North Carolina
Geographic Information Coordinating Council

Minutes

November 6, 2019

PRESENT

Alex Rankin (Chair), Steve Averett, Paul Badr, Debbie Brannan, Kathryn Clifton, Michael Cline (for Bob Coats), John Correllus, John Cox, Stan Duncan, Dianne Enright, John Farley, Kristian Forslin, John Gillis, Dean Grantham, Jason Hedley, Matt Helms, Bliss Kite, Camille Tyndall Watson (for Sarah Koonts), Scott Lokken, Dan Madding, Elaine Marshall, Hope Morgan, and Chris Nida

Staff: Tim Johnson, CGIA

ABSENT

David Baker, Wesley Beddard, Greg Cox, Seth Dearmin, Chloe Gossage, Joanne Halls, Pokey Harris, Debbie Joyner, Allan Sandoval, Tony Simpson, Lee Worsley, and Ron York

PROCEEDINGS

A meeting of the Geographic Information Coordinating Council was held in Training Room 240 of the Albemarle Building, 325 N. Salisbury, Raleigh, North Carolina.

Welcome and Chair Announcements

Alex Rankin, Council Chair, called the meeting to order and welcomed Council members and visitors.

Mr. Rankin shared several announcements with the Council. Debbie Brannan, Area Manager for Technology and Innovation for Cabarrus County, has accepted the role of Chair of the Local Government Committee. He thanked Jason Clodfelter for his service in that role. Tim Johnson, CGIA Director and Council staff, was recently elected to the board of directors of the National States Geographic Information Council (NSGIC) at the annual meeting of the organization. He will be serving a two-year term. Finally, Mr. Rankin directed Council members to the bottom of the agenda for a list of dates for the 2020 GICC meetings – February 12, May 6, August 12, and November 4.

Approval of Minutes

The minutes of the August 14, 2019 meeting were approved for adoption with no changes.

Presentations

1. *USGS 3D Elevation Program and National Hydrography Datasets – Status, Future Plans, and Opportunities to Collaborate (Vicki Lukas, USGS)*
   See https://files.nc.gov/ncdit/GICC-USGS-3DEP-20191106.pdf

Mr. Rankin welcomed Vicki Lukas from the US Geological Survey to share information about their efforts concerning two data layers that are very important to the Council – elevation and hydrography. Ms. Lukas is the Chief of Topographic Data Services in the National Geospatial Program of the USGS, where she helped initiate and oversees the 3D Elevation Program along with the National Hydrography Datasets of The National Map. She has over 25 years of experience as a Geographer at the USGS. Past positions include overseeing partnership activities of The National Map and the national network of Liaisons, serving as a mapping liaison in the western U.S., and beginning her career in digital geologic mapping. Ms. Lukas has been the project lead on multiple mapping coordination initiatives, including the 3DEP Executive Forum, the Alaska Mapping Roundtable and Executive Committee, and the project team of the National States Geographic Information Council and National Association of Counties to develop early partnering mechanisms for *The National Map* program.

Ms. Lukas began by describing the goal of the 3D Elevation Program (3DEP) which is the complete acquisition of nationwide LiDAR by 2023. This will provide the first national baseline of consistent high-resolution elevation data collected in less than one decade. This data has numerous applications such as forestry and flood risk mapping. It has been estimated that addressing mission critical requirements through a complete nationwide dataset could result in a return on investment of 5:1 with the potential for generating $13 billion per year in value. The current status of this effort (through federal FY19) is approximately 67% completion with 3DEP data. The program is not fully funded for nationwide coverage. With an ultimate cost of $1 billion, a total of $382 million has been expended, with the remaining effort consisting of $360 million in USGS and partner funding and another $269 million gap that is not funded between now and FY23. Ms. Lukas referenced a website here with more information about the numbers. The USGS has funded a supplemental project covering the North Carolina coastal plain which was not shown on the nationwide map.

