



## North Carolina Geographic Information Coordinating Council

Minutes  
November 13, 2013

### PRESENT

Chair: Stan Duncan. Members: David Baker, Jay Bissett, Bob Brinson, Marc Burris, James Caldwell, Neelima Chitoor (for Hunter Robinson), Kathryn Clifton, John Cox, John Dorman, Ryan Draughn, Dianne Enright, Jeff Essic (for Hugh Devine), John Farley, John Gillis, Matt Helms, Bliss Kite, Elaine Marshall, Becky McGee-Lankford (for Sarah Koonts), Anne Payne, Alex Rankin, Linda Rimer, Allan Sandoval, and Colleen Sharpe

Staff: Tim Johnson, CGIA

### ABSENT

Chris Estes, Derek Graham, Dan Madding, Sarah Porper, Hunter Robinson, Sharon Rosado, Richard Taylor, Rebecca Troutman, Keith Werner, and Ron York

### PROCEEDINGS

A meeting of the Geographic Information Coordinating Council was held in the Board Room of the Department of Public Instruction in Raleigh, North Carolina. Chair Stan Duncan called the meeting to order.

#### Chair Announcements

Mr. Duncan noted that the meeting was rescheduled to today to avoid a conflict with GIS Day (November 20). Jurisdictions around the state have adopted resolutions supporting GIS Day, which is good to see.

Mr. Duncan announced that Governor McCrory recently appointed Joseph Sloop, Geographic Information Officer for Forsyth County and formerly from the Town of Yadkinville, as a member for the Council based on a recommendation by the Association of County Commissioners to be a local government representative. Joseph was not available today on short notice, but he confirmed that he is ready to serve.

Mr. Duncan reported on the status of the Council's 2013 Annual Report which covers accomplishments from Fiscal Year 2012-2013 and has action items for 2013-2014. A draft has been reviewed by the Management and Operations Committee and is now under review by the Office of Budget and Management and the Governor's Policy Office. Once finalized, the Annual Report will be delivered to the Governor and Joint Legislative Oversight Committee on Information Technology and distributed to the Council.

He observed that the appropriations bill included a provision requiring a report on GIS Applications in State Government. A survey was completed and findings are being reviewed by ITS management before submitting a report to the Joint Legislative Oversight Committee on Information Technology. Mr. Duncan added that Council members will receive a copy on completion.

Mr. Duncan welcomed Jim Alberque, the new GIS Manager for the City of Raleigh, to the Council meeting today. Mr. Alberque moved to Raleigh from Boston, Massachusetts for the position. He expressed appreciation for the recognition and hospitality.

On the topic of Census 2020, Mr. Duncan sent a letter appointing Bob Coats to chair a new Working Group for 2020 Census Geospatial Data. Mr. Coats is the Governor's Census Liaison and will be guided by the Charter for the working group approved August 19, 2013 by the Management & Operations Committee. Several Council committees are in the process of naming representatives to the committee along with other organizations included in the Charter. Mr. Duncan emphasized the importance of the Census for the State of North Carolina and all of our jurisdictions and the opportunity to improve related geospatial data.

### Approval of Minutes

The minutes of the August 14, 2013 meeting were approved with no changes.

### Legislative Matters

Returning to the topic of the Council's 2013 Annual Report, Mr. Duncan noted that it builds on the foundation of the 2012 report, including multi-year initiatives and projects. While statistics about the NC OneMap website, the number of counties flown, and other accomplishments are important, he emphasized the need to tell stories and explain how our technology, the work of the Council, and the work we do in our offices affect the citizens of North Carolina and even people outside of the state. The goal for the 2014 Annual Report is to say more in fewer pages and tell our stories in a new process. He pointed out that the executive summary is brief and the letters of transmittal to the Governor, the Speaker of the House, and the Senate Pro Tem are personalized to the recipients.

He shared a concept from Russell Aycock (Wharton School, University of Pennsylvania) about how we work in government and the private sector and think about change in a constructive way. Professor Aycock said (to paraphrase) a significant number of our problems arise out of doing the wrong thing better. The more efficient we are at doing the wrong thing, the worse we become. It is much better to do the right thing poorly than the wrong thing better. If you do the right thing poorly, and you correct it, you get better.

