

Geographic Information Systems



Report to the Joint Legislative Oversight Committee on Information Technology

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Legislative Request

"SECTION 7.16.(a) The State Chief Information Officer (State CIO) shall:

- (1) Document Geographic Information System capabilities existing in State agencies, including, but not limited to, the Office of the State CIO, the Department of Public Safety, the Department of Transportation, and the Department of Agriculture and Consumer Services, in consultation with the Center for Geographic Information and Analysis. This requirement shall be completed by December 1, 2014, with a copy of the written analysis to be submitted to the Joint Legislative Oversight Committee on Information Technology and the Fiscal Research Division on or before that date.
- (2) Develop recommendations for consolidating GIS functions within State government. These recommendations shall be presented to the Joint Legislative Oversight Committee on Information Technology and the Fiscal Research Division on or before that date.

"SECTION 7.16.(b) The State CIO shall determine if there are potential markets for State GIS data. To accomplish this requirement, 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. By December 1, 2014, the State CIO shall report to the Joint Legislative Oversight Committee on Information Technology and the Fiscal Research Division on any plan developed for the sale of GIS data, or if the State CIO finds that the sale of GIS data is not feasible, the basis of that determination."

Introduction and Background¹

Geographic Information Systems (GIS) combine layers of data about specific locations that provide powerful and critical decision-making tools for State and local agencies. Examples of decisions that are made using GIS include highway planning, forecasting environmental impacts, plotting spreads of infectious diseases, mapping the best routes for inspectors and first responders, and zoning and districting mapping. The power and value of GIS are not simply in "map making". GIS analysis can sift through or combine multiple data layers and identify the interdependencies and cumulative value of those layers.

GIS functions exist in multiple agencies across the state, but it is important to note that all GIS groups are not alike. In most agencies, the GIS team imbedded in an agency is a collection of professionals who understand what mapping data and tools are available within the state, and use these assets to help solve business problems. These efforts include routing for agriculture inspectors, plotting of infectious disease spread, tracking bird migrations, etc. There is a much smaller subset of GIS professionals who collect and maintain GIS data on behalf of the state. There is not as much overlap of these efforts as one might predict in looking at the diversity of GIS groups within the state agencies. This report will address some of those overlap areas.

¹ Some of the information in this section was taken from The February 2008 General Assembly Report: Geographic Information System (GIS) Study prepared by OSBM



The current state-wide governing body for GIS is the Geographic Information Coordinating Council (GICC). Details on the membership and duties of the GICC can be found in North Carolina General Statute G.S. 143-725, 726, and 727.

A focal point for the GICC is NC OneMap, a first-stop website where consumers of North Carolina data and web services can locate, discover and use statewide geospatial resources. This organized effort originated in 2003 as a GICC initiative in partnership with county, municipal, state, and federal data providers, with a formal implementation plan. The NC OneMap vision promotes geospatial data standards; data currency, maintenance, and accessibility; and data documentation (metadata). The GICC selected 37 priority data themes as the initial focus. The latest update is attached for Framework (most commonly used and most important for base mapping and analysis) and Non-Framework data themes, most of which are now discoverable through the NC OneMap Geospatial Portal. The portal, implemented in 2011 to revitalize NC OneMap, now features 286 datasets and 136 live map services, covering 32 of the 37 priorities. It is managed by the NC Center for Geographic Information and Analysis (CGIA) in the Office of Information Technology Services (OITS), and is directed by the GICC.

In 2008, the Office of State Budget and Management (OSBM) submitted a GIS report to the General Assembly. Major findings of the study were as follows:

- Agreement that there was widespread use of and potential for GIS as analytical tool
- There were 1,200 state employees using GIS daily across 36 application areas
- 175 FTEs were dedicated to GIS at cost of \$12M
- There was a critical need for data layer coordination and sustainable funding
- Appropriated funding was needed for CGIA staff to GICC
- The state should develop a cost-share model for updating orthoimagery
- The state should improve data sharing to solve repetitive and redundant state data requests to local governments

Implemented Recommendations:

