N.C. Department of Information Technology

N.C. Geographic Information Coordinating Council

2019 Annual Report to the Governor and to the Joint Legislative Commission on Governmental Operations:

Data-Driven Collaboration

Thomas I. Parrish, IV
Acting Secretary and State Chief Information Officer

Alex Rankin, Chair

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Contents

Introduction

The N.C. General Assembly established the N.C. Geographic Information Coordinating Council in August 2001.[1] The Council, a unit of the N.C. Department of Information Technology, is the State's focal point for collaboration in geographic information and statewide mapping and supports a host of state and local government programs and services. Governance of geographic information and technology relies on stakeholder engagement around geographic data, standards and data sharing, and demonstration of practical examples of the value of geographic information systems in public and private business processes.

The Council is charged with advising and reporting annually to the Governor and the General Assembly on strategic direction, responsibilities and requirements as North Carolina applies geographic information system technology in collaborative ways to meet the needs of decision-makers at all levels. The N.C. Department of Information Technology's (NCDIT) Center for Geographic Information and Analysis (CGIA), within the Government Data Analytics Center (GDAC), staffs the Council. NCDIT's Acting Secretary and State Chief Information Officer is responsible for supervision and support of the Council. N.C.G.S. § 143B-1421(g) requires the Council to report annually to the Governor and the Joint Legislative Commission on Governmental Operations.

The Council submits this report to share its strategic focus on data-driven collaboration, outline priorities and challenges, and update the Governor and the Commission on its Fiscal Year 2018-19 accomplishments.

About the Council

The Council meets quarterly to consider policies, issues, and initiatives. Council meetings took place on four occasions during FY 2018-19: on August 8, 2018; November 7, 2018; February 13, 2019; and May 8, 2019. Alex Rankin, of CESI Civil-Geotechnical-Surveying, chairs the Council.

Council members represent a broad set of stakeholders and perspectives including state agencies, local government, education, private business, and federal agencies. The Management and Operations Committee handles the Council's business in between quarterly meetings and includes the chairs of the standing committees and the Office of State Budget and Management representative. The Council has three user-oriented standing committees: the Local Government Committee, the State Government GIS Users Committee, and the Federal

[1] *See* N.C.G.S. § 143B-1420 *et seq*.

Interagency Committee. Additionally, the GIS Technical Advisory Committee and the Statewide Mapping Advisory Committee are standing committees that address policy and technical issues from a collaborative perspective. In addition to more than 30 Council members, more than 50 individuals contribute to committees and working groups, representing state agencies, local governments, federal agencies, universities, and private organizations.

The Council (https://it.nc.gov/gicc) and *NC OneMap* (http://data.nconemap.gov) websites are widely used by committee members, the state's geographic information systems (GIS) community, and the public to keep current on initiatives, meetings, opportunities and news about both the Council and *NC OneMap*.

Data-Driven Collaboration

The state, local, federal, and regional governments, as well as the businesses, educators, and citizens represented on the N.C. Geographic Information Coordinating Council collaborate to inform decisions derived from location-based information.

Data needs shared by a range of statewide stakeholders drive data-driven collaboration. Spatial data is more than just representations of natural and manmade features on the earth in GIS. Behind each feature we see on a map is a wealth of data about that feature influenced by the business needs of the stakeholders collaborating to produce the dataset. A rectangle representing a building location contains information important to the local police department, county tax assessor, regional planner, floodplain administrator, and state emergency manager. Feature location and information about location matters, providing maps and the basis for analysis that saves time, resources, and reduce costs for the taxpayers of North Carolina.

Data-driven collaboration informs decisions and priorities and produces effective data that Council members and their respective organizations edit, integrate, and publish to improve citizen interactions. Residents of North Carolina may not know about the planning and collaboration required to produce a powerful dataset, but they benefit when they discover online interactive maps that help them find a friend's new address, a nearby greenway, their local polling place, or opportunities to comment on new transportation or community projects.

Adding Value

The Council prioritizes geospatial initiatives and data sharing that add value to emergency response, framework data sharing, and preparations and support for Census 2020 to ensure that every North Carolinian is counted.

1. Emergency Response

The Council devoted considerable time to two projects related to emergency response: North Carolina's transition from Enhanced 911 emergency communications to Next Generation 911 and improving coordination and planning for natural and man-made disasters.

