![NCGICC logo]

North Carolina
Geographic Information Coordinating Council

Minutes
August 12, 2009

PRESENT

Chair, Dr. Lee Mandell. Members: George Bakolia, Bob Brinson, Michael Brown (for Kenneth Lay), Ron Brown (for Bliss Kite), John Correllus, John Cox, John Dorman (for Reuben Young), Ryan Draughn, John Farley, Bill Gilmore, Kelly Laughton, Dan Madding, Ben Matthews (for Derek Graham), Herb McKim, Joe McKinney, Tom Morgan (for Elaine Marshall), Steve Morris (for Dr. Hugh Devine), Doug Newcomb (for Federal Interagency Committee), Anne Payne, Julie Stamper, Richard Taylor, 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. Dr. Lee Mandell, Chair, called the meeting to order. He welcomed George Bakolia, State Chief Information Officer.

The Minutes of the May 13, 2009 meeting were approved with the correction noted by GICC member John Farley on page 6 relating to the Powell Bill discussion. Corrected Minutes are on the GICC website and were in member packets.

Status and Discussion of Council Priorities

Priority #1—GIS Implementation Plan and Appropriation of Funds (HB 719)
Dr. Lee Mandell said the Legislature passed the budget and the special provisions relating to the GIS Implementation Plan. The Center for Geographic Information and Analysis (CGIA) has been moved to the Office of the State Chief Information Officer. He gave special thanks to Dr. Billy Willis who had worked on drafting the report and to George Bakolia, the State Chief Information Officer, for fighting for this legislation. He noted that their support demonstrates the level of appreciation and interest in GIS and the GICC initiatives on the part of the CIO. There is now a mandate from the General Assembly to implement the GIS plan over the next two years.

Priority #2—Surveyors' Model Law Working Group
Mr. Herb McKim, Chair of the Working Group, reported that three items are moving forward. The Local Government Committee (LGC) submitted a series of questions on surveying exemptions related to corporate limits and whether one municipality can collect GIS data for another municipality, without using a licensed surveyor. The next step is whether these

questions should be directed to the NC Board of Engineers and Land Surveyors (NCBELS) or be submitted to the Attorney General. Mr. Tim Johnson suggested that the letter needs to be restructured before submission to the Attorney General's office to solicit an opinion. He said Richard Bradford, Assistant Attorney General assigned to the Office of the State CIO, would be a resource to make sure the language in the letter is appropriate before submittal to the Attorney General. Mr. John Dorman said the letter should ask for an "advisory" opinion, not a formal opinion.

> *Action #1:* Council staff will compose a letter to the Attorney General's office asking for an "advisory" opinion based on questions raised by the LGC. The letter will be issued through Dr. Lee Mandell, GICC Chair.

Mr. McKim reported that NCBELS has sent a letter to the Attorney General's office seeking an advisory opinion on the Councils of Government issue regarding their status as political subdivisions of the State. The third item had to do with the "authoritative" issue regarding which data must be collected by a surveyor. Mr. McKim said that staff has investigated and the next step will be consideration by the Working Group followed by a meeting with NCBELS to clarify their understanding.

Priority #3—NC OneMap Implementation
Mr. Johnson referred members to the handout of the numerous updates of NC OneMap data that occurred since the May 13 meeting. Some of these data layers were part of homeland security updates (e.g. fire stations). The data holdings continue to grow. He mentioned that the U.S. National Grid, adopted by the GICC as a standard, is now integrated into the NC OneMap viewer. CGIA conducted workshops and developed training materials as a result of the 2008 Federal Geographic Data Committee (FGDC) Cooperative Agreements Program grant that concluded summer 2009. A process has been developed to transfer geospatial data into the Archives through the GeoMAPP Library of Congress grant. As a result some NC OneMap data has now been archived with the Division of Archives and History. He mentioned that 300 black and white aerial photos from Dare County, 1947, are also archived. Dr. Mandell asked about the access mechanism. Mr. Zsolt Nagy said the Division of Archives and History cataloging system is the Manuscript and Archives Reference System (MARS) and can be searched for specific data and formats [web: http://mars.archives.ncdcr.gov/BasicSearch.aspx]. All geospatial data includes metadata for each data set.

