# North Carolina
# Geographic Information Coordinating Council

## Minutes
## May 11, 2016

PRESENT
Bob Brinson (Vice Chair), Allan Axon, Steve Averett, David Baker, Jon Beck, Jay Bissett, Jr., Kathryn Clifton, John Correllus, John Cox, Gary Thompson (for John Dorman), Ryan Draughn, Dianne Enright, John Farley, John Gillis, Derek Graham, Matthew Helms, Bliss Kite, Sarah Koonts, Dan Madding, Elaine Marshall, Linda Millsaps, Doug Newcomb, Josh Norwood, Kevin Parrish, Anne Payne, Alex Rankin, Allan Sandoval, Joseph Sloop, Richard Taylor, and Ron York
Staff: Tim Johnson, CGIA

ABSENT
Stan Duncan (Chair), Marc Burris, Joanne Halls, Chloe Gossage, and Sharon Rosado

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. Vice Chair Bob Brinson called the meeting to order.

### Chair Announcements
Mr. Brinson welcomed the Council members and visitors. Stan Duncan sent his regrets for being stuck in route in Clemmons with car problems and not making the meeting today.

Mr. Brinson welcomed Kristian Forslin, GIS Coordinator for the NC Railroad Company, to the Council as an advisory member appointed by Mr. Duncan. Mr. Forslin has extensive experience in GIS and served as president of the Carolina Urban and Regional Information Systems Association and on the executive committee for the NC GIS Conference.

Mr. Brinson also welcomed Steve Averett, GIS Manager for the City of Greensboro, who was appointed to the Council by Governor McCrory to represent municipal government, as recommended by the NC League of Municipalities. The Council has one remaining vacancy for an at-large state agency to be appointed by the Governor. Two appointments by the Speaker of the House are pending.

The Council website is undergoing an overhaul to take advantage of new technology, to be consistent with a common look and feel for State websites, and to be more readable and usable to citizens.

Also, with the Council and CGIA being part of the new Department of Information Technology (DIT), the Council is adding a standing agenda item for a briefing from Council member John

Correllus, Deputy State Chief Information Officer and Chief Data Officer to highlight how the work of DIT and the Council coincide.

## Approval of Minutes

The minutes of the February 11, 2016 meeting were approved for adoption with no changes.

## The Value of GIS to Council Members

(See "GICC_TIMS_May2016" PPT file - http://www.ncgicc.org/GICCMeetings.aspx )

Mr. Brinson introduced Council member Derek Graham, Section Chief for Transportation in the NC Department of Public Instruction. Mr. Graham explained that GIS has been valuable in routing and scheduling school buses across the state since the early 1990s. The initiative started in the Operations Research Program at NCSU where Derek was a graduate student. Expertise from the Institute for Transportation Research and Education (ITRE) and funding from the State Energy Office were instrumental in creating the Transportation Information Management System (TIMS) which is still in operation. Legislation required local boards of education to implement TIMS or an equivalent system in 1992.

Early work on TIMS included digitizing road centerlines and identifying address ranges as a basis for routing and scheduling. In later years, Census geographic data and local government street centerlines became the sources for TIMS. The key is finding out the locations of student residences and getting the buses there on schedule. Priority attributes for streets are direction of travel, average speed, hazardous for student crossing, and "no travel" for a school bus. Output by school district relate to boundary planning, reports and maps, service indicators, and optimization and related efficiencies in fuel consumption. Student data are available from the "PowerSchool" system. Bus stop directions and times are available to bus drivers. Railroad crossings are indicated as well for safety. TIMS shares information on buses and students passing through railroad crossings with NCDOT to inform planning related to crossings. Optimization software can inform bus routing as well as location of bus stops to save time, fuel, buses, and labor. An example is bus stop consolidation in Charlotte. TIMS also informs school board tasks including drawing school assignment areas.

Funding from the General Assembly is allocated based on efficiency (cost per student and number of buses operated) and equity (considering distance of student residence to school and students per mile of roadway). Other applications related to bus transportation include local school district GPS on buses for monitoring and defending drivers, and cameras with geospatial locations on some buses to document vehicles that violate the stop-arms on buses. Service indicators from TIMS, including maps, are valuable to school districts as well. Also, ITRE studies the best locations for future schools based on projected growth.

