



North Carolina Geographic Information Coordinating Council

Minutes
February 11, 2015

PRESENT

Chair: Stan Duncan. Members: Bob Brinson (co-chair), Kathryn Clifton, John Cox, John Dorman, Dianne Enright, John Gillis, Derek Graham, Joanne Halls, Bliss Kite, Sarah Koonts, Dan Madding, Doug Newcomb, Kevin Parrish, Anne Payne, Alex Rankin, Hunter Robinson, Allan Sandoval, Joseph Sloop, Richard Taylor, Allan Axon (for Keith Werner), Michael Brown (for David Baker), Tom Morgan (for Elaine Marshall)

Staff: Tim Johnson, CGIA

ABSENT

Jon Beck, Jay Bissett, Marc Burris, Ryan Draughn, Chris Estes, John Farley, Matthew Helms, Twyla McDermott, Josh Norwood, Lee Roberts, Sharon Rosado, Rebecca Troutman, 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 welcomed Dr. Joanne Halls as a new Council member representing the President of the University of North Carolina System. She is an Associate Professor in the Department of Geography and Geology at UNC Wilmington.

Mr. Duncan pointed out the report on GIS from Chris Estes, State Chief Information Officer, to the General Assembly in December and encouraged members to review it. Krissy Culler involved many of the Council members in discussions and development of the content. The report was favorable to the Council in terms of the Council's charge, accomplishments, and opportunities. The report has ten recommendations. Mr. Johnson will distribute a copy to the Council by email.

Approval of Minutes

The minutes of the November 20, 2014 meeting were approved with no changes.

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(See “GICC Presentation on GIS” PPT file at GICC website - <http://www.ncgicc.org/GICCMetings.aspx>)

Dianne Enright, NC Center for Health Statistics, representing the Department of Health and Human Services on the Council, described the value of GIS to her organization. GIS has a long history in public health. John Snow first put cases of cholera on a map in London in the 1850s that led to the determination that contaminated water, not air, was the source of the epidemic. Modern GIS maps help DHHS decide where to allocate staff and resources. For example, a map of the ratio of school nurse to student population by school location indicates shortages and imbalances. Ms. Enright shared other examples including flu vaccine dose distribution, facilities by type of care, hospital capacity by location, and patient treatment type. Ms. Enright explained that she uses GIS for road network analysis, for example, to determine the distance and drive time between a location of death by stroke and the nearest hospital with a certified stroke center, and other hospitals on the way. Suitability analysis, most identified with economic development, has been applied to health issues as well. Clusters of cancer cases could be evident using spatial analysis, though data and time complicate the analysis. She has to take care to aggregate records so that sensitive data are not published in a map. Ms. Enright ended her description with a story about highway rest stops that highlighted the value of GIS to inform public policy to combat communicable diseases and promote public health.

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Joseph Sloop, Forsyth County, explained his experience with the value of GIS in local government. He defines “value” as importance, something worth having. Conceptually, his department (MapForsyth) has capabilities (staff, data, hardware and software) and effective staff processes that achieve optimized return on investment. Mr. Sloop, Geographic Information Officer for Forsyth County, also has experience with land records, development and planning, and town management. Beyond his own perspective (“GIS rocks”) Mr. Sloop asked other county and city officers to explain the value of GIS to their work. The county’s Chief Information Officer stated that “GIS has improved our data accuracy tremendously, enabled large scale data analysis, and enabled us to delve into ‘quality of life’ issues in our community.” A simple map with orthoimagery, parcels, and the vicinity of an organized crime location assisted the Sheriff’s Office in crime investigation and arrests. MapForsyth extends its services to local nonprofit organizations. For example, “Forsyth Futures” commented that “GIS helps us to answer questions that do not have an easy answer when looking at a traditional spreadsheet.” Mr. Sloop provided examples where MapForsyth produced GIS analysis and mapping to add value, save money, and do more for the county budget director, the deputy fire marshal, United Way, housing and community development, the Housing Authority of Winston-Salem, and Wake Forest University. Data generated for those organizations can be valuable to Forsyth County in return. In addition, assistance to the Winston-Salem Forsyth County Schools for a crisis mapping system has been a part of a successful cooperative effort. The partnership includes John Dorman and the Department of Public Safety. Forsyth County Manager Dudley Watts, Jr. summed up the value of GIS in building effective solutions: “If used effectively, GIS can be the master storyteller.”