Mr. Johnson asked Mr. John Farley to share his idea about NC OneMap online. Mr. Farley said that a recent demonstration by ESRI of their ArcGIS online capability might provide more functionality and more accessibility at less cost. He said he reviewed the GIS Implementation Plan and, considering that there was no money in the recent budget for a refresh of NC OneMap, this might be an alternative. Dr. Mandell said is the kind of input we seek from the GICC members and this one is an issue for the GIS Technical Advisory Committee. There are several possibilities for the NC OneMap refresh, including Google, Microsoft, open source, and now this alternative, but there could be others. Mr. Farley said it might be good to revisit the NC OneMap technical requirements to see if they are outdated. Dr. Mandell said the requirements need to consider both the philosophical and technical aspects to make sure we reach a good solution. Mr. John Correllus mentioned that with CGIA now moved to the Office of the State Chief Information Officer, this is an opportunity to re-establish the vision of GIS in the state. There are technical requirements as well as business needs of the agencies using GIS. Dr. Mandell said the Management and

Operations Committee should lead the business case. Mr. George Bakolia asked about the time window for an NC OneMap refresh. Mr. Johnson said, according to the GIS Implementation Plan, the plan and business requirements that create the roadmap would be conducted in this fiscal year, and implementation in the next fiscal year. Mr. Bakolia said he is concerned about the budget. He said the second year of the biennium will be more difficult and the State is anticipating a shortfall. He suggested the GICC consider grants and partnerships with the University system and others. He mentioned that the General Assembly allocated zero dollars for the ESRI Enterprise license in the second year. Mr. Doug Newcomb said there are open source options. Dr. Mandell said we will consider all options, but open source is not totally free either. Mr. Correllus said we still need a roadmap to know where NC OneMap is going.

Dr. Mandell said the business plan will establish that road map.

> *Action #2:* The GIS Technical Advisory Committee to consider ArcGIS online and other technologies for NC OneMap.

Presentation: Using GIS and Agent-Based Modeling to Understand the Spread of Influenza

Bill Wheaton, Director, Geospatial Science & Technology Program, Research Triangle Institute, mentioned that RTI was the first company located in Research Triangle Park in 1958. The influenza project was to create micro-simulation for agent-based modeling using attributes of individuals in households. There is no individual database of household characteristics (numbers and individual ages within a household), except in the long form of the census. To create a model that matches reality and learn how an agent, such as influenza, can spread through a community, a synthetic database was created. It contains point data for all US households, 105 million points collected by the 2000 Census, and some were selected randomly to get information on ages of persons in that household. The household points generated a population of 273,624,650, which does not include individuals who are in group quarters (i.e. nursing facilities, prisons). The model must include real-world school and workplace interactions. Mr. Wheaton said the timetables of influenza spread include four phases: susceptible ⇨ exposed ⇨ infections (symptomatic and asymptomatic) ⇨ recovered. He said that 30% of infections occur in the household, 33% within the community, and 37% in schools and workplaces. The model can assess mitigation strategies. For instance, school closure duration of one to five weeks showed the same number of people getting sick. School closure is not an effective mitigation strategy unless the schools close for a period of three months. It is most effective if schools close within a day or two of the first outbreak. Mr. Wheaton said the model can also be used to show the difference of vaccination versus no-vaccination in the spread of the disease curve. The use of GIS-generated points allows an animation that shows the spread of a seed infection, using Centers for Disease Control and Prevention data, and how it can move through a population. He showed a simulation for North Carolina covering a period of 80 days. Mr. Farley asked about the synthetic population the model was based on. Mr. Wheaton said it was created against the census data. The model is not based on an actual pandemic. It is helpful for policy makers, but is not going to predict an outcome. Mr. Wheaton added that the computer scientists really benefitted when GIS was added to the model for visualization. The geospatial aspect of the simulation is important and scientists are just beginning to understand the value of geospatial data and GIS.