Mr. Brinson asked about the evolution of the long standing TIMS system. Mr. Graham expects additional software changes over time by the vendor, Educational Logistics, as needs of schools and students continue to evolve in terms of educational programs and scheduling. Monitoring with GPS and use of mobile devices will help achieve further efficiencies.

## Progress on Statewide IT Activities

(See "DIT_Update – GICC 5-11-16" PPT file - http://www.ncgicc.org/GICCMeetings.aspx )
Mr. Brinson introduced Council member John Correllus, Deputy State Chief Information Officer and Chief Data Officer. Mr. Correllus explained that after State CIO Keith Werner's presentation on

restructuring activities to the Council in February, there was recognition that a regular agenda item would give the Council a better understanding of DIT activities and how they relate to the Council.

Mr. Correllus stated the IT vision as "a performance-driven, transparent and secure IT organization with an unyielding commitment to connecting people, resources and partners." The mission is "to lead, partner and facilitate in order to provide easy, cost-effective government services to the citizens of North Carolina." The operating model is to optimize, unite, revitalize, invest and transform. The rationale is a unified department, stabilized organizational structure, traditional and best practices for organizational design, and appropriate organizational balance. Anticipated outcomes are organizational balance, span of control, appropriate chain of command, strategic focus, standardization, and reliable service delivery.

With reference to the new organization chart (see presentation) Mr. Correllus described his responsibility as Deputy CIO for the new Data Division. He outlined who we are—the Government Data Analytics Center (GDAC) of which CGIA is a part, plus boards and staff of the Health Information Enterprise Authority, the NC 911 Board (directed by Richard Taylor), Criminal Justice Information Network (CJIN, chaired by Mr. Brinson) and GICC. He explained what we do—transform data into knowledge to support informed decision-making, identify and integrate data assets to improve citizen interactions, and increase operational efficiencies and outcomes through data sharing and use of analytics. He observed the success of the Council in leveraging datasets both state and local. Also, there are opportunities for common collaboration among criminal justice, healthcare, financial and educational communities as well as local government, vendor partners, and enterprise security and risk/enterprise strategy.

GDAC has been successful in leveraging data to fight fraud and support the criminal justice system. Challenges include data sharing and data protection in consideration of sensitive datasets managed by some of the programs. He emphasized that the only reason we have data is to improve our services to citizens and businesses. Working with Sarah Porper on enterprise strategy will be important for the Council. Concerning vendor partners, Mr. Correllus described what will be a data visualization center at GDAC on the first floor of the Education Building. The focus will be on data, and a key to the center will be geospatial data. The goal is to visualize services and transparency, and he looks forward to GIS being part of the display.

Mr. Brinson observed GDAC coordinates datasets from many agencies that are very accessible and useful to the Department of Public Safety. In a similar way, *NC OneMap* adds value by integrating local government data into statewide datasets and providing public access.

## Technical Presentation

*North Carolina Coastal Atlas* (Dr. Tom Allen)
(See "NCCoastalAtlas_NCGICC_2016_V2" PPT file - http://www.ncgicc.org/GICCMeetings.aspx )

Mr. Brinson introduced Dr. Tom Allen, Associate Professor of Geography at East Carolina University (ECU) and his colleague, Rob Howard, a faculty member who has worked on the Atlas since its inception in 2011. Dr. Allen described the North Carolina Coastal Atlas as an online mapping and investigation system that provides both static and interactive maps and related data and information for exploration, analysis and learning about coastal issues and resources for students, managers, scientists, teachers, and the interested public. The goals are to

provide maps, data and information, attempt to explain the coastal environment, help with decision-making and discovery, and improve access via the Internet. Users include educators, researchers, planners, and GIS professionals. He acknowledged that the Atlas benefits from investments in GIS by state, local, and federal governments, including *NC OneMap*, the Floodplain Mapping Program, and statewide LiDAR to name a few. Coastal hazards are of particular interest to ECU and the Renaissance Computing Institute. Data collection efforts set the stage for the Atlas to display data in interactive maps. Partners include NOAA, ECU, Albemarle Pamlico National Estuarine Program, NC Sea Grant, Coastal Studies Institute, and the NC Division of Coastal Management. An international network of coastal atlases has served as a valuable resource as well.

