NCGICC

North Carolina
*Geographic Information Coordinating Council*

# *The Power of Place*
## 2014 Annual Report to the Governor and North Carolina General Assembly

**December 2014**

*Submitted to:*

*Governor Pat McCrory*

*and*

*The Joint Legislative Commission on Governmental Operations*

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## Executive Summary

The Geographic Information Coordinating Council (Council) is a focal point for public and private sector stakeholders to discuss geographic data, data sharing, standards, and view practical examples of the value of geographic information systems in public and private business processes. The Council was established in August 2001 and is incorporated in General Statute §143-725 through 143-727. The Center for Geographic Information and Analysis (CGIA) staffs the Council. The purpose of the Council is to advise the Governor and the General Assembly on strategic direction, responsibilities, and requirements as North Carolina applies geographic information technology in collaborative ways to meet the needs of decision makers at all levels. This report fulfills that statutory charge.

The Council reports the following accomplishments in 2013-2014 (described in Section II):

*NC OneMap:*
- ✓ Completed the infrastructure upgrade at the Eastern Data Center in Raleigh to ensure reliability of operations for *NC OneMap*.
- ✓ Redesign of *NC OneMap* websites planned for consistency with nc.gov
- ✓ Updated and expanded the content of NC OneMap Geospatial Portal.

Orthoimagery:
- ✓ Completed the processing and quality review for 2013 imagery.
- ✓ Delivered the imagery to Public Safety Answering Points and to county GIS coordinators.
- ✓ Made the data available free to government agencies, the private sector and the public as an "image service" and downloadable files through *NC OneMap*.
- ✓ Delivered a final report to the NC 911 Board.
- ✓ Began the 2014 phase, acquiring imagery for 25 counties and initiating quality review.

Statewide Datasets:
- ✓ Progress on statewide roads with completion expected in 2015
- ✓ Successful completion of a grant project for parcels
- ✓ Progress on updating statewide addresses, with completion expected late in 2014

GIS Applications:
- ✓ Reviewed GIS applications in state agencies and reported to the Joint Legislative Oversight Committee on Information Technology.

Standards:
- ✓ Adopted a revised standard for Global Positioning System Data Collection and Documentation.
- ✓ Developed a metadata profile to be adopted late in 2014
- ✓ A revised set of technical specifications for orthoimagery took precedence over a cadastral standard update (forthcoming)

*NC OneMap (*http://data.*nconemap.com),* a priority initiative of the Council since 2004, is the hub of geographic data for North Carolina.  The Council's vision is to organize, develop, and apply the best available state and local and geographic data to inform decisions and make business processes more efficient.  This first-stop website for geographic data consumers is governed by the Council and fed by collaborating agencies (page 14). The priority datasets include orthoimagery, parcel boundaries, addresses, street centerlines, floodplains and jurisdictional boundaries.

A four-year update of the 2010 statewide orthoimagery was complete for one-half of the state by early 2014.  The imagery directly supports the 127 local 911 communication centers and a host of other applications throughout the public and private sectors.  Phases 3 and 4 are in progress with delivery of 2014 imagery products scheduled for January 2015 (page 11).

The Council guided a collaborative project led by the Working Group for Seamless Parcels and funded by a grant from the Environmental Protection Agency (EPA).  The project created custom online tools to transform as-is county parcel boundaries into standard, integrated datasets, and share data services in the EPA Exchange Network and through *NC OneMap*.  The project published parcels for 25 counties plus lands of the Eastern Band of Cherokee Indians, a grant partner (page 18).

For statewide addresses, CGIA is developing a business case for maintaining an address database for the state (Address NC).  The business plan will document roles for stewardship of the dataset and operational costs for on-going maintenance and establish the benefits and metrics for demonstrating return on investment. The business plan will accelerate efforts to improve addressing in the state for the Working Group for Geospatial Census Data's collaboration with the US Census Bureau for Census 2020 and for development of Next Generation 911 (page 20).

A project to create a statewide street centerline dataset is close to completion.  NCDOT is integrating all state and local street centerlines into a statewide roads dataset for a more complete, current, and consistent resource for NCDOT's business needs.  Release of roads dataset is expected in 2015, including access through *NC OneMap* (page 20).

The Working Group for Census Geospatial Data is leading collaborative efforts to develop statewide datasets and accommodate timely data sharing in processes that will upgrade and improve the US Census Bureau's geographic files (page 20).

The Council relies on the knowledge, vision and needs of its stakeholders to define important standards for data collection and sharing. The Council completed updates to the global positioning system (GPS) standard that it first adopted in 1994, and developed a new metadata standard for state and local governments, scheduled for adoption in late 2014 (page 22).

Action plans for 2014-2015 again focus on ways to expand and maintain priority datasets, sustain efficient discovery and access through *NC OneMap,* and apply standards and practices to add value to public and private business processes for mutual benefits (Section III).

# Contents

## Introduction

Where can a transportation planner find mapping data for conservation land boundaries, or an emergency manager find current aerial imagery to determine location of a distress call from a lost hiker, or an economic developer find a current set of roads for analyzing market access? North Carolina has a geographic information framework, governed by the NC Geographic Information Coordinating Council, featuring the first stop for consumers of geographic data: *NC OneMap* (http://data.nconemap.com).

*NC OneMap* is described in Section I in detail. What is the underpinning of North Carolina's geographic information framework? Why does North Carolina get compliments from GIS data consumers from around the nation?

The vision for a first-stop online portal was stated by the NC Geographic Information Coordinating Council in 2004. The Council and its committees and working groups have guided, advised, informed and energized construction of the framework since then.

This annual report is presented in three sections:
- I. The Purpose of the Council
- II. Accomplishments in 2013-2014
- III. An action plan for 2014-2015

## NC OneMap

*"I have to stop and take the opportunity to thank you all for your data portal. I am a retired municipal GIS manager from north Texas and in my new job with a local fiber optic engineering firm we work a lot in North Carolina. Your site has made my job so much easier. It is more useful than some other paid sites we subscribe to."*

Great work.

Bill Scott, GIS Administrator, City of Lewisville, Texas (Retired)



**State Capital and Vicinity, 2013**

# Section I.  Purpose of the Geographic Information Coordinating Council

The North Carolina Geographic Information Coordinating Council (Council) was established by law in August 2001 and is incorporated in General Statute §143-725 through 143-727.  The Council originated through Executive Order #147 issued on July 30, 1991 by Governor James G. Martin. A successive Executive Order No. 16 was issued by Governor James B. Hunt Jr. on May 21, 1993 to continue the Council structure and responsibilities.

The purpose of the Council is to develop policies to guide use of geographic information, geographic information systems (GIS), and related technologies.  The Center for Geographic Information and Analysis (CGIA) staffs the Council.

The Council is a forum for North Carolina's GIS community of collaboration.  The Council organizes cooperation among geographic information producers and governs public access to geospatial resources that support a wide range of business processes in state and local government and private organizations.  See Figure 1.



**Figure 1. A GIS Community of Collaboration**

GIS is a planning and analysis tool that informs many public business processes on a daily basis. For example, the technology is widely used for optimal routing of emergency vehicles, garbage trucks, and school buses.  GIS provides an efficient way to combine multiple perspectives in a map, including but not limited to natural resources, transportation, and economic development.  As confirmed in a survey in 2012, private organizations apply GIS in forestry, agriculture, utilities, real estate, engineering, surveying, and business location, to name a few.