Committee Reports

Council committee representatives reported on their group's activities.

Statewide Mapping Advisory Committee (SMAC)
Ms. Anne Payne, Chair, said the SMAC met on July 8 and heard updates from the various committees. She introduced Dr. Tyrel Moore, professor of Geography at UNC-Charlotte, who is the Chair of the NC Board on Geographic Names (NCBGN) subcommittee. She asked members to review the Charter for the NCBGN in their packets. Subcommittee membership includes NC Department of Transportation (NC DOT), NC Geological Survey, the UNC system, as well as representatives from the Local Government Committee (Amy Durden of Elizabeth City), the Division of Water Quality, and the Department of Cultural Resources. Ms. Payne asked for approval of the NCBGN Charter.

> *Decision #1:* The GICC approved the NC Board on Geographic Names Charter as presented.

Working Group for Orthophotography Planning. Mr. Tom Morgan said the committee presented the idea of developing a statewide aerial imagery plan to the NC 911 Board on August 6, and a one-page fact sheet on the benefits is being prepared. A business plan is being developed for statewide imagery and will be based on input from users, vendors and government agencies. The 2009 National Agriculture Imagery Program (NAIP) flights in North Carolina will be completed by the end of August. An issue paper on the benefits of adding a color infrared band to the NAIP photography is being developed. Mr. Zsolt Nagy said the 2010 aerial imagery grant application for federal cost-share has been awarded by USGS. The 2010 flights will concentrate on urban areas in the Triad and Triangle. Mr. Morgan said the Working Group is researching guidelines and standards on oblique imagery, as directed by the Statewide Mapping Advisory Committee. He mentioned there will be discussions on August 20 with the NC Center for Automotive Research to review the possibility of establishing a digital orthophotography camera calibration range at their facility. He announced that the USGS Bathymetric LIDAR pilot project is scheduled for 2010 on the New River in Ashe County.

The revised Digital Orthophotography Standard, approved by the SMAC and vetted by the Secretary of State, GICC committees, and groups including the NC Property Mappers Association, was before the GICC for adoption. Mr. Morgan said all comments about the standard have been addressed. He asked the GICC to approve the standard so it can be officially adopted for the Land Records Management Section by the Secretary of State.

> *Decision #2:* The GICC approved the 2009 Digital Orthophotography Standard.

Working Group for Seamless Parcels (WGSP). Mr. Morgan said that committee is working on the land-use fields (attributes) that need to be included in a parcel standard. A US EPA Exchange Network grant has been awarded to the Department of Environment and Natural Resources (DENR) for the seamless parcels project and is expected to be funded in the near future. He said the WGSP is now able to report on an action it was assigned at the August 2008 meeting. The action was to follow up on Nancy von Meyer's recommendations concerning seamless parcels. The five recommendations and resolutions include:

(1) <u>Establish a state parcel coordinator and initiate statewide coordination of parcel data</u>. Mr. Thomas Morgan, Land Records Manager for the Land Records Management Section in the Office of the Secretary of State was designated as the cadastral coordinator for North Carolina with the Federal Geographic Data Committee.

(2) <u>Establish state coordination of the Census Bureau's Boundary and Annexation Program</u>. Mr. Thomas Morgan, Land Records Manager for the Land Records Management Section in the Office of the Secretary of State was designated as the North Carolina Certifying agent to the Boundary and Annexation Survey conducted by the US Census Bureau. He said he has certified the years of 2000 through 2008 during the past two years. The last certification was delivered August 4, 2009 and constituted a review of approximately 7,000 annexations in North Carolina.