Ms. Lukas pointed out the great partnership between the USGS and North Carolina over several years and commended North Carolina for its leadership in this area. In recent years this has included the Hurricane Sandy LiDAR and now the Hurricane Florence-related work which she just referenced. Similar to the GICC, the USGS has governance related to the 3D Elevation Program. The structure includes the USGS and NOAA as leaders along with an Executive Forum and the 3DEP Working Group which is responsible for implementation. This group includes several federal agencies along with the American Association of State Geologists and the National States Geographic Information Council.

Funding challenges include the prevalence of federal lands in the western United States and the focus by state and local governments more on populated areas. Some strategies for the future include coordination with the EarthMRI critical minerals initiative, focus on hazards such as wildfires and

landslides, and working with states to develop state-level plans for completing their coverage. Ms. Lukas shared a list of 40 organizations that are part of the 3DEP Coalition. These organizations are actively supporting 3DEP in terms of advocacy, aiding the push for funding to complete the national coverage.

Regarding future efforts, the USGS is conducting the 3D Nation Elevation Requirements and Benefits Study which will update information published in 2012 about applications for LiDAR data. This will include both coastal and inland bathymetry with involvement from NOAA. North Carolina provided input to the earlier study and the USGS appreciated that contribution. The goal is to complete the study in 2020. Ms. Lukas shared a timeline for the study. She highlighted the work in inland bathymetry in various pilot locations across the country. Preliminary results of the study indicate 500 mission critical activities need inland bathymetry with state governments and the federal government as large users. Ms. Lukas asked the Council to consider pilot areas where it could join with the USGS on data collection.

Moving on to USGS efforts with hydrography, Ms. Lukas pointed out that the agency is bringing their elevation and hydrography programs together. The context is the National Water Model in cooperation with NOAA and the National Weather Service. The NHDPlus High Resolution effort is currently in production with completion expected in FY20 for the continental United States. The product uses a 10-meter resolution elevation source and a hydrography source of 1:24,000-scale or better. Beyond the current effort, the USGS seeks to derive hydrography from 1-meter LiDAR with a hydrography source of 1:5,000-scale. North Carolina agencies are working on deriving hydrography from LiDAR and that represents another way in which the USGS can collaborate with the Council.

Ms. Lukas elaborated further by discussing the USGS effort to develop the National Hydrography Infrastructure which would include tools for accessing water data and providing the indexing system for sharing water-related information. The National Hydrography Infrastructure Working Group has been recently established to facilitate collaboration. It currently consists of federal agencies, but the intent is to reach out to the states for their involvement.

In conclusion, Ms. Lukas spoke about efforts between USGS and NOAA to implement a future continuous 3D National Terrain Model. This would integrate topographic and bathymetric surfaces. One of the benefits is the ability to perform flood forecasting in three dimensions at the street level.

Mr. Rankin asked for questions from members of the Council. With no questions, he thanked her for her presentation today.

2. *Publicly Available GIS Infrastructure Data – Best Practices (Amy Barron and Adam Spry, Duke Energy)*
   See https://files.nc.gov/ncdit/GICC-DukeEnergy-20191106.pdf

Mr. Rankin reminded the Council of its theme of seeking greater public access to infrastructure data. Amy Barron and Adam Spry from Duke Energy are prepared to present their work to the Council.

Amy Barron, Manager of Customer Delivery Carolinas GIS and Centralized Design, completed her undergraduate and graduate work at the University of South Carolina. She worked in both the public and private sector before landing at Duke Energy in 2008. She is currently the Manager of GIS and

Centralized Design for Customer Delivery Carolinas. She leads an amazing team covering North and South Carolina. She earned her PLS in 2014 and GISP 2004.

Adam Spry, Director of Land Services Enablement, is a native of Nashville, TN, attended Lambuth University where he received a BBA focused in Marketing and Economics, followed by a Doctor of Jurisprudence from the Cecil C. Humphreys School of Law at the University of Memphis. He worked in public education and private sector marketing before beginning a career in infrastructure land rights management with the West Virginia Division of Highways in 2007. He joined EQT Corporation in 2008, relocated to Charlotte with Piedmont Natural Gas in 2011, and is now Director, Land Services Enablement leading Duke Energy's fantastic Research & Data Management, Survey & Mapping, and Land Services GIS teams.