In emergency communications, seconds matter. Citizens deserve quick emergency response; lives may be at stake. Public Safety Answering Points (PSAPs) have relied upon "Enhanced 911" systems for emergency communications. Legacy 911 systems depend on situs addresses to locate an address, whether automatically transmitted via a landline or spoken from a cellphone. Calls to 911 from a landline carry the address associated with the landline. In the case of a cellphone call, PSAPs may receive the location of the tower, the location of the caller, or a point in between, depending on such factors as terrain and technology of the caller's cellphone. As 911 calls originating from cellphones continue to increase, "Next Generation 911" (NG911) is vital for North Carolina, and geographic data are essential for the new approach.

Required statewide geospatial datasets for NG911 include roads, addresses, and emergency service boundaries, all framework data layers prioritized by the Council. The Council adds value to NG911 through two of its primary initiatives: AddressNC for statewide address points and Statewide Orthoimagery for base mapping and visual reference. See Figure 1 for an example of address points and imagery. The NG911 project kicked off in April 2019. The project includes statewide community engagement from local PSAPs, municipalities, and counties, and provides a strong example of the importance of geospatial information and broad coordination.

Hurricane Florence struck North Carolina in September 2018 and caused weeks of flooding, highlighting the importance of existing geospatial information and the proficiency and grit of North Carolina's GIS professionals. The existence of accurate elevation, flood prediction, transportation, parcel, and address geospatial layers, in the hands of a skilled GIS workforce, saved lives and property. The Council reviewed the hurricane response and observed that the event drew in a wider network of organizations that, due to the magnitude of the storm, were asked to respond in ways not previously encountered. Drawing on the experience of local, state, regional, and federal GIS professionals, the Council initiated the Working Group for Enhanced Emergency Response. The working group will develop a common emergency response data-sharing platform and design a method for mobilizing GIS professionals from blue sky areas of the state to assist colleagues responding to the disaster. The working group will form a foundation for even more coordinated response to future events.

Figure 1. Kernersville, NC: Address points on orthophotography

2. The 2020 Decennial Census: A Complete Accurate Count of Every North Carolinian

Census 2020 preparation was underway during FY 2018-2019, and the Council led multiple projects to achieve the data-driven goal of a complete, accurate, defendable count of North Carolina residents in the 2020 Census, ensuring North Carolina is appropriately represented in the U.S. Congress and fair distribution of federal resources flows to the state and its cities and towns and citizens. The more residents that are counted in Census 2020, the more federal tax dollars return to North Carolina and its units of local government. The Census Bureau estimates the federal government spent $1,623 per North Carolinian, based on census data, in FY 2015. That can amount to more than $16,000 over 10 years for each additional resident counted in the 2020 Census.

Based on current data and population trends, the census likely will result in additional North Carolina representation in the U.S. House of Representatives. Since the number of available House seats is fixed, any increase in representation accorded North Carolina must be based on accurate and defendable population counts.

The Council formed a working group for Census Geospatial Data in 2013, chaired by Bob Coats, the Governor's Census Liaison in the Office of State Budget and Management. The Census Bureau relies on geospatial data, including orthoimagery, to verify a large percentage of

residential addresses. The Council adds value by making its resources available, especially *AddressNC* updates for address verification and Statewide Orthoimagery for visual reference. The Council prioritized production of a comprehensive list of residential addresses to receive census forms.

Beyond the census, the Council's strategy is to maintain foundational address data as changes occur. This approach combines and maintains authoritative data provided by local governments in standard format and makes data available to the many state agencies that often seek the same information from localities. Eliminating redundancies and providing a standardized data platform benefits local governments and state government agencies. Maintaining these foundational datasets also supports the Office of State Budget and Management's (OSBM) State Demographer in annual population estimates.

Accurate municipal boundaries are a second framework layer priority supporting the Census. The Census conducts the Boundary and Annexation Survey (BAS) annually to collect selected legally defined geographic areas. This data is used to support Congressional and State redistricting, Census tabulation and statistics, as well as Community Block Group Grant program eligibility and various rural housing and economic development programs. The Council recognized that improved coordination and data flows can increase the accuracy of municipal boundary geospatial data, and it formed the Municipal Boundary Workgroup to review the current process and identify efficiencies and improvements in the current process with the goal of an authoritative, locally maintained, statewide municipal boundary layer that can be shared with the BAS annually. North Carolina statute requires the Department of the Secretary of State (SOS) to approve municipal boundaries, and the Council OSBM representative, Bob Coats, is leading the Municipal Boundary Workgroup in this effort.