- CGIA was moved to the Office of the State CIO, seven appropriated positions were allocated, and the professional services component was reestablished
- The GICC Management & Operations (M&O) Committee was given a greater role in GIS governance across the state
- GICC/M&O/CGIA were given authority to create, update, and promote standards for state agencies and collaborate with local governments
- State agency GIS personnel were left in agencies
- A statewide orthoimagery flyover was coordinated and funded through NC 911 Board
- CGIA was established as reviewer of proposed IT projects that use GIS
- CGIA revitalized NC OneMap with implementation of a Geospatial Portal
- Progress on data sharing among state agencies, reducing the number of requests to local governments

Recommendations that were not implemented:

- Set and manage Statewide GIS Strategy through GICC, and coordinate implementation of that strategy through CGIA. This was partially implemented. Currently, the GICC does not have total



authority over GIS strategy and standards in the state, nor have they been given an enforcement mechanism. Often times, standards and strategy fall prey to limited budgets.

- Establish GIS roles and responsibilities for update of framework plus other key data layers. This has been partially implemented, with the largest barrier being funding.
- Establish GIS Reserve account and staff position in OSBM (account to hold funds targeted for implementing Statewide GIS Strategy).

With the above background and in response to the 2014 legislative request, the State CIO created a GIS working group with representation from the following departments: Administration, Agriculture and Consumer Services, Commerce, Community Colleges, Cultural Resources, Environment and Natural Resources, Health and Human Services, Office of Information Technology Services-Center for Geographic Information and Analysis, Office of the State Auditor, Public Instruction, Public Safety, Revenue, Secretary of State-Land Records Management Program, State Board of Elections, and Transportation. The working group met once every 2-4 weeks from September through November to address the questions posed in the legislative request.

Part I: Current Geographic Information System Capabilities in North Carolina

The GIS Working Group conducted a survey of state GIS managers to learn more about GIS capabilities of state agencies. The five-part survey asked for information about GIS in the areas of organization, GIS data, GIS data sharing, GIS applications, and related infrastructure. The survey was completed in October 2014.

Background

The working group received nineteen independent responses representing thirteen state agencies (departments or commissions). Of those nineteen respondents, seventeen currently use GIS Data; of the two currently not using GIS only the State Auditor's office wishes to use GIS in the future.

Respondents reported a total of 73 full-time dedicated GIS Staff and approximately 1,614 part-time GIS staff. Of the 1,687 combined full-time and part-time GIS staff, 1,452 or 86 percent, are state employees. In addition, there are approximately 1,593 GIS users who are considered "casual" users, or users whose primary business function is not GIS.

GIS technology is mature in state government. Most state agencies have been using GIS for more than 15 years. All agencies use some version of ESRI GIS software for which North Carolina has an Enterprise License Agreement.

Organizations Responding to the Survey:

Department of Administration (DOA)

Department of Agriculture and Consumer Services (AGR)

Department of Commerce (DOC)

Department of Cultural Resources (DCR)



Department of Environment and Natural Resources (DENR)
Department of Health and Human Services (DHHS)
Department of Insurance (DOI)
Department of Labor (DOL)
Department of Public Instruction (DPI)
Department of Public Safety (DPS)
Department of State Treasurer (DST)
Department of Transportation (DOT)
Office of Information Technology Services, Center for Geographic Information and Analysis (CGIA)
Office of State Auditor (OSA)
State Board of Elections (SBE)
Wildlife Resources Commission (WRC)

GIS Data

Detailed information from the data part of the survey can be found in Appendix A.

GIS capability depends in part on availability of complete, consistent, current GIS or “geospatial” data to apply to business process in state government. Thirteen state agencies answered survey questions about GIS data. Agencies entered the primary geospatial datasets used by the organization and rated the importance of datasets.

There are also other multi-department activities within the state that use GIS data in collaboration efforts. One example is the Interagency Leadership Team (ILT), which focuses on transportation planning and the associated environmental permitting issues and requirements. Statewide parcels and high-resolution streams and wetlands are some of the most critical data to these 11 state and federal agencies that work collaboratively on transportation initiatives within the state.

