Geographic Information Coordinating Council
MANAGEMENT AND OPERATIONS COMMITTEE
June 19, 2017
1:00 to 3:00 PM
Center for Geographic Information and Analysis
301 North Wilmington Street, 7th Floor
Room 770A

MINUTES

1. Chair Stan Duncan welcomed Bob Brinson, John Farley, Bob Coats, Dan Madding, Tim Johnson, Joe Sewash, Jeff Brown and on the phone Kathryn Clifton, Silvia Terziotti, and Joseph Sloop.

2. Minutes of the April 10, 2017 meeting of the Management and Operations Committee were approved for adoption as submitted.

3. Quick Updates

a. *AddressNC*
Joe Sewash reported the *AddressNC* project is completing user story interpretations and tracking developments with road centerline maintenance and Next Generation 911. He confirmed with the US Department of Transportation that *AddressNC* data from 2014 and 2018 will be integrated in the National Address Database.

b. Working Group for Professional Land Surveying and GIS
Bob Brinson, chair of the working group, reported he is ready to send a letter to the NC Board of Examiners for Engineers and Surveyors. The letter will briefly describe the progress, share three documents prepared by the working group (a summary of findings to date, use cases, and a decision tree to guide geospatial data development) and request a meeting in the next two to three weeks to discuss the findings of the working group. More detail may be offered by the group in a meeting. The meeting is planned to precede the August Council meeting. Mr. Duncan will co-sign the letter, along with Mr. Brinson.

Mr. Madding posed a question for consideration: in the absence of a license for practicing GIS, is there a risk that GIS jobs in the state could be filled by foreign workers, for example through the H-1B visa program?

c. Statewide Orthoimagery
Tim Johnson reported on the three ongoing projects. Close out of the Coastal 2016 orthoimagery will be completed this month. There were no issues to report from the 60-day final review period. The 2017 Eastern Piedmont phase will initiate local government visual quality control at the end of July. The online tool for imagery review is now familiar to most local government contacts, but training will be offered again for those new to the process. The project team did a site visit to the contractor in Maryland that acquired imagery over US

Army installations, as required by Fort Bragg. The visit went well and confirmed proper handling of the orthoimagery. The imagery over the installations will be reviewed by CGIA and Fort Bragg, and delivered to Fort Bragg only. In the vicinity of the installations, Public Safety Answering Points (PSAP) may obtain copies under non-disclosure agreements. The Northern Piedmont and Mountains phase (2018) is proceeding. Contracts are signed with NCDOT Photogrammetry and NC Geodetic Survey for technical assistance. The qualifications based selection process will take place this summer. Mr. Duncan thanked the project team for improving the process with Fort Bragg in recent years.

d. NC Parcels
Mr. Brown reported the spring update is nearing completion with 86 counties updated to date. Of the remaining 14, seven are in progress for various technical reasons. Seven other county contacts have not been responsive this spring. By next week, Mr. Brown will seek assistance from Mr. Duncan and the Department of Revenue and the NC Association of County Commissioners to find ways to obtain copies of parcel data for those nonresponsive counties. Regarding the new field in the standard schema indicating present use value by property, yes or no, to date at least 21 counties have had information in their source parcel dataset to populate the field.

b. Census Geospatial Data
Mr. Coats reported on Census programs. The management team from the Census, Atlanta regional office, met with Governor Cooper on June 8. There was discussion about making residents feel safe about completing the Census 2020 questionnaire and being counted. The Census Bureau is proceeding with its priorities including Local Update of Census Addresses (LUCA) and local complete-count committees. The map of LUCA participation in 2010 informed discussions of outreach to jurisdictions. The Census Bureau plans to hold a set of technical workshops beginning in the fall but possibly as late as January, inviting local governments to fill in. Mr. Coats observed that training in January would be preferred so that he can promote LUCA at the annual conferences of the NC League of Municipalities and NC Association of County Commissioners. Councils of Government will have a role in outreach including the Participant Statistical Area Program next year. The Census Bureau expressed appreciation for geospatial data sharing by North Carolina.

The State Demographer, Mike Cline, is ready to issue the new automated survey of local governments for information to support county and municipal population estimates. Mr. Coats emphasized the value of a centralized municipal boundary resource along with *AddressNC*. This may be of interest to the Local Government Committee.