The Coastal Atlas is not a clearinghouse for data. The Atlas leverages data from *NC OneMap* and several other sources. The Atlas adds value by refining data and creating custom cartographic products and information. The emphasis is on interactive mapping and investigation of coastal resources. Different views of information are organized by type of user as well. On a given month, approximately 5,000 people use the Coastal Atlas. Facebook and Twitter feeds supplement the web interface.

Dr. Allen described the system behind the Coastal Atlas and resulting thematic maps such as shorelines, wetlands, threats to habitats, flood inundation vulnerability, and research locations. He displayed the data catalog as well as tools that search for addresses, show imagery from two time periods, spotlight locations of interest, measure distance, markup and sketch on maps, and map sharing. The Atlas also features a geotagged bibliography and information via social media. He noted that estuarine shoreline, digitized based on imagery, is complete and updated annually. For example, a dot map of research activity, areas for the extent of research, and related bibliography.

The Coastal Atlas features many interactive maps of coastal resources, including paddle trails and hiking trails. He displayed examples of story maps including the Charles Kuralt Trail and data catalogs including surf spots in North Carolina. He also described a coastal permitting application developed for the Division of Coastal Management to improve the flow of information. NC Land of Water is now supporting the Atlas, too, with interest in tourism assets and related maps.

Dr. Allen described the forthcoming Atlas 2.0 (fall 2016) that will be easier to use and will enable access from tablets and smartphones, editing and sharing of maps, integration with ArcGIS Online for addition of map layers form organizational accounts, and an application tool for coastal permitting. Users will be able to identity their type of interest to shape their experience in the Atlas.

The Atlas takes advantage of data from *NC OneMap* and other State sources, and has developed new data related to coastal resources such as a wind map for sailors and hiking trails, the latter taking advantage of crowd sourcing. Also notable is an inventory of salinity data for the coast that will provide an important baseline for research and analysis over time.

Mr. Brinson drew parallels between the Atlas and *NC OneMap* in that funding may be variable and it is a challenge to extend value outside of the GIS community. As the tools get better and better, more consumers gain capability to make use of the data and maps. Dr. Allen added that the Coastal Atlas has tried to fit into the GIS community in ways that supplement GIS capabilities. Support from NOAA and ECU has been instrumental in building and improving the Atlas.

In response to a question about imagery, Dr. Allen observed that having new high resolution orthoimagery every four years is adequate for mapping shoreline and sea grass, supplemented by federal imagery sources such as the lower resolution National Agriculture Imagery Program (NAIP) imagery and its four-band products that are helpful in mapping coastal resources including wetlands.

Mr. Johnson acknowledged the great work on the Atlas and expressed appreciation for the presentation. He asked about the availability of some of the datasets and web services that may be suitable for discovery and access through *NC OneMap*. Dr. Allen confirmed that some would be, and that some datasets developed in the university could be transferred to *NC OneMap*. He also noted that commercial operations are apparently scraping data from Coastal Atlas and *NC OneMap* servers.

Mr. Brinson thanked Dr. Allen and Mr. Howard for the informative presentation.

## Previous Legislative Actions

Mr. Brinson called attention to two legislative actions, in Session Law 2014-120 and Session Law 2015-264, relating to language about licensed professional surveyors and GIS in General Statute 89C. The changes in GS 89C were discovered only recently by NCDOT and confirmed by Mr. Duncan. For background information, Mr. Johnson summarized previous Council actions related to GS 89C. The Council had a Surveyor's Model Law Working Group beginning in 2004-2005 that established common ground between the surveying community and the Council regarding GIS and surveying, including a state and local government exemption from rules governing licensed surveying and an advisory letter from the Attorney General confirming the exemption for state and local government including councils of government. Session Law 2014-120 eliminated the state and local government exemption and replaced that section (7) with new language (7a) that has no language about state and local government. The bill passed in 2015 added "public utility" to the language as the only change from the 2014 bill.

