North Carolina
Geographic Information Coordinating Council

Minutes

February 23, 2022

PRESENT

Hope Morgan (Chair), Steve Averett, Amy Barron, Kathryn Clifton, Balu Chepuri, Bob Coats, , Stan Duncan, Dianne Enright, Kristian Forslin, Dean Grantham, Joanne Halls, Pokey Harris, Jason Hedley, Matt Helms, Dan Kempton, Scott Lokken, Elaine Marshall, , Chris Nida, Allan Sandoval, Bill Shankle, Allen Serkin, Brooks Tate, Gary Thompson, Linda Thurman, Christian Vose, Natalie Walton-Corbett, Melanie Williams, Eric Wilson and Vanessa Wrenn.

Staff: Tim Johnson, Colleen Kiley, CGIA

ABSENT

Paul Badr, David Baker, Seth Dearmin, Jason Dowdy, Sarah Koonts, Haley Pfeiffer-Haynes, and Tony Simpson

PROCEEDINGS

The council held its meeting via Webex.

Welcome and Chair Announcements

Hope Morgan welcomed the Council and introduced herself as the new Council chair. She stressed the importance of the Council in coordinating widely used framework datasets including orthophotography, parcels, transportation, municipal boundaries, and elevation among others. The Council has been instrumental in coordinating funding, production, stewardship, and maintenance of datasets that are essential to the function of state and local government as well as the private sector. Ms. Morgan reminded Council members that as representatives of their secretary and agency, they have an obligation to regularly update secretaries on the work of the Council and serve as a liaison bringing information from agencies back to the Council.

Alex Rankin has stepped down as Chair of the Council, and Ms. Morgan thanked him for his service to the GICC and the GIS community in North Carolina. He served as both member and Council chair for at least 10 years. He was appointed Chair by Governor Cooper in 2017 and stepped down at the end of 2021. Ms. Morgan expressed her appreciation and thanked him for his commitment and support of the Council.

The North Carolina Department of Information Technology has named Tim Johnson North Carolina's first Geographic Information Officer. He has served unofficially in the role, but the official title brings North Carolina in line with other states in the nation with well developed and strong geospatial programs.

New Appointments to the Council

Ms. Morgan made several announcements about changes in Council membership since the last meeting.

- Representing DIT, Dan Kempton, IT Enterprise Architect
- Representing the Department of Public Instruction, Vanessa Wrenn, Chief Information Officer
- Appointed by the Governor: Linda Thurman, Director for Student Professional Development and Employer Relations at UNC Charlotte
- Advisory Member (appointed by the GICC Chair): Ballingam Chepuri (Balu), Advanced Data Analyst, State Board of Elections

Chairwoman Morgan welcomed the new members.

Approval of Minutes

The minutes of the November 3, 2021 meeting were approved for adoption with no changes.

Presentations

Census Count Question Resolution Update (Bob Coats, OSBM)
Bob Coats, Governor's Census Liaison, gave an update on the 2020 Census. In 2021, data was released for local redistricting. The released Census data has been treated with a disclosure avoidance system, referred to as differential privacy to protect individual confidentiality. Only three data points are excluded from differential privacy and are reported as exact counts: state population, block level housing units, and block level group quarters.

Communities have three options for Census corrections. Two involve challenges, and the third is a local special census. Mr. Coats outlined the three options.
1. **Count Question Resolution (CQR):** Free challenge available to Tribal and Local Governments only based on limited boundary and housing issues. Successful CQR challenges could change 2020 Census counts. Valid challenges are based on one of three corrections. Challenges may be submitted in paper, Geographic Update Partnership Software (GUPS), or by GIS.

Boundary	Incorrect boundaries were used
Geocoding	Housing units or GQs were counted in the wrong place (inside/outside town limits)

Coverage	Housing units or GQs in an area were not counted

2. **Post-Census Group Quarters Review (PCGQR):** Free challenge available to Tribal and Local Governments only of group quarter (GQ) facility and population counts. Successful PCGQR challenges could revise 2020 population estimates base.
3. **Special Census:** Local government funded repeat of the entire Census process for a specified area

The Count Question Resolution (CQR) program began January 3rd, 2022 and will run through June 2023. The Census Bureau uses boundaries in place as of January 1, 2020 and housing units as of April 1st, 2020. Only the highest elected official can submit a challenge, but they can designate anyone to assist with preparation of the challenge. For resources and details on the CQR process, the Census Bureau has a CQR Website with information. The Census will make free spatial analysis software available to local governments called Geographic Update Partnerships Software (GUPS). Additional resources and webinars can be found on the N.C. Office of State Budget and Management website.