Ms. Barron thanked Mr. Rankin for the opportunity to speak to the Council. She summarized the geographic footprint of Duke Energy which consists of 31,000 electric transmission line miles and 746,000 miles of natural gas transmission lines serving 7.7 million customers in six states. Then she posed the question of accessibility to right-of-way data to Mr. Spry who stepped to the podium.

He described his role of managing the easement and parcel data. He acknowledged the GICC's request to Duke Energy to share its data. Mr. Spry said that Duke Energy is prepared to share a graphic representation of electric and natural gas transmission easements. That does not include the electric and natural gas facilities themselves. Attributes would include asset protection contact and website; data correction contact; disclaimer; and deed book and page. Duke Energy believes that it would help get information out to a broader community of users if someone needs either to perform construction in those areas or cross them. It is also helpful to share data as a means of seeking quality improvements to it. Duke Energy provides easement agreements to county registers of deeds across North Carolina. Easement polygons have recently been deemed to be public data by Duke Energy management and can be shared. Mr. Spry and Ms. Barron are excited about the company's willingness to take this step. This simplifies access to the data for those who are involved in construction, land development, bridge replacements, or other activities where awareness of the location of Duke Energy assets is needed.

In closing, Mr. Spry asked the Council where to deliver the data and how frequently it should be delivered. He and Ms. Barron also asked to be more involved with the Council on future work of the Working Group on PLS and GIS.

Mr. Rankin opened the floor for questions from the Council, starting with a question of his own. Does the information that Duke Energy intends to share include where lines exist and where right-of-way has been acquired but is not occupied? Mr. Spry responded affirmatively. Paul Badr asked what information would be included with the polygons. Mr. Spry responded that it would include electrical and natural gas transmission, not distribution, simply indicating that it is a Duke Energy property. Mr. Badr stated that this is a big step for Duke Energy to take. Steve Averett asked how comprehensive the dataset would be. Mr. Spry stated that it is comprehensive for North Carolina.

Jessica Middlebrooks, GICC Legal Counsel, asked two questions: (1) will the data include the type of easement and access to it; and (2) how often could the data be updated. Mr. Spry indicated that it

could be provided frequently, and Duke Energy would just need to work with the GICC to determine how to provide it. Ms. Barron reminded the Council that the data would provide a graphical representation that Duke Energy has an easement in the area and enlisting a professional land surveyor would be needed as part of your due diligence in verifying the accuracy of that representation in relation to the user's need. Kathryn Clifton asked about the lag time between the acquisition of the easement and when the data is represented in the dataset. Mr. Spry stated that it is typically added when a new project goes into the construction phase rather than when the easement is recorded. The ultimate goal would be to add the data in real time following recordation of the easement. Ms. Clifton added that from a county government standpoint it would be helpful to have the data available as a map service with the opportunity to download the data as well for analysis.

Ms. Barron shared that Duke Energy would provide the data to NC OneMap. She envisions working with other states in the Duke Energy footprint, but North Carolina was the first to ask about data sharing. Jason Hedley asked if as-built versions of the easements would be available if things changed. Mr. Spry stated that the representation would be what was recorded. Matt Helms asked if easements were ever extinguished. Mr. Spry commented that it happens but is rare. The next update of the dataset would reflect it if that situation occurred.

Mr. Rankin concluded the segment by thanking Ms. Barron and Mr. Spry for their presentation and willingness to share their data through what he considers a best practice for others to follow. He added that NC OneMap is the right destination for the data and that he would work to plug Ms. Barron and Mr. Spry into the Council's committee structure.