Strategic Direction for the Council for Data-Driven Collaboration

Goal 1. Improve and/or expand statewide geospatial data

1.1. Promote free and open discovery of and access to geospatial data created and maintained by local governments.

Status: Local government data distribution policies vary from open data access to offline copies by request
Lead: Local Government Committee
Tasks: Summarize business needs and value; promote through professional organizations

1.2. Find solutions for consumers to discover and gain access to public geospatial datasets that local governments currently withhold from public access for concern about homeland security.

Status: Local government policies vary

Lead: Local Government Committee

Tasks: Research and clarify federal, local, and public utility policies; summarize business needs and value versus risk; define alternative geospatial datasets (e.g., corridors, easements, service areas) and their appropriate uses and disclaimers; start a conversation with local data managers

1.3. Continue to support initiatives that compile and maintain statewide geospatial datasets that are priority data themes of the Council.

Status: Priority statewide datasets available to the public include AddressNC, NC Roads, NC Parcels, Statewide Orthoimagery, county and municipal boundaries, LiDAR elevation, surface waters, and geodetic control.

Lead: Statewide Mapping Advisory Committee

Tasks: Prioritize efforts to improve municipal boundaries and surface waters; sustain working groups to advise data programs and projects; support Next Generation 911 and AddressNC and the local government role in data sharing

1.4. Find solutions to make data sharing local-to-state more efficient to meet the needs of multiple statewide datasets and not place undue burden on local geospatial data managers.

Status: NC Roads and other datasets have achieved full participation by local governments, but use a variety of processes at different times

Lead: Statewide Mapping Advisory Committee

Task: Maintain data content standards

Assist: State Government GIS Users Committee

Task: Define common data requirements from multiple state agencies

Assist: CGIA and Next Generation 911 Project Team

Task: Define data requirements and a workflow in collaboration with contractor and the Local Government Committee

1.5. Request all state agencies to make the Council's priority geospatial datasets discoverable and accessible through the NC OneMap Geospatial Portal.

Status: Most, but not all, priority datasets are discoverable and accessible through the first-stop state geospatial data portal

Lead: State Government GIS Users Committee

Task: Identify priority datasets currently not discoverable and accessible through NC OneMap and find solutions with host agencies

1.6. Promote geospatial metadata for standard documentation.

Status: Metadata standard is in place, training materials are prepared, and implementation in more GIS operations will add value
Lead: Statewide Mapping Advisory Committee
Task: Metadata Committee—reach out to local governments, promote online videos, and provide onsite training

Goal 2. Support applications of geospatial data

2.1. Support creation of services that publish results through online applications that include vehicle routing and address validation, from single requests to batch processing.

Status: Ongoing initiative
Lead: Statewide Mapping Advisory Committee
Task: Assist in analysis of business requirements and benefits for application development and geospatial services related to NC Roads and AddressNC
Assist: Local Government Committee
Task: Help promote local government data sharing for statewide datasets for roads and address points

2.2. Support other applications that derive business value from geospatial data assets and analytics.

Status: Ongoing initiative
Lead: State Government GIS Users Committee
Task: Identify common opportunities and requirements
Assist: Local Government Committee

Goal 3. Collaborate for more integration of geospatial data in information technology for expanded benefits

3.1. Identify opportunities to collaborate on GIS solutions in state departments and divisions not directly represented on the Council to add value to state business processes.

Status: Negotiated and implemented a Statewide Enterprise License Agreement for GIS software available to all state Agencies.

Lead: State Government GIS Users Committee

Tasks: Survey state agencies to learn more about GIS and training needs and opportunities; collaborate with the Department of Information Technology on optimization of IT resources.

3.2. Identify opportunities to collaborate and inform municipalities engaged in "Smart Cities" initiatives about potential for GIS in information technology solutions.

Status: A guide to understanding Smart Cities initiatives was published this fiscal year.

Lead: Technical Advisory Committee

Tasks: Engage local government and university resources to research and identify potential applications of GIS in support of "Smart Cities" initiatives

Assist: Local Government Committee

Goal 4. Collaborate with all parts of the GIS community in North Carolina

4.1. Identify opportunities to collaborate on geospatial data and technical solutions on a regional basis, engaging councils of government.

Status: Ongoing

Lead: Local Government Committee

Task: Representatives participate on SMAC and working groups to identify opportunities for regional solutions

4.2. Reach out to jurisdictions with the least resources to find ways to add value with geospatial data and applications.

Status: CGIA supported the Local Update of Census Addresses (LUCA) program on behalf of a few local governments that did not participate directly in the program

Lead: Local Government Committee

Tasks: Identify jurisdictions in need, priority business needs and data needs, and practical ways to assist; engage professional organizations in outreach and solutions

Assist: Statewide Mapping Advisory Committee

Accomplishments 2018-2019

Collaboration for Imagery Quality and Efficiency

Accomplishment: The Statewide Orthoimagery Program completed phase 3 (Northern Piedmont and Mountains) of the second four-year cycle, funded by the NC 911 Board, and acquired imagery for phase 4, the Southern Piedmont and Mountains region. Next year the program will complete phase 4 of 4 in the second cycle of updates and acquire imagery for phase 1 to refresh the Coastal region.

The Statewide Orthoimagery Program, funded by the N.C. 911 Board, delivers a consistent, complete, and current visual reference for emergency communications and a wide range of purposes. The program updates a quarter of the State's counties each year on a rotating basis with high-resolution, consistent, and accurate orthoimagery. See Figure 2.

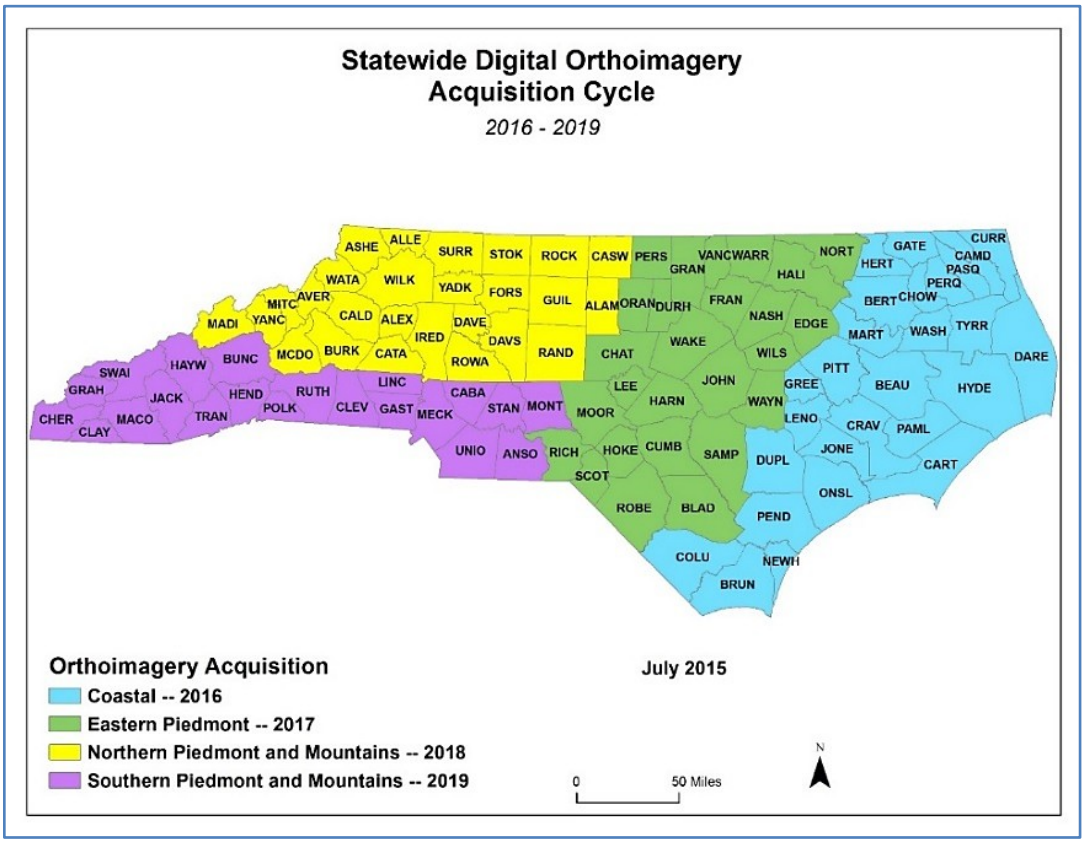

Figure 2. Statewide imagery acquisition cycle 2016-2019

The orthoimagery program distributes countywide imagery extending seven miles beyond the county border to each county. If each county acquires address data from neighboring counties

to go along with imagery, PSAP operators will be more likely to (a) recognize an address via cellphone as outside their primary response areas, (b) confirm that address, and (c) transfer the call as quickly as possible to the appropriate PSAP in the adjoining jurisdiction. This should save seconds and minutes, and ultimately lives.