He urged Council members to think about how we do things. He announced that at the end of the meeting, he will ask members around the table to offer up suggestions about how we can provide our information, products, and services to the citizens of NC in a better fashion.

## Committee Reports

***Management and Operations Committee (M&O) and NC OneMap Governance Committee.*** Mr. Duncan reported that the M&O committee, including Sarah Porper from Office of State Budget and Management, had a good discussion about making business cases for GIS projects. He explained that we need numbers to justify projects, but also stories that highlight benefits to people. For example, Mr. Duncan interviewed a job candidate whose family moved from Oregon to North Carolina and used information found through NC OneMap extensively in planning their relocation to our state. Stories like this express benefits in human terms.

***Local Government Committee (LGC).*** Kathryn Clifton, LGC chair, reported that the LGC met August 28. Since then, LGC firmed up its Advisory Team (A-Team) membership. This supplemental group of 10-12 GIS people has worked well providing information and insight for specific questions that come up from time to time. LGC is compiling the benefits of statewide data (e.g., imagery, street centerlines, and seamless parcels) to towns, cities, counties, and councils of government. A draft is expected at the next LGC meeting (December 4) and the committee will share a completed document with the Council. Also, LGC identified prospective members for the Working Group for 2020 Census Geospatial Data.

***State Government GIS Users Committee (SGUC).*** John Farley, SGUC chair, described three SGUC meetings since the last Council meeting. A general meeting (August 22) featured technical presentations on the Green Growth Toolbox (Wildlife Resources Commission), NC OneMap services and related use cases, and the NC Board of Examiners for Engineers and Surveyors and its licensing opportunity for GIS practitioners. There was a special meeting held in September for more information about licensing.

In an Executive Committee meeting on October 21 included approval of the committee work plan for 2013-2014, identification of a representative for the 2020 Census working group (John Cox), and discussion of the opening of the Innovation Center where the Department of Transportation and the Department of Environment and Natural Resources had well received GIS exhibits.

Another general meeting (November 7) featured presentations on Fiber Analytics Resource Atlas (NC State University), NC Birding Trail map viewer (Wildlife Resources Commission), demographics and geospatial data (Jennifer Song, State Demographer), and Mobile GIS applications (Timmons Group).

Mr. Farley and vice-chair Dianne Enright have met with the Office of Information Technology Services to discuss an approach to the Enterprise License Agreement (ELA) for GIS software. The State is looking at enterprise licensing which may affect the next ELA for GIS. Mr. Farley explained that NC was one of the first states to have an ELA with Esri. In response to a question from Mr. Duncan, Mr. Farley offered to check with his counterpart in New York to see if the transportation department only or the State of New York followed NC ELA model. He added that North Carolina and New York are looking toward annual agreements instead of multi-year agreements (NC ELA is 5-year) in recognition of rapidly changing technology. In response to a question from Ms. Clifton about the ELA and local governments, Tom Morgan (in attendance) confirmed that Councils of Government are considered to be part of local government, and Mr. Farley explained that the current ELA has provisions for local governments to get General Services Administration pricing on software licenses.

***Statewide Mapping Advisory Committee (SMAC).*** Ryan Draughn, SMAC chair, began his report by expressing appreciation to John Dorman for doing a presentation on the Flood Risk Information System to the League of Municipalities Conference in Hickory in October. The League looks forward to more GIS presentations at future conferences.

The SMAC met on October 30. Regarding the NC Board on Geographic Names, SMAC approved a name change for Avocet Lake in Wake County. The US Board on Geographic Names has approved and entered the name in the Geographic Names Information System. The NC Board is working on a request for a stream name in Vance County by a family farm. A quarterly report on name changes in North Carolina, prepared by CGIA, is available from the SMAC web page on the GICC website.

The Metadata ad-hoc Committee is making progress on an updated standard for NC, based on the forthcoming ISO Standard (expected in January). The work includes development of a Local Government Profile for NC.