Committee structure is vital to the Council.  User committees bring a unique perspective to issues and tasks. User-oriented standing committees are the Local Government Committee (LGC), State Government GIS Users Committee (SGUC), and the Federal Interagency Committee (FIC).  The GIS Technical Advisory Committee (TAC) and the Statewide Mapping Advisory Committee (SMAC) are the two standing committees that combine representation from each committee with subject experts to work on policy and technical issues from a collaborative perspective.  In addition to Council membership, more than 50 individuals are involved in various committees and working groups.  See Figure 2.
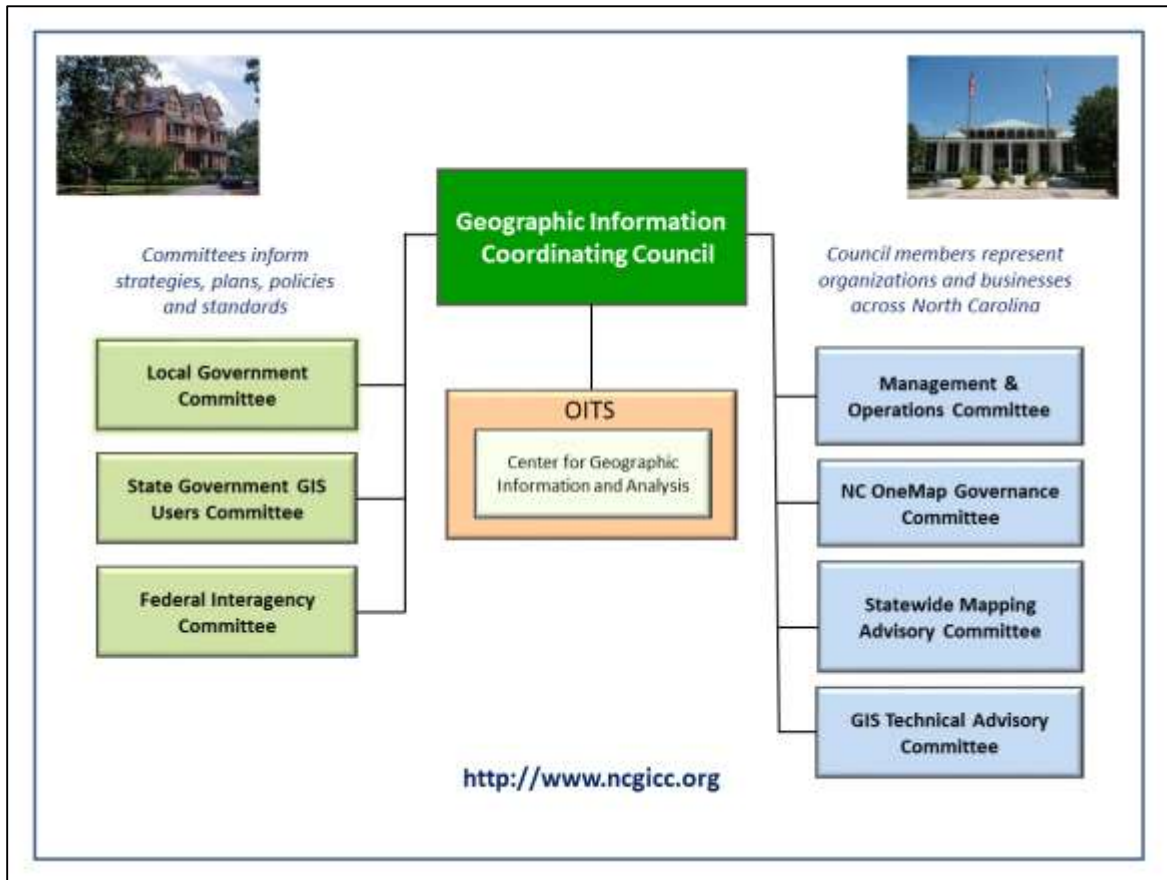


**Figure 2. Organizational Structure of the Geographic Information Coordinating Council**

The Management and Operations Committee (M&O), comprised of standing committee chairs and other Council members, provides advice and support to the Council on matters concerning policy, management, and operations of geographic information, geographic information systems and related technology.  The M&O Committee members also comprise the *NC OneMap* Governance Committee, whose purpose is to develop, direct, and exercise oversight of *NC OneMap* strategy, resources, and performance.  Each committee has a work plan and regular meetings.

The Council meets quarterly to consider policies, issues, and initiatives. Council meetings took place on August 14, 2013, November 13, 2013, March 13, 2014, and May 15, 2014.

**Council Membership**

Mr. Stan Duncan continues to serve as Chair of the Council. Mr. Duncan is the County Assessor and Tax Collector for Henderson County, the Past President of the NC Association of Assessing Officers, and currently serves as Vice President of the NC Tax Collectors Association. He previously served for more than 20 years as a Valuation Specialist for the NC Department of Revenue's Property Tax Division. Mr. Duncan is the first Council chair from local government.

The Governor reappointed Anne Payne of Wake County and Hunter Robinson of the Office of the State Auditor. New Governor's appointments are Joseph Sloop (Forsyth County), Twyla McDermott (City of Charlotte), Josh Norwood (Pender County), Kevin Parrish (Caldwell County), Jon Beck (Land of Sky Regional Council), and Robert Wayland (US Environmental Protection Agency). The Council Chair appointed Alex Rankin of CES, Inc. as an advisory member.

Council members for Fiscal Year 2013-2014 are listed in Appendix A. The establishing authority and precedent for the Council is described in Appendix B.



The Council in a Recent Quarterly Meeting

## Section II.  Accomplishments

In the 2013 Annual Report, the Council described an action plan for 2013-2014.  The status of the plan elements:

*NC OneMap:*
- ✓ Completed the infrastructure upgrade at the Eastern Data Center in Raleigh to ensure reliability of operations for *NC OneMap*.
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These accomplishments are described in the following sections.

## Imagery for the State

**Statewide Imagery**
Before 2010, aerial imagery in the state was acquired by individual counties when funds were available, resulting in a patchwork of vintage and quality that did not meet the vision of the Council for consistent, complete, current imagery.  In 2009, the NC 911 Board funded a project to acquire high resolution imagery for all 100 counties in North Carolina.  By early 2011, consistent high resolution imagery was made available to emergency responders and the statewide GIS community for the entire state for the first time.  The imagery is accessible for download and as an image service through *NC OneMap*.  In addition to its value to emergency responders at all levels of government, the imagery serves as a fundamental data layer for numerous other applications and is heavily used by the private sector.

**A Four-Year Cycle to Update Statewide Imagery**
The NC 911 Board recognized the need to update the orthoimagery on a periodic basis and endorsed a Business Plan for Orthoimagery in North Carolina (Statewide Mapping Advisory Committee) that defined the business case and recommended a practical approach for refreshing imagery in North Carolina.  The NC 911 Board approved funding for all four phases of the four-year cycle in collaborative projects managed by CGIA.  Phases 1 and 2 are complete, involving acquisition of imagery for 50 counties in the Coastal Plain and Eastern Piedmont regions.  The imagery was delivered to the PSAPs and county governments.  See Figure 3.

**Saving Money**
The NC 911 Board is now spending less on orthoimagery per year with the statewide four-year approach than it spent previously to reimburse individual county imagery acquisition.  Prior to the statewide effort, the Board had received $24 million in requests annually for orthoimagery projects.  Based on actual costs in the first two phases and projected costs for phases 3 and 4, the four-year, statewide approach will result in a total cost of approximately $17 million.

**Figure 3. NC Orthoimagery, Example in Spruce Pine, 2014**

Phase 3, covering 26 counties in the Northern Piedmont and Mountains, was initiated late in 2013. Imagery was acquired during February-April 2014 and quality review is complete. Delivery of the imagery to the PSAPs and county governments will occur in January 2015. Phase 4 planning is underway for imagery acquisition in winter 2015 covering 24 counties in the Southern Piedmont and Mountain region. See Figure 4.
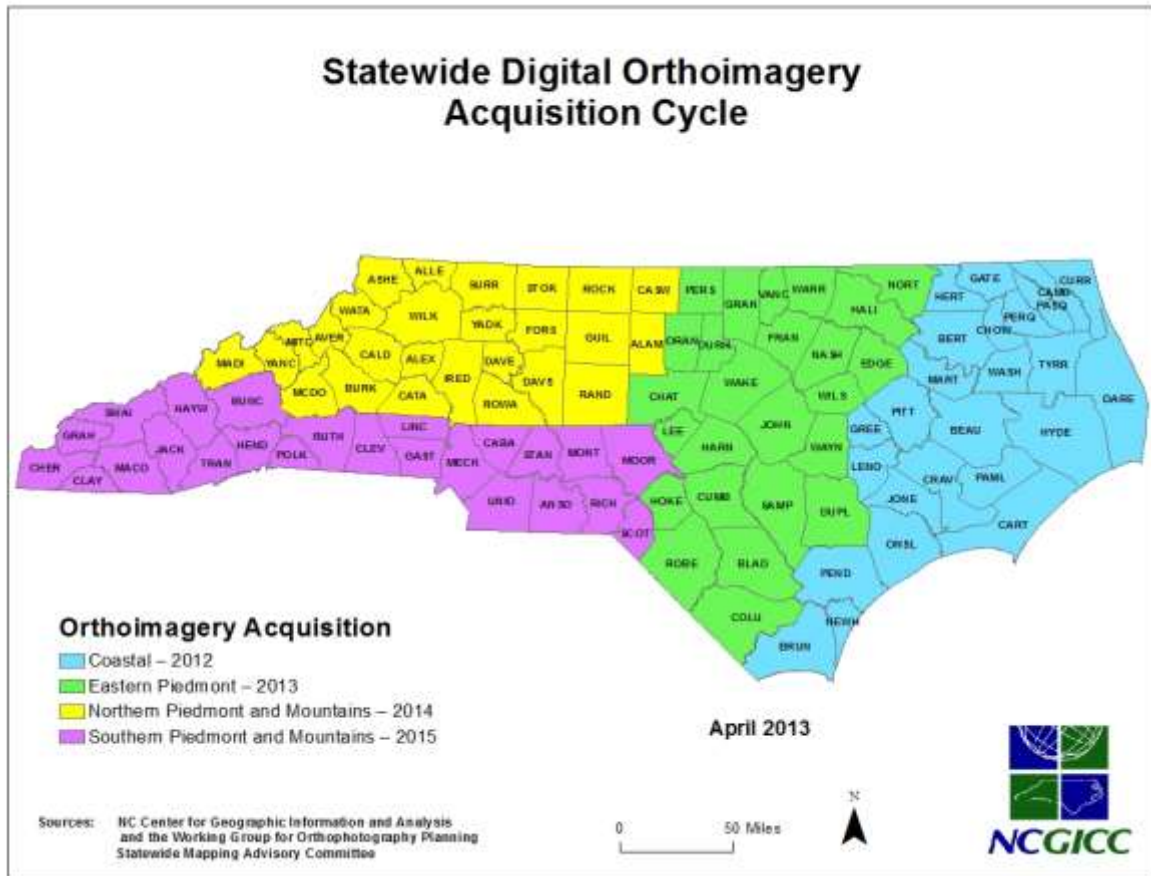
**Figure 4. Four-Phase Imagery Acquisition in North Carolina**