The CGIA has managed the Statewide Orthoimagery Program since 2012, in collaboration with the Council, its committees and working groups, and the following partners:

- the N.C. 911 Board;
- the N.C. Department of Transportation's Photogrammetry Unit;
- the Department of the Secretary of State's Land Records Management Program;
- the N.C. Department of Public Safety's Geodetic Survey; and
- local government PSAPs and GIS Units.

Prior to the statewide effort, the 911 Board received $24 million in requests annually from local governments for orthoimagery projects. The four-year statewide project was budgeted at $15.5 million, a savings of as much as $82 million from the previous funding method. About 77 percent of the cost is for services by private contractors, contributing to the state's economic vitality by sustaining private jobs in photogrammetric services. The statewide collection means counties do not need to spend time and money on imagery procurement and related budget proposals, contracting, and project management. For many rural counties, the four-year State cycle provides imagery more frequently than counties could afford otherwise.

The imagery is available to state, local, federal, and regional government agencies, as well as the private sector, the academic community, and private citizens as map services and downloadable files from *NC OneMap*. Benefits include saving time in locating and responding to emergencies, saving time informing business decisions, knowing the date the imagery was captured and its resolution and accuracy, and avoiding the cost of erroneous information from out-of-date or less accurate imagery and map features. An example of orthoimagery with date of capture is shown in Figure 3.

Figure 3. 2018 Orthoimagery: Old Salem Museums and Gardens and Salem College, Winston-Salem, NC

Collaboration for Land Information

Accomplishment: Increased frequency of parcel updates with 92 counties updating the complete statewide parcel dataset during the fiscal year. The Council directed multiple efforts to collect and update base data layers to support a complete accurate 2020 Census count.

North Carolina is one of the leading states in maintaining border-to-border land information online as standardized parcels. The Council collaborated with all 100 counties and the Eastern Band of Cherokee Indians to realize a longtime goal to compile, publish, and maintain statewide standardized parcels (boundaries and property information). The seamless parcel dataset has become a model for other foundational statewide data layers. Combined with statewide aerial imagery, address points, and other foundational geographic data, informative views of the landscape are readily accessible to all counties, the N.C. General Assembly, state agencies, private businesses, educators, and the public. See Figure 4 for an example of recent imagery,

address points, and parcel data.

Consistent, complete, current, accessible parcel boundaries with information about location, use, size, and value saves time and money for public and private business processes. Statewide parcel data informs decisions in economic development, emergency management, transportation planning, land development, utility management, public health, and forestry, among other applications. For example: Businesses benefit from the collection of parcels across county boundaries. Duke Energy uses parcels to determine land ownership when creating and maintaining utility rights-of-way and when engineering new transmission lines.

