Challenges and Opportunities in 2018 and Beyond - Summary

Members of the NC Geographic Information Coordinating Council offered observations and insights about challenges and opportunities in 2018 and beyond. During quarterly meetings on November 8, 2017 and February 14, 2018, the Council considered four questions to guide discussions.

1. *How can we collaborate to improve or expand statewide **geospatial data**?*

The challenges identified by Council members:
- Address data creation at the local level for administrative and E-911 purposes; consistency and quality are issues of concern.
- Aggregation of addresses, parcels, and roads into statewide standardized geospatial datasets, given a variety of formats and content among the local government authoritative sources, requires a significant effort.
- Documentation of local and state geospatial datasets as standard metadata records saves time and supports quality; metadata are not available from many jurisdictions.
- Comprehensive discovery of enterprise geospatial data—both state and locally managed –depends in part on metadata and its online accessibility; NC OneMap covers most but not all statewide geospatial resources; public access to local government data varies.

Constraints to collaborative improvement or expansion of statewide geospatial data discussed by Council members:
- Local government data managers may have security policies that withhold some geospatial data from public access. The most common concern is for geospatial representations of locations of public water supply pipes and facilities.
- Local data distribution policies vary from providing "open data" online as downloadable datasets and web services to making data available offline by request. Some local governments charge fees for offline copies of data.
- Local adoption of data content standards is difficult to achieve statewide; data management and business needs vary among local governments; converting local geospatial data to a standard model runs the risk of breaking local applications.

Opportunities identified by Council members concerning statewide geospatial data included:
- Expand the role of geospatial data in enterprise data management – collect location data with tabular data in business processes that have not taken advantage of location in analysis and reporting.
- 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.
- Improve the quality of statewide datasets for jurisdictional boundaries and addresses to achieve consistency, currency, completeness, and reliability for applications.
- Municipalities are gaining experience and learning lessons about "Smart Cities" solutions; municipalities would benefit by communicating and sharing knowledge.
- Changes in technology for data management and data sharing provide opportunities to improve and expand statewide data and its discovery and access.

*2. How can the Council support **applications** of geospatial data to meet business needs and the challenges ahead?*

State agencies have developed and are maintaining statewide datasets, notably integration of state and local authoritative data (roads), aggregation and standardization of local data (parcels and addresses), and statewide collections (imagery and elevation). The next step is to apply statewide data in ways that inform business processes and decisions. Opportunities to create services that publish results through online applications include vehicle routing and address validation, from single requests to batch processing. These services could be alternatives for state and local agencies that individually purchase commercial address validation services from various vendors, with resulting cost savings.

Applications that would be useful to the GIS community and the public help answer the question: what jurisdiction am I in and who is a contact? For a user location of interest (point), what are the related jurisdictions (areas) in terms of voting, house and senate representation, local tax collection, business licensing requirements, municipal or county service provision, and other interests? Statewide applications would save local governments from developing individual solutions to answer the same questions.

An application that helps coordinate asset maintenance by state and local governments could save time and money. Asset maintenance can be complementary or work at cross purposes. An example may be road paving by NCDOT days before a city digs up the same road to install or repair a water line, followed by repaving. Collaboration could result in a statewide application that integrates state and local data to inform asset management planning.

On the topic of underground utilities and the scarcity of publicly accessible geospatial inventories of what is where, there would be great value in an application backed by a statewide database that would identify for a location of interest the utilities present, the service providers, and who to contact. This would supplement the NC 811 service. Security issues concerning data access would need to be solved.

Applications for economic developers doing site selection could be more informative about industrial parks, development plans, and availability of utilities. Again, infrastructure data would be valuable, but its availability is constrained. Use cases for site selection include the agriculture industry where, for a location of interest, information on utilities and capacity information, or at least utility providers would be valuable. Also, the quantity of water available to a new customer is important to know when evaluating a location of interest, not merely inclusion in a public water service area.

Applications related to data analytics represent opportunities deserving Council attention. North Carolina's Government Data Analytics Center is an example of planning and implementing ways to manage and apply large quantities of data. Part of the challenge to the

GIS community is finding ways to derive value from a wealth of source data. Airborne and mobile sensors capture ever more quantities of data with increasing frequency. Issues of public safety may be involved. For example, autonomous vehicles will require large quantities of high quality data for signs, guardrails, road conditions, and other location information, analyzed and served by secure applications for vehicle operation and safety.

*3. What are ways to collaborate for more integration of geospatial data in **information technology** for expanded benefits?*

In North Carolina, GIS and IT could be better integrated. Some state agencies, as advised by the Department of Information Technology, include GIS in their respective IT plans. Some agencies do not. The Council continues to have opportunities to inform some state departments and divisions within departments about the potential to apply GIS to business processes. Decisions could be better informed with GIS applied to their business data. A survey and/or conversations could identify opportunities in departments and divisions not directly represented on the Council. DIT is available to assist in reaching out to department IT contacts.

On the local government level, municipalities are engaging in "Smart Cities" initiatives. In the absence of standards or guidance from a statewide perspective, the efforts are not integrating GIS and IT in some cases, lessening the quality and value of these initiatives. Knowledge sharing is needed to take advantage of GIS across the growing number of municipalities looking to apply technology for improved services.

*4. How can the Council benefit **your part** of the GIS community in NC and/or the **public**?*

In addition to the ways the Council may benefit members, as implied in answers to the first three questions, discussion included a regional perspective to local government roles and needs. Regional councils have GIS capacity and regularly interact with constituent local governments on planning, transportation, and other regional issues. Many of the local governments are small with little or no GIS capacity. Those with least resources could benefit from more understanding of how GIS can generate benefits locally, and regional councils as well as the Council can play supporting roles. An opportunity for statewide geospatial initiatives is for regional councils to assist in aggregating local government data for multiple jurisdictions within their respective regions.

North Carolina Geographic Information Coordinating Council https://it.nc.gov/gicc
Council Chair: Alex Rankin giccchair@gmail.com
Council Staff: Tim Johnson tim.johnson@nc.gov