The project contributes to the state's economic vigor by sustaining private sector jobs in photogrammetric services throughout the year. Invaluable to a wide range of users, the data are available to state, federal and regional government agencies, the private sector, the academic community and private citizens as map services and downloadable files from *NC OneMap*.

Benefits include (a) saving time in locating and responding to emergencies; (b) saving time in informing business decisions; and (c) avoiding the cost of erroneous information from out-of date imagery and map features. The NC 911 Board recognizes the value of the imagery, not only for emergency response, but for countless other uses and applications by the private sector and government agencies

The ongoing collaboration with the NC 911 Board exemplifies the value and benefit of the Council model for fostering collaboration among government agencies and the private sector.

**Figure 5. NC Orthoimagery, Example over Spencer Shops at NC Transportation Museum, 2014.**

## NC OneMap

**Priority Initiative**

The Council's priority initiative is *NC OneMap,* serving the goal to ensure that public investment in geospatial data and services will continue to generate benefits for a wide range of public and private purposes. The Council's vision is *"NC OneMap will include data that are current and accessible over the Internet to all statewide sectors including government agencies, utilities, private firms, schools, universities, and individual citizens. Data on the Internet will be free to search, discover, view, and acquire. It will be available 24 hours per day/seven days per week. Standards and procedures will ensure that the data are of the highest quality available, contain no unnecessary redundancies or inconsistencies, and are adequately and uniformly documented."*

## First-Stop Geospatial Portal

The *NC OneMap* Geospatial Portal is the state's prime site for discovery of and access to geospatial data as downloadable files and/or map services (instances of datasets served over the Internet as map images). Through the Geospatial Portal users can discover relevant datasets, determine their suitability and either download data or stream data through a web service directly into a user's desktop or web application. Keyword searches and searches by spatial extent make it easy to find content in a user's area of interest. See Figure 6.

The Geospatial Portal effectively supports data sharing and access. Consumption of geographic data has grown in variety, volume, and expectations in recent years. Usage continues to grow as data moves from desktops to smart phones and tablets. Significant investments have been made in North Carolina's geographic data at the local and state levels to serve the business needs of government, which in turn, have produced datasets the private sector and citizens find valuable, as evidenced by statistics from the *NC OneMap* servers. There were more than 149,000 annual dataset downloads (including imagery) from *NC OneMap*, an average of more than 12,400 per month in Fiscal Year 2013-14. Geospatial Portal web services logged 3 million visits in FY 2013-2014, including 2.9 million for imagery services. An additional 37,000 visits to the Geospatial Portal for data and information resulted in 1.2 million page views.



**Figure 6. NC OneMap Geospatial Portal Home Page, June 2014, http://data.nconemap.com**

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**Content of *NC OneMap***
The strengths of *NC OneMap* are extensive content (286 datasets and 136 live map services) and collaboration with other agencies to deliver data to consumers.  As data moves from desktops to smart phones and tablets, consumption of geographic data continues to grow.  Significant investments have been made in North Carolina's geographic data at the local and state levels to serve the business needs of government.  In 2013-2014, the Council's *NC OneMap* Governance Committee continued to monitor the status of priority datasets for *NC OneMap* and their respective action plans to support quantity and quality.  *NC OneMap* includes datasets stored and managed by CGIA, datasets stored by other public agencies linked to the *NC OneMap* Geospatial Portal, and map services hosted by CGIA and other public agencies, accessible through this one-stop portal for North Carolina information.

In 2013-14, a total of 61 new datasets and web services were added to the portal, including the 2013 imagery for the 25 counties in the Eastern Piedmont region project area, standardized land parcels for 25 counties, and statewide digital elevation models and contours.  For existing content, state agencies updated datasets shared with *NC OneMap*. See Appendix C.

Other information sources are vital for discovering, interpreting, and using imagery and map data.  *NC OneMap* features metadata resources, contact information for geospatial coordinators in government agencies, and statewide imagery project information.

**Value of *NC OneMap***
To achieve benefits, the Portal requires geospatial content that is current, complete, consistent, reliable, well documented, and practical to apply to business needs.  The best public access enables quick and easy discovery of geospatial data and provides ways to derive value from the data for a variety of applications.  Benefits are available to public and private entities in a broad range of activities that contribute to health, safety, knowledge, communities, natural resources, and economic vitality in North Carolina.

# NC OneMap and Statewide Imagery

 *"As a large database company, TomTom uses North Carolina imagery for maps, products, quality control, and for deriving many other diverse attributes including lanes information and turns, as well as for geocoding the location of points of interest."*

> Peter Berger, Senior Production Engineer for TomTom in Lebanon, New Hampshire



**Courthouse and Vicinity, Lincolnton, NC**

### *NC OneMap* Supports the Private Sector

Many North Carolina datasets, invaluable to private and public sector users, are not available on commercial map viewers. Anonymous users of *NC OneMap* take advantage of the self-service features of the website. The Council has anecdotal evidence that public sector agencies – in both state and local government – depend heavily on *NC OneMap*, and consumers in the private sector benefit as well.

### *NC OneMap* Improvements

Staff made significant improvements to the Geospatial Portal in 2014, responding to input and feedback from the user community and various surveys.

#### *NC OneMap* Reliability

A longtime priority of the Council has been to ensure the *NC OneMap* Geospatial Portal is always available, especially in periods of emergency when users need access to data. *NC OneMap* is now supported by identical servers in the OITS Eastern Data Server (EDC) in Raleigh and the Western Data Center (WDC) in Forest City (Rutherford County). Failover capability assures that *NC OneMap* is a reliable first stop for public access to geographic data.

#### Performance of *NC OneMap*

The most important performance metric from a user perspective is server response time from receipt of a request. Imagery, unlike text, is memory intensive. The *NC OneMap* team faced a significant challenge to ensure a rapid refresh of imagery by viewers. The performance of the *NC OneMap* imagery service is measured in seconds to refresh an image view from a request. Response continues to consistently average less than 2.0 seconds, satisfying the system goal. This does not include the time taken for a response to get from the server to a user's device over a network. *NC OneMap* staff continue to track visits to websites and performance.

## Using NC OneMap

*"NC One Map is a fantastic tool we use in our business every day. We provide agronomic services to farms; the imagery allows us to create accurate professional maps and identify management zones for soil sampling. Our customers and their buyers often compliment the quality of our maps stating this is better than Google! The WMS system is a very simple way the access the imagery without taking up valuable hard drive space. This service is highly valuable to the agriculture industry in NC."*

Mary Wilks
Carolina Precision
Consulting, Inc.



**Imagery in Nags Head, NC**

## Council and Committees at Work

The Council meets quarterly to consider policies, issues, and initiatives.  In addition, the actions of standing committees and working groups are vital for practical strategies and policies and effective communication of concepts, practices, techniques, and knowledge.  The coordination structure provides consistent opportunities for program managers and subject matter experts to offer their perspectives and insights to solve problems and achieve mutual benefits.