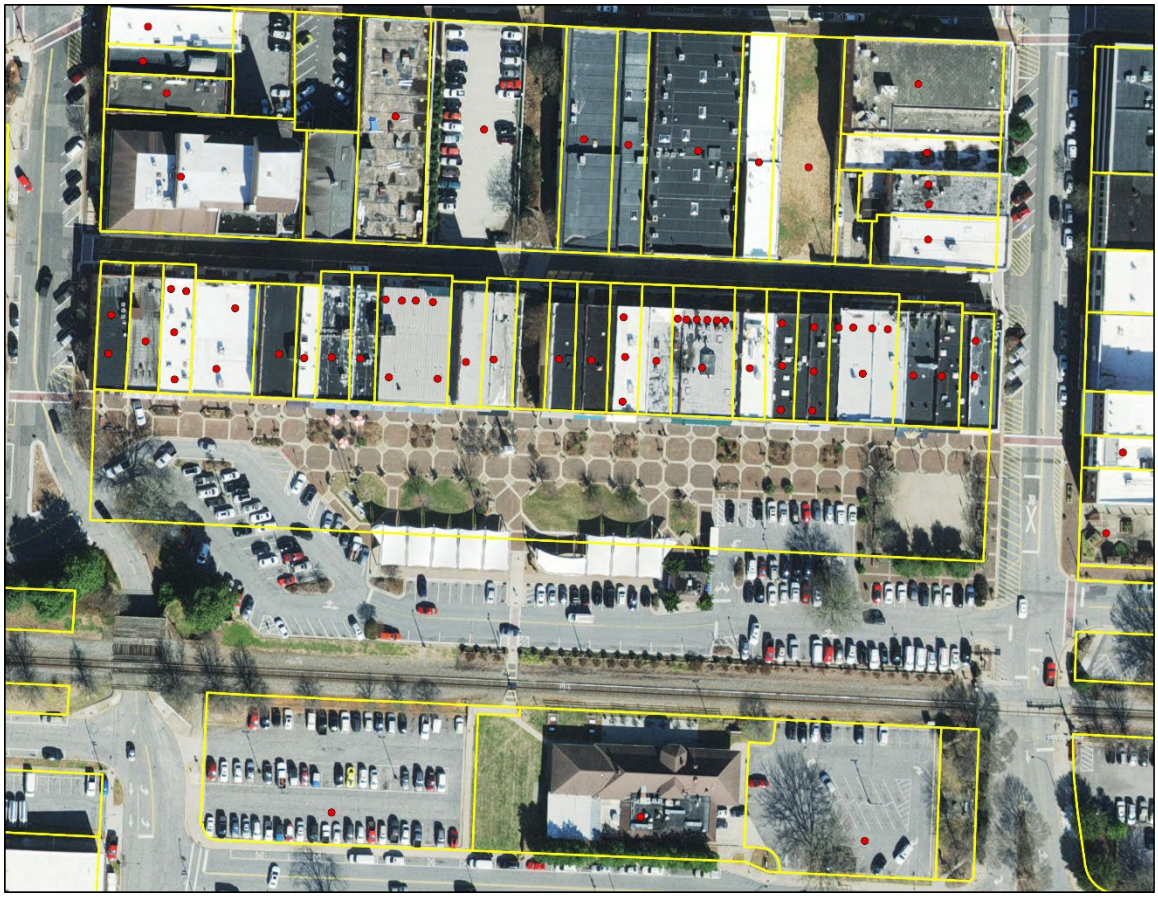

Figure 4. Hickory, NC: Parcel boundaries and address points over orthoimagery

Current parcel data for all counties are available from *NC OneMap* in the event of a natural disaster that might interrupt county data operations, and N.C. Emergency Management (NCEM) used this parcel data to assess damage from Hurricane Florence. The U.S. Census Bureau is applying parcel boundaries to improve census geography in support of a complete, accurate, defendable count of NC residents.

As always, counties are the authoritative sources of the most current and detailed parcel data. For detailed research on specific properties, data consumers are directed to online county map viewers and county geographic information system (GIS) contacts.

In preparation for the 2020 Census, the GICC has directed multiple efforts to provide accurate base data to support the Local Update of Census Addresses (LUCA), and the Boundary and Annexation Survey (BAS). The Council initiated the Municipal Boundary Workgroup to realize a single statewide accurate municipal boundary layer. Using the Statewide Seamless Parcels layer as a model, the workgroup has tested a process of sharing locally maintained municipal boundaries to a statewide layer. The new statewide layer will provide efficiencies and eliminate duplication of effort, providing an important single source for the BAS as well as state applications to support emergency management, transportation, and others going forward.

Collaboration for Public Access to Geographic Information

Accomplishment: The GICC began investigating the availability of infrastructure data including barriers to public access. The Local Government Committee compiled a survey of local governments statewide to examine the prevalence of spatial utility data and review data sharing policies.

NC OneMap is a primary initiative of the Council that ensures public investment in geospatial data and services will continue to generate benefits for a wide range of public and private purposes. Through the *NC OneMap* Geospatial Portal, users can discover relevant datasets, determine their suitability, and download data or stream data through a web service directly into a desktop or web application. Keyword searches and searches by spatial extent make it easy to find content in a user's area of interest.

NC OneMap is effective because of its extensive content and collaboration with other agencies to deliver data to consumers including more than 400 GIS datasets that aid in decisions made by surveyors, engineers, land conservationists, transportation planners, and emergency managers. As data moves from desktops to smart phones and tablets, consumption of geographic data continues to grow. State and local governments have made significant investments in North Carolina's geographic data to serve the business needs of government.