In addition to a multitude of uses that can be seen in detail in Appendix A, survey results indicate that state agencies widely use a set of core GIS datasets. That is consistent with the priority datasets of the NC Geographic Information Coordinating Council and with the National Spatial Data Infrastructure’s “Framework” datasets commonly used for base mapping and analysis. The core datasets for this report include:

- Addresses (locations of residential and nonresidential addresses)
- Roads / Centerlines (all state maintained and locally maintained roads)
- Hydrography (including rivers, streams, lakes, ponds, and shoreline)
- Parcels (property boundaries)
- Elevation (models, contours, slope, etc., currently derived from Light Detection and Ranging (LiDAR))
- Imagery (digital aerial photography)
- County and municipal boundaries



A foundational dataset for positional accuracy, geodetic control, is also part of the GIS Framework for North Carolina.

A second set of commonly used datasets were evident from the survey and are included in the 37 priority datasets of the Coordinating Council and the vision of NC OneMap, including:

- Census boundaries and associated demographic data
- Soils
- Flood hazard areas
- Building footprints (outlines of structures based on imagery)
- Critical facilities (locations for law enforcement, fire, emergency services, hospitals, schools, and other structures of concern for emergency call answering and response)
- Lands managed for conservation, recreation, cultural resources, and military operations

The survey asked for the source for each dataset used by an organization. The incidence of single-source and multiple-source for Core Data and commonly used data types was consistent with the status of statewide core geospatial datasets. In cases where a statewide dataset is complete and current, a single source is indicated by the survey respondents. The prime example is orthoimagery, where NC OneMap is the point of access for image services and downloads. In cases where a statewide dataset is in progress (e.g., street centerlines and parcels) or nonexistent, there are multiple sources including local governments where authoritative parcel datasets and centerlines for locally maintained roads are managed.

Part 2 also asked “Are there any other GIS datasets you do not currently have access to that you would like to use?” and “Are you currently conducting any major data gathering or data creation activities, or will you be doing so within the year?” Five datasets were in both the “like to use” and “data creation/update” categories: statewide datasets for parcels, roads, addresses, elevation, and flood hazard areas, all Core Data or commonly used datasets.

Other datasets in the “like to use” category lack a current major effort to create or update and publish. They included streams, critical facilities, emergency service boundaries for Next Generation 911 call routing, zip code areas, old aerial photos that could be geo-referenced, land use related to agriculture and forestry, and building footprints. The latter are developed but not published for discovery and access.

Data Distribution, Data Sharing, Data Exchange

A detailed summary of data distribution methods can be found in Appendix B.

The first stop for discovery and access to statewide geographic datasets in North Carolina is the NC OneMap Geospatial Portal. NC OneMap is designed for consumers to discover relevant datasets, determine their suitability and either download data or stream data through a web service directly to a user’s desktop or web application. Keyword searches and searches by spatial extent make it easy to find content in a consumer’s area of interest.



The strengths of NC OneMap are the extensive content and the collaboration achieved with other agencies to deliver data to the consumer. Consumption of geographic data 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. Public access through NC OneMap serves additional business needs of private organizations and citizens.

State agencies approach data distribution, data sharing and data exchange in several ways. Most agencies store their business data on local infrastructure, with some utilizing servers at OITS (including NC OneMap). In some instances, agencies share a copy of a dataset with CGIA for loading in the NC OneMap database for publication of web services and downloadable data. Business applications internal to agencies are supported by internal, cloud, and NC OneMap web services depending on the data and applications served. Data sharing with other state agencies is accomplished by file transfer protocol or by sharing data with NC OneMap for distribution. Public distribution includes data and web services accessible through NC OneMap, agency FTP, and cloud services.

GIS Applications

GIS applications in state government are varied and specific to business processes. The more than 80 applications described by survey respondents included geocoding (matching addresses to locations), source water assessment, public water supply reporting, single-subject map viewers (e.g., historical sites), groundwater decision support, soils and crop yields, flood risk, hazard mitigation planning, the Continuously Operating Reference System (CORS), NC OneMap geospatial portal, transportation asset management, and Traveler Information Management System to name a few. Some of the applications are public facing (e.g., an interactive game land map and the State Parking Map) and others are used internally (e.g., State Preparedness and Response Tracking Application).

Infrastructure

State agencies responded to the survey by listing information technology infrastructure, hosting location, and service level. The majority of database servers, application servers, and web servers were hosted internally by departments with the exceptions of DENR, DOA, DCR and CGIA, where OITS hosting is included.

The summary table below indicates instances of state agencies using internal, OITS, NC OneMap, and cloud resources for storage, meeