

Statewide Mapping Advisory Committee Meeting

Minutes

Wednesday, July 16, 2014; 1:30 PM – 3:30 PM

NC League of Municipalities

Albert Coates Auditorium, 215 North Dawson St., Raleigh, NC

Conference Call Number: 641-715-3840; Access Code: 1061167#

Web Conference: <https://join.nc.gov/its/meet/david.giordano/JMWHVBV8>

Welcome/Introductions – Ryan Draughn, Chair, welcomed Tom Morgan, John Bridgers, Gary Thompson, Steve Averett, Kelly Eubank, Colleen Kiley, John Farley, Sean McGuire, Alice Wilson, Cam McNutt, Kenneth Taylor, Silvia Terziotti, Jeff Essic, Jeff Brown, Tim Johnson, Anne Payne, Carter Vickery, and on the phone Tyrel Moore, Doug Newcomb, Stephen Dew, and Rick Wallace.

Approval of April 16, 2014 Minutes -- approved

Metadata Committee Update

Steve Averett, City of Greensboro, and chair of the ad-hoc Metadata Committee, reported that the committee is nearing completion of the North Carolina State and Local Government Metadata Profile based on the recently adopted ISO 19115-1 standard. Steve explained that metadata is essential for finding geospatial data both internally in business operations and online. The committee's priority is the Metadata Profile. This is not a formal ISO profile, though it could become one.

Steve recapped the history of metadata standards. The Federal Geographic Data Committee (FGDC) adopted the Content Standard for Digital Geospatial Metadata (CSDGM) in 1994. NC Geographic Information Coordinating Council adopted the same in 1998 as a standard for North Carolina. The CSDGM standard has been widely applied since. In 2003, ISO published its first 191** metadata standard. In 2010, FGDC adopted the ISO metadata standard and encouraged federal agencies to use it. CSDGM remains valid as a standard to date. North Carolina formed its ad-hoc Metadata Committee in 2012 to “recommend ways to expand and improve geospatial metadata in North Carolina that are both efficient for the data producer and beneficial for data users in discovery and application of geospatial data” (committee charter). Steve explained that federal and state data managers have achieved valid metadata records for published datasets, but local government data managers too often do not successfully complete metadata records. The goal of the committee is change the local government deficit in metadata by promoting the new standard and providing tools that make it easier to create and maintain valid metadata. Data consumers and business partners have high expectations about availability, transparency, and online access, and that includes metadata for efficient and effective use of data. The ISO standard (19115-1) is a revision approved in 2014. Committee member Lynda Wayne helped the committee get a head start on the revised standard, well before approval of the final version.

Steve displayed the outline of the Metadata Profile, including the table that specifies what is in the standard. The sections are introduction, acknowledgements, the value of metadata in brief,

recommendations, and tables that specify what is in the standard. A sample will be useful as well as compliant XML templates for users to download from CGIA, import and start using.

Steve explained the tables include required elements for the Profile as well as optional elements. Domains and codes are included, as well as best practice guides for content of metadata fields. The timeline for review, completion, recommendation, and adoption covers several steps. The first step, the presentation to SMAC today, includes an invitation to SMAC members to engage their respective organizations and committees in review of the metadata standard. A polished version will be ready for distribution on July 25, with XML templates to follow shortly thereafter. Distribution includes SGUC and LGC member lists as confirmed by SMAC members.

September 5th is the deadline for completing review and sending comments to Steve. Separate notes are preferred to tracking changes in a document. The timeline for review and adoption is aggressive to take advantage of opportunities for promotion of the State and Local Government Profile and related tools at the 2015 NC GIS Conference in February. Before the next SMAC meeting (October 28) the ad-hoc committee plans to submit the finalized standard to SMAC (targeting October 8) and request SMAC to approve (via email) a recommendation for Council adoption. The Council requires 30 days to review a standard, making October 20 a deadline for distribution to Council members in anticipation of the Council meeting on November 20. Ryan pointed out that the timetable comes with the expectation that the review will not result in major changes in the standard. If substantial modification is required, the timetable may prove too optimistic.

Steve Averett's contact information for submitting comments, asking questions, or requesting distribution of the document: Steve.Averett@greensboro-nc.gov GIS Manager, City of Greensboro (336)373-2057.