Infrastructure information is critical to planning, development, and maintenance. The Council devoted time during its quarterly meetings to investigate the barriers to public access of infrastructure data. Legal counsel presented on laws and regulations pertaining to infrastructure data and availability, the Local Government Committee performed a survey of

local governments to review availability of infrastructure data and the policies and practices in place for sharing information, end users shared use cases to support the incorporation of infrastructure data early in planning processes, and private utilities outlined an option for sharing of electric infrastructure data. This topic continues to be an important topic for the Council and will be explored further during the next fiscal year.

Elevation data has long been a priority dataset for the state of North Carolina. The State's comprehensive LiDAR coverage makes North Carolina an example nationwide for quality, comprehensive elevation data. The Statewide Mapping Advisory Committee coordinated with NCEM, NC Department of Transportation (NCDOT), and the US Geological Survey to monitor the completion of the final phase of high-density LiDAR for the State in 2019, and identified the need for statewide contours to be produced during fiscal year 2019-20.

Collaboration for Consistency

Accomplishment: CGIA and the State Government GIS Users Committee collaborated to develop the "NC OneMap 2.0 Standards and Best Practices for Supplying Data and Services" document to promote easily discoverable data and services within NC OneMap. The Metadata Committee published a State and Local government metadata profile and held workshops to increase adoption of metadata standards.

Consistency and documentation are key data quality factors, in addition to completeness, currency, and reliable online access to priority datasets. Up-to-date standards and recommended practices continue to be valuable for GIS data managers in state and local governments. During this fiscal year, the Metadata Committee updated tools and resources housed within *NC OneMap* for producing and editing consistent, compliant metadata. In addition, the committee produced training materials and provided metadata training at sites across the state with the goal of increasing adoption of the current standards.

NC OneMap relies upon data producers to maintain and share priority datasets through the online platform. As an initiative of the Council, *NC OneMap* is most effective when users can easily search for and explore data and resources. CGIA updated guidance documentation "NC OneMap 2.0 Best Practices for Supplying Data Within the ESRI ArcGIS Online Environment" to include important considerations for sharing, documenting, and optimizing web services. The document provides step-by-step guidance for data providers to ensure that data shared on *NC OneMap* remains quality, easily discoverable data.

Technical Assets and Developments

Accomplishment: The Technical Advisory Committee, with assistance from the Local Government Committee, issued a guide to understanding Smart Cities concepts, approaches, practices and the role of geospatial data and technology. The guide is intended for municipalities and other local government entities that are interested in implementing a Smart Cities initiative to improve public services.

The GICC promotes the value of reliable geographic information for effective decision making, and provides guidance on standards, practices, and initiatives. The GICC recognized that communities around the state were exploring or launching Smart Cities initiatives. The Technical Advisory Committee worked closely with the Local Government Committee to review Smart Cities concepts, existing initiatives, and compile a reference document to assist communities who may be considering implementation to improve public services. "Understanding Smart Cities from the Geospatial Perspective: A Guide to Getting Started" guides communities as they strive to improve public services through new technologies and can be found on the Council website.

Governance for Geographic Information

Accomplishment: The Council met regularly and engaged committees and working groups in carrying out initiatives. It continues to be the focal point for engagement in collaboration opportunities, as envisioned by the General Assembly.

The Council, CGIA, and *NC OneMap* provide a coordination foundation for governance of geographic information that engages stakeholders from state, local, regional, and federal government, educational systems, and private business. Producers and consumers of geographic information are represented in committees and working groups that inform plans, strategies, policies, priorities, and initiatives related to geographic data and GIS technology. In

its support role, CGIA's location in NCDIT's Government Data Analytics Center (GDAC) is advantageous, especially for *NC OneMap* as a statewide data resource.

In FY 2018-19, the Council continued a process of defining the current practice of GIS professionals in consideration of changes in geospatial technology that enable greater accuracy in the digital representation of such features as roads, buildings, fire hydrants, and timber stands. The challenge for GIS governance is to clarify differences between the practice of GIS and the practice of professional land surveying, in collaboration with the N.C. Board of Examiners for Engineers and Surveyors, in ways that meet the respective responsibilities of the Council and the Board. A working group of the Council defined use cases and practical decision points to help guide GIS practitioners, presented the use cases at professional conferences, and sought comments and review from GIS and surveying communities.