**Council Initiatives on Data Development and Management**
The Council and its committees continue to make progress in developing procedures to create seamless, statewide datasets for framework data.  The goal is to build **seamless, statewide datasets** for critical framework data layers using the best, highest resolution data from agencies with program responsibility for managing these data.  An important step in the process is to implement procedures to upload and integrate the most recent data from the managing agencies.  Depending on the dataset, updates may be quarterly or annually.

The source of the data varies, depending on the data theme.  For example, authoritative data for property boundaries and the best addresses are managed by local governments.  Federal land ownership data are managed by the various federal agencies.

By consolidating data from the source agencies, seamless statewide datasets in a common format representing the most up-to-date data can be distributed through *NC OneMap* to a wide range of users – local, state and federal governments, regional planning organizations, the private sector, academia and the public.

These datasets can more efficiently support important business activities by government and the private sector.  For example, the US Census Bureau needs local street centerline data to support the census.  In the past, the US Census Bureau had to acquire this data independently from 100 counties in North Carolina and then reformat and integrate the data into their mapping files.  It will be more efficient for the Census Bureau to acquire a seamless, statewide dataset of street centerlines through *NC OneMap*.

The *NC OneMap* Governance Committee identifies **parcels, addresses, and street centerlines** as the highest priority datasets.  Progress on developing these statewide datasets and others is described in the following sections.

A Statewide Parcels Dataset
In North Carolina, individual county governments are responsible for creating and maintaining parcel boundary data for purposes of property tax assessment.  All 100 counties in North Carolina now have digital datasets of parcel boundaries.

Digital parcel data are critical to a wide variety of business processes, in both the private and public sectors, including economic development, emergency response and mitigation, real estate development, residential and commercial construction, state, regional and local planning, and environmental and conservation management.

Most counties support websites for viewing parcel data and almost half of North Carolina's counties support free download of their parcel dataset. However, a single seamless statewide dataset of parcel data for all 100 counties will be most valuable to users.

North Carolina was not among the leading states in compiling an integrated dataset for property boundaries until successful completion of a grant project in April 2014. The Council oversaw the collaborative project led by the SMAC's Working Group for Seamless Parcels (WGSP) funded by an Exchange Network grant from the Environmental Protection Agency (EPA). The NC Integrated Cadastral Data Exchange created custom online tools to transform as-is county parcel boundaries into standard, integrated datasets, and share data services in EPA's Environmental Information Exchange Network and with users of the *NC OneMap* Geospatial Portal. The online tool was implemented with parcels for 25 of 100 counties plus lands of the Eastern Band of Cherokee Indians, a grant partner. An example of multi-county parcel data is shown in Figure 7.
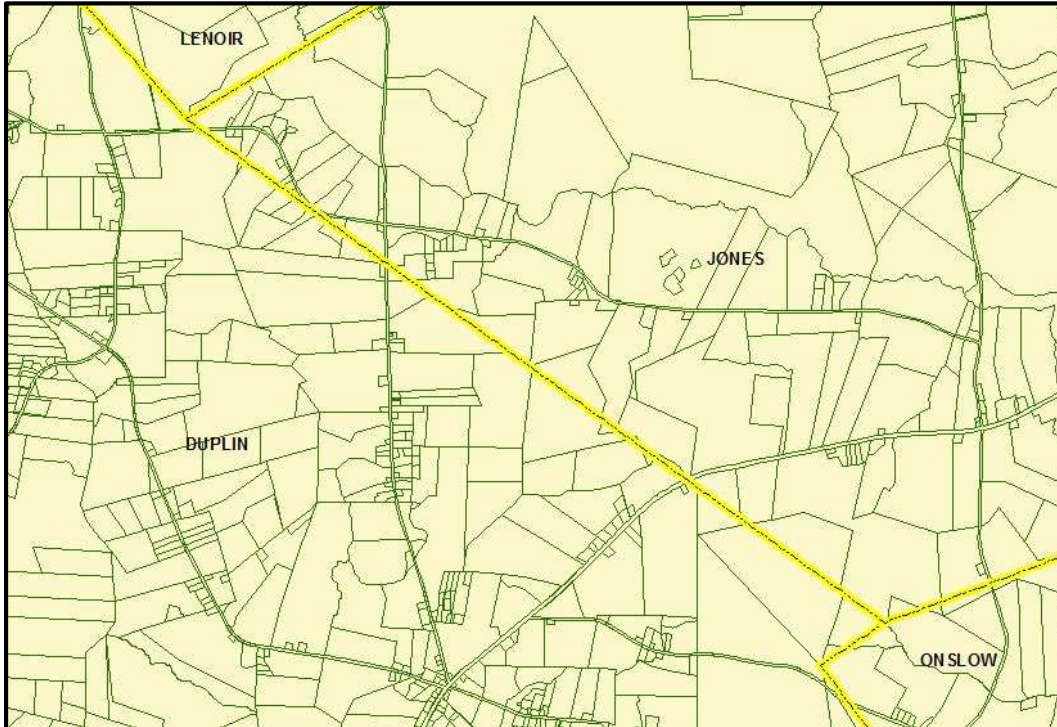


**Figure 7. NC Parcels Project, Example Where Four Counties Meet**

The project team will continue adding counties to the system, with assistance by the WGSP co-chairs (including a member of the NC Property Mappers Association), the Eastern Band of Cherokee Indians, the Secretary of State's Land Records Management Program, the NC Department of Transportation GIS Unit, and Departments of Revenue, Public Safety, and Environment and Natural Resources. CGIA managed the project and made the standardized parcel data and web services discoverable and accessible through *NC OneMap*. The contractors on the Project Team were the Carbon Project, Inc., Fairview Industries, Inc., and Atlas Geographic Data, Inc. The Project Team benefited from guidance and oversight from

the Council, the Statewide Mapping Advisory Committee, and the Enterprise Project Management Office in the Office of Information Technology Services.

Developing a Business Case for the Master Address Database Maintenance

Address points representing locations of homes, offices, and other buildings constitute another high-priority statewide dataset. The Federal Communications Commission has recognized the importance of GIS technology and complete, accurate and accessible geospatial datasets to support the nation's public safety system – Next Generation 911. Accurate and up-to-date addresses are essential for call routing, call handling, call delivery, location validation, and emergency response.

CGIA has a grant project in progress, funded by the Federal Geographic Data Committee, Cooperative Agreements Program. The project is developing a business case for maintaining the state's master address database (Address NC).  The business plan developed through this project will document roles for stewardship of the dataset and operational costs for on-going maintenance for Address NC.  It will also establish the benefits and metrics for demonstrating the return on investment for maintenance funding.  The business plan will accelerate efforts to improve addressing in the state for collaboration with the US Census Bureau for the 2020 census, development of Next Generation 911, and in support of the National Broadband Map.

Street Centerlines for the State

A project to create a statewide street centerline dataset built on state and county files is close to completion.  NCDOT plans to integrate all street centerlines into a statewide roads dataset for a more complete, current, and consistent resource for NCDOT's business needs. Release of the statewide roads dataset is anticipated in 2015.  Regional planning organizations, local governments, state agencies, private firms, and the public will be able to access the data through *NC OneMap*.

**Collaborating and Applying GIS Technology**

The Council guided opportunities to collaborate, share data, and apply GIS technology. Efforts by the Council and its committees and working groups included Census collaboration, GIS technology for state agencies, planning for imagery acquisition after emergency events, and review of state agency GIS applications.

Census Collaboration

The decennial Census is one of many business processes that benefit from complete, consistent, current, reliable, discoverable, and accessible geospatial data.  The Management and Operations Committee chartered a Working Group for Census Geospatial Data. The group began its work in 2014 and coordinated an 8-member delegation from US Census Bureau headquarters to brief the Council in March 2014.  The purpose of the working group is to ensure collaborative efforts to develop statewide datasets in North Carolina and accommodate timely data sharing with the Census Bureau.  The goal is to provide consolidated statewide datasets that are complete, consistent, current, well documented,

reliable, and trustworthy.  These datasets, often built on local resolution data, will upgrade and improve the US Census Bureau's geographic files.

A complete, accurate statewide address dataset for residential and commercial locations will be especially valuable.  North Carolina's congressional representation depends on an accurate count of the state's population in the decennial Census.  For the largest federal programs with funding formulas based on population, each person added to the population count in North Carolina represents about $15,000 in federal funding over the decade following the Census.

## GIS Technology for State Agencies

The Council's State Government GIS Users Committee (SGUC) provides a regular forum for state agency GIS professionals to network, learn, and identify opportunities for collaboration.  In 2014, SGUC members took advantage of an enterprise license agreement for GIS software to test software as a service designed for organizations.  Members shared experience and began building a knowledge base about publishing online maps, accessing web services, managing user accounts, applying templates, and designing web pages for displaying maps and applications.  For example, NCDOT created *GO*!NC to support its non-GIS business units and as a public portal for NCDOT maps, web services, and web applications.  In terms of efficiency, the online publishing tool enables NCDOT to reduce the time required to publish newly acquired aerial imagery from 3-4 days to 3-4 hours.