3. *Importance of Utilities Data in NCDOT Project Delivery (Eric Wilson and Ryan Arthur, ATLAS Project)*
   See https://files.nc.gov/ncdit/GICC-NCDOT-Utilities-Data-20191106.pdf

Mr. Rankin introduced Ryan Arthur, lead and Eric Wilson, technical lead for NCDOT's ATLAS Project to share the value of utilities data in NCDOT project delivery. Since the team last briefed the Council, an application has been created to assist the project delivery process with over 700 datasets. There are 400 utility providers in North Carolina and their data is important to the project delivery process. For example, there are 105 different power providers ranging from large utilities such as Duke Energy and Dominion Energy to electric membership corporations as well as municipalities, schools and universities. Only about 50% of the state is covered in terms of data availability. The team appreciates Duke Energy for its willingness to share its portion of the data.

Taking a typical NCDOT highway project as an example, it is clear that utility data is critical in minimizing effort during project scoping, planning, and design. Lack of awareness of the presence of utilities requires rework with financial and schedule impacts. Once a utility investigation is done and all utilities are known, negotiations must occur between NCDOT and the various utilities. Utilities need to be moved which affect the schedule and the cost increases because the MOA between NCDOT and each utility is based on a specific right of way that has now changed. Negative impacts result in a loss of trust between NCDOT, utilities, and the public. Much of this could have been avoided with earlier access to a more complete set of utility data.

Remedies to this problematic situation include engaging with North Carolina 811; investigating data availability from open source data; engaging consultants to contact individual utilities; and assessing

the issue at an executive level at NCDOT. North Carolina 811 maintains an agreement with each utility that precludes them from sharing full datasets from those individual utilities. The 811 service only operates by providing an x, y-coordinate that results in presence or absence of each utility at that point. The open source approach did not yield web services that meet the need. Availability of the Duke Energy data described earlier would be very beneficial to the NCDOT project delivery process. The ATLAS project needs similar data from all the other 404 utility providers.

Moving forward, it is clear that security of utility information is important and needs to be maintained. There is a need to embrace web services as a part of the solution. The GICC can help solve the current situation by being an advocate for finding ways to make utility data more accessible. The ATLAS project recommends the following additional actions: (1) communicate with utility owners; (2) craft tactical relationships over time; (3) gather feedback on the issue and construct use cases, then show return on investment; (4) form a GICC committee to focus on the issue; and (5) create a blanket MOA or MOU similar to North Carolina 811.

Mr. Wilson concluded his remarks by asking for questions. Mr. Rankin asked about the number of NCDOT projects ongoing at any one time. Mr. Wilson responded that 500-700 projects are involved in the project development process at one time. Mr. Rankin stated that it is clear that there is tremendous benefit to NCDOT to have infrastructure data statewide. Hope Morgan added that many utilities do not have the capabilities of Duke Energy which makes providing data difficult, particularly for smaller utilities. The Council needs to define a platform and provide technical assistance to those utilities to enable them to contribute to the statewide picture. It is also an excellent opportunity to standardize what will be provided. Grant funds may also be needed to facilitate the standardization process for their data. Ms. Barron asked what happens if Duke Energy provides distribution data to NCDOT that turns out to be inaccurate. Mr. Wilson responded by stating that there are layers that are secured, not widely accessible, and if the planned project right of way appears to cross that utility data, then NCDOT simply communicates that, nothing more. Field work would help confirm the existence of an actual problem.

Mr. Rankin wrapped up this segment of the agenda by directing the Council's attention to the Charlotte Stormwater application that he considers another best practice. It shows locations of stormwater infrastructure including facilities and easements. The website can be found here .

Committee Reports

Statewide Mapping Advisory Committee (SMAC). Paul Badr, SMAC Chair, briefed the Council on activities of the committee since the August 14 Council meeting.

The SMAC held its last quarterly meeting on October 16. The primary points are summarized below:

- For the Statewide Orthoimagery Program, the 2019 project has moved into the 21-county southern piedmont and mountains area. The project team has received about 50% of the final deliverables from the contractors. The remainder will be delivered in about two weeks. The project team will schedule delivery meetings with the 911 Public Safety Answering Points (PSAPs) in early December. At those meetings the PSAPs will receive copies of their imagery. Image services and download capability should be available from NC OneMap around that same time. The 27-county 2020 coastal project will include the 4th band (color infrared) for the entire deliverable area. Five vendors have been selected and the project team

is currently working to issue contracts. Due to project timeline efficiencies the goal is to deliver imagery to the 911 community before Thanksgiving of next year.

