

The Texas Emergency GIS Response Team, or EGRT, is a rapidly deployable GIS resource built to support disaster response and recovery efforts across Texas. The concept for EGRT was developed in 2006 for the North East Fire Department Association (NEFDA) which covered 14 cities in northeast Tarrant County with operational agreements to share equipment and resources. A GIS team was formed and given access to the NEFDA Mobile Command Post, and since 2006, has responded to numerous incidents including flooding, a chemical spill, and several apartment fires. The team has also been deployed to Galveston for Hurricane Ike and the Possum Kingdom grass fires.

Eight years later, the concept has expanded to cover the entire State of Texas for emergency training and response. On Dec. 26, 2015, the team responded to a severe weather event in north Texas near Dallas. Twelve tornadoes were confirmed, 3 were rated EF-2 or greater with the most intense damage occurring with the Sunnyvale-Garland-Rowlett tornado. Thirteen fatalities occurred.

The next morning, the Tx EGRT team was activated, bringing in team members from the surrounding area to man the EGRT Mapping Unit in the EOC, including Olesya Powers, a Garland resident who had survived the tornado. She had attended the EGRT training sessions and was listed on the On-Call List for emergency response. She took her place designated as the "EGRT Mapping Unit" and began helping the responders obtain a picture of the situation. She and another EGRT volunteer, Gage Reigleman, offered advice to field personnel on how set up the GPS units to record the damage and continued to update the damage assessment maps as field data became available throughout the day. Once decisions on how to respond began being made, individual Incident Action Plan maps were created to illustrate the location of the certain streets and houses that were impacted and showed the best way to enter the neighborhood safely.

GIS professionals across Texas are encouraged to become Texas EGRT volunteers. The requirements to become part of the team include completing three online FEMA courses and completing one online and one in-person Tx EGRT training course. All courses are Free. Links to all requirements can be found at http://www.texasegrt.org/egrt-training.html.

Upcoming Conferences and Workshops

Conferences

Common Ground Alliance 811 Excavation Safety Conference & Expo
Orland, FL, March 14 -16, 2017
For more information visit:
http://cgaconference.com

Houston Regional GIS Expo 2017
Houston, TX - March 23, 2017
For more information visit:
https://www.eventbrite.com/e/houston-regional-gis-expo-2017-tickets-31126701803

SCAUG & LA RS/GIS Conference – South Central Arc User Group & Louisiana Remote Sensing
Baton Rouge, LA - March 27-31, 2017
For more information visit: http://www.scaug.org

ESRI Petroleum GIS Conference
Houston, TX - April 12-13, 2017
For more information visit:
http://www.esri.com/events/petroleum-energy

NENA Conference – National Emergency Number Association
San Antonio, TX, June 3-8, 2017
For more information visit:
http://www.nena.org/events/EventDetails.aspx?id=641831&group=

GEOINT Symposium – US Geospatial Intelligence Foundation
San Antonio, TX, June 4-7, 2017
For more information visit:
http://usgif.org/events/geoint-symposia

ESRI UC
San Diego, CA - July 10-14, 2017
Visit http://www.esri.com/events/user-conference for more details

FOSS4G 2017 – International Conference for Free and Open Source Software for Geospatial
Boston, MA - August 14-19, 2017
For more information visit: http://2017.foss4g.org/

GIS-PRO, Annual URISA Conference
Jacksonville, FL - October 23-26, 2017
For more information visit:
http://www.urisa.org/education-events/gis-pro-2017/

SWAAG Conference - Southwest Division of the American Association of Geographers
Huntsville, TX, October 25-28, 2017
For more information visit: http://www.sw-aag.org/2017-meeting.html

Workshops and Training

Austin TNRIS Classes:

Programming ArcGIS with Python – Intermediate: April 11-12, 2017

Advanced ArcGIS Programming with Python: June 1-2, 2017

Introduction to ArcGIS Online: March 22, 2017

Editing in ArcGIS: March 21, 2017

Intermediate ArcGIS Online: May 10-11, 2017

Houston Classes:

Getting Started with the ArcGIS Server JavaScript API: May 1-3, 2017

Building ArGIS Applications with Web App Builder: May 4, 2017

Telling Your Story with Story Maps: May 5, 2017

For the full class schedule please visit: http://geospatialtraining.com/live-class-schedule/

Interesting Links

URISA Texas members come from a wide variety of backgrounds and experiences. Their paths often allow them to come across interesting material. We are pleased to share the following with you in hopes that it may be of help or interest to you.

The Atlas of ReUrbanism is the result of an initiative by the National Trust of Historic Preservation to build the successful, inclusive, and resilient cities of tomorrow. The Atlas is a tool for urban leaders and advocates better understanding and leveraging the opportunities that exist in American cities. It takes the massive amount of data currently available about cities and makes it more accessible, allowing for the exploration and discovery of connections between older buildings and economic, demographic, environmental measures. Check it out at: http://forum.savingplaces.org/act/pgl/atlas

The North Texas Council of Governments (NTCOG) is once again offering an abundance of free GIS data for their 16-county region in the DFW area. These data include 2015 subdivision, development, and employer information. You can find these data and much more at http://rdc.nctcog.org/Members/ServiceGroup.aspx?id=9.

The National Pipeline Mapping System (NPMS) Public Viewer enables the user to view NPMS pipeline, liquefied natural gas (LNG) plant and breakout tank data one county at a time, including attributes and pipeline operator contact information. The user can also view gas transmission and hazardous liquid pipeline accidents and incidents going back to 2002 for the entire US. This is a data-viewer only – data cannot be downloaded. https://pvnpms.phmsa.dot.gov/PublicViewer/

Bridgehunter.com is a database of historic or notable bridges in the United States. The purpose of this site is to assemble a database of the historic bridges in the Central United States. This includes everything from minor stone culverts to sweeping suspension bridges to massive steel truss spans. This also covers past, present, and future -- bridges that are long gone, those that are still standing, and those that might be built in the future using historic designs. http://bridgehunter.com

The Geologic Atlas of Texas (GAT) is a series of 38 hard copy map sheets depicting surface geology for the entire state of Texas at a scale of 1:250,000. In October 2002, the United States Geological Survey (USGS), in cooperation with the Texas Natural Resources Information System (TNRIS), embarked on a project to digitize all 38 GAT hardcopy map sheets and compile them into a single, stand-alone geodatabase. Completed in 2007, the project resulted in a rich, digital dataset containing more than 145,000 geologic features in Texas and portions of neighboring states. The Texas Geology Web Map Viewer allows you to explore all of the rich data at a touch of a button. You can find it here at https://txpub.usgs.gov/DSS/texasgeology/.

City Maps: A coloring book for adults by Gretchen Peterson

2016 ESRI Storytelling with Maps Contest winners

The Great British Coloring Map: A coloring journey around Britain (in association with Britain's Ordnance Survey)

Podcast discussions on geography & geospatial technologies

USGS Historical Topographic Map Explorer

The Living Atlas of the World—available through ArcGIS Online—is the foremost collection of geographic information used to support crucial decision-making.

URISA Texas Events!

The March Mappy Hour is here!

When: March 23, 2017, 4:30-7:30

Where: The Thirsty Growler,
5733 SH 121, The Colony, TX

Keep an eye out for these upcoming events:

- More Mappy Hours
- Monthly Speaker Series
- New ~URISA Texas Luncheons

Visit our events page for more details

Thank you to our Sponsors!

URISA Texas would like to thank Dunaway Associates and Esri for their generous donations.

DUNAWAY 60 years

esri
THE SCIENCE OF WHERE™

Would you like an article, event or GIS related group included in the Lone Star? Contact us at urisatexas@gmail.com