Mr. Sewash added three brief points. At the National States Geographic Information Council (NSGIC) Address and Transportation Committee meeting earlier this year, Brian Timko of the Census Bureau confirmed an online public interface for tracking local government sign-ups, expected in August. NSGIC is pulling together states that are going to have varying levels of LUCA support for local governments: North Carolina, New York, Indiana, Montana, Mississippi, and Arkansas. To track the federal budget, NSGIC is reaching out to monitor proposed budget cuts that will impact geospatial resources, including programs in the Department of the Interior, Environmental Protection Agency, Department of Homeland Security

and Federal Emergency Management Agency. Proposed cuts to US Geological Survey and Federal Geographic Data Committee are draconian. Federal geospatial data online may be affected. Mr. Coats observed attention by the Census Bureau to statistical indicators that are essential for tasks such as identifying at-risk populations for Census 2020.

4. GICC Priorities

Mr. Duncan introduced his intention for the Management and Operations Committee to identify priorities for the Council for fiscal year 2017-2018. A critical eye toward current initiatives as well as suggestions for new efforts will help focus the Council. He observed the tendency to be in a holding pattern during changes in administration of state government, and described an opportunity to be strategic in serving the GIS community. State and local connections may need strengthening, for example. Where are we now and where should we be going? The Council wants to be thorough, thoughtful and responsive to needs and issues. For example, in response to a report to the Council by the Executive Director of the NC911 Board, the Statewide Orthoimagery Program distributes imagery to a county to an extent seven miles beyond its borders to support answering emergency calls from mobile devices that may originate outside the service area of a PSAP. In another example, the Council responded to modified statutory language concerning professional land surveying and GIS by forming a working group that did a detailed assessment and developed recommendations to discuss with the licensing board for surveyors.

Mr. Duncan emphasized the value of Census 2020 preparation, *AddressNC*, and NC Parcels Program as efforts to advocate and support. He also stressed the value of integrating these datasets with statewide roads and other geospatial data. For example, a PSAP has access to imagery and address points beyond its jurisdiction to support call answering. He would like to see research into how those datasets are being used by PSAPs, as copies of datasets and/or as web services. He observed that NC Parcels is recognized as a good product, but it could be a stronger dataset if standard fields are fully populated and additional items such as incorporated jurisdiction boundaries are integrated with parcels.

Another Council priority is Next Generation 911, supported by state and local investments in required geospatial data—street centerlines, PSAP boundaries, and emergency service boundaries—and strongly recommended data including address points. NC 911 Board invests in orthoimagery to the benefit of local governments. Mr. Duncan added he would like to make Next Generation 911 a focus of the August Council meeting. Timelines will be important to clarify. Mr. Duncan may consider inviting Richard Taylor to the next Management and Operations Committee meeting to discuss the latest information.

Further discussion about priority geospatial data brought out more thoughts from the group. Ms. Clifton and Mr. Madding observed that street centerlines may be the most valuable dataset for PSAP operations now. Address points will be critical in the future. Imagery continues to be essential as well for context of locations of interest. Regarding use of imagery for the 7-mile extent beyond boundaries, web services can be an alternative to storing additional imagery and data for neighboring areas, acknowledging a need to have local data accessible if a service is not active.

Mr. Sloop explained the approach in Forsyth County – the computer aided dispatch systems use street centerline data for 3 miles beyond the county boundaries to cover all dispatch areas. He plans to add the imagery as well. Mr. Sloop uses data from NC Parcels for neighboring counties for GIS tasks, also.

Recognizing the value of local government datasets for statewide purposes, Mr. Madding asked what, in addition to orthoimagery, would add value to local GIS operations. Mr. Sloop explained, from his local government experience, he would have benefitted from wider use of state standards to guide data development and management. For example, local government implementation of standard fields and field headings would have saved time when he needed to combine roads, parcels and other geospatial data from neighboring counties to create integrated datasets for analysis and mapping. Available standards help justify the data design used by the local GIS. Particularly for one- or two-person GIS operations, standards help.

Ms. Clifton pointed out the value of licensed Esri street centerline data that can be edited locally. Edits are portable, and Esri will review and integrate the updates into its dataset. The Esri product is a routable street network. Achieving the same functionality with a county street dataset is challenging.

