MINUTES
GEOGRAPHIC INFORMATION COORDINATING COUNCIL
May 20, 2004

PRESENT

Chair, Dempsey Benton. Members: Don Allen (for Carmen Hooker-Odom), Jon Beck (for Joe McKinney), Bob Brinson, Bob Coats (for Tom Newsome), John Correllus (for James Fain), Hugh Devine, John Dorman (for Bryan Beatty), Terry Ellis, Dianne Enright, Mike Fenton, Derek Graham (for Mike Ward), Linda Haywood (for Mike Wilkins), Jay Heavner, Kevin Higgins, Reggie Hinton (for Norris Tolson), Bill Holman, Susan Johnson, Kelly Laughton, Tim Lesser, Lee Mandell, Rex Minneman (for Elaine Marshall), Stephen Puckett, Forrest Robson (for Lyndo Tippett), Bill Ross, Jerry Ryan, Rebecca Troutman, Charlotte Turpin, David Wray (for Britt Cobb)

PROCEEDINGS

A meeting of the Geographic Information Coordinating Council was held on May 20, 2004 in the Board Room of the Department of Public Instruction in Raleigh, North Carolina. Chair Dempsey Benton called the meeting to order. The Minutes of the February 18, 2004 meeting were approved. Mr. Benton also congratulated Mr. Tim Johnson on being named as Director of the Center of Geographic Information and Analysis (CGIA), staff to the Council.

Status and Discussion of Priorities Before Council

Priority #1—NC OneMap Implementation.
Tim Johnson, Council staff, said that a NC OneMap request submitted to the state Homeland Security team was not funded, nor was a proposal submitted to the Office of Budget and Management included in the Governor's expansion budget. Some funding was made available through the Department of Environment and Natural Resources to achieve several specific goals prior to the end of the fiscal year: enhance the NC OneMap web mapping application with a type-in address locator, connect 60 local governments in the initial launch, and activate links to metadata. Letters encouraging participation were sent to all counties and cities that indicated web mapping capability in their responses to the NC OneMap Data Inventory.

Staff also met with Governor's Office staff in the Washington, DC office. A letter in support of NC OneMap federal funding was co-signed by the secretaries of Commerce (Jim Fain), Transportation (Lyndo Tippett), and Environment and Natural Resources (Bill Ross) and was mailed to the North Carolina Congressional delegation. Mr. Johnson said staff is working on the 5-year budget plan that includes data acquisition and maintenance, application development and maintenance, system acquisition and maintenance and staffing needs. Some of this information will be shared in the Council's Annual Report to the Legislature this summer.

Zsolt Nagy said the good response to the inventory paved the way for the NC OneMap launch, and shows the maturity of the use of geographic information systems within the state. Out of the

62 respondents that indicated web-mapping capability, 52 have already expressed their interest in participating with NC OneMap. Both USGS in Raleigh and Sioux Falls, South Dakota are showing excellent support for the NC OneMap launch.

Dempsey Benton suggested that the Management and Operations (M&O) add the 5-year budget planning to their agenda so it can be presented for action at the August 18th Council meeting.

Action #1: The M&O Committee will consider the draft NC OneMap five-year budget plan prepared by CGIA staff and bring a revised version to the next Council meeting for further action.

Priority #2—Data Inventory
Zsolt Nagy reported that the local government data inventory is complete and has been released on the NC OneMap web site www.NCOneMap.com . The web site offers a PowerPoint summary of the results, the detailed survey, and other helpful information. Staff plan to develop a Survey Monkey tool for the state government inventory as well. He mentioned that we are also paying attention to the Geospatial One-Stop model for an ongoing inventory, which requires metadata. Staff continue to investigate new tools for easy metadata collection.

Priority #3—Data Content Standards
Bill Holman asked Rex Minneman to report on the revised *Digital Orthophotography* standard. Mr. Minneman said the standard can not be put forward for adoption at this meeting. Additional questions were raised on the revisions and how those changes link to other chapters in the state mapping standards. The effected sections will be reviewed by the American Society for Photo-grammetry and Remote Sensing (ASPRS) before the final standard is brought before the Council in August.

Forrest Robson said the *Transportation* standard will include 21 common attributes for road features. The subcommittee has forwarded that portion to the Statewide Mapping Advisory Committee. However, the work is continuing on both the topology and geometry portions.