Richard Taylor commented that he is very impressed with the school safety project. Collaborating around GIS and training 911 communicators has been valuable. He acknowledged that John Dorman, Joseph Sloop and many others have done a great job bringing pieces together to a very promising project. Mr. Dorman added that planning, reporting and response rely on GIS. The

project is compiling floor plans for all schools, unique in the country. Mr. Duncan suggested that this would make a good topic for a future Council meeting.

Mr. Duncan asked Ms. Enright and Mr. Sloop about data retention for GIS data generated in various projects and solutions. In the case of health statistics, Ms. Enright explained that the source records are archived and an analysis could be replicated from those records. She retains map product copies in her office. Mr. Sloop pointed out the value of keeping historic datasets. Anne Payne added that Wake County offers access to tax parcel datasets going back to 1999.

Showcasing GIS in NC; Legislative Event

Mr. Duncan explained a pre-conference event planned for February 25th designed to inform members of the General Assembly about applications of GIS in state and local government. A number of exhibitors have been invited to display examples. Several legislators and staff have responded to Mr. Duncan with intentions to attend. The event will begin at 4:00 PM with remarks by Chris Estes and Mr. Duncan. Exhibits will remain open until 6:00 PM. All Council members are invited to “Showcasing GIS in NC” (postcards with details were handed out to members).

The event is sponsored by the Council and will be hosted at the Innovation Center (downtown Raleigh). Jeff Brown, CGIA, gave a brief overview of the event. The exhibits are not comprehensive but are selected to help convey four messages:

- GIS is widely used, valuable, and focused on business applications.
- Local government data are vital for local purposes and as sources for statewide, standardized datasets.
- Collaboration is evident in the business solutions.
- Investment in GIS brings returns to government operations, private businesses, and citizens.

The thematic approach highlights examples of GIS data and applications used in business processes, with emphasis on collaboration between local and state and between state agencies. Mr. Brown expressed appreciation for the preparation by the interactive exhibitors and hosts who are Council members, State Government User Committee executive members, and Local Government Committee members, including Stan Duncan, John Farley, Dianne Enright, Dan Madding, Allan Sandoval, Richard Taylor, Kathryn Clifton, Anne Payne, Tom Morgan, John Cox, and Allan Axon. Other participants will be Alice Wilson, City of New Bern; John Noyes and Tom Waryold, Lincoln County; Hope Morgan of DPS; John Bridgers, Secretary of State; Joe Sewash of CGIA; Anna Stefanowicz of the Wildlife Resources Commission; and Liz McLean from OITS and the Innovation Center.

The first theme, “Framework for Collaboration” includes examples of imagery, parcels, roads, elevation, address points, streams, and NC OneMap discovery and access. Examples of applications of framework data in Lincoln County include site suitability for economic development, property appraisal, public works, schools and community assets, emergency preparedness, and first response.

The second theme, “Access to Collaboration” features the New Bern development process and permit tracking, GO!NC for transportation data, recreation map viewers for hunting and fishing, and a new Natural Heritage map viewer.

“Technology for Collaboration” features Spencer’s mobile application for code enforcement, NC Broadband for citizen engagement, new LiDAR and elevation, and the Flood Risk Information System.

“Analytics for Collaboration” includes Wake County open space prioritization, AccessNC for economic development, Long Leaf Pine analysis for timber investment and management, and prioritization of state transportation investments.

“Looking Ahead: NextGen911” will explain the role of GIS framework data and technology in emergency communications, connecting the dots from Murphy to Manteo as Mr. Taylor commented.

Mr. Duncan observed that GIS has mushroomed into all aspects of our lives. Decisions are now made less according to who you talk to and much more informed by facts. He noted that well informed legislative decisions benefit us all. The showcase presents an opportunity to receive and answer questions from exhibit visitors. There will be additional outreach to the legislature and the Joint Legislative Oversight Committee on Information Technology before the event.

Mr. Duncan urged members to attend the GIS Showcase. Mr. Graham confirmed that the Innovation Center is an advantageous location for legislators. John Dorman urged participants to convey the message that GIS is a mainstream tool, required for business solutions and decision making.

NC GIS Conference

Tim Johnson reminded the Council that the NC GIS Conference will take place on Thursday and Friday, February 26-27 at the Raleigh Convention Center. To date, more than 800 people are scheduled to attend and 41 vendor booths are reserved. The poster competition has more than 30 entries. There are 50 sessions and 140 speakers coming from as far away as British Columbia, Florida, and New York. The conference includes student presenters nominated by their respective universities in the University System, and by one community college. Mr. Johnson looks forward to a great conference.

Committee Reports

Statewide Mapping Advisory Committee (SMAC).

Mr. Duncan plans to contact Ryan Draughn to discuss reactivation of the Ad hoc Metadata Committee to work on implementation of the new State and Local Government Metadata Profile. The Council needs to address the next phase to follow up and gain benefits from the new standard. Metadata records are required for trustworthy data. Mr. Duncan welcomed suggestions on how to proceed.

Ms. Payne commented that an initial intention for the metadata committee was to carry through with outreach and instruction. Data managers need guidance to adopt a new standard and take advantage of efficiencies in creating and managing metadata.

Working groups under SMAC reported briefly. The Working Group for Seamless Parcels, as reported by Tom Morgan, has made progress toward a statewide compilation of parcels. He explained, as displayed on the map handed out, that beyond the initial 25 counties, NC OneMap has 22 additional counties in the map service. Another 18 counties are in progress, and the remainder are scheduled to

be added before June. Local governments are participating when contacted, and the project team is working through the list to complete the data translations. Mr. Morgan and Mr. Brown explained that the counties designated for completion in February-March and for April-May are based on a previous regional plan and do not suggest that one group will be more difficult to complete than the other. To date, the project has been able to get permission for copies of county parcels. County interactions range from in person training on the tool, to interactive web sessions, to verification of project team translations.

Also, a cadastral manual is in progress that will provide an additional resource for standardizing parcel data. Mr. Morgan also explained the role of parcel data along with municipal boundaries in the Census Bureau's Boundary Quality Assessment and Reconciliation Project (BQARP).

Mr. Duncan commented that this is the most progress on parcels that we have since the grant project ended. He met recently with the Association of County Commissioners to discuss the importance of counties sharing their authoritative parcel data for statewide parcels. Kevin Leonard, Executive Director, has offered his support and assistance from his staff in acquiring copies of parcel data. Mr. Duncan pointed out that collaboration between state and local governments includes statewide orthoimagery from the NC 911 Board that is of tremendous benefit to the counties. Sharing parcel data with the statewide effort is complementary to imagery and necessary for achieving the mutual benefits of statewide datasets. Mr. Duncan and Mr. Morgan are confident that the statewide parcel dataset will be completed by June. This will include updates to the original 25 counties by the end of June. The intended update cycle after June will take into account county parcel status on January 1 and status later in the year in relation to tax billing.

Gary Thompson reported for the Working Group for Orthophotography Planning. In addition to quarterly review of the Statewide Orthoimagery Program and an update on the LiDAR acquisition project, the Working Group discussed a draft guidance document for oblique imagery that will be completed in March and submitted to SMAC for review. Mr. Thompson also explained national work in progress on a new dynamic horizontal/vertical geodetic datum for 2022 that includes velocity and gravity as factors. He recommended that North Carolina begin work now to analyze potential impacts in our state. There will be an opportunity to submit comments and recommendations to NOAA. Mr. Thompson is organizing a work group to look at the technical details. Mr. Morgan added that an approach under consideration is to fix state plane coordinates to the North American plate as of January 1, 2022, and transform latitude/longitude accordingly. Issues will include impacts on use of parcel identification numbers and deed registration related to state plane coordinates. Software will need to accomplish appropriate transformations.