On the topic of roads, Mr. Farley added he invited Mr. Sloop, Mr. Sewash, Hope Morgan and a few others to meet and discuss the functional potential of the statewide road centerline dataset. The concept is for a local government to maintain local centerlines and edit in a way the results are contributing to the statewide seamless centerline dataset. This represents an opportunity for a working group to focus on the workflow and underlying technology for the state to work with local governments. There is an opportunity to use a tool built on the same concept as the NC Parcels Transformer—NCDOT owns the tool developed by the Carbon Project, Inc., for the Working Group for Roads and Transportation (WGRT) that translates local roads datasets to a standard. Mr. Farley intends to meet again to discuss processes and data collection methods including one used by NC Emergency Management. The new limited services contracts may provide opportunities for building methods and tools. NCDOT updates road centerlines on a quarterly basis, meeting most needs except Next Generation 911 which requires more frequent updates. An analysis of the current roads data model and what is needed to meet future functional requirements would inform next steps. Requirements include vehicle routing and geocoding addresses. The workflow with and participation by local governments are critical pieces. A related requirement is included in House Bill 457 that would direct NCDOT to work with local governments to maintain a database of non-system roads. Also, Federal Highway Administration now requires submission of all public roads to be integrated into a national dataset. Mr. Farley suggested that a working group under the Statewide Mapping Advisory Committee (SMAC) start going through a process to identify needs and requirements for a workflow. Given the likely passage of H457, the timing of an effort becomes more urgent. The goal is a statewide roads dataset that enables routing and geocoding. The state can offer to build the translation models to consume the local government roads data as managed locally. Translations for all counties were established in the WGRT project and are available to update and apply.

Mr. Coats observed that a statewide roads resource is a benefit to small jurisdictions, and training can be valuable to local governments to encourage participation and make the process simple to carry out.

Mr. Sewash added that the NENA requirement for 72-hour updates of road centerlines has not been met by any state. Tracking individual transactions is required to verify the error reporting and resolution. It is not a bulk translation. The most frequent updates he has seen among states are weekly cycles. In response to a question about the timing of Next Generation 911 in North Carolina, Mr. Sewash shared that the NC 911 Board Technology Committee is meeting June 20th to review a request for proposals for GIS services related to data for the system. Mr. Farley pointed out that, in the absence of hard requirements from Next Generation 911 and not yet knowing the differences in requirements for transportation purposes and emergency call answering purposes, work on requirements for statewide roads should continue for other business purposes. Local authoritative sources of street data need to be considered. County datasets may be inclusive of municipal data or not, and the department responsible for publishing street centerlines varies by jurisdiction. For example, Ms. Clifton is working on Davidson County street centerlines including data from municipalities. Some data development by NCDOT for some jurisdictions may be required.

Getting back to Council priorities, Mr. Duncan suggested open source solutions need more formal assessments as options for geospatial databases, servers, and desktop tools. In the context of the last year of the Enterprise License Agreement with Esri, more information about software options will be valuable. This is an example where Mr. Duncan relies on the Council's committees to advise and collaborate on technical issues and opportunities to find the best solutions.

Mr. Duncan described an opportunity to add value in the Department of Revenue by applying geospatial data to point-of-sale information for fair sales tax collection and distribution to units of local government. He would like the Management and Operations Committee to think about other agencies that could take advantage of GIS, for discussion at the next meeting.

He asked the committee chairs to share their primary objectives, issues, opportunities, obstacles, state-level directives that guide their work, new legislation affecting their stakeholders, and collaboration needed with other committees.

5. Committee Direction for FY2017-2018

Local Government Committee
Kathryn Clifton reported the LGC discussed priorities and identified key efforts that have value for local governments:
  • Next Generation 911 and what to expect when
  • Preparation for Census 2020
  • Address points and related services
  • Street centerlines as sources for statewide data maintenance
  • Professional Land Surveying and GIS as it affects local government contractors

- Unmanned Aircraft Systems (UAS) and how they may be utilized for small data collection projects and other local government purposes

State Government GIS User Committee
John Farley referred to the street centerline discussion as a priority for SGUC. In addition, the former Interagency Leadership Team (ILT) was a collaborative effort focused on transportation with the purpose of building out geospatial datasets statewide to support more efficient planning, permitting, and decision making. Recently, the NCDOT Chief Operating Officer asked about how to use GIS to streamline the highway construction process. The ILT had a successful pilot program but has not been active in several years. Mr. Farley foresees an initiative like the ILT as an interagency effort. NCDOT may be more willing to pay for data development and other needs than in previous years. NCDOT is proceeding internally with intentions to work with other agencies on details of datasets and benefits. Mr. Johnson recounted some of the history of ILT and CGIA's involvement in defining data requirements and statewide benefits. Mr. Sewash confirmed ILT identified 70 data layers and narrowed the list to the 36 most valuable datasets. NCDOT intends to learn lessons from the previous effort and pick up where ILT left off, assessing datasets one at a time with attention to attributes, update frequency, and maintenance responsibility.