Mr. Brinson relayed a message from Mr. Duncan who was surprised to be surprised by learning of the legislative changes long after the fact, and is asking Council members to keep their eyes and ears open for things that affect the Council and communicate what you learn with the Chair. Second, Mr. Duncan asked to start a conversation today, not expecting to solve an issue, but to get started on clarifying meanings of the new language.

Mr. Johnson explained the purpose of the Council discussion is to find out if Council members were aware of the change in legislation and to learn of impacts or potential impacts on members' organizations. Mr. Duncan asked that the State Government GIS User Committee (SGUC) and the Local Government Committee (LGC) begin a conversation.

John Farley, SGUC Chair, shared his understanding that the North Carolina Board of Examiners for Engineers and Surveyors (NCBELS) is interpreting the new language in GS 89C to mean that private companies using GIS are practicing unlicensed surveying. He described a case in which a private company practicing GIS received a letter from NCBELS for unlicensed practice of GIS, for services including data development, data conversion, maps, exhibits, and quality assurance/quality control. Considering that GIS operations in public agencies do those services,

Mr. Farley is concerned that state and local governments are in violation of the law and/or NCBELS rules. For example, NCDOT creates and generates authoritative street centerline data without a professional licensed surveyor (PLS) anywhere in the chain of production.

Mr. Farley continued by pointing out that the enabling legislation for the GICC states that the Council "is established to develop policies regarding the utilization of geographic information, GIS systems, and other related technologies. The Council shall be responsible for the following:

(1) Strategic planning.
(2) Resolution of policy and technology issues.
(3) Coordination, direction, and oversight of State, local, and private GIS efforts.
(4) Advising the Governor, the General Assembly, and the State Chief Information Officer as to needed directions, responsibilities, and funding regarding geographic information."

He pointed out that the change in legislation and NCBELS' interpretation of rules conflict with the Council's mandate. From a practical standpoint, Mr. Farley observed that the State puts GIS in the NC Department of Information Technology (NCDIT), the core business of which involves no engineers or surveyors. Likewise, the core business of NCDOT GIS and other department GIS operations do not involve engineers or surveyors. The SGUC Executive Committee discussed this issue last week and also noted a need to define the scope of engineering and surveying services related to GIS and interpret the new language.

Kathryn Clifton, LGC Chair, expressed concern about GIS in local government and about how the new language and NCBELS rules affect private GIS companies that work under contract for local governments. She polled LGC members and LGC's Advisory Team and found that more than half of those responding had not heard about the legislative changes. Although no specific impact of the changes was reported by the respondents, Ms. Clifton expressed concern about how the legislation will affect local governments that develop geospatial data to represent locations of point address data, stormwater utilities, water and sewer lines, manholes, etc. If data collection by local government must be done under the responsible charge of a PLS, many organizations may not have a PLS on staff.

Mr. Brinson opened the discussion to Council members. Alex Rankin commented that areas of expertise in engineering and surveying include photogrammetry as an addition several years ago and then GIS in 2013. The purpose behind licensing is to protect the public. Gary Thompson added that surveyors in North Carolina are allowed to gain expertise in multiple disciplines and become licensed to practice in multiple areas of expertise. Also, Mr. Thompson referred to a set of guidelines based on model rules from the National Council of Examiners for Engineering and Surveying that addresses what geospatial data falls under the definition of surveying. He added that a section of the statute (89C-19) has a provision requiring work being done under the responsible charge of a surveyor where the safety of the public is directly involved. He has contacted NCBELS and confirmed its willingness to meet to discuss the issues.

Dan Madding identified a need to define the scope of engineering and surveying services. In particular, what land surveying services require GIS expertise, what GIS practices are within the scope of land surveying, and what GIS practices are not land surveying?