Mr. Taylor observed that the Federal Communications Commission (FCC) is requiring greater accuracy in wireless communications. In North Carolina, 75 percent of emergency communications originate from wireless devices, and NC 911 Board is looking at x, y, and z coordinates. Mr. Thompson confirmed that the new datum will affect emergency communications and related coordinates. Fixing state plane coordinates to the North American plate could be a solution.

Local Government Committee (LGC). Kathryn Clifton, LGC chair, reported that local governments sent letters to the NC 911 Board in support of statewide orthoimagery. She added that she attended the Rowan County 2014 imagery delivery meeting and she is already benefitting from the new imagery. Ms. Clifton is pleased that the LGC helped plan "Showcasing GIS in NC" and that she can take part in the event. LGC is discussing GIS in the local government enterprise

and ways that counties and their related municipalities can share data. The next LGC newsletter will focus on return on GIS investment in local government operations. Also, LGC is looking at ways for local governments to implement the new metadata standard. LGC is waiting to hear from the NC Association of County Commissioners about its vacant seat on the LGC.

State Government GIS Users Committee (SGUC). Dianne Enright, SGUC vice-chair, referred to the legislative event discussed already and SGUC's role in planning and preparing for the GIS showcase event. She added that SGUC members contributed to the GIS Working Group convened by Krissy Culler and to the substance of the GIS report to the General Assembly by the State Chief Information Officer. Work included a survey of state agencies regarding geospatial data, applications, and infrastructure. Also, Ms. Enright and John Farley are participating with OITS in negotiations with Esri for a new Enterprise License Agreement for GIS software.

Ms. Clifton observed that more information and outreach to schools and nonprofit organizations could increase buy-in for maintenance of statewide datasets. For example, she asked if the Council is or could be tracking the use of free Esri GIS software licenses in public schools as an indication of a future generation of GIS users and data consumers. Members were not aware of a reliable method for tracking this. Information from the vendor would be complicated if licenses issued but uninstalled were not removed from a list. Ms. Clifton added that nonprofit organizations may obtain a discount license, and she is interested in knowing more about what data they may be producing. Ms. Payne noted that nonprofits in Wake County make use of open source software to a great extent, meaning that users with Esri software would be only part of the user base.

Federal Interagency Committee (FIC). Doug Newcomb, acting FIC chair, reported that the FIC Executive Committee met on January 22 and planned the FIC meeting scheduled for February 26 at the conference during lunchtime. A general meeting in May is expected to take place in Wilmington. Subjects discussed include possible applications the new LiDAR data when it is released, and ways to work with more closely with the State to get federal data products integrated into NC OneMap for discovery and access. Doug will coordinate with David Giordano, CGIA, about a presentation and discussion at a FIC meeting. Doug also inquired if the "GeoPackage" software (Open Geospatial Consortium) is in use for data distribution in state and local government in North Carolina. Dan Madding suggested that the Technical Advisory Committee could consider the question next year after completing current tasks on its work plan.

GIS Technical Advisory Committee (TAC). Dan Madding, TAC chair, reported that the committee is making progress on three tasks:

- technical architecture for GIS, with assistance from Joe Sewash and OITS
- hosting map services online, with assistance from David Giordano
- mobile applications, led by Mr. Madding

Mr. Madding invited Council members and their colleagues to assist TAC on any of the three tasks. His approach is to engage subject matter experts on specific questions and tasks.

Management and Operations Committee (M&O) and NC OneMap Governance Committee.