Zsolt Nagy reported that the content elements of the *Cadastral* standard has been reduced to a three-page document, "Draft Guidelines: Content Elements for Regional/Statewide Publication of Core Geospatial Parcel Data." These are the core information elements for the mapping of parcels. Mr. Nagy said the elements are divided between "required" and "desired" for use in NC OneMap applications. The discussion of these guidelines will help draw the line between "required" and "desired" elements. Rebecca Troutman asked if local governments had an opportunity to see the guidelines to make sure they can provide the content required. Mr. Nagy said there was a lot of background work to this point and the guidelines will be widely distributed for comment through the SMAC process.

Tim Johnson reported that staff is in contact with the Information Resource Management Commission (IRMC) concerning the next steps after the Council approves standards. He learned that there is no formal process for submitting standards to the IRMC. The staff can bring new standards before the Technical Architecture Project Certification Committee (TAPCC) of the IRMC. IRMC staff suggested that the Council should introduce the TAPCC to the GICC and its mission and brief that committee on the various standards that will be submitted for review. The Council needs to ensure that a proposed standard does not conflict with other state standards.

After Council approval, the standard will be forwarded to TAPCC for consideration and recommendation for approval. Once approved the standard goes into the state's technical architecture. Mike Fenton said that timing is good because the technical architecture for the state is now being updated.

Priority #4—Access and Distribution
Susan Johnson urged Council members to read the email sent to them regarding the draft "Guidelines for Providing Appropriate Access to Geospatial Data in Response to Security Concerns." She suggested everyone read the first five pages of the handout so that the Council can decide how it will choose to get involved. The document was drafted by the Homeland Security Working Group of the Federal Geographic Data Committee (FGDC) and comments are solicited from decision-makers through June 2.

Ms. Johnson suggested the members understand the reasoning behind the security guidelines, which is to protect spatial data from being used against the United States while keeping in mind the critical role of spatial data as an economic engine. She said the guidelines are organized using the following rationale: 1) Does the organization own the data set; 2) Document your use of the guidelines by identifying the data set, the potential concern, the findings from application of the guidelines, and the action to be taken; 3) If data originate in the organization does it warrant restriction: is it a risk to security, is the data unique, and does the benefit of making it public outweigh the impact to security; and, 4) If the security risk warrants restriction is it possible to alter/change data to retain security while maintaining an economic benefit. She mentioned this is the first document for policy makers: Most decisions on data restriction are currently being made at the technical level. As a member of this working group, Ms. Johnson said a revised version, based on comments, may be brought before the August Council. Ms. Johnson said the guidelines were based on the 2004 RAND report, "Mapping the Risks: Assessing the Homeland Security Implications of Publicly Available Geospatial Information," that Council members received with the tentative agenda.

Dr. Lee Mandell asked if she was soliciting individual comments from Council members. Ms. Johnson said it might be more appropriate for a Council subcommittee to consider the document. A formal comment from the Council is probably not required by June 2, but later in the process. Dr. Mandell said the draft is very balanced. He recommended that a subcommittee review and make recommendations to the FGDC on behalf of the Council. The Chair assigned the Management and Operations Committee to this task. Ms. Johnson said the FGDC will issue the guidelines, but they are under review of the Department of Homeland Security.

Action #2: The M&O Committee to formulate the Council's response to the FGDC guidelines: "Providing Appropriate Access to Geospatial Data in Response to Security Concerns," and send it to GICC members, if necessary, prior to the August 18 meeting.

Presentation: GIS and the Wireless E-911 World

Richard Taylor, Executive Director of the NC Wireless E-911 Board, said the use of mapping is essential to all E-911 calling centers, but he noted that the calling centers often do not share their map expertise with other city offices. Mr. Taylor said the first E-911 service was established

through a telephone land line that terminated at a specific address. In the cell phone and wireless world, the person can be anywhere and to find a location you must know a latitude and longitude.

The Federal Communications Commission issued rules in 1996 (FCC 94-102) that effected wireless E-911 communications in two phases. In Phase I (1998 implementation), cell phone companies had to provide a tower and sector location and a callback number for the mobile phone that originated an E-911 call. In Phase II (implementation begun in 2001), a caller's X and Y coordinates are required to be transmitted by the mobile device. This service is paid for by mobile users through a cost-recovery mechanism established in N.C. G.S.§62A-21, which also established the Wireless 911 Board to administer the funds.