## Imagery Acquisition after Emergency Events

In 2014, SGUC members collaborated by communicating with each other and with federal agencies during the approach of Hurricane Arthur in June 2014. The efforts clarified a federal plan to test new digital sensors along the Outer Banks before and after the storm, and confirmed that NCDOT aircraft were ready to be deployed in case of extensive highway damage. Fortunately, damage was not severe. This collaboration exemplifies the value and benefit of the Council model for fostering collaboration among government agencies to achieve cost savings and greater efficiencies.

## Review of GIS Applications in State Government

Session Law 2013-360 (Appropriations Bill), Section 7.9.(c) directed CGIA to conduct a review of all GIS applications in State agencies, identify instances of duplication for existing applications, and develop a plan for consolidating duplicative projects.  CGIA provided a report on the review to the Joint Legislative Oversight Committee on Information Technology and the Fiscal Research Division.  The Office of the State CIO and CGIA collaborated with state GIS managers to complete and submit a report in December 2013.  From the report summary:

> "GIS applications organize and display geographic information for internal agency processes, for the public, or both. For this report, CGIA conducted a review of all GIS applications in state agencies. The report also provides background on GIS in state government, identifies policy considerations, presents a roadmap for progress, and provides next steps for the future. The report concludes that state agencies do not have duplicative GIS applications or projects. Each GIS application supports specific business purposes in agencies, and GIS operations are

embedded in business processes.  The report also finds that agencies have made progress in reducing duplicative data storage and GIS is underutilized in some state agencies." See: http://www.ncleg.net/DocumentSites/committees/JLOCIT/Reports%20to%20the%20General%20Assembly/2013%20GA%20Report%20GIS%20Applications%20FINAL.pdf

That section of the budget bill directed State government agencies to coordinate any GIS initiatives through CGIA and the Office of the State CIO, to ensure existing capabilities are not being duplicated.  The legislation also directed CGIA to monitor and approve all new GIS-related information technology projects and expansion budget requests.  CGIA collaborated with the Office of the State CIO and other State agencies to accomplish these tasks.

## Standards

General Statute §143-725 through 143-727 charges the Council with developing policies regarding the utilization of geographic information.  Developing and promoting standards is integral to this responsibility.  The Council's process for creation, assessment, update and adoption of standards relates to (1) standards created and updated by the Council, and (2) other state or federal standards suitable for adoption by the Council.  The Council addressed the following standards and technical issues in FY2013-14.

### Metadata

What ensures that geographic data consumers will apply datasets and web services with understanding, discretion, confidence, and trust?  The answer is "metadata"—information that includes who collected the data, how was it processed, the level of precision, and when was it captured?  Metadata also provides the reference content for searching for data on the *NC OneMap* Geospatial Portal.

In 2013-2014, North Carolina seized an opportunity to update and improve the Council-adopted metadata standard in consultation with national subject matter experts and collaborators in the state.

At the direction of the M&O Committee, the SMAC established the ad-hoc Metadata Committee to recommend ways to expand and improve geospatial metadata in North Carolina that are both efficient for data producers and beneficial for data users in the discovery and application of geospatial data.

The Metadata Committee, comprised of GIS professionals from local, state and federal government and academia, addressed a wide range of issues, including:
- Incentives and return on investment for metadata creation and maintenance
- Best practices for integrating metadata creation into workflows
- New metadata creation tools
- Recommendations for revising the current metadata standard

The Metadata Committee developed a State and Local Government Profile for metadata required elements.  The Profile is designed to be integrated into GIS software to ease creation

and maintenance of metadata and provide an incentive for local and state government practitioners to improve metadata content and quality.  The new standard will be considered for Council adoption.

**Global Navigation Satellite System (GNSS) Data Collection and Documentation Standard**
The Statewide Mapping Advisory Committee developed a revision of the Global Positioning System (GPS) standard to achieve consistency with changes in technology.  Led by subject matter experts in the NC Geodetic Survey in the Department of Public Safety, a working group researched current technology and consulted stakeholders to bring the standard – first adopted in 1994 and last revised in 2006 – up to  date and applicable to current practice.  The new title reflects significant changes in satellite availability and reference systems that assure accuracy in global positioning.  Following reviews by stakeholders and technical experts, the Council adopted the revised standard in March 2014.

## Communication and Outreach

A Communications Plan adopted by the Council in 2011, guides the Council in promoting and communicating activities and accomplishments related to (1) initiatives of the Council and its committees and (2) mission/project activities of the Council members, especially in the area of geospatial data development.

### Technical Presentations and Reports
Quarterly Council meetings feature a technical presentation to inform Council members about investments in and applications of geographic data and technology.  In 2013-2014, presentations to the Council covered:
- New standards for geospatial metadata by the ad-hoc Metadata Committee,
- GIS used in support of elections by Craven County and the State Board of Elections,
- A new project to upgrade and update elevation data through LiDAR acquisition by the Department of Public Safety, and
- Collaboration in preparation for Census 2020 by a delegation from the US Census Bureau

In addition, the Council's standing committees build the GIS community's knowledge base by hosting technical presentations that demonstrate tools and techniques and convey strategies and lessons learned in support of public business processes.

### Preparation for 2015 NC GIS Conference
The biannual NC GIS Conference serves as a valuable forum for education and networking.  Perhaps the most valuable outcome of the NC GIS Conference is that it engenders a true sense of community and collaboration among GIS professionals across North Carolina.  Preparation for the 14th NC GIS Conference began in 2014.  With a theme "Mobile and Global" the event will take place February 25-27, 2015 at the Raleigh Convention Center.  With a focus on the use of GIS and related technologies in government, business and education, the conference appeals to a wide audience, including government officials at all levels, members of the business community, and academic and education professionals.
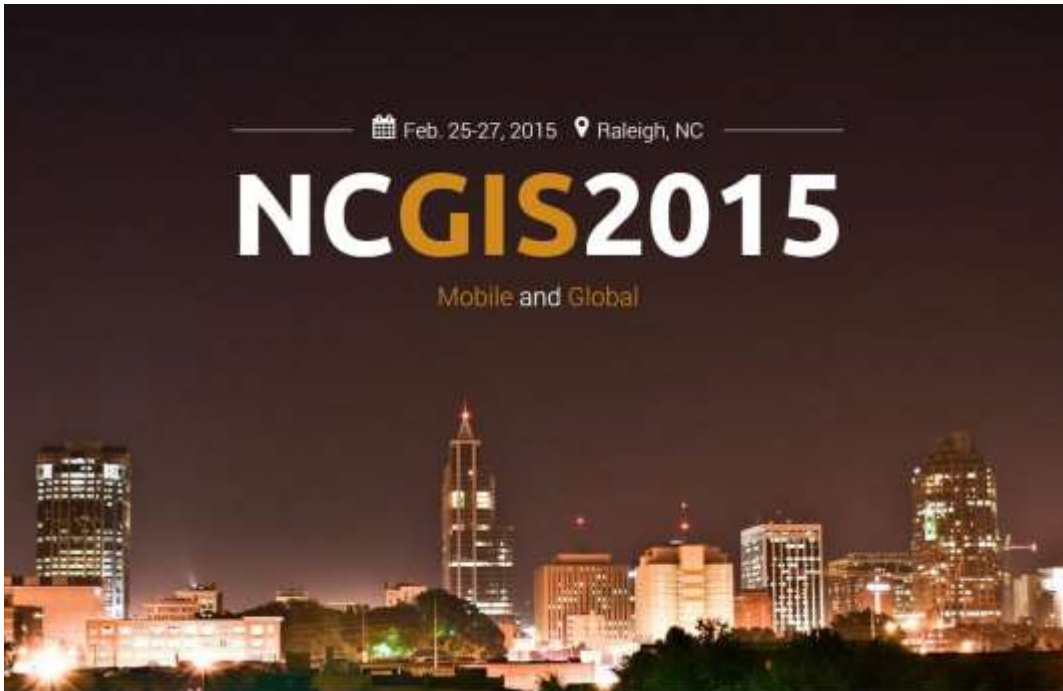
## Other Professional Meetings and Events

Council initiatives were promoted in numerous venues around the state. Staff, along with Council and committee members, presented at meetings sponsored by the NC 911 Board, NC Property Mappers Association, NC Society of Surveyors, Mountain Region GIS Alliance, and NC Arc Users Group.