(3) <u>Coordinating funding for parcel production</u>. Mr. Morgan said although no funds are available, the Working Group is forming coalitions with other organizations to develop a seamless parcels layer. NC DENR partnered with the Eastern Band of the Cherokee Nation, Office of the Secretary of State, 24 counties, two Councils of Government, and the NC Property Mappers Association to apply for a $500,000 grant from the US EPA to develop a tool, secure a delivery system and a method of storage for government-to-government use of parcels through the existing EPA node/client system. NC OneMap will be the vehicle to share the parcels with the general public, if licensing permits. Mr. Morgan said the WGSP is working with the Department of Transportation in an effort to help and to receive mutual benefit from their vehicular taxation project.

(4) <u>Develop implementation technology for data sharing standards and have a plan to roll out the standards.</u> Mr. Morgan said the local government perspective considers this an unfunded mandate. Each county developed their GIS to meet local needs and the North Carolina public records law provides protection for that investment. The WGSP is working to develop a process and a tool through the EPA grant so that local government data can be easily transformed to the standard, with minimal work required by local governments. Distribution beyond government-to-government sharing will still be controlled by individual local governments.

(5) <u>Establish a cadastral business plan</u>. The WGSP expects to present a completed business plan at the November GICC meeting.

<u>Working Group for Roads and Transportation (WGRT)</u>. Ms. Payne said the WGRT is revising a street centerline standard that was initially passed by the GICC in 2005. Mr. Alex Rickard, WGRT co-chair, said the issue is very complex with variations at state and local levels with requirements for emergency management, police, planning and tax applications. The key is to determine a common framework to (1) update the street centerline standard, and (2) create plans for a data translator tool that will allow a seamless exchange. The existing standard includes geocoding, but there is an additional need to support routing applications that relies on road line connectivity. Mr. Rickard referred the GICC members to the handout that listed the current attribute fields and the additional attribute fields essential for routing applications: such as unique ID number for every street, elevation data (e.g. overpasses), speed, and length of line segments, so these can be referenced back from the local government to the NC DOT. The WGRT is concerned about data integrity and wants the standard's "best practices" to provide more guidance to local government GIS data providers (e.g. how to visually represent a divided highway; what to do when duplicate street names, such as Hwy. 50 and Main Street, are applied to the same road). There are core items, and the unique identifier number could be linked to extra tables in an appendix for NC DOT and the Institute for Transportation Research and Education (ITRE) items such as pavement management.

He said we cannot expect local governments to change their attributes, but with a translation tool we could match attribute values and import it into NC OneMap. Mr. Rickard pointed out that the working group membership was large because of the need to include diverse stakeholders. He said that he would present the work to the LGC and the SGUC in the next month. The Statewide Mapping Advisory Committee will review the new standard in October and then the GICC will receive it for approval in November.

Mr. Ron York asked if this standard was based on the national standard. Ms. Janet Lowe, NC DOT, said there were several standards consulted: the National Emergency Number Association (NENA) has typical attributes, the US Postal Service, and the Federal Geographic Data Committee have address standards, as well as local government individual variations. Ms. Julie Stamper said this was a great job and the best practices document will really benefit local governments in the state. She complimented the working group for including local government representative in the process. Mr. Ryan Draughn said he used an ESRI software tool, called the interoperability extension, that successfully did this translation, but it cost $1,800 per seat and might not be cost-effective. Dr. Mandell said he was impressed by the inclusiveness of the process that included all the GIS community. There needs to be periodic evaluation of our standards and this was a good model.

Stream Mapping Advisory Committee. Ms. Payne reported that there are two issue papers being developed at the request of the SMAC. One is to clarify sources for surface water features names; and a second is the integration of the watershed boundary dataset with the national hydrography (NHD) dataset. That committee will be working directly with the Local Government Committee to energize additional local participation on the committee.

Ms. Payne said there was an outstanding action item from the May 13 GICC meeting that asked the SMAC to work with the NENA to propose and submit a statewide plan for funding orthoimagery through 911 revenues to the NC 911 Board for inclusion in its legislative study. She reported that she, CGIA staff, and Gary Thompson met with Richard Taylor and the 911 Study Group to brief them on the work of the SMAC Working Group for Orthophotography Planning, and activities in North Carolina. Richard Taylor reported that it was a productive meeting and the group was impressed.