Unlike the funding mechanism for land-based telephone lines that paid a telephone bill surcharge to your local government to administer the E-911 call center, in the wireless world an $.80 surcharge is assessed to all mobile users which is collected by their carriers and deposited in a state Wireless Fund. This fund is managed by the Wireless 911 Board, which retains a 1% administrative fee. Sixty percent of these funds are returned to the service providers to cover expenses for equipment, data, software and operational costs for complying with the FCC requirements. The remaining portion reimburses the Public Safety Answering Points for their equipment, database provisioning, and other expenses related to providing the E-911 service. He mentioned the revenue generated by the surcharge is roughly $3 million per month.

Mr. Taylor said wireless communications depend on cell tower coverage areas. Each tower covers a 2.5 to 5 mile radius and coverage areas must overlap. Each cell tower is divided into sectors, based on topography. To know where a wireless E-911 call originates, Position Determining Equipment is now required and service providers have several options:

1) GPS "chip" inside the handset. Using triangulation, a satellite can identify the caller's location, which is then transmitted across the E-911 system. This GPS "chip" will be required in all handsets manufactured by 12/31/05, but will not be available for older cell phones. Another drawback is that the GPS "chip" will not work inside a building. Dr. Mandell asked about privacy and civil liberty issues. With a GPS "chip" in a handset, the consumer can turn the phone off, deactivating the GPS. When an E-911 call for help is originated, however, the chip is activated and the consumer gives up privacy.

2) Network based option. This requires more cell towers installed with additional positioning technology. This coverage is expensive for vendors, but AT&T and Cingular are taking this path.

Mr. Taylor said that some schools and governments are connecting to voiceover IP through either cable or broadband, which does not generate revenues to E-911 centers since the individual caller can not be located. Other sectors not involved in this effort include the Onstar wireless program, in Charlotte, which maintains extensive information on the vehicle and accidents, and the HazMat sector. These two services can only move information by phone to an E-911 call center. He said the National Emergency Number Association believes that this broadband problem can be solved within the state.

He said 61 North Carolina counties are requesting Phase II service, which means funding and equipment must be in place as well as formal requests made to the local land-line provider. The Public Safety Answering Points must be able to receive and utilize the location data transmitted by the wireless carrier which is then plotted on orthophotography or other maps, and have CAD dispatch, telephone and radio communications to law, fire and EMS designated responders.

They must have a level of confidence in location, within meters, to dispatch the necessary crew from a city or county. Mr. Benton asked if Phase II counties were providing maps at a particular standard. Mr. Taylor said there is no standard, and even poor counties could meet minimum requirements. Ms. Laughton said it would be beneficial for the Council to work with the Wireless Board, especially related to mapping.

Committee Reports

State Government GIS Users Committee (SGUC). Dianne Enright reported that the SGUC met in April and heard presentations from L.C. Smith, Department of Transportation GIS, and David Herlong, Floodplain Mapping Program. The SGUC is investigating state government licensing of the ESRI GIS software in use throughout state agencies. The next step is to obtain examples of other statewide licensing agreements and meet with the Center for Geographic Information and Analysis to discuss how to proceed in pooling resources and administration. Dr. Mandell asked if there would be greater cost-savings if local governments were included in such a licensing agreement. Ms. Johnson said usually increased volume leads to cheaper pricing. Mecklenburg and Charlotte have combined into a single Enterprise agreement for their ESRI licenses to save money. Kelly Laughton said the LGC would like to work together on such an agreement with state government.

Action #3: Invite Local Government Committee participation in ongoing discussions between State Government GIS Users Committee and ESRI regarding possible statewide enterprise licensing of their products.

Ms. Enright reported that SGUC was satisfied with the three-pronged approach of education, experience and contributions established for the GIS Professional certification, but there were two concerns: 1) the lack of a privacy statement since personal information is being collected, and 2) the high certification application fee [$250]. She said this program would bring proper recognition to individuals who meet the certification standards, but she also expressed the groups' hope that re-certification fees would be greatly reduced.