Mr. Duncan reported that the Management & Operations Committee is working on questions posed at the last Council meeting, including public access to infrastructure data. Utility locations are informative for many purposes including planning, but utility companies and local governments have reasons for not sharing geospatial representations of utility lines and facilities with the public. NC

OneMap infrastructure data are out of date and new statewide compilations are not planned. What kind of infrastructure could be compiled and published? Rights-of-way may be practical. Service areas, not lines and facilities, could be an alternative dataset. Mr. Duncan sees a need for a process to identify suitable infrastructure data and guidelines for sources to provide that data consistently.

On the question of maps of cable franchise areas, the Committee recommends that the Secretary of State consult with NC Broadband in the Department of Commerce about managing the hard copy maps that are submitted. A change in the submission requirement to change from paper to digital and/or from one department to another would require a change in legislation.

Statewide Orthoimagery Program Update

(see “Statewide GICC Orthoimagery Program” PPT file at GICC website - <http://www.ncgicc.org/GICCMetings.aspx>)

Tim Johnson provided a brief update on the status of the Statewide Orthoimagery Program. The project team met all of the objectives for the Northern Piedmont and Mountains (2014) project. The review of horizontal quality led by NC Geodetic Survey found no quality issues in the 26-county region. Deliveries to Public Safety Answering Points (PSAPs) were completed on January 29th at the last of seven regional meetings that were well attended by PSAPs and local GIS coordinators. Imagery services were released on NC OneMap the first week in February.

The Southern Piedmont and Mountains 2015 project, the fourth of four phases and covering 24 counties, is entering the imagery acquisition stage. Since the last Council meeting, contracts were signed with five companies, study areas were assigned, and flight plans were developed. Image acquisition is underway, continuing into mid-April. Communication with PSAPs is in progress with training for the VOICE (Virtual Online Inspection, Checking & Editing) quality control tool in late spring and early summer. CGIA has coordinated imagery acquisition over military installations with Fort Bragg and Camp Mackall. Chris Estes, on behalf of OITS, signed an agreement for flights and acquisition that covers both imagery and the LiDAR collection managed by John Dorman in the Department of Public Safety, Division of Emergency Management.

Mr. Johnson reported that Richard Taylor requested that the Statewide Orthoimagery Program develop and present a proposal to the NC 911 Board for imagery in another 4-year cycle, 2016-2019, to assure that imagery is not more than four years old when new imagery is acquired. Mr. Johnson was pleased to report that project team members—NCDOT Photogrammetry Unit, NC Geodetic Survey in the Department of Public Safety, and the Department of the Secretary of State—are committed to continuing their collaboration with CGIA through 2019. CGIA will present the proposal at the NC 911 Board Meeting on February 27. This is an exciting opportunity for the program.

Mr. Duncan stated the Council’s appreciation to the NC 911 Board for its work, commitment and backing for statewide imagery.

Kevin Parrish commented on the value of statewide orthoimagery to local governments. In his experience as a county customer for imagery years ago, the added tasks of finding a vendor, defining requirements, contracting, managing a vendor, and reviewing quality were very challenging in the context of regular responsibilities. He appreciated the efforts of the project team and emphasized the value of the organized quality control. He explained that the VOICE quality control system and its

“crowd sourcing” approach is far better than the previous approach whereby a vendor would drop off a copy of the county’s imagery and ask a county to report any issues. Mr. Duncan observed that Mr. Parrish and others on the front lines of GIS had to make a case for county funding of imagery, often in tough budget situations, in addition to the procurement and project management. The Statewide Orthoimagery Program efficiently manages all aspects of the projects now.

Mr. Taylor explained that the NC 911 Board discussed the future of statewide orthoimagery at a working session. He is grateful to Council members and others who submitted many letters of support to the Board. It has been important for Board members to see the support and read about the many areas that imagery has touched, including efforts like school safety. The growth in the project since 2010 has been outstanding. Mr. Taylor noted that the Board has not done the financial analysis needed to quantify savings, but there have been considerable savings for the Board. In addition, counties have saved the time and effort that would have been required to produce comparable imagery products county by county. Mr. Taylor added that the VOICE system has been very impressive and the success of the overall project has “been unbelievable.” He has advocated for the next project cycle, looks forward to the next NC 911 Board meeting, and expects to see good results.