Geospatial Maturity Assessment (Karen Rogers, Wyoming Enterprise GIS and past NSGIC president and Tim Johnson, CGIA)
Karen Rogers, past president of the National States Geographic Information Council (NSGIC) and Wyoming Chief Geodata Officer, joined the meeting from Wyoming to explain the Geospatial Maturity Assessment (GMA) and its importance to promoting national geospatial advancement. NSGIC exists to advance state-led geospatial coordination for the nation and performs the GMA every two years.

Ms. Rogers outlined three prior assessments that inspired the GMA. First, the American Society of Civil Engineers (ASCE) Report Card for America's Infrastructure was started in the late 1980's. As a member of the Coalition of Geospatial Organizations (COGO), the ASCE participated in the Report Card on the U.S. National Spatial Data Infrastructure (NSDI) which began in 2015. Finally, NSGIC began a simple effort to gather information on seven framework datasets in the early 2000s through periodic surveys. In 2019, this simplified effort was expanded to a more formalized process that would create state level report cards for geospatial framework data layers and state coordination efforts becoming the GMA.

The GMA process involved creating teams for each framework data layer to craft the assessment questions. Framework layers were divided into two categories, state-led and federal-led. Grading was different for the two groups with state-led categories graded A to F, and with federal led layers graded at a baseline of C with additional investment and state involvement activities raising the grade. Differences exist across the country in the need for certain layers. For example, in the eastern part of the country, leaf-off imagery is preferred, and less is invested in the federal-led leaf-on layer. In the west, more states prefer the federal leaf-on layer and less investment is placed in state-led leaf-off imagery.

Once the grading is completed, states have an opportunity to provide responses to their grades to put grades in context. The grades and statements are then published on the NSGIC website. In addition, grades are presented in map form on the GMA dashboard. North Carolina's grade was A-, an

improvement from the 2019 grade of B+. This grading system allows states to review their progress, compare their programs to those of neighboring states, and consult states with higher grades to learn from successes.

Tim Johnson presented North Carolina's report card to the Council, a copy of which is attached to these minutes. Mr. Johnson began by stating that North Carolina's stellar grade was a result of time and financial investment over decades. North Carolina was graded an A for coordination, reflecting the mature and active coordination program in the state. A grades in leaf-off orthophotography, addresses, and transportation are a result of investment from the 911 Board and coordination by the GICC to collect, standardize, and distribute the data. The N.C. Geodetic Survey's (NCGS) dedication to the collection and distribution of geodetic control data resulted in an A- grade. Investment from the Department of Transportation and Department of Public Safety's Flooplain Management Program in Lidar data collection and distribution resulted in another A- grade. Recent work by the Working Group for Municipal Boundaries as well as the NCGS to improve the municipal and county boundary data in the state resulted in an A grade. Because the state relies more heavily on leaf-off imagery, less investment is made in leaf-on imagery flown by federal partners. An area for improvement would be to invest in leaf-on imagery upgrades where needed. Hydrography was the only C grade and reflects the level of completeness, lack of defined data steward, and limited public availability of data updates. The Hydrography Working Group is expected to make progress over the next two years that should improve the grade.

Ms. Morgan opened the floor for questions, and Doug Newcomb asked if open data was considered in the grading. Ms. Rogers answered that data availability and formats were part of the grading with the most points awarded for states with open, downloadable data, and web services She mentioned that as the process matures, new layers may be added at future dates. NSGIC may add NextGen 911 as more states develop their programs, and they are trying to get a baseline for elections data.

GeoEnabled Elections: North Carolina's county-state partnership (Balu Chepuri, Sean Pumphrey, NC SBE and Tonya Burnette, Granville County Elections Director)
Mr. Chepuri, Advanced Data Analyst with the State Board of Elections (SBE), introduced his partners in the presentation, Tonya Burnette, Granville County Elections Director, and Sean Pumphrey, a Security and Support Technician with the SBE who assists counties in performing weekly audits.