Local Government Committee (LG). Kelly Laughton said that the committee met in May and was interviewed by Jeff Brown, CGIA, regarding NC OneMap features and functions and local government participation. The LGC endorsed the GIS Professional Certification, and says it lends credence and is a beneficial step for GIS practitioners. At the November 19, 2003 Council meeting the LGC asked the Executive Director of the North Carolina Board of Examiners for Engineers and Land Surveyors to involve the LGC when a committee was appointed this spring to review NCEES Model Law. Mr. Benton suggested that the Council create an *ad hoc* committee to be chaired by member Stephen Puckett, who is the current president of the NC Society of Surveyors. Ms. Enright said that SGUC would also like to participate on that committee.

Action #4: Stephen Puckett appointed chair of Council *ad hoc* committee to work with NC Board of Engineers and Land Surveyors on their 2004 review of the NCEES Model Law. Mr. Puckett is to establish the timeframe and meeting commitments and inform chairs of Local Government and State Government GIS Users Committees, respectively.

Action #5: The Local Government Committee and the State Government GIS Users Committee may appoint up to four participants each to the *ad hoc* committee on the NCEES Model Law.

***Federal Interagency Committee (FIC*).** Jerry Ryan said the US Census Bureau presented at the committee's last meeting. Their group also supports the GIS Professional Certification program as well as the Guidelines for Providing Appropriate Access to Geospatial Data in Response to Security Concerns. The LIDAR work group is planning a LIDAR symposium hosted by US Geological Survey and NC State University, through Dr. Hugh Devine.

Mr. Benton said the user committees had completed their tasks to bring the GIS Professional Certification information to their members. He suggested that staff take the next step.

Action #6: CGIA to present a proposal for action on the GIS Certification Program at the August 18 Council meeting.

GIS Technical Advisory Committee (GIS TAC). Susan Johnson said that the committee did not meet. One unresolved issue of the architecture of NC OneMap concerns metric (suggested for state agencies) versus English units (used by all local governments) for data.

Statewide Mapping Advisory Committee (SMAC). Bill Holman said the procedures for "Changing Offensive or Insulting Geographical Place-names" was sent with the meeting agenda to all members in advance. The procedures were drafted with the help of the Secretary of State's Office and the SMAC. The procedure is very similar to those already in place for making recommendations to the US Board of Geographic Names. He mentioned the SMAC created the NC Board of Geographic Names in 1996 to comply with federal requests to have a specific entity responsible in each state. The current chair is Dr. Wayne Walcott, UNC-Charlotte. Ms. Troutman asked if the procedures document closely tracks the current legislation. Mr. Zsolt Nagy replied that it does. And this procedure will be the official process once adopted by the Council. A motion to adopt was made, seconded and carried.

Action #7: Council adopted procedures as presented by the Statewide Mapping Advisory Committee for "Changing Offensive or Insulting Geographical Place-names."

Gary Thompson reported that the Orthophotography Implementation Planning committee is continuing to investigate funding sources to help local governments obtain orthophotography. He mentioned that one initial step was to identify the broad range of existing state services available to local governments that support their orthophotography efforts; from GPS base station networks, to LIDAR elevation data, to orthophotography collection specifications, technical assistance, and dissemination through the NC OneMap web portal. Counties are discovering new applications for the LIDAR data captured through the Floodplain Mapping program. Counties enjoy a direct "cost benefit" if LIDAR is available for their area because it reduces the costs of processing new orthophotography.

The subcommittee is continuing to study cost-projections on establishing an orthophotography program to cover the entire state on a 4-year cycle, with roughly one-quarter of the state completed each year, contiguously. Rex Minneman said they considered only two scales for the

statewide coverage to achieve the highest ground detail, acknowledging an increasing county migration to the 200-feet scale coverage:

1-inch = 400-feet (15,000 sheets x $200/sheet = $ 3,000,000)
1-inch = 200-feet (60,000 sheets x $200/sheet = $12,000,000)

The figures do not include quality assurance/quality control costs. It assumes the contractor is chosen using the Qualifications-Based Selection process and not an RFP low-bid process. There are adequate geodetic controls across the state for 400-scale photography, but more controls might be needed for the 200-feet scale photography.