SMAC approved the retirement of the NC StreetMap online data collection system, to be accomplished by CGIA with notification of users and stakeholders. In response to a question from Anne Payne, Mr. Farley explained that NC DOT has an alternative tool (to be adopted from the Working Group for Roads and Transportation project) and is on track to complete an integrated statewide roads dataset (the “Rome” Project) in the third quarter of 2014.

Working Group for Orthophotography Planning (WGOP). On behalf of Gary Thompson, WGOP chair, who could not attend today, Mr. Draughn reported that work on updating the GPS standard is proceeding with submission to SMAC expected by January. A draft will be available in December for review by stakeholders, including the State Government GIS User Committee. The working group recommends renaming the standard to the Global Navigation Satellite Systems (GNSS) standard update for North Carolina to accurately represent the current systems that apply to NC. Regarding the National Geodetic Survey, the Geocon 2011 software is likely to go into production soon and be available to apply to data development. On the topic of oblique imagery, the working group surveyed counties and is reviewing requirements and return on investment for oblique imagery.

Mr. Thompson has been nominated for a second 3-year term on the National Geospatial Advisory Committee (NGAC). Education, workforce development, and elevation are main topics of discussion on that committee. Regarding elevation data, the working group discussed LIDAR acquisition plans for North Carolina. Also, National Geodetic Survey is looking to collect airborne and terrestrial gravity data in eastern North Carolina (to convert GPS data to ground elevations).

Working Group for Seamless Parcels (WGSP).

(see EPA Parcels... PPT file at GICC website: <http://www.ncgicc.org/GICCM Meetings.aspx>)

Tom Morgan, co-chair of the WGSP, reported that the grant project funded by US Environmental Protection Agency (EPA) is proceeding on schedule. Tools under development include a data “transformer” in the cloud for translating uploaded county parcel files to a standard set of fields. For a sample of 25 counties, the project will produce downloadable data and web services in multiple formats for parcel boundaries and parcel center points. The products will serve a wide range of users and flow into the EPA Exchange Network. The project is on schedule to be completed before the end

of April 2014. The vendors led by the Carbon Project, Inc., have been busy building functions in the “transformer” and developing cross-walks from local source data to standard fields.

In response to a question from Bob Brinson about sustainability of the tool, Mr. Morgan explained the tool will accommodate field matching updates by data managers; participation of data producers is an essential part of the system. Ms. Payne added that the fields in Wake County’s published shapefiles tend to change infrequently even if some fields change in operational GIS data. In response to a question from Ms. Clifton, Mr. Morgan explained that the tool relies on data producers pushing updated shapefiles to the tool for translation on a quarterly basis. Ms. Clifton offered that the Local Government Committee will encourage participation. Mr. Morgan pointed out that the Seamless Parcels tool will play a role in data retention. Mr. Farley added that good base data, including parcel data, will be invaluable to the 2020 Census. In response to a question from Ms. Clifton, Mr. Morgan welcomed additional volunteer data producers to participate in the next phase of the project. In response to a question from Mr. Dorman, Mr. Morgan explained that there would not be an additional application development cost to accommodate participation by the other 75 counties once the tool is implemented.

On the topic of parcel data updates, Mr. Duncan explained that county parcel data are effective January 1, but counties vary in completion dates after January 1. It will be important to know the dates for the source datasets. Also, David Baker expects to assist in working with counties to push source data to the parcels project.

Mr. Duncan thanked the SMAC and its working groups for the progress on these very important initiatives.

***Federal Interagency Committee (FIC).*** Linda Rimer, chair of the FIC, reported that after an interruption by the federal government shutdown, the FIC elected three new Executive Committee members: Vice-Chair Doug Newcomb of US Fish & Wildlife Service, Elizabeth Porter of US Army Corps of Engineers, and Doug Marcy of the NOAA Coastal Services Center. Members continuing are David Wyatt of Eastern Band of Cherokee Indians, Denise Smith of US Marine Corps, and Drew Pilant of US EPA. FIC will work on updating its bylaws next.