In discussion, Ken Taylor explained the expectations of USGS and federal agencies for FGDC standards for metadata and observed that federal adoption of the ISO standard is in process. He cautioned against distribution of maps as pictures (e.g., PDF format) or simple online map viewers that do not contain information that would be in metadata records of the source datasets. Ken plans to consult with Association of American State Geologists to get more information on what other states are doing regarding the new standard.

Steve explained that other states have expressed interest in North Carolina's approach, as well as the Province of Alberta, Canada. Other states may take advantage of NC's timely work. FGDC is encouraging adoption of the ISO standard. Templates will be important to realize the benefits of the new standard.

John Farley offered to coordinate review and comments by SGUC. He expressed confidence in the ad-hoc committee's work. Tom Morgan is interested in theme-specific templates (e.g., cadastral) that may be put into practice by local governments. Alice Wilson explained that the Local Government Committee meets next on August 20, but committee members and its Advisory Team can review and make comments sooner.

Tim Johnson emphasized that adoption of the standard is a necessary step, but timely

implementation of the standard and tools will be essential to solve the problem of missing metadata in local government data. Alice agreed and will advise the LGC to consider if the standard is implementable. Ease of use will be more important than the specific wording of the standard.

Anne Payne observed that the ad-hoc committee (originating when she chaired the SMAC) has had strong representation from all sectors that will be involved with metadata from the beginning and expects that to translate into a new standard that will not need a lot of modification before adoption.

Steve added that the document includes standards for both datasets and web services. Hyperlinks will lead to resources including templates.

Ryan observed that the ad-hoc committee has worked hard and been productive over many months. He urged the ad-hoc committee and SMAC members to communicate in a timely way to achieve the timetable. John Farley concurred in going ahead with the expectation that four weeks of review is adequate and modifications can be made within the given time.

Silvia Terziotti suggested a webinar to explain the structure of the standard and give people confidence that it will be practical to review.

Sean McGuire cautioned that the Local Government Profile not be too different from the ISO standard so that it can apply to others beyond NC. He suggested that letters of endorsement from SGUC and LGC (representing data publishers) would help strengthen the case for Council adoption. Ryan welcomed such letters.

Steve apologized for the relatively tight schedule, but it puts the ad-hoc committee in a position to make the most of its hard work at the GIS Conference and put implementation on track. Ryan thanked Steve for the presentation and discussion.

Framework+ Datasets

Adopting the structure of the last SMAC meeting, Ryan called on members to report on opportunities, development, maintenance, and issues for Geospatial Framework datasets for North Carolina.

- *ORTHOIMAGERY*

Tim Johnson (CGIA) provided a status report on the Orthoimagery Program. The imagery program is moving along in three phases. The project team delivered a final report on the Eastern Piedmont phase (2013) to the NC 911 Board. As part of a cost-share agreement, USGS reviewed eight counties in the Raleigh-Durham-Chapel Hill urban area and found no quality issues. Gary Thompson is leading the final work on horizontal quality control for the 25 counties. The project website has been updated and now features map images that enable users to look at seam lines for the ortho images and identify the date of acquisition for an image in a location of interest. One lesson learned – the county mosaic product performs better in a flat format rather than a composite format. The 2014 project will use the flat format for county mosaics.

In the Northern Piedmont and Mountains (2014), quality control training using the VOICE online tool is complete for local Public Safety Answering Points (PSAP) and GIS contacts in the 26-county region. Visual quality review will begin on August 4. The delivery schedule from the five contractors for quality review covers six weeks. The county sequence enables concurrent review of adjoining counties from two contractors to assure consistency from one contractor to another.

The fourth phase in the 4-year imagery refresh is in the Southern Piedmont and Mountains (2015). The project covers a wide range of elevation and is more mountainous than the 2014 region. Ten of the counties have extreme relief. NC 911 Board approved the project in April. The QBS process will occur in August. There are ongoing discussions with Fort Bragg about flight plans over portions of the military installations.

He added that counties and municipalities have opportunities to engage the contractor assigned to its area for additional geospatial products such as higher resolution imagery. In 2014, the City of High Point and Appalachian State University opted to pay a contractor for buy-up products. The 2015 project will include outreach to jurisdictions in the region to explain the opportunity and how to fit into the process, including Shelby, Monroe, Gastonia, Charlotte, Asheville, and Hendersonville.

Silvia added that the Eastern Band of Cherokee Indians may be interested as well.

- *TRANSPORTATION*

John Farley (NCDOT) reported that the Rome Project will (1) help maintain the Linear Referencing System, (2) capture all roads in the state, and (3) integrate with asset management. The full set of state roads will have more attributes populated for state system roads, but the local roads that will be integrated into a statewide dataset will be maintained on a regular basis. Esri is the prime contractor and is applying its “Roads and Highways” product as part of the solution. There is a web-based tool that enables NCDOT business units to attach events to the roads. For example, for purposes of Next Generation 911, there will be a web tool to enable address points to be attached as events to the centerlines maintained by NCDOT. The project will save costs for NCDOT. Other agencies, instead of maintaining a copy of the road network with their own business information, will be able to attach business data to NCDOT’s dynamic road network; agencies will not need to modify a road network, but will use the one published by NCDOT. The first delivery of converted data will be reviewed later this month. In early 2015 the full dataset will be converted. Published web services may include Web Feature Service (WFS) format if there is enough demand from users. John added that Next Generation 911 has a requirement to have address information that may be tackled in another project after completion of the Rome project in 2015.

- *CADASTRAL*

Jeff Brown (CGIA) reported that since the last SMAC meeting the project team for the NC Integrated Cadastral Data Exchange completed the EPA grant project. The team delivered a master schema for parcels in North Carolina, a geospatial database, an online

application called the Parcel Transformer designed and implemented by the Carbon Project, Inc., standardized parcel data for 25 counties and lands of the Eastern Band of Cherokee Indians, REST services for the EPA Exchange Network, REST services in Esri format, Web Map Services, Web Feature Services, NCID authentication for data producers to share and translate their source data, and user guides for the Transformer and NCID registration.

The process for local governments includes uploading source shapefiles to the Parcel Transformer, specifying translations from source to master schema, and running a job. When a county submits an update, the saved translation model will make the process easy and efficient. Transformed products include the original polygons with standardized fields, a point file with the standardized fields, and valid metadata. Web Feature Services will be published to the EPA Exchange Network and will be added to the base collection in the NC OneMap Database for publication of additional services to support a range of open data formats for consumers.

Jeff recognized the project team and the coordination structure that served the project well.

The plan for Fiscal Year 2014-2015 is for CGIA to coordinate the project partners to expand the resource and maintain statewide parcels. The project needs to secure funding for operation and maintenance, estimated to be \$72,000 in the first year and \$45,000 in following years. Partners will engage data providers, assist in transformations, control quality, add counties monthly, and refresh the original 25 counties. The plan is to complete expansion by May 2015.

Based on consultations with project partners, the primary roles and responsibilities for the next phase are the following.

- CGIA will administer access to the online Transformer, manage data transformations and monitor status, manage the Carbon Project's role in operation & maintenance, coordinate technical assistance, assist selected counties, manage quality assurance, update the NC OneMap Database with transformed data, publish web services and data, and continue outreach to data producers and consumers.
- Secretary of State, Land Records Management Program will coordinate outreach to data producers, obtain copies of datasets from producers where needed, obtain permission to publish where needed, assist selected counties in transformations, and maintain cadastral mapping standards for NC.
- NC Department of Revenue will assist in outreach to data producers, and assist in establishing and sustaining funding support for operation and maintenance.
- NC Department of Transportation will assist in establishing and sustaining funding support for operation and maintenance and continue project oversight and technical advice.
- NC Department of Public Safety, NC Department of Agriculture and Consumer Services, and Eastern Band of Cherokee Indians will continue

to assist in quality assurance of transformed data, and provide project oversight and technical advice.

- The NC Geographic Information Coordinating Council will continue to provide oversight and advice through Council meetings and Management & Operations Committee meetings, the Statewide Mapping Advisory Committee and the Working Group for Seamless Parcels, the State Government GIS User Committee, the Local Government Committee, and the GIS Technical Advisory Committee. Collaborators will maintain and support core cadastral data content standards consistent with the Master schema of the NC Parcel Transformer.