- The NC Parcels effort continues with the fall parcel update underway. The parcels team is encouraging counties to update their parcel data in the transformer quarterly.
- For the Elevation framework data layer, the NC Department of Public Safety is producing 1-foot contour lines based on updated LiDAR elevation data. A total of 97 counties are complete so far.
- For the Geodetic Control framework data layer, the year 2022 will bring new horizontal and vertical datums for North Carolina. The changes will impact county land records in the state and anyone else using or creating geospatial data. Gary Thompson and the 2022 Reference Frame Working Group are working to get the word out.
- The NextGen 911 project is progressing nicely. The project team has established contact with approximately 50% of the 127 PSAPs in the state. Multiple site visits have been made and by the end of this month about 35 local government agencies will have received some form of communication from the team.

Mr. Rankin asked if there were any questions for Mr. Badr. Stan Duncan asked if the quarterly updates of parcels had already started. Mr. Badr responded that those quarterly updates had begun. [Editorial Note: A subset of the counties are providing quarterly updates at this time.]

Local Government Committee (LGC). Mr. Rankin recognized Debbie Brannan to give her first report as new chair of the LGC. At the last LGC meeting on August 28, highlights from the previous GICC meeting were discussed. CGIA gave an update on the NextGen911 project and briefed the Committee on the final report of the Working Group for PLS and GIS and progress on the Public Access to Infrastructure Data topic. Bob Coats provided an update on the 2020 Census and was grateful for the work done so far by the local governments in terms of the Local Update of Census Addresses (LUCA), the Participants Statistical Areas Program (PSAP), and the new construction programs. He encouraged local governments to review the Boundary and Annexation Survey that the Census Bureau will be releasing by the end of this year and provide any feedback to the Bureau by March 1, 2020. Local government officials could also serve as local trusted voices on local complete count committees. Outreach to communities and encouraging public participation are important as the 2020 Census is valuable for all segments of North Carolina. One goal is to increase the response rate by 5% over the 2010 Census.

The committee reviewed its 2019-20 Work Plan. Two tasks have been added to the work plan including communication with local jurisdictions regarding the NextGen911 project as well as providing advice, guidance, and support to the GICC regarding the Public Access to Infrastructure Data topic. The LGC also discussed the vacancies for both the Chair and Vice-Chair roles as well as representation from Carolina URISA, the regional councils of government, and the NC League of Municipalities. Representatives of the various GICC committees and working groups briefed the committee on those activities - Working Group for Enhanced Emergency Response, Working Group for Seamless Parcels, Working Group for Orthoimagery and Elevation, Hydrography Working Group, and the Statewide Mapping Advisory Committee.

Since the last meeting, the LGC has been working on finding new representatives for its vacant positions. Debbie Brennan (Cabarrus County) was selected as LGC Chair and Alice Wilson (City of New Bern) was selected as Vice-Chair. The LGC welcomed Pam Carver (Henderson County) as the Carolina URISA representative and Aarti Sharma (Centralina COG) as the Associate of Regional

Council Executive Directors (ARCED) representative. The NC League of Municipalities (NCLM) and CGIA are working on identifying their representative. Finally, the LGC filled the two local government representative slots on the Working Group for Orthoimagery and Elevation with Josh Norwood (Pender County) and Natalie Walton-Corbett (City of Greenville) agreeing to serve in that capacity.

The LGC's final quarterly meeting of 2019 will take place on November 20.

State Government GIS Users Committee (SGUC). John Farley, SGUC Chair, briefed the Council. The committee has completed its work on the ESRI Enterprise License Agreement (ELA) with a signed agreement in terms of licensing and cost. The next step for the committee is to prepare its work plan for 2019-20. Steve Averett asked when the ESRI ELA will be published for access by local governments. Mr. Farley agreed to follow up and provide the link to the document.

Federal Interagency Committee (FIC). Scott Lokken, FIC Chair, stated that the executive committee will meet soon to discuss and schedule their next full membership meeting. He thanked Vicki Lukas of the USGS for her presentation today. On other matters, NOAA-National Geodetic Survey (NGS) efforts are focused on 2022 reference frame migration. His agency is also working on changes to the state plane coordinates and zones for 2022. A Federal Register notice was released in October highlighting an upcoming change from the US Survey Foot to the International Survey Foot. The change will occur on December 31, 2022. In other matters, post-storm imagery from the hurricane is available and updates to coordinate transformation software are also available.

Hope Morgan asked if the fact that the US Survey Foot is going away matters to the Council and how do we handle that change. Gary Thompson stated that the US Survey Foot is a requirement in the general statutes. It is also in the statutes in approximately 40 other states. Mr. Rankin asked about the difference between the US Survey Foot and International Foot. Mr. Lokken indicated that the difference is very small. Tim Johnson stated that the GICC has a history of evaluating federal directions and either adopting or choosing not to adopt them. Mr. Thompson shared that the NC Society of Surveyors met recently and voted to remain with the US Survey Foot. Mr. Rankin asked the Statewide Mapping Advisory Committee to take up this matter, develop pros and cons, and make a presentation at a future GICC meeting. Mr. Lokken noted that comments from the Federal Register notice are due on December 2. Mr. Rankin acknowledged the date but believed that the Council needs to evaluate the issue nonetheless and decide what is best for North Carolina.

GIS Technical Advisory Committee (TAC). Dan Madding, TAC Chair, reported for the committee. He is looking for any comments on the Smart Cities document that the TAC shared at the last Council meeting. The Committee is preparing its work plan for 2019-20. He called on Council members to suggest technical topics for the TAC to explore.

Management and Operations Committee (M&O). Alex Rankin reported as the committee chair. The M&O met on October 14 and meets again on December 16. Matters that the committee discussed have been mostly covered earlier in the agenda. The committee discussed the continuing work of the Working Group on Enhanced Emergency Response (WGEER) including best practices. Hope Morgan shared some lessons learned from recent storm events. WGEER met on October 25 and is moving forward based on recommendations that the Council adopted at its August meeting. They are establishing a phone call protocol surrounding events. On another path, a process for identifying volunteers to support GIS activities related to an event is being defined. This is being organized

through the NC Division of Emergency Management's Training, Exercise and Response Management System (TERMS). Various state government departments are being identified and engaged. A final path is setting up the portal environment to support geospatial data sharing as part of emergency planning and response activities. A session with ESRI is scheduled for November 22 to pursue that part of the recommended path.

GICC Member Announcements

Matthew McLamb shared an update of the NextGen 911 effort across the state on behalf of Pokey Harris and Gerry Means of the NC 911 Board who could not attend today. Mr. McLamb and Anna Verrill of CGIA, along with a GeoComm representative and a NC 911 Board regional coordinator, have been meeting with PSAPs and local government GIS leads to assist them in data readiness for NextGen 911. Approximately 85 of the 127 PSAPs in North Carolina have been contacted and collaboration has occurred. GIS data is critical to the success of the project. Upcoming workshops are occurring in Carteret and Person counties. These workshops typically include several PSAPs each. Looking ahead, the team is in the very early stage of interaction with NCDOT regarding street centerlines that will be a product of NextGen 911. Similarly, the AddressNC effort will be the beneficiary of address data emerging from NextGen 911. The goal is to have all PSAPs on the ESInet telecommunications network and all GIS data in place by June 30, 2021. The support of local governments in North Carolina is very much appreciated as we move down this path.

ADJOURNMENT

There being no other business, the Chair requested and received a motion and a second to adjourn the meeting. The meeting was adjourned at 2:31 PM.

This was the final meeting of the Council for the 2019 calendar year. The Council quarterly meeting schedule for 2020 is: February 12, May 6, August 12, and November 4.

Presentations given at this meeting are on the Council website.