***Technical Advisory Committee (TAC).*** Colleen Shape, chair of the TAC, reported that the group has not met but will get together soon to review its work plan and technical issues.

### Technical Presentation

(See “Craven GIS\_Elections” and “SBE\_GIS” PPT files at GICC website - <http://www.ncgicc.org/GICCM Meetings.aspx>)

Mr. Duncan welcomed Craven County’s Sol Wuensch (GIS Application Developer) and Lou Valenti (GIS Administrator). Craven County won a Herb Stout Award this year for its use of GIS in support of local elections. He also welcomed Marc Burris, State Board of Elections Chief Information Officer and Advisory Member of the Council, for a state perspective on GIS and elections.

Mr. Wuensch explained that new boundaries based on the 2010 Census for Congressional, State House, State Senate, and County Board of Education districts presented a challenge to the Craven County Board of Elections. Thousands of registered voters were placed in different districts than before redistricting in 2011. To assist the Board of Elections, Mr. Wuensch created a desktop GIS

application to map the locations of registered voters over old and new voter precinct and district boundaries to help identify and fix errors in voter registration and voter addresses.

Mr. Wuensch displayed maps of the various boundaries. Teaming up with the Board of Elections, the GIS team applied address structure points (E911), political and jurisdictional boundaries, parcels, street centerlines, and orthoimagery (Geographic Framework datasets) to the problem. State Elections Information Management System (SEIMS) and Census boundary files are applied as well. He described complexities in comparing voter registrations to address information and determining the correct districts and precincts for each address. Maps were very effective in displaying voter addresses that fell outside of assigned districts by simple color coding. Methods revealed flaws in the address and registration files that Mr. Wuensch and others could fix to improve the results. GIS analysis included combining all jurisdictional boundaries into unique combinations to which the voter locations could be applied. A new work flow resulted from the team work between GIS and Elections and the new methods of analysis.

To put the work flow into action, Mr. Wuensch created a desktop GIS tool for search and analysis for the Board of Elections to apply in developing information for voters prior to the 2012 elections. While the approach was complex, the analysis is now automated to run overnight. He emphasized the importance of county address point data (for this, 911, and other projects), the advantages of data sharing, the benefits of collaboration within the county, and the value of state and federal data sources. This tool could be applicable to other counties, depending on the local address data quality and availability of GIS personnel.

Mr. Burris followed with his part of the presentation. For a State perspective on supporting elections with GIS, Mr. Burris described the State Board of Elections (SBE) jurisdictional audit that, like the Craven County effort, compares addresses and districts. Using a GIS system (since 2009) and the SEIMS database, Mr. Burris overlays address locations and jurisdictions to identify mismatches and problematic records. SBE shares results with counties in tabular and GIS formats. This helped the counties improve the quality and accuracy of local voter locations. As illustrated in the Craven County presentation, county boards of elections are responsible for making all of the necessary changes identified in redistricting updates and audits. For online map viewing, Mr. Burris utilized Google Fusion tables to visualize voter locations over old and new voting districts. Users can point to a map and get the jurisdictions that apply in that location.

Looking ahead, Mr. Burris plans to:

- Continue to work with the counties, the state, census, and private entities to ensure the most accurate assignment of address points. He is working with counties to get updated address data.
- Utilize a web interface to allow counties to view audits and correct individual address points.
- Look into a mechanism to allow counties to run audits “On Demand” to upload local jurisdictions and audit anytime.
- Look to integrate SEIMS Geocode and GIS to utilize jurisdictional boundaries and address points rather than street segment assignment in the SEIMS Geocode application.

Secretary Marshall asked how many provisional ballots were cast in Craven County in 2012. She emphasized the importance alerting voters to changes in precincts and districts. Mr. Burris added that voter notifications are required. (Note: in the days following the meeting, Mr. Wuensch reported to CGIA that voters cast 597 provisional ballots in Craven County in 2012). Ms. Payne added that

Wake County is creating sets of maps designed to assist voters in understanding resident locations and related precincts. The importance of maps like these is heightened by new election laws that will not count provisional ballots cast in a wrong precinct.