Discussion around the table raised the following issues and concerns for further attention by the Council and potentially a new working group:

- There is a need to clarify the definitions of what constitutes engineering and surveying services, including land surveying and what is GIS professional practice in the context of current GIS technology, GIS Professional certification (GISP), and PLS licensing requirements.
- The term "safety of the public" needs more specific definition with respect to state and local government exemption from PLS licensing requirements.
- The concepts of "authoritative source" and "level of accuracy" need review and clarification.
- There is a need to review role of disclaimers in geospatial data documentation and how they relate to distinctions between surveying and GIS.
- NCBELS had a period in 2013 during which a GIS professional could be grandfathered as a PLS with mapping science expertise, subject to application and examination. Might that period be re-opened depending on findings of the Council?

In response to concern about monitoring legislation and communicating changes, Mr. Brinson urged members to consult with their respective legislative liaisons about what to watch for in legislative matters that may affect the Council and GIS community.

Mr. Brinson brought the discussion to a close, concluding that people of goodwill are still not clear on exactly what the legislation means, and a working group has merit. He invited a motion to create a working group.

Mr. Farley made a motion, seconded by Dianne Enright, amended by Dan Madding, and approved by the Council:

DECISION: The Council voted to form a working group to work with NCBELS to define GIS in North Carolina, define the scope of engineering and surveying services in relation to GIS, articulate how GIS is practiced by GIS professionals, review the legislation to clarify the language, and make recommendations on how to enable GIS practices through agencies and Boards that are stakeholders, including potential modifications to legislation and rules governing Professional Land Surveying and GIS.

Mr. Brinson asked Council members interested and able to serve on the working group to send a message to Mr. Johnson. The Council Chair will appoint a chair of the working group.

Committee Reports

***Statewide Mapping Advisory Committee (SMAC).*** Ryan Draughn, SMAC chair, reported that the SMAC met on April 20 and made progress on three items. For the Board on Geographic Names, the committee is clarifying procedures and consolidating documents to guide deliberations of the Board and SMAC. Those document improvements followed SMAC's January approval of name changes for two geographic features that had offensive names, subject to submission of local opinion that had been pending. SMAC approval of the name changes was completed by a submission of local opinion yesterday from the county government where the features are located to the US Board on Geographic Names. Improvements in communication procedures are expected to result in earlier notification of SMAC and the Council when an objectionable or offensive name change is proposed. Second, SMAC approved a charter for the 2022 Reference Frame Working Group, chaired by Gary

Thompson. Third, SMAC is reviewing proposed updates to the 2005 data content standard for core cadastral data as submitted by the Working Group for Seamless Parcels.

***Local Government Committee (LGC).*** Kathryn Clifton, LGC chair, reported that the committee continues to support the Working Group for Seamless Parcels, the Working Group for Orthophotography Planning, and the Metadata Committee. LGC will meet next week and discuss the Professional Licensed Surveyor/GIS issue among other topics. The committee continues to work on communicating the value of GIS. The group will also discuss data requests from state agencies to local governments to look for further opportunities to coordinate data sharing.

***State Government GIS Users Committee (SGUC).*** John Farley, SGUC Chair, reported that the Executive Committee discussed the PLS/GIS topic. Several State GIS users attended FOSS4G, the open source software conference held in Raleigh. NCDOT is looking at open source license management as a proof of concept. Mr. Farley added that DIT is working on a GIS services contract that would enable state agencies to write task orders for services from a contracted vendor. This would provide another option to go along with the Request for Proposals and Supplemental Staffing options. The Executive Committee also discussed data sharing, acknowledging the progress made in consolidating state data requests to local governments as well as anticipating strategic opportunities for more coordination of data requests.

***Federal Interagency Committee (FIC*).** Doug Newcomb, FIC chair, reported that FIC had a general meeting on March 16 with presentations on sea grass mapping and mobile data collection. Regarding geospatial data sharing, the NOAA Digital Coast is in the process of updating online applications for data access and viewing.

***GIS Technical Advisory Committee (TAC)***. Dan Madding, TAC chair, reported that based on review comments, TAC seeks information on open source applications for mobile data collection to finish up the document on mobile GIS.

***Management and Operations Committee (M&O).***
Mr. Brinson reported on behalf of Stan Duncan that the Management and Operations Committee is paying particular attention to preparation of geospatial data for Census 2020.