Mr. Farley described an opportunity to apply open source solutions as part of hybrid systems for storing, analyzing, and serving geospatial data. This also relates to coming negotiations concerning an enterprise license agreement with Esri. License management is an issue for SGUC. Mr. Sewash advised talking to the states of Washington, Utah and Colorado for information on negotiating an enterprise license agreement in the context of hybrid approaches to system architecture. Mr. Johnson added, after the last ELA was signed, DIT leadership advised an assessment of open source alternatives for cost considerations.

In response to a question from Mr. Duncan, Mr. Farley has not formerly gathered information from other states about applications of open source solutions. He observed industry trends toward hybrid solutions that combine Esri and open source tools. More research is needed. Mr. Farley will consult SGUC about its work plan the question of open source software options and developing guidance for GIS operations.

Mr. Duncan directed SGUC, LGC and TAC to collaborate on an assessment and a guidance document on open source solutions within the next six months. He needs to be able to answer potential questions about open source options by November or December this year.

Mr. Madding suggested that, instead of a white paper limited to GeoServer software as planned, an assessment of open source solutions for desktop GIS, database, and server including functionality of specific software packages. Levels of functionality for alternatives may be most informative. Potential resources include the Census Bureau (Geographic Update Partnership Software is built on QGIS), one or more private companies that have implemented open source software, local government technical staff, FIC members who are open source users, universities that are using open source software for applications, and vendors approved for the limited services contract that specialize in open source solutions. Software training may be a component, provided by a contractor and/or NCDOT's GIS trainer.

Another opportunity from the perspective of SGUC is the limited services contract for GIS in state government and local government as well. Mr. Farley proposes continuing the review committee to monitor the limited services contract and learn ways to make it most effective.

Federal Interagency Committee
Silvia Terziotti described two FIC concerns. First, a priority is progress on statewide datasets that can be integrated into national datasets, including elevation, address points, and roads. These are very useful for federal agencies working in North Carolina. For example, NC LiDAR is a source for 1-meter digital elevation models for USGS purposes.

Statewide soils (managed by the USDA Natural Resources Conservation Service) will be valuable as a seamless dataset, with attention to the most useful soil characteristics for GIS applications. Hydrography is a federal dataset that needs state input to improve and match to elevation data. The National Hydrography Data (NHD) Plus (High Resolution) will be available soon, based on 1:24,000-scale data including streams and catchments. Updates to the watershed boundary dataset are in progress. Ms. Terziotti described potential for representing land cover as a few basic classes, taking advantage of LiDAR classifications and/or National Agriculture Imagery Program imagery, for example. Also, she pointed out federal GIS users in North Carolina may create subsets of federal datasets that represent features in North Carolina, and related data sharing would benefit state and local GIS users.

FIC is also very interested in standards, most notably implementation of the ISO metadata standard. More and more tools are emerging and she would like federal, state and local efforts to progress together. She is interested in state needs for standards and how those relate to federal efforts. She sees an opportunity for the GIS community in North Carolina to inform the process of developing federal standards for elevation and hydro break lines collected with LiDAR data.

North Carolina will also be consulted in an upcoming national elevation enhancement assessment to look at elevation datasets and whether standards need to change for the quality level of LiDAR now being collected.

Statewide Mapping Advisory Committee
Joseph Sloop concurred with the priorities reported today including hybrid software solutions and standards. Looking ahead at the geospatial industry, he expects the Internet of Things will be important. For example, his department ties into digital weather stations to inform public schools in managing storm water retention dams. He expects real time data to be more available and useful.

On the open source topic, MapForsyth is testing a PostgreSQL database with ArcSDE sitting on top as a hybrid application. The county is beginning to use QGIS for some desktop applications as well. Related to the Government Data Analytics Center (GDAC), geospatial data analytics will be more important to local governments. Tools may include Esri Insights, GeoDa, and R statistical program. To get more return on investment, Mr. Sloop would like to explore more ways to use the statewide datasets. He sees crossover in issues and opportunities between committees as beneficial.

In the interest of time Mr. Sloop ended his comments with the intention of adding more detail at the next meeting.

Regarding geospatial data, Mr. Madding added his preference to see an updated dataset for water and sewer infrastructure. Ms. Clifton added suggested development of datasets applicable to economic development, and alternative transportation (e.g., the Carolina Thread Trail) as a statewide dataset.

Technical Advisory Committee
Dan Madding plans to modify the open source task from a paper on installation of GeoServer to a paper on open source software functionality as a guide for users. Another opportunity for TAC is to document government practices using unmanned aircraft systems.

7. Future Meeting Dates

July 24 is the preferred date for the next Management and Operations Committee meeting. The committee will continue its discussion on Council priorities for FY2017-2018.

The meeting adjourned at 3:00 PM.