Mr. Duncan thanked the Mr. Wuensch and Mr. Burris for fine presentations.

#### Statewide Orthoimagery Program Update

(see Orthoimagery PPT file at GICC website - <http://www.ncgicc.org/GICCMeetings.aspx>)

Tim Johnson provided an update to describe a wrap-up, clean-up, and gear-up for the 2012, 2013 and 2014 orthoimagery projects, respectively. The project partners NCDOT Photogrammetry Unit, the Secretary of State's Office, the Department of Public Safety's Geodetic Survey Section, and CGIA have collaborated on all three phases.

#### Coastal Orthoimagery Project 2012

CGIA submitted the Final Report to NC 911 Board on September 26. The 25 counties were delivered on schedule and under budget, the cloud-based quality control tool facilitated efficient reporting of issues, regular weekly project status meetings surfaced issues early for discussion/resolution, and SharePoint enabled more efficient collaboration between contractors and the State team. The Final Report will be posted on Statewide Orthoimagery Program website.

#### Eastern Piedmont Orthoimagery Project 2013

The Eastern Piedmont region, covering 25 counties in the center of the state, includes Fort Bragg and Seymour Johnson Air Force Base. Visual quality control for all 25 counties is complete. Contractors have delivered sixteen counties to CGIA with the remainder to be delivered by December 4. Reviewers identified 738 issues (in about 4 to 5 percent of all imagery tiles) and issues were resolved by the contractors. Delivery of imagery triggers horizontal quality control, followed by packaging of imagery products, including sets of compressed imagery files. Concurrently, Fort Bragg delivery and logistics are in progress.

Products will be delivered to Public Safety Answering Points (PSAPs) in four regional distribution meetings in January 2014 and imagery services will be available on NC OneMap by February. There will be a 60-day final review period to assure final acceptance; that period will not constrain use of the imagery starting in January, but quality issues discovered if any will be resolved. The Fort Bragg imagery will not be available to the public, but will be used by Fort Bragg and local 911 communications centers.

#### Northern Piedmont and Mountains Orthoimagery Project 2014

The gear-up part of the Statewide Imagery Program is the region consisting of 26 counties in the northern mountains and piedmont, adjoining the 2013 project. Mr. Johnson noted that weather conditions will be the primary risk for completing the imagery acquisition cycle. One reason that the four-year plan was split into two pieces for the mountains was to minimize the weather risk as much as possible. Also, to mitigate risk, new digital sensors to be used in mountain areas will fly higher and collect images over a wider swath for the same 6-inch ground resolution. There is a metropolitan area (Winston-Salem) including Randolph County.

In preparation for flights during February through April 2014, the project team conducted a Qualifications-Based Selection (QBS) process. A Request for Qualifications (RFQ) was released on September 5, bids were submitted by September 25, and the project team completed evaluation of responses and published a list of five selected respondents on October 18 (NC OneMap website). After cost proposals are finalized and approved, contracts will be in place in December. The project team is planning the full schedule for this phase including outreach to the PSAPs in the area.

### NC OneMap Update

(see NCOM update PPT file at GICC website - <http://www.ncgicc.org/GICCMetings.aspx>)

David Giordano, NC OneMap Database Administrator, reported five data updates to NC OneMap this quarter: Non-Public Schools, USGS Stream Gauges, Zip Code Tabulation Areas, Biodiversity/Wildlife Habitat Assessment, Wildlife Resources Commission Gamelands, and Elevation.

Elevation is a Geographic Framework dataset in which the Council has a vested interest. The NC OneMap Geospatial Portal now provides access to new map services for slope, aspect, shaded relief, shaded elevation, hill-shade, and contours (2-foot intervals). For digital elevation models and contour lines created by NCDOT GIS Unit about ten years ago, CGIA is assuming online distribution responsibility.

As background, Mr. Giordano explained that CGIA outreach to NC OneMap users reveals business needs for statewide data. In particular, surveyors and engineers have expressed a need for elevation data that can be used quickly and easily by people who are not GIS professionals. CGIA met with Mr. Farley and found a way to collaborate to make web services derived from elevation data readily discoverable and accessible through NC OneMap. NCDOT will provide a forwarding link from their distribution page to NC OneMap for elevation web services. Similarly, downloadable digital elevation model data by county will follow shortly. This collaboration gets NCDOT out of the elevation data distribution business and makes more value-added data available from NC OneMap.

Mr. Giordano displayed graphic examples of the elevation services released this morning. Uses of elevation data include road engineering, watershed analysis, view-shed analysis (line-of-sight), and cut and fill operations. He pointed out that the source is the statewide LIDAR data managed by the Floodplain Mapping Program, processed into county-based products by NCDOT.

### Open Discussion

Mr. Duncan opened the meeting to the floor. He asked how members see needs for additional or different services that are GIS-related, GIS-based or GIS-derived. He asked what members are hearing from peers or clients.

Mr. Farley explained that the example of collaborating on data distribution helps NCDOT free up resources for internal project work and data development and publication. Value-added datasets like the derived elevation products are well suited for NC OneMap and CGIA as enterprise data. Mr. Duncan added that it relates to comments from the Office of State Budget and Management. It is important to specify how agencies use repurposed resources.



Alex Rankin shared that he typically starts looking at an area of interest using Google Maps, but he needs to go beyond what are mainly pictures to get access to a variety of geographic datasets including contours and parcel data. To the extent that NC OneMap can be easy to use by the public and offer many types of data, it is a valuable resource. For nontechnical business users, the more intuitive the NC OneMap experience, the better.

Mr. Burris commented that a central point of data access is valuable in saving time in mining for data, especially for data from 100 counties. Central data access helps his customers. Also, he is working on a major project for address points (structure locations) for elections. Address points will replace the previous data derived from tables of addresses associated with address ranges along street centerlines. People in county offices will assist in 2014 to assure that address points are accurate and on the correct property. Every time a voter registers or updates a registration, the address is verified by State Board of Elections.

Mr. Farley pointed out that CGIA has a master address point database update underway. Also, state agencies are looking at seamless parcel center points along with building footprints from the Floodplain Mapping Program as sources related to address points.

Mr. Duncan emphasized the importance of and interest in address data. It comes up again and again in presentations and discussions. He described meetings with stakeholders across the state to determine needs for address data related to structures. Business needs in state and local governments include but go far beyond Census 2020 and 911 Communications. For example, Mr. Duncan and Mr. Baker have looked at addresses related to sales tax collection and distribution. This is a wide and encompassing topic that we are working on in collaboration with Mr. Coats and other partners. Address data will be a topic for a future Council meeting.

Mr. Farley added that the State Demographer Jennifer Song used master address point data for detailed analysis with the Census Bureau just prior to the 2010 Census. The outcome was discovery of 1,200 additional residential addresses with about 4,000 in population that would have been missed in the Census count.

Also, Mr. Duncan met with Tim Trainor, Chief of the Geography Division at the US Bureau of the Census, who confirmed that North Carolina is one of two states that will provide an initial statewide address dataset to the Bureau to get a head start on Census 2020. This is an example of North Carolina being in the forefront among states for quality of geographic information. He added that recognition won't stop North Carolina from trying to improve. He observed that efforts are starting to coalesce from a lot of directions to make an effective addressing program.

### GICC Member Announcements

Ms. Payne announced that GIS Day takes place on Wednesday, November 20. Festivities include exhibits by the City of Raleigh, Wake County, and state agencies at the Raleigh City Museum, 9:00 AM to 3:00 PM.

## ADJOURNMENT

There being no other business, the meeting was adjourned at 3:00 PM. The next meeting will be Thursday, February 13, 2014 from 1:00-3:00 pm at the Department of Public Instruction Board Room, Room 755, 301 N. Wilmington Street, Raleigh.

Presentations and reports are on the Council Website: <http://www.ncgicc.org/GICCMeetings.aspx>. Click on “GICC Meetings” and navigate to November 13, 2013 and the column on the right for presentations and documents presented during the meeting in a downloadable zip file.