Statewide Orthoimagery Program Update

Tim Johnson provided a brief update on the Statewide Orthoimagery Program. The project team is working on parts of three phases simultaneously: wrapping up 2015, processing 2016 and planning 2017. The 2015 project will be wrapped up in June, including imagery from re-flights over parts of the Sandhills Region to meet state specifications, redelivery of those tiles to the Public Safety Answering Points, and a final report. Mr. Johnson added that the project team implemented new delivery methods for the 2015 project based on recommendations from the NC 911 Board. A delivery for a county now includes imagery extending a minimum of seven miles beyond the county's boundaries. To meet that requirement, the project team successfully worked with neighboring states (TN, GA, SC) to obtain copies of imagery beyond the state boundary to achieve the seven-mile extent. This results in more complete pictures for counties. Mr. Johnson displayed the complete 4-year cycle of imagery 2012-2015 to point out achievement of "visually

consistent within reason," a credo for the statewide imagery program. There are not large differences in the visual quality in clarity and tone from phase to phase.

The 2016 Coastal area is proceeding on schedule. Mr. Johnson displayed a map of acquisition by date and explained that contractors took advantage of good weather early in the flying season starting in late January. The only complication was standing water from river flooding in the Grifton/Kinston area, requiring some re-flights in mid-March to complete the acquisition. The project team is working with local contacts in preparation for visual quality control in August and September.

The NC 911 Board approved the proposal for the 2017 phase in the Eastern Piedmont. The project area will include Scotland, Richmond, and Moore Counties in order to minimize logistics with Fort Bragg. Challenges in the Eastern Piedmont include the urban areas with concentrations of infrastructure and tall buildings. That phase will begin as soon as the General Assembly approves the budget for 2016-2017.

## NC OneMap Update

David Giordano, *NC OneMap* Database Administrator, reported that the *NC OneMap* team developed some applications based on user comments and questions. The goal was to develop some easy-to-use applications, not requiring GIS, and featuring popular datasets. He demonstrated how to find and open two applications through the *NC OneMap* Geospatial Portal. First, the "*NC OneMap* Parcels with Statewide Standardized Attributes Web Application" enables a user to view property boundaries over a choice of base map, look up an address, and identify information about a property of interest. Second, in response to requests for the date of imagery in a location of interest, CGIA developed an online map application for quick access to dates. Instead of downloading imagery tiles and other layers, consumers may now simply navigate to a location of interest and click on the location to get information on the flight in that location and view the imagery. Mr. Giordano invited Council members to try the applications either by going to the Geospatial Portal or following the links in this presentation when posted on the GICC website.

## GICC Member Announcements

Mr. Newcomb announced that the Open Source Geospatial Foundation's North American conference for open GIS at the Raleigh Convention Center, May 2-5, 2016 was successful with 558 attendees from several countries. The presentations are available on the website (https://2016.foss4g-na.org/conference/session-slides) and videos will be posted. He noted that a presenter from Richland County GIS commented that he got his start with open source GIS after he attended the 2015 NC GIS Conference.

Tom Morgan announced that he submitted to the Secretary of State his notice of retirement effective August 1. Mr. Duncan has invited Mr. Morgan to attend the August Council meeting.

Mr. Johnson announced that the 2017 NC GIS Conference will take place in Raleigh. He and Jeff Essic of NC State University are leading the program committee and will seek presentation topics soon. The rate structure will be announced soon. Speakers will pay a discounted registration for the

first time in an effort to cover costs and keep the regular rate affordable for all. Mr. Johnson and Brett Spivey of CGIA will update the website by July 1.

## ADJOURNMENT

There being no other business, the meeting was adjourned at 3:10 PM. The remaining Council meetings for 2016 are scheduled for August 10 and November 9 (a revised date).

Presentations and reports are on the Council Website: http://www.ncgicc.org/GICCMeetings.aspx. Click on "GICC Meetings" and navigate to May 11, 2016 and the column on the right for presentations and documents presented during the meeting in a downloadable zip file.