Council members participated in meetings of the North Carolina–South Carolina Joint Boundary Commission. Nationally, the Council and committee members were among North Carolina participants in the Esri International Users Conference, and CGIA represents North Carolina in National States Geographic Information Council activities.

## North Carolina Board on Geographic Names

The North Carolina Board on Geographic Names (NCBGN) is a committee of the SMAC. The NCBGN and the United States Board on Geographic Names (USBGN) work together to develop official names that are required to be used on federal products and are adopted by other non-federal organizations for use in mapping projects and databases. Official names are managed in the Geographic Names Information System (GNIS), a searchable database, acknowledged by the Council as the official North Carolina names repository.

Government agencies, other organizations and private citizens may submit a petition to the NCBGN to change the name of a geographic feature (other than roads) or to name an unnamed feature in North Carolina. The NCBGN reviews the name-change proposal and seeks input from appropriate local and state government agencies and citizens to establish accepted usage and support for the proposed feature name. The NCBGN submits a recommendation for the name change to the USBGN for final approval and inclusion in the GNIS.

**Orthoimagery Project Training and Outreach**

The Statewide Orthoimagery Program team conducts extensive training and outreach to inform local 911 staff and GIS professionals about progress, quality assessment procedures and delivery schedules. The project team provided online training for staff of 911 Center Public Safety Answering Points and for local government GIS staff on quality assurance tools.

**Websites**

The Council (www.ncgicc.org) and *NC OneMap* (www.nconemap.com) web sites are widely used by committee members, the NC GIS community and the public to keep current on initiatives, meetings, opportunities and news about both the Council and *NC OneMap*.

## Section III.  Action Plan for 2014-15

The Council will pursue a combination of activities to achieve its mission in fiscal year 2014-15.  The goals for the coming year continue to be driven by the recommendations called for in the GIS Study Report and further referenced in the State Geographic Information/Consolidation Implementation Plan.  The Council is also driven by ongoing, high priority actions based on quarterly Council meetings and committee work.

The Council must be continually aware of the rapidly changing market and economic forces at play in the overall economy of the State and is committed to responding quickly to the needs of the State and its stakeholders.

## Sustain NC OneMap in Support of Public and Private Business Needs

The Council will continue to work to improve technology and data resources in ways that achieve the *NC OneMap* vision and meet specific business needs that generate benefits for public and private users of NC *OneMap* resources.  The *NC OneMap* project team, with support from the M&O Committee, GIS Technical Advisory Committee (TAC), and other Council user committees, completed the infrastructure upgrade and expansion of content of the Geospatial Portal as set forth in the 2014 Action Plan.  The primary actions in 2014-2015:

1. Define requirements for infrastructure to effectively support expansion and maintenance of the geographic data and imagery in the *NC OneMap* Database.
2. Redesign and restructure the Council and *NC OneMap* websites to improve the consumer experience.  This effort will apply to three *NC OneMap* website links: Geospatial Portal, Web Services, and the *NC OneMap* general program information site.
3. Continue to update and expand the content of *NC OneMap* Geospatial Portal, with emphasis on the Council's priority geospatial data resources for public discovery and access.

## Manage the Statewide Program for Orthoimagery

Continue to implement the Business Plan for Orthoimagery in North Carolina, which calls for the acquisition of one-fourth of the state each year over a four-year cycle.  The NC 911 Board approved the plan and approved funding for acquisition of imagery during 2014-15 (Phase 4 of 4) to support a full four-year cycle to complete a statewide update.

## Complete Northern Piedmont and Mountains 2014 Orthoimagery Project

Imagery for Phase 3 of the project, covering 26 counties, was acquired in the winter of 2014.  CGIA and the project partners will complete the Northern Piedmont and Mountains Orthoimagery Project through the following actions:

1. Complete the processing and quality review.
2. Deliver the imagery to Public Safety Answering Points and to county GIS coordinators.

3. Make the data available free to government agencies, the private sector and the public as an "image service" and downloadable files from the *NC OneMap* Geospatial Portal.
4. Prepare a final report for the NC 911 Board.

## Begin Southern Piedmont and Mountains 2015 Orthoimagery Project

The NC 911 Board approved funding for Phase 4, the Southern Piedmont and Mountains Orthoimagery Project. Tasks for 2014-2015 include:
1. Conduct a Qualifications-Based Selection (QBS) process to identify private contractors for imagery acquisition.
2. Acquire the imagery for 24 counties in the region.
3. Initiate processing and quality review.

## Report on GIS Consolidation in State Government

Session Law 2014-100 (Appropriations Bill), Section 7.16.(a) directs the State Chief Information Officer to document GIS capabilities in State agencies in consultation with CGIA, and develop recommendations for consolidation of GIS functions within State Government. The State CIO will provide a report to the Joint Legislative Oversight Committee on Information Technology and the Fiscal Research Division in December 2014. Section 7.16 (b) directs the State CIO to determine if there are potential markets for State GIS data. The State CIO shall identify any issues associated with the sale of State GIS data and, if feasible, develop a plan for selling that data. The State CIO engaged many of the Council members in a GIS Working Group formed to compile information and analyze opportunities.

## Adopt and Promote Standards

The Council has an established process for creation, assessment, update and adoption of standards. This includes (1) standards created and updated by the Council; and (2) other local, state or federal standards suitable for adoption by the Council.

In 2014-2015, the SMAC's Working Group for Standards and other committees are working on several standards:

➢ Metadata Standard. In 1994, the Council endorsed the Federal Geographic Data Committee's (FGDC) Content Standard for Digital Geospatial Metadata. A revised metadata standard, developed by the International Standards Organization (ISO), working in collaboration with FGDC, was approved by the ISO and adopted by FGDC in 2014. The ad hoc Metadata Committee will complete an ISO-compliant North Carolina State and Local Government Profile as a new metadata standard for the state. Upon Council approval and adoption, the Metadata Committee will collaborate with other Council committees to demonstrate and promote the ISO standard and best practices to local governments, state agencies, and educational institutions.

➢ The Land Records Management Program in the Department of the Secretary of State, is in the process of updating the *Technical Specifications for Digital Orthophoto Base Mapping* to take into account new technology and lessons learned from the Statewide Orthoimagery Program.  The Statewide Mapping Advisory Committee and the Council will review and consider approval of the revised standard with a recommendation for adoption by the Secretary of State.

➢ The Land Records Management Program in the Department of the Secretary of State, plans to update the *Technical Specifications for Cadastral Base Digital Mapping*, and follow the same process of review and endorsement by the coordination structure.

The Council and its collaborators will continue to actively engage stakeholders to identify needs for new or updated standards that will advance statewide geographic information efforts.  The Council will continue to collaborate with state agencies, counties, and municipalities to promote the adoption and implementation of Council-approved standards.  Outreach and technical assistance are needed at the state, regional, and local government levels, and with private organizations to promote application of standards.  The end result is more consistent, complete, well-documented geospatial data for local, regional and statewide business needs, including data discoverable and accessible through *NC OneMap*.

## Collaborate for Data Quality and Data Sharing

Opportunities for collaboration include the following actions that are planned and listed as high priorities of the Council and staff.  Development of statewide datasets continues to be a focus for multi-county, cross-jurisdictional mapping and analysis related to emergency management, 911 communications, infrastructure planning, and many other public and private business needs.

**Statewide Parcels**
The SMAC's Working Group for Seamless Parcels (WGSP), CGIA, and project partners will apply the tested and proven online translation tool to expand the content of the integrated, standardized parcel dataset to a statewide resource in 2014-2015.  CGIA is managing the effort in collaboration with the project team from the grant project that was completed in April 2014 (see page 18).  The next phase is underway with a goal of reaching full content by June 2015.

**Statewide Addresses**
CGIA received a grant from the Federal Geographic Data Committee to develop a business case for maintenance of the statewide address database for North Carolina.  A second project, conducted in collaboration with NC Broadband in the Department of Commerce and funded by the National Telecommunications and Information Administration, will support an update of the statewide address database.

## Statewide Roads

The SMAC's Working Group for Roads and Transportation (WGRT) delivered a web-based translation tool that has enabled 84 counties to upload their local centerline file and translate the attributes to a common format.   NCDOT is in the process of integrating data for state and federal highways with  county street centerlines into a statewide roads dataset for a more complete, current, and consistent dataset to support NCDOT's business needs.  The statewide roads dataset will be accessible to other users through the *NC OneMap* in 2015.

## Census

The Working Group for Census Geospatial Data will continue to collaborate with the US Census Bureau to assure timely data sharing to upgrade and improve the geographic files applied to Census programs including Census 2020. The primary NC datasets will be addresses, parcels, street centerlines, orthoimagery, and jurisdictional boundaries.