Mr. Chepuri began his presentation with the most important task for his group: getting the correct ballot to each voter. To achieve that goal, his office has created tools to allow local boards of election to check and correct voter registration locations. His office has created audit tools for jurisdictions to ensure that each voter is located in the correct jurisdiction so they receive the correct ballot for the jurisdictions in which they live. Voter data is transmitted to the SBE from local boards of election, and the SBE runs an audit tool to identify mismatched voter/jurisdiction combinations. Unmapped voter records and those identified as a mismatch are displayed in a geopoint map that counties utilize to manually move the voter's address location to the correct house in order to ensure they are receiving the correct ballot. Mismatched registration data is sent weekly to local boards of election through a secure FTP site to allow them to correct the information and re-send it to the SBE. The SBE's audits check voter locations in relation to state level jurisdictions such as county, N.C. Senate, N.C. House, and U.S. House boundaries. Because there are many local jurisdictions, the SBE provides a tool to allow local boards of election to audit their data with their local jurisdiction

boundaries. The tool is hosted by the SBE and uses data layers uploaded by the local boards of election. Mismatched data is reported to the local boards of election so they can correct their records.

The SBE uses open-source software and has a successful record in providing audit services in an open-source environment. Mr. Chepuri finished his presentation with requests for improvements. He is eager to have access to the new Next Gen 911 Addresses, specifically, the geocoding tool built from NC address locations. He is currently using a national address service and believes a NC centric service that has been verified by local authorities will be an improvement in correctly locating voter addresses. He also stressed that county boundaries are incredibly important to verifying that voters are mapped in the correct county, but that many boundaries have not been surveyed, and this leads to uncertainty regarding the correct county in which a voter lives. He said there have been several disputes related to unsurveyed county boundaries. He asked the council to consider the importance of accurate county boundaries to elections.

Ms. Burnette and Mr. Pumphrey discussed the county perspective of the audit process. Ms. Burnette demonstrated the process through which counties assign address street ranges to districts and then check that data with state audit tools. She stressed the detailed work required to correctly assign voters and then check and verify that each voter is correctly assigned. The county boards of election utilize the state audit tools weekly, and the state tool allows them to feel confident in their voter assignments. Mr. Pumphrey followed with a demonstration of the geopoint tool which allows unmapped voter addresses to be manually mapped to the correct house in an easy to use webmap. This tool is a secure tool hosted by the SBE that can be accessed by local boards of election. Typically, around three percent of voter addresses are not able to be automatically matched to a known address, and the geopoint map allows those voters to be correctly located. Mr. Chepuri hopes that the new NC specific address geocoder will decrease this initial unmatched set of voters and thus, decrease manual work required from local boards of election. Mr. Pumphrey finished his presentation with a demonstration of the local district audit tool.

Ms. Morgan opened the floor for questions. Kathryn Clifton asked how the council could better support the elections office with data and services. Mr. Chepuri stressed the need for more accurate address locations than they currently use and expects an improvement with Next Gen 911 addresses. He also reiterated the need for accurate county boundaries and asked if the Geodetic Survey could expedite surveys, ideally surveying all 100 county boundaries.

Infrastructure Working Group: Preliminary Findings (Colleen Kiley and Tim Johnson, CGIA)
The Infrastructure Working Group is wrapping up its initial investigation into infrastructure data availability and data sharing practices. The working group will be releasing a draft preliminary recommendations report prior to the next GICC meeting, and Colleen Kiley and Tim Johnson presented the highlights and main findings of the report.

Mr. Johnson began with a history of the Infrastructure Working Group. The accessibility and the value of accessing infrastructure data is an issue that came before the Council by the private sector, local governments, and others back in 2019. The Council reviewed the availability, the age of data, and the common policies practices and regulations that influence how the data is shared. Over the course of three meetings, the Council heard from data consumers, local public and private data producers, and legal counsel. At the end of the discussion, the Council felt that there needed to be further investigation and document the practices around this topic. Four questions were handed to the Infrastructure Working Group:

1. What are the business needs that require access to infrastructure data?
2. Which data layers are needed and why?
3. What is the impact of not having the data available?
4. Do we need full public access to the data or can we have limited secure access that still meets the needs?