Jay Heavner said a regional orthophotography effort will be administered by Centralina Council of Governments within their service area. The group plans to fly in March 2005 at the 100-feet scale in urban areas and 200-feet scale otherwise. This will provide excellent regional coverage at a constant minimum 200-feet scale. The contract will be through RFP. The group is seeking funding from US Geological Survey in the Urban 133 project that has already supported some orthophotography acquisition in the Triangle, and Charlotte/Mecklenburg areas. All counties within this region will pay for the actual flight, but some may not be financially able to pay to process their photography. Mr. Heavner also mentioned that the LIDAR data is an exceptional tool, especially in regards to detailing parcels in remote areas.

Mr. Benton said the committee needs to have details on when each county was last flown. John Dorman said the Floodplain Mapping Program has plans to fly LIDAR in Phase III, the western counties possible this coming winter (2004-05). Up until now the default basemap for the FMP project has been the statewide 1998 color infrared digital orthophotography, unless a county had more current imagery. However, based on FEMA's rules, the 1998 photography is now too old to be used for the Phase III flood insurance rate maps. The Phase III LIDAR flights will have to be expanded to also take digital orthophotography within that region, unless a county has orthophotography more recent than 1999.

Dr. Mandell asked about the next steps. Mr. Thompson said the committee plans to talk with Richard Taylor from the Wireless 9-1-1 Board and involve partners from Floodplain Mapping, Homeland Security, and other departments in state government. Forrest Robson said the Department of Transportation uses a full range of orthophotography scales, but they do obtain the 200-feet scale from a local government when that level of detail is needed. Mr. Benton said he will ask Roger Sheats, Deputy Secretary of the Department of Transportation, to participate in the statewide orthophotography discussions with the SMAC subcommittee.

Management and Operations Committee. Tim Johnson said the committee meets on an as-needed basis. It will take up several tasks assigned in this meeting.

Overview of NC Flood Warning Program

David Herlong, of the Floodplain Mapping Program, discussed the Flood Inundation and Forecast Mapping project, which is a real-time flood warning system. This is being developed with money ear-marked in last year's federal budget. Real-time flood forecast maps and real-time flood inundation will help reduce the loss of lives and property in North Carolina. In the

Tar-Pamlico pilot, new stream gages were added and some old ones hardened that had been damaged during Hurricane Floyd. Rain gages were also installed to provide an important data stream. The gages transmit data to a satellite which then transmits to both the Floodplain Mapping Information System (FMIS) and the National Weather Service forecast center that crunches the data through a forecast model and transmits the results to the FMIS. Using their library of flood profiles this new information can be combined and distributed as real-time maps of the affected areas. The system requirements for the Flood Inundation and Forecast Mapping are complete and the Center for Geographic Information and Analysis is constructing the web application that is being reviewed and implemented for the Tar-Pamlico River Basin.

Users of this information will be emergency responders and planning groups. The graphic display of flood inundation and current conditions will be useful when it is sent as an alert to appropriate officials. There are several options to select on the web interface: 1) a Real-time module; 2) a Forecast module; and 3) a Scenario module. The Real-time module colors counties by threat level and offers a time stamp for all data. Current gage data is available and gages are grouped and color coded based on conditions. Orthophotography provides the basis for the map display and flooding extent. The Forecast module includes statements or warnings issued and allows users to view the expected results over time. In the Scenario module, the user can select a gage and elevation to see the spread of flooding as the river rises in one-half foot increments. This module would be most valuable for planners and emergency responders for use prior to a hurricane or heavy rain event to see exactly where the water will go, and which areas, neighborhoods and roads would be affected. Emergency notification is another function planned for the full implementation which will also integrate storm surge inundation and 3-D mapping into the web site. Mr. Benton said this is a great improvement over the past 10 years. John Dorman said when this work is complete this tool might be highly useful for drought as well as floods.

ADJOURNMENT

There being no other business, the meeting was adjourned. The next meeting will be held August 18, 2004, 1:00-3:00 pm at the Department of Public Instruction Board Room, Room 755, 301 N. Wilmington Street, Raleigh.

All PowerPoint presentations and reports are on the Council Web site: www.cgia.state.nc.us/gicc, then click on "Meetings." The individual "Presentation" icons follow the Agenda and Minutes.