The map showing a planned sequence of counties is based on consultations with project partners and the goal of adding more counties in the first few months to build the content. Cam McNutt confirmed that it would be useful for DENR to have standardized parcels sooner for counties related to the Dan River. Commerce has pointed out that counties from the Sandhills Region would be timely sooner. Tim urged the project team to modify the sequence to take into account those preferences and earn support of state agencies. Jeff confirmed that it will be done.

John Farley emphasized that parcel datasets play a role in transportation planning and evaluation of projects. Cam added that a statewide dataset will save time for both DENR business units that may be inclined to collect parcel data and for local government data managers fielding multiple requests for parcel data.

Tom Morgan added that local government data dictionaries are invaluable in efficient data transformation. He assured the committee that the tool is easy to use and can be done in a few hours the first time. The user guide emphasizes this point.

- *ELEVATION*

Gary Thompson (Department of Public Safety) reported the LIDAR refresh project is in progress. The first two phases by the Department and USGS have been flown. If the full plan is funded, NC may be the first state to have statewide QL2 data. The first delivery of data will be July 1 from contractors for three counties. Gary displayed samples from the validation range in Raleigh. The validation area data had a vertical accuracy within 18.3 cm. The LAS data can be classified. There will be a clip and ship tool for consumers needing parts of tiles (source files are very large). Delivery of products is expected in early 2015. John Farley pointed out that in NCDOT's experience consumers prefer digital elevation models and contours and that web services for those derived products will be important in serving consumers. Where web services for derived elevation products will be hosted remains to be determined.

Ken Taylor added that a news report (Politico) indicates that the federal government is shifting \$13.1 million in funds to elevation data at the expense of floodplain, beach erosion, and landslide mapping. He is concerned about the impact on North Carolina programs and will look into this further.

- *HYDROGRAPHY*

Cam McNutt (Department of Environment and Natural Resources) reported that the Stream Mapping Advisory Committee (StreamMAC) has met and collected information from state agencies about who is using what datasets for hydrography. He intends to gather information on what datasets local governments are using and he can provide a template for describing those data. The group plans to update the business case for stream mapping and review the state tables. The goal is to have a single authoritative dataset for statewide use.

Even within the Division of Water Resources, as many as six different stream datasets are in use (geometry the same, but attribution varies). Getting agencies to use a common dataset is in part a communication challenge. The Division cites the 1:24,000 scale hydrography geometry in rules used to implement the Clean Water Act. The Division adopted a dataset from USGS about five years ago as the geometry (National Hydrography Dataset or NHD). The committee needs to determine who is editing stream lines, how, and why. Once there is a statewide dataset, a process is essential to maintain geometry. Also, names are not entirely consistent with GNIS.

The watershed boundary dataset (national) is integrated with NHD. The Division of Water Resources now has a common set of river basin boundaries (17) consistent with NC law. Inter-basin transfer boundaries were also resolved to the watershed boundary geometry. The watershed geometry now accommodates multiple purposes with fields for federal, state, inter-basin transfer, etc.

Classified streams are based on 1:24,000-scale geometry, consisting of named streams (about 13 thousand) and a few more (140) that are unnamed tributaries (note: some tributaries are named in NC but not GNIS). Cam serves on the NC Board on Geographic Names to help resolve naming issues. He noted that there are some coastal features that are physically gone but retained in databases for regulatory reference.

Regarding local government representation on the committee, Wright Lowery represents the Local Government Committee. Alice Wilson also attended a meeting via telephone. The LGC is interested in providing information about use of stream data in local governments. Cam will provide a template.

Cam expects the committee to have results to report to SMAC in six months.

- *GEODETIC CONTROL*

No discussion today.

- *GOVERNMENTAL UNITS*

Gary Thompson reported on county boundaries. Survey work is complete on the NC-SC boundary. There will be legislation to minimize the impact of boundary changes on three homeowners. The next state boundary to review will be NC-VA. Gary's office maintains county boundary data and provides files to NC OneMap.