State Government GIS Users Committee (SGUC)
Mr. John Corellus said the monthly SGUC Executive meeting on May 14 focused on the ESRI Enterprise License Agreement (ELA) and the growing use of this ELA throughout state government. He mentioned that the State Auditor's office wants to use this technology to track potential fraud in the WIC program and others where vouchers may be spent inappropriately. The June 11 meeting focused on archiving GIS data with the Division of Archives and History. The general membership meeting on August 6 presented an ESRI discussion on technology transfer with ArcGIS Platform and ArcGIS Server Web Maps overview.

Regarding the ESRI ELA, Mr. Corellus said the SGUC has an Enterprise License Team consisting of himself, Dianne Enright, and Tim Johnson. The ELA is entering its fifth year and expires July 2010. Meetings have been scheduled with Office of Information Technology Services (OITS) procurement. Currently, 725 single-use licenses are registered, but Mr. Corellus said he suspects that fewer are actually deployed in state government and this information is being collected. Mr. Corellus noted that the GIS licenses provide tremendous value because so many state government applications and business practices have a spatial component. The SGUC has

established a Technical Architecture Committee to communicate with the OITS Architecture and Engineering Group. The committee wants to develop standard architectures for state government GIS shops to help OITS understand GIS needs. Mr. John Farley, who chairs that committee, says they are looking at several "use cases" of Technical Architecture System Design (TASD) and should have a draft document in October that would streamline the approval process with OITS.

Local Government Committee (LGC)

Ms. Julie Stamper, chair, said the LGC membership has changed. Amy Durden from Elizabeth City will serve on the NC Board on Geographic Names. Jerry Simmons, Pender County, will represent the NC Property Mappers Association; Kat Clifton, City of Salisbury, will represent the NC League of Municipalities; Gene Hume, Buncombe County, will represent Carolina URISA; Chris Koltyk, Moore County, continues to represent the NC Local Government Information Systems Association; and Alex Rickard, Eastern Carolina Council, continues to represent the councils of government. Ms. Stamper said she is the member appointed by the NC Association of County Commissioners.

Management and Operations Committee (M&O)

Dr. Mandell said the GICC is obligated to follow the GIS Study Implementation Plan and will incorporate next steps into the 2008-2009 Annual Report. Twenty-one recommendations are on a work schedule. He asked GICC members to provide anecdotal stories on GIS successes and new innovative uses that can be incorporated into the annual report. He noted that fiscal restraints eliminated the NC OneMap refresh from the state budget.

He said the GICC needs to appreciate a difference structurally with the ESRI ELA and, further, that he would like to see the State Government GIS Users Committee merge efforts with the Management and Operations Committee and local governments. Mr. Correllus said it would be great to leverage an ELA to include local governments, but he cautioned that any decision has a direct impact on hundreds of state government users of ESRI licenses. Mr. George Bakolia, State Chief Information Officer, said as we negotiate a new ESRI agreement, local governments should not be excluded from the discussion, but the state cannot subsidize local government. He said the inclusion of local governments could aggregate for the best price. Since CGIA has now moved into OITS, we can tap into research institutions, such as Gartner, for knowledge about purchasing and other mechanisms. Mr. Correllus mentioned that the purchasing mechanism was the objection in the previous ELA, where local government participation was concerned. Ms. Kelly Laughton said she also remembered that obstacle, but perhaps it could now be overcome. Dr. Mandell said that the NC Local Government Information Systems Association, through the UNC School of Government, has a mechanism in place. Mr. Bakolia said timing is good for these discussions with ESRI.