## First-Stop for NC Geographic Information

The Council's goal continues to be to sustain *NC OneMap* as a first-stop, high quality, trusted location on the Internet for geospatial information about North Carolina.  Since the Council initiated *NC OneMap* in 2003, the emphasis has been to inform public and private users about what datasets are available and how to obtain copies of them.  The discovery/access role has become more important as both the content of *NC OneMap* and the number of users of geospatial data have expanded.  The *NC OneMap* Governance Committee will continue to oversee the *NC OneMap* team as it makes progress on technical solutions that will enhance and expand public discovery of and access to North Carolina geospatial data and to serve collaborating state agencies.

## Communication and Outreach

The Council and its standing committees will continue the practice of hosting technical presentations to build the knowledge base of the GIS community in North Carolina and highlight ways that geographic information and technology support public decisions and government business processes.

Outreach efforts are critical for sharing the Council mission, goals, current activities, and plans.  Guided by a communication plan, Council committees and staff will continue to share knowledge about standards, best practices, opportunities for cost sharing, and participation in *NC OneMap*.  The plan includes participation in local, regional, and statewide meetings, and enhancements to the Council and *NC OneMap* websites.

CGIA will sponsor the 2015 North Carolina GIS Conference in Raleigh from February 25-27.  The 2013 conference attracted more than 1,000 participants from state, local, and federal government, the private sector and academia.

## Appendices

A. Geographic Information Coordinating Council Members, Fiscal Year 2013-14
B. NC Geographic Information Coordinating Council Establishing Authority and Precedent
C. *NC OneMap* Data Updates for 2013-2014

## Appendix A: Fiscal Year 2013-14 Geographic Information Coordinating Council Members

| 2014 Member | Title and Organization | Appointing Authority |
|---|---|---|
| **Chair, Stan Duncan**<br>200 N. Grove Street, Ste. 102<br>Hendersonville, NC 28792 | County Assessor & Tax Collector<br>*Henderson County*<br>828/697-4576 / 828/606-4577 (cell) | NC House of Representatives<br>*(Appointed as Chair by Governor)* |
| *Vice Chair*, **Bob Brinson**<br>2020 Yonkers Road<br>Raleigh, NC 27604 | Chief Information Officer<br>*Department of Public Safety*<br>919/716-3501 | Governor |
| **June S. Atkinson**<br>301 N. Wilmington Street<br>Raleigh, NC 27601 | State Superintendent<br>*Department of Public Instruction*<br>919/807-3430 | Executive Office<br>*Designee—Derek Graham*<br>919/807-3571 |
| **Jon Beck**<br>339 New Leicester Hwy. Suite 140<br>Asheville, NC 28806 | GIS Planner<br>*Land of Sky Regional Council*<br>828/251-7468 | Governor<br>*(for Lead Regional Organizations)* |
| **Jay Bissett**<br>6750 Tryon Road<br>Cary, NC 27518 | Principal & Raleigh Branch Manager<br>*Mulkey Engineers & Consultants*<br>919/858-1841 | NC House of Representatives |
| **Kathryn Clifton**<br>600 S. Salisbury Avenue<br>Spencer, NC 28159 | Land Management Director<br>*Town of Spencer*<br>704/633-2231 | Chair, Local Government Committee |
| **Bill Daughtridge, Jr.**<br>1301 Mail Service Center<br>Raleigh, NC 27699-1301 | Secretary<br>*Department of Administration*<br>919/807-2425 | Executive Office<br>*Designee—John Cox*<br>919/807-4674 |
| **Sharon Allred Decker**<br>4301 Mail Service Center<br>Raleigh, NC 27699-4301 | Secretary<br>*Department of  Commerce*<br>919/733-3449 | Executive Office<br>*Designee—Allan Sandoval*<br>919/715-1803 |
| **Chris Estes**<br>PO Box 17209<br>Raleigh, NC 27609 | State Chief Information Officer<br>*Office of Information Technology Services*<br>919/754-6575 | Executive Office |
| **John Farley**<br>1587 Mail Service Center<br>Raleigh, NC 27699-1587 | Section Manager<br>*Dept. of Transportation, GIS Section*<br>919/707-2151 | Chair, State Government GIS Users Committee |

| 2014 Member | Title and Organization | Appointing Authority |
|---|---|---|
| **Edward S. Finley, Jr.**<br>4325 Mail Service Center<br>Raleigh, NC 27699-4325 | Chair<br>*NC Public Utilities Commission*<br>919/733-4249 | Executive Office<br>*Designee—Bliss Kite*<br>919/733-0854 |
| **John M. Gillis, Jr.**<br>128 S. Churchill Dr.<br>Fayetteville, NC 28303 | Farming and Land Development<br>*Gillis Group Partnership*<br>910/308-4255 | NC Senate |
| **Lyons Gray**<br>4501 Mail Service Center<br>Raleigh, NC 27699-4501 | Secretary<br>*Department of Revenue*<br>919/715-9851 | Executive Office<br>*Designee—David Baker*<br>919/733-7644 |
| **Matthew Helms**<br>5100 Brookshire Blvd.<br>Charlotte, NC 28216 | Senior Business Analyst<br>*Charlotte-Mecklenburg Utilities*<br>704/564-9354 | NC Senate |
| **Elaine F. Marshall**<br>PO Box 29622<br>Raleigh, NC 27626-0622 | Secretary of State<br>*Office of Secretary of State*<br>919/807-2008 | Executive Office |
| **Twyla McDermott**<br>600 E. Fourth St.<br>Charlotte, NC 28202 | GIS Manager<br>*City of Charlotte*<br>704/366-8066 | Governor<br>*(for Municipal Government)* |
| **Paul Meyer**<br>215 North Dawson St.<br>Raleigh, NC 27603 | Executive Director<br>*NC League of Municipalities*<br>919/715-3930 | Executive Office<br>*Designee—Ryan Draughn*<br>919/715-2915 |
| **Josh Norwood**<br>805 S. Walker St.<br>Burgaw, NC 28425 | GIS Administrator<br>*Pender County*<br>910/259-0129 | Governor |
| **Kevin Parrish**<br>PO Box 2200<br>Lenoir, NC 28645 | GIS Director<br>*Caldwell County*<br>828/757-1388 | Governor |
| **Anne Payne**<br>PO Box 550<br>Raleigh, NC 27603 | GIS Database Administrator<br>*Wake County*<br>919/856-6383 | Governor<br>*(for General Public)* |
| **Frank Perry**<br>4201 Mail Service Center<br>Raleigh, NC 27699-4701 | Secretary<br>*Department of Public Safety*<br>919/733-2126 | Executive Office<br>*Designee—John Dorman*<br>919/825-2310 |

| 2014 Member | Title and Organization | Appointing Authority |
|---|---|---|
| **Dr. R. Scott Ralls**<br>5001 Mail Service Center<br>Raleigh, NC 27699-5001 | President<br>*NC Community College System*<br>919/807-6950 | Executive Office<br>*Designee—Sharon Rosado*<br>919/807-7087 |
| **Lee Roberts**<br>20320 Mail Service Center<br>Raleigh, NC 27699-0320 | State Budget Director<br>*Office of State Budget & Management*<br>919/807-4700 | Executive Office |
| **Thomas Ross**<br>PO Box 2688<br>Chapel Hill, NC 27515-2688 | President<br>*UNC-Office of the President*<br>919/962-1000 | Executive Office<br>*Designee—Dr. Hugh Devine,<br>NCSU*  919/515-3682 |
| **John E. Skvarla**<br>1601 Mail Service Center<br>Raleigh, NC 27699-1601 | Secretary<br>*Dept. of Environment & Natural Res.*<br>919/707-8625 | Executive Office<br>*Designee—Keith Werner*<br>919/707-8917 |
| **Joseph Sloop**<br>PO Box 757<br>Winston-Salem, NC 27102 | Geographic Information Officer<br>*Forsyth County*<br>336/703-2303 | Governor<br>*(for County Government)* |
| **Tony Tata**<br>1501 Mail Service Center<br>Raleigh, NC 27699-1501 | Secretary<br>*Department of Transportation*<br>919/707-2800 | Executive Office<br>*Designee—John Farley*<br>919/707-2151 |
| **Richard Taylor**<br>3810 Mitchell Circle<br>New Bern, NC 28562 | Executive Director<br>*NC 911 Board*<br>919/754-2942 | NC Senate |
| **David Thompson**<br>215 N. Dawson St.<br>Raleigh, NC 27603 | Executive Director<br>*NC Assoc. of County Commissioners*<br>919/715-2893 | Executive Office<br>*Designee—Rebecca Troutman*<br>919/715-2893 |
| **Steve Troxler**<br>1001 Mail Service Center<br>Raleigh, NC 27699-1001 | Commissioner of Agriculture<br>*Dept. of Agriculture & Consumer Services*<br>919/733-7125 | Executive Office<br>*Designee—Daniel Madding*<br>919/807-4344 |

| 2014 Member | Title and Organization | Appointing Authority |
|---|---|---|
| **Robert Wayland**<br>6903 Valley Drive<br>Raleigh, NC 27612 | Leader, Energy Strategies Group<br>*US Environmental Protection Agency*<br>919/541-1045 | Federal Representative |
| **Aldona Wos**<br>2001 Mail Service Center<br>Raleigh, NC 27699-2001 | Secretary<br>*Dept. of Health and Human Services*<br>919/855-4800 | Executive Office<br> *Designee—Dianne Enright*<br> 919/715-4473 |