Members of the Council who were involved in the working group included Amy Barron, Kristian Forslin, Matt Helms, and Brooks Tate, with Dean Grantham as Chair since the issue was assigned to the GICC Technical Advisory Committee. Ms. Kiley described the work and preliminary results of the working group. The group reviewed five categories of infrastructure including water/sewer, stormwater, electricity, telecommunications, and natural gas. For each category it reviewed data types, data consumer needs, industry security concerns, regulations, policies, and best practices. The working group conducted research through group discussion, interviews, surveys, and solicited use cases from data providers and consumers.

The working group found that decisions regarding what data to share, how to share it, and how to communicate with those that need data are individual management decisions based on perceived risk, organizational risk tolerance, and an evaluation of other factors and circumstances that may outweigh risk factors. Some of the factors that are included in a risk evaluation are risk of physical damage, positional accuracy, completeness, attribute accuracy and completeness, data scale, risk of using one layer to infer features in another layer, cost to respond to data requests, costs of losing development to municipalities with open data, inefficiencies or silos created by data sharing methods, and the cost of poor development decisions from misunderstood data. The decision to share or withhold infrastructure data is not black and white. It comes down to evaluating an entire system, its dependencies, the staff and funding on hand, and sometimes in the end, the risk tolerance management.

The working group investigated many topics and found that the variety of considerations for each infrastructure category was too vast to explore in depth. Ms. Kiley outlined some of the topics and two or more perspectives the working group uncovered for each topic. Service areas initially emerged as a layer that many seemed willing to share and that were needed by many stakeholders. However, the group found that service areas are not always accurate, sometimes including areas where service is not available, or is not available currently. The working group found that DOT and DEQ are both attempting to collect service areas with limited results. The group discussed the issues around infrastructure clearly visible on aerial photography while spatial representations are withheld for security reasons. Discussions with data users revealed that even when they were able to obtain the location data, that was not always enough information. There may be existing infrastructure, but it may not support the capacity necessary for a planned facility. These and other issues will be presented more in depth in the final report.

The Infrastructure Working Group has divided its preliminary recommendations into two categories, those for data providers, and those for the GICC at the state level. Recommendations for data providers are based on minimizing risk. The working group acknowledged that data sharing was always going to be a risk-based evaluation, and concentrated recommendations on those that would ensure that for providers who want to share data, accuracy, completeness, and proper documentation were not factors holding them back. The group heard "homeland security" often as a reason why data was withheld, but when it surveyed local providers, the number one reason given for what influences data sharing was data quality. Whether the data is shared in the end, the working group felt these recommendations will result in better data and more transparent policies.

The preliminary recommendations for data providers include:
1. Write a data sharing agreement.
2. Write internal data maintenance and sharing procedures.
3. Write data disclaimers for webservices and metadata.
4. Evaluate and update geometric accuracy and completeness.
5. Evaluate and update attribute accuracy and completeness.
6. Complete metadata.
7. Develop secure regional data sharing partnerships.

Recommendations to the GICC were influenced by the need for additional information, more industry participation, and a changing landscape in each industry. The preliminary recommendations for the state and GICC include:
1. Revisit this topic periodically.
2. Engage industry professional and organizations.
3. Task the metadata committee with creating an infrastructure template.
4. Monitor funding opportunities that could be used to improve infrastructure mapping.

Committee Reports
Due to time constraints, committee reports were not presented at the meeting, and are attached to these minutes.

Announcements
Gary Thompson announced that he is looking for partners to fund an update of Phase 3 Lidar which encompasses the triangle and triad areas where rapid development and transportation projects have created much change.

Hope Morgan announced that instead of a virtual conference this spring, she is considering outreach efforts and would welcome ideas.

The disclaimer currently on NC OneMap was reviewed by DIT legal counsel, and they have recommended changing it. Ms. Morgan asked all members to review the disclaimer and be ready to discuss it at the next meeting.

ADJOURNMENT

There being no other business, the Chair requested and received a motion and a second to adjourn the meeting. The meeting adjourned at 3:00 PM.

2022 GICC Quarterly Meeting Dates
- May 11 (editor's note: this date has changed from the original date of May 18)
- August 17
- November 16

Presentations given at this meeting are on the Council website.