John Farley reported on municipal boundaries. Under the Powell Bill, NCDOT obtains municipal boundary changes as part of NC DOT cost share for maintenance of state roads in local jurisdictions. There are a few towns that do not participate, but NCDOT tries to include boundary information for those jurisdictions in the state dataset even if it is not maintained annually. Accuracy varies in some locations. Updates occur between October and February. The municipalities that do not participate (46) are small and do not have state maintained roads (and do not receive NCDOT payments).

- *ADDRESSES*

Jeff Brown (CGIA) reported on behalf of Joe Sewash (CGIA) who could not attend today. Regarding addressing standards, a final federal addressing standard is not yet available for review and analysis. The Federal Geographic Data Committee (FGDC) Addressing Standard and the National Emergency Numbering Association (NENA) Next Generation 911 GIS Data Standard are in review and reconciliation processes. The National States Geographic Information Committee (NSGIC) Addressing Working Group meets next week and will discuss the status of both standards.

Working Groups

NC BOARD ON GEOGRAPHIC NAMES – Dr. Tyrel Moore reported that the NCBGN has no action items currently for consideration by the NC Statewide Mapping Advisory Committee. He provided updates on the following items:

- 1) At the January SMAC meeting, Chair Ryan Draughn raised a question concerning a 2006 proposal that still is listed as pending resolution. The proposal is for the naming of Buck Quarter Creek in the historic Cox Mountain/ Eno River Basin area in Orange and Durham counties. Tyrel contacted Ms. Jenny Runyon of the US BGN for background into the pending proposal. The naming of the creek was approved with some complications in 2006 but remained incomplete. The case came before the NCBGN in 2008 at which time, a new Board was reluctant to overturn the previous Board's recommendation. Ms. Runyon informed Tyrel that she would refer the issue to the US BGN for a judgment that would bring closure to the pending status.
- 2) Requests to name a stream in Mecklenburg County for a new Middle School is being compiled and Tyrel will work with the proponent, Mr. John Fout, as needed.
- 3) A proposal to name a stream in Vance County has encountered scrutiny by the US BGN; the naming of four tributaries is a complication that will delay closure on this request.
- 4) NCBGN received a request from Transylvania County for the proposed commemorative naming of a summit. The proponent had requested this two years ago. The US BGN Guidelines require a five-year waiting period for approval of commemorative names.
- 5) Finally, the Board will continue to work toward resolving the issue of objectionable or offensive feature names by engaging local officials and encouraging the replacement of such names.

STANDARDS

Tom Morgan (Department of the Secretary of State) reported that he is coordinating assistance from the NC Property Mappers Association's Cadastral Committee and the Working Group for Seamless Parcels to work on an update of the cadastral mapping standard for North Carolina. Second, with help from CGIA, NCDOT Photogrammetry, NC Geodetic Survey, the Secretary of State, and vendors on the statewide orthoimagery project, a revision of the orthophotography standard is nearly complete. Tom will distribute to a wider audience for review and comment, including the Council and the North Carolina Registry. There will be a request for a recommendation from the Council for the Secretary of State to adopt the revision. The revision will include new technology and take advantage of lessons learned in the statewide project.

ORTHOPHOTOGRAPHY PLANNING – Gary Thompson reported that the Working Group had its usual review of orthoimagery phases and updates on geodetic and elevation data. During the last storm event (Hurricane Arthur), federal agencies called North Carolina to coordinate imagery acquisition. FAA, NOAA, USGS, FEMA, NCEM, and members of the SGUC Executive Committee talked twice to assure coordinated efforts. NOAA acquired oblique imagery along the Outer Banks before and after the storm, in part to test equipment and processing methods. Oblique imagery was processed and shared within a day. Fortunately, damage was not extensive.

The Working Group is making progress on a guidance document for local governments interested in oblique imagery. The target is to have a document for SMAC early in 2015 with a goal of presentation to the Council in May 2015.

Tom added that NCDOT Photogrammetry created a template for a Memorandum of Understanding for State agencies to sign in preparation for a need for imagery acquisition by NCDOT. A signed MOU needs to precede a work order for imagery acquisition. In a discussion, SMAC members pointed out that getting a mechanism in place is important in the event of inland flooding, a landslide, or other types of damage in areas that would not be acquired by NOAA (Outer Banks) or NCDOT (along highways). Potential cost savings for dual missions can be significant.