**Advisory Members**

| | | |
|---|---|---|
| **Marc Burris**<br>441 N. Harrington Street<br>Raleigh, NC 27603 | Chief Information Officer<br>*NC State Board of Elections*<br>919/715-1673 | GICC Chair |
| **Sarah Koonts**<br>4614 Mail Service Center<br>Raleigh, NC 27699-4514 | Director<br>*Division of Archives and Records, Dept. of Cultural Resources*<br>919/807-7308 | GICC Chair |
| **Alex Rankin**<br>Post Office Box 268<br>Concord, NC 28026 | President<br>Concord Engineering & Surveying, Inc.<br>Representing NC Society of Surveyors<br>704/786-5404 x1012 | GICC Chair |

## Appendix B: NC Geographic Information Coordinating Council Establishing Authority and Precedent

The North Carolina Geographic Information Coordinating Council was established by Senate Bill 895 in August 2001 and was incorporated in the General Statutes §143-725 through 143-727.

The purpose of the Council is to develop policies regarding the utilization of geographic information, geographic information systems (GIS), and other related technologies. The Council is responsible for the following:

- Strategic planning,
- Resolution of policy and technology issues,
- Coordination, direction, and oversight of State, local, and private GIS efforts, and
- Advising the Governor, the General Assembly, and the State Chief Information Officer as to needed directions, responsibilities, and funding regarding geographic information.

The Council is charged with statewide geographic information coordination and fosters cooperation among State, federal, tribal, and local government agencies; academic institutions; and the private sector in order to improve the quality, access, cost-effectiveness and utility of North Carolina's geographic information and to promote geographic information as a statewide strategic resource.

**Precedent**. Prior to the enactment of legislation, the North Carolina Geographic Information Coordinating Council existed through Executive Orders. Executive Order No. 147 issued by Governor James G. Martin, first established the Council in July 1991. Governor James B. Hunt, Jr. issued Executive Order No. 16 in May 1993 that remained in effect until 2001.

**Staff to the Council**. The Center for Geographic Information and Analysis (CGIA), located in the Office of Information Technology Services, staffs the Council. CGIA manages and distributes digital geographic information about North Carolina maintained by numerous State and local government agencies. It operates a Services Program, a statewide data clearinghouse, and manages the *NC OneMap* program which provides Internet access to State and local government through the *NC OneMap* Geospatial Portal.

# Appendix C: *NC OneMap* Updates for 2013-2014

The *NC OneMap* team added numerous new datasets and web services and posted regular updates of existing data to the *NC OneMap* Geospatial Portal.

**FY 2013-14: Data and Web Service Updates and New Releases**

| TITLE | CUSTODIAN |
|---|---|
| 2013 North Carolina Digital Orthoimagery Service | CGIA |
| Aspect (Slope Direction) Elevation Service | CGIA |
| Boating Access Areas | NC Wildlife Resources Commission |
| Animal Operations | DENR DWR |
| Estuarine Benthic Habitat Mapping | DENR DMF |
| Federal Lands in North Carolina | Natural Heritage Program |
| Hillshade Elevation Service | CGIA |
| Managed Areas in North Carolina | Natural Heritage Program |
| MPO and RPO Boundaries | NCDOT |
| Municipal Boundaries, Fiscal Year 2012 - 2013 | NCDOT |
| Natural Heritage Element Occurrences | Natural Heritage Program |
| NC 2013 Orthoimagery Seamlines with Photo Exposure Dates | CGIA |
| NC House Districts | NC General Assembly, Information Systems Division |
| NC OneMap - Latest Imagery Image Service - OGC WMS | CGIA |
| NC OneMap Habitat - Map Service | CGIA |
| NC OneMap Latest Imagery Image Service - ArcGIS Server | CGIA |
| NC Parcel Boundaries and Standard Fields | CGIA |
| NC Senate Districts | NC General Assembly, Information Systems Division |
| NCDOT District Boundaries | NCDOT-GIS |
| NCDOT Division Boundaries | NCDOT-GIS |
| NCDOT Fatal Crash Sites | NCDOT-GIS |
| NCDOT Ferry Routes | NCDOT-GIS |
| NCDOT Functional Classification Road Segments | NCDOT-GIS |
| NCDOT Hatching Mile Markers | NCDOT-GIS |
| NCDOT MPO and RPO Boundaries | NCDOT-GIS |
| NCDOT Municipal Boundaries - Powell Bill | NCDOT-GIS |
| NCDOT Pavement Condition Survey, Combined Data – Network Master | NCDOT-GIS |

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|---|---|
| NCDOT Pavement Condition Survey, Continuously Reinforced Concrete | NCDOT-GIS |
| NCDOT Pavement Condition Survey, International Roughness Index | NCDOT-GIS |
| NCDOT Pavement Condition Survey, Jointed Concrete | NCDOT-GIS |
| NCDOT Pavement Condition Survey, Skid Number | NCDOT-GIS |
| NCDOT Priority Routes for Road Treatment and Snow Removal | NCDOT-GIS |
| NCDOT Road Characteristics | NCDOT-GIS |
| NCDOT Roads Designated for Light-Weighted Vehicles | NCDOT-GIS |
| NCDOT Shields and Labels on State Maintained Roads | NCDOT-GIS |
| NCDOT Smoothed Urban Boundaries | NCDOT-GIS |
| NCDOT State Maintained Roads | NCDOT-GIS |
| NCDOT Statewide AADT Volume Group Segments | NCDOT-GIS |
| NCDOT Statewide Airport Locations | NCDOT-GIS |
| NCDOT Statewide Average Daily Traffic Count Stations | NCDOT-GIS |
| NCDOT Statewide Bicycle Routes and Local Suitability Routes | NCDOT-GIS |
| NCDOT Statewide National Highway System | NCDOT-GIS |
| NCDOT Statewide Pavement Condition Survey, Asphalt | NCDOT-GIS |
| NCDOT Statewide Tiered Breakdown of Road Functionality | NCDOT-GIS |
| NCDOT Transportation Improvement Program Bridge Locations | NCDOT-GIS |
| NCDOT Transportation Improvement Program Road Projects | NCDOT-GIS |
| NCDOT Truck Network | NCDOT-GIS |
| NCDOT Unpaved Roads | NCDOT-GIS |
| NCDOT-Maintained Bridges | NCDOT-GIS |
| NCDOT-Operated Fuel Depots | NCDOT-GIS |
| North Carolina County Boundaries, 2014 - NC Department of Transportation / NC Geodetic Survey | NCDOT |
| North Carolina Rail Lines | NCDOT |
| North Carolina Rail System - Rail Lines, Facilities, and Crossings | NCDOT |
| North Carolina River Basins | U.S. Department of Agriculture, North Carolina Natural Resources Conservation Service |
| North Carolina State and County Boundary with Shoreline, 2014 - NC Department of Transportation / NC Geodetic Survey | NCDOT |
| North Carolina Transportation Division Boundaries, 2014 | NCDOT |
| Shaded Elevation Service | CGIA |
| Shaded Relief Elevation Service | CGIA |

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|---|---|
| Shellfish Growing Areas | DENR, NC Shellfish Sanitation and Recreational Water Quality Section |
| Slope Elevation Service | CGIA |
| Smoothed Urban Boundary | NCDOT |
| Speed Limits – NCDOT Traffic Safety | NCDOT |
| Statewide Elevation Contours | CGIA |
| Submerged Aquatic Vegetation - SAV | DENR, Albemarle-Pamlico National Estuary Partnership |
| US House Districts | NC General Assembly, Information Systems Division |
| USGS 1:24,000-scale Quad Index (NCDOT) | NCDOT |
| USGS Stream Gauges | US Geological Survey |
| Water Supply Watersheds | DENR, Division of Water Resources |