Mr. Johnson pointed out that VOICE emerged as a solution for the NC 911 Board’s directive to include local governments earlier in the quality review process. Local use of VOICE has reached the point where some counties in the 2014 phase had 100 percent of their imagery tiles reviewed, far beyond the project goal for 25 to 30 percent of all tiles.

Mr. Taylor pointed out that the Federal Communications Commission (FCC) is pushing for locational accuracy in emergency communications. Accuracy of cell phone call placement depends on the quality of reference data including imagery. He is proud to share what North Carolina is accomplishing in 911 with the FCC and other states.

Kathryn Clifton added that municipalities, before the Statewide Orthoimagery Program, would try to coordinate and negotiate with their respective county governments to acquire imagery and resolve issues of scale, resolution, budgeting, and funding to suit all parties. Now, the statewide cycle of imagery acquisition is planned, standardized, and predictable for municipal governments. Also, the online VOICE system enables municipal government reviewers to see the quality issues reported by county and state reviewers, as well as resolutions of those issues, and review additional locations. She found the training for using the VOICE system to be excellent.

Tom Morgan observed that before statewide imagery, private contractors serving individual counties were not always following the state specifications for orthoimagery acquisition and processing. Many counties did not have the expertise to enforce compliance with the standards. Now, with photogrammetry professionals and geodetic experts on the statewide project team, imagery contractors are compelled to comply with the specifications, ensuring quality in the imagery products.

Anne Payne added that beyond the great importance of money savings to local governments—much appreciated—there are great benefits to having a professional team backing up the imagery projects and providing organized quality review that makes a complete package. She appreciated the commitment of the agencies on the project team to the next 4-year cycle.

NC OneMap Update

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

Brett Spivey, NC OneMap Application Developer, reported on new and updated resources in the NC OneMap Geospatial Portal as follows:

- Address Points
- Natural Heritage Program Natural Areas
- Natural Heritage Element Occurrences
- Managed Areas in North Carolina
- Federal Lands in North Carolina

Mr. Spivey highlighted the availability of the new dataset for statewide address points produced by CGIA in October 2014, as web services and downloadable data from the NC OneMap Geospatial Portal.

The 2014 imagery was released on NC OneMap last week. Just like imagery from 2012 and 2013, 2014 imagery is available as a cached map service, similar to the format seen in Google Maps, and as a versatile map service that can respond dynamically to consumer requests for hundreds of different projections. 2014 imagery is also included in the “orthoimagery all” service that includes all years of imagery available to NC OneMap going back to 1997. Time lapse viewing of imagery from that map services is supported by some software packages.

Improvements in infrastructure include completion of the redundant NC OneMap server stack at the OITS Western Data Center, to be followed by more upgrades at the Eastern Data Center. Upcoming improvements in OITS infrastructure will mean that NC OneMap will have the potential to realize goals for real-time fail-over and distribution from one data center to the other in a disaster recovery situation. If this capability is implemented, NC OneMap will be truly available all of the time.

Currently, the team continues to work with the NC Parcels Project to update the NC OneMap database when transformed parcels are added to the Transformer in the cloud and published as Web Feature Services. The standardized parcel map service on NC OneMap now includes 47 counties, with more counties in progress.

Looking ahead, the NC OneMap team has started preliminary work to redesign and integrate NC OneMap and GeoPortal websites. The goal is to improve in all aspects—communication, easy, useable, intuitive, timely, engagement, access, trust, and authoritative—revolving around the value of return on investment. NC OneMap has come a long way in 10 years, but it needs to keep up with technology and consumer expectations.

GICC Member Announcements

Tim Johnson added that the NC GIS Conference will go digital this time, with no printed program. The schedule is handled in a downloadable app called “Sched” that enables custom scheduling.

ADJOURNMENT

There being no other business, the meeting was adjourned at 2:40 PM. The next meeting will be Wednesday, May 13, 2015 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 February 11, 2015 and the column on the right for presentations and documents presented during the meeting in a downloadable zip file.