Regular Status Updates

NATIONAL GEOSPATIAL PROGRAMS OFFICE – Silvia Terziotti thanked Tim and Ken for reviewing the 3DEP fact sheet. Regarding the reprogramming of dollars to elevation projects announced by Ken, Silvia will get more information for the committee.

GEOSPATIAL AND TECHNOLOGY MANAGEMENT – Colleen Kiley, reporting for Hope Morgan, did not have any additional information beyond Gary's report on the elevation project.

NC ONEMAP – Jeff Brown reported for David Giordano. A total of 17 datasets were updated or added during the quarter. NCDOT and Natural Heritage Program have been consistent in submitting updates to NC OneMap. NHP datasets include federal lands. Regarding NC OneMap infrastructure, the operating system is being upgraded to

Windows Server 2012 R2. Work is nearly complete on a routine to automate parcel data uploads into NC OneMap database and generate map services and feature services. Also, website redesign is planned for NC OneMap and GICC.

NC Geographic Information Coordinating Council

COUNCIL UPDATE – Tim Johnson gave a brief update on the May 15th meeting. In longest Council meeting on record (on purpose), the Census Bureau briefed the Council on Census programs related to preparation for Census 2020 and shared a timetable for submissions and reviews. The Council adopted the revised GNSS Standard for North Carolina. The Council heard brief updates from the standing committees, the Orthoimagery Program and NC OneMap. Tim also announced the 2015 GIS Conference at the Council meeting and solicited ideas for the program committee. Tim reiterated that the program committee is working hard and a website for the conference will be live at the beginning of August.

STATE GOVERNMENT COMMITTEE – Sean McGuire reported the Executive Committee began work on building a knowledge base for sharing information and developing and managing GIS-related information technology projects. On the topic of technical architecture system design, OITS presented on issues related to GIS to the SGUC General Meeting in June. Also, SGUC members are sharing design documents with the GIS Technical Architecture Committee. Regarding ArcGIS Online for Organizations, SGUC members have great interest in applying the software. One of the best examples is NCDOT's GO NC!

The Executive Committee continues to work on developing data for sharing among state agencies and with the public, with emphasis on Strategic Transportation Investment (10-year planning), Integrated Cadastral Data Exchange, Street centerlines and address points, and Business location data.

SGUC is preparing to work with OITS on the next Enterprise License Agreement with Esri as the fifth and final year of the current agreement begins tomorrow. The Executive Committee meets on August 5th and a general meeting is scheduled for August 28.

LOCAL GOVERNMENT COMMITTEE – Alice Wilson reported that the Local Government Committee is still working on statements of the benefits of statewide datasets in support of Council initiatives including orthoimagery, parcels, elevation, stream mapping, etc. LGC expressed support for expanding the integrated parcels project to a statewide resource. On the topic of addresses, SMAC coordination with the State Board of Elections will be important to local governments, particularly where local boards of election lack GIS capability to readily verify address datasets as requested by State Board of Elections. Ryan advised contacting Marc Burriss at State Board of Elections as a good resource.

Issues for the LGC in the coming months include (1) opportunities to contact imagery flight vendors assigned to acquisition areas (to explore local procurement of additional products), (2) uses of stream data in local governments, (3) cloud solutions and data

retention, (3) analyzing trends in parcel size, especially subdivided parcels related to land development, from retained versions of parcel data, (4) professional development opportunities, and (5) appointment of another local government representative to the Working Group for Orthophotography Planning.

The next LGC meeting is scheduled for August 20, 2014 at 2:00 PM.

- *FEDERAL INTERAGENCY COMMITTEE* – Silvia Terziotti reported that the executive committee will meet tomorrow, chaired by Bob Wayland of US EPA.

Ryan recommended that SGUC, LGC, and FIC reserve time with their respective members to discuss review of the metadata standard and the timeline for submitting comments.

New Business

None.

Task Review

Ryan asked for review of the SMAC Work Plan and expect a communication from Ryan to solicit questions and comments in the next week so it can be finalized soon. Jeff added that the SMAC Work Plan is a framework for working groups and committees; they can add detail in their own work plans.

Adjourn --The meeting adjourned at 3:28 PM.

2014 SMAC Dates

October 29