GIS Technical Advisory Committee (TAC)

Chair, Kelly Laughton said the TAC draft bylaws were distributed and comments were received. Membership has been expanded. Mr. Correllus said the use of the words "statewide technical architecture" is confusing to state government uses who must primarily work with OITS. He mentioned that SGUC has a single representative on the GIS TAC, and there should be more. Dr. Mandell said the term "statewide technical architecture" is in the GICC authorizing legislation in reference to the GIS TAC and as such must be a part of the TAC bylaws. The new membership of the TAC includes two GICC members selected by the GICC Chair. Dr. Mandell appointed John Farley as GICC representative to the GIS TAC, which will add an additional

state government representative. The second GICC member will be named later and will come from local government. Mr. Correllus asked how the GIS TAC will dovetail with the SGUC Technical Architecture Committee. Mr. Bakolia, as State Chief Information Officer, said he has statutory obligations and we must all work together. He stated that OITS does not have expertise in GIS, but does have expertise on technical architecture. Dr. Mandell said we can revise bylaws later, if necessary. We do not want competing work groups so the SGUC workgroup should work with the GIS TAC, and Mr. Correllus and Ms. Laughton should determine how to proceed.

Decision #3:   The GICC adopted the GIS Technical Advisory Committee bylaws.

Mr. Correllus voted against the motion.

Federal Interagency Committee (FIC)
Mr. Doug Newcomb reported for the FIC. He said Dr. Jerad Bales had resigned as Chair. The FIC met earlier in the day. There was a presentation from NC Floodplain Mapping Program on their on-going Sea Level Rise Risk Management Study. The Eastern Band of the Cherokee Nation also presented on their use of GIS since they must abide by federal, state and local rules and regulations, even when building a house. Mr. Newcomb said that was very interesting and recommended it for a future presentation at the GICC. He said the Natural Resources Conservation Service (NRCS) has a soils data viewer on line, and a new national map viewer is coming. The 24,000-scale USGS topographic maps that are being updated will be in GeoPDF format beginning in 2010. Mr. Newcomb said the National Agriculture Imagery Program (NAIP) will fly North Carolina in October 2009. Mr. Dan Madding said pre-quality control county image mosaics will be delivered 60-days after that to NC Department of Environment and Natural Resources. He thanked Julia Harrell, DENR IT, for finding the $30,000 to get the 4th band (color infrared) for the entire state in this round.

ANNOUNCEMENTS

Master Address Dataset. Mr. Joe Sewash, Center for Geographic Information and Analysis, reported that the general aggregation of the statewide master address dataset was completed on time. There were 4,769,545 North Carolina addresses derived from local governments (counties and cities). The data included building footprints and points, centerlines, parcels. Outputs included spatial data; process tools for the next iteration; and metadata. For ease of use, the state was broken into 10 geographic areas. The data is currently on the CGIA website, but a separate domain will be created to make the data accessible. Mr. Sewash said that process used the FGDC street address standard. Beyond the 2010 Census, this Master Address Dataset can be used in the next generation of 9-1-1. The context of having this consistent digital information to enable spatial awareness at a higher policy level should be beneficial. For instance, it can be used in wildlife fire support applications to aggregate current fire locations and use the active address data set to show threatened locations.

Mr. Sewash stated this is a service-oriented dataset so it could be used to integrate into any statewide context, such as view-shed impacts, infrastructure analysis and planning. The project was funded by the General Assembly with a 10-month deadline. Moving forward, he said he would like to work with stakeholders, for example the LGC, to help with address support and

maintain better addresses at the local level. Data transfer support and tools are being developed. Ms. Rebecca Troutman asked if updates could be added when new housing subdivisions are developed. Mr. Sewash said widgets are in place and can be used by local government to refresh the data, but the General Assembly did not provide maintenance funds. Ms. Stamper said that the US Census Bureau will be looking for new construction prior to the 2010 Census.

ADJOURNMENT

There being no other business, the meeting was adjourned. The next meeting will be November 10 from 1:00-3:00 pm at the Department of Public Instruction Board Room, Room 755, 301 N. Wilmington Street, Raleigh.

PowerPoint presentations and reports are on the Council Web site: www.ncgicc.org Click on "Meetings." Presentations and documents presented during the meeting are available in a Zip file for easy download.