Under the leadership of Council member Gary Thompson, representing the N.C. Geodetic Survey, the Council reviewed the upcoming 2022 Reference Frame. The new datum will replace the existing North American Datum of 1983 (NAD83) and the North American Vertical Datum of 1988 (NAVD88) and will rely primarily on global navigation satellite systems and gravimetric geoid modeling. The Statewide Mapping Advisory Committee formed the 2022 Reference Frame Working Group to evaluate the impacts of the replacement on state and local governments and the surveying and mapping industry and to recommend practical solutions for implementation of the 2022 Reference Frame.

Sharing Information and Knowledge

Accomplishment: The Council hosted the biannual N.C. GIS Conference in Winston-Salem in February 2019. Nearly 700 GIS professionals from across the state attended the Conference. GICC committees continued to build a technical knowledge base and communicated with professional organizations and consumers.

Council meetings provide an opportunity to explore how various groups across the state respond to a similar circumstance, often leading to new collaboration. The Council hosted GIS professionals from local governments, NCDOT, NCEM, N.C. Department of Environmental Quality, and N.C. Department of Agriculture and Consumer Services to explore how various organizations across the state responded to Hurricane Florence, what efficiencies could be gained by coordinating efforts and data, and what resources could be better allocated. The Working Group for Enhanced Emergency Response is a biproduct of this initial investigation and was tasked with creating a secure collaborative data sharing model for authoritative geospatial data and resources. In addition, the group was asked to develop a mechanism for sending GIS

professionals to hard hit areas to provide relief for stretched local governments during storm response. The workgroup, consisting of members from state, local, federal, and private organizations, will explore these tasks over the 2019-2020 fiscal year, with the goal of testing a solution for the 2020 hurricane season.

The 16th biannual NC GIS Conference provided a valuable forum for education and networking, achieving a true sense of community and collaboration among GIS professionals across North Carolina. Attendees included government officials at all levels, members of the business community, college students, and education professionals. Conference attendees traveled from 58 North Carolina counties and 21 states. Post-conference survey respondents mentioned networking opportunities and informative sessions as conference strengths. Conference attendees found learning from their peers in similar industries and governments, discovering emerging technologies, discussing projects with vendors, receiving updates on state and local projects, and connecting with old coworkers and colleagues to be worthwhile experiences gained from the NC GIS Conference. Ninety-five percent of post conference respondents indicated that they would return for the next conference.

In keeping with the priorities of the Council, the 2019 NC GIS conference included presentations about 2020 Census preparation and support, transportation planning, hazard mitigation, disaster response, NextGen 911, broadband, and the 2022 datum conversion, among others. Panel discussions were held to update the community on the use cases outlined by the GIS/PLS workgroup, the statewide response to Hurricane Florence, sharing of local government infrastructure data, and statewide geospatial data status and opportunities.

In addition, the Council promoted its initiatives in numerous venues around the state. Staff,

along with Council and committee members, presented at meetings sponsored by the 911 Board, the N.C. Property Mappers Association, NCLUG Bentley CADD User Group, and the N.C. Arc Users Group. Nationally, CGIA represents North Carolina in National States Geographic Information Council activities and participated as a panelist at their midyear meeting on "Recent Hurricane Events and the Value of GIS."

Future Priorities

The Council's priorities for the future remain centered around data-driven collaboration and continual improvement of access to data products. Fiscal Year 2019-20 priorities cover adoption of new federal standards, Census support, emergency coordination, and improving access to data that will save time, money, and lives.

1. **Data Improvement**
   - Improve access to infrastructure data and recommend standards and best practices for data sharing.
   - Centralize municipal boundary data into an authoritative source and pilot a maintenance process.
   - Continue support for the collection and dissemination of vital orthophotography and elevation datasets.
   - Improve frequency of updates to county parcel data.

2. **Community Coordination**
   - Create a common platform for sharing data and resources during emergency response.
   - Update NC OneMap to enhance data access and GIS community engagement.
   - Finalize PLS/GIS use cases and distribute findings of the workgroup to the broader community.
   - Coordinate data collection for address and boundary products and continue to support the 2020 Census collection efforts.

3. **Standards Development**
   - Review the 2022 Reference Frame and recommend a process for adoption.
   - Review adoption of the International Foot and recommend a process for migration away from the US Foot.
   - Develop standards for statewide stream mapping and evaluate methods for more accurate stream data.

For more information about the Council, including the latest meeting information and contact information for Council members and staff, please visit the Council's website at https://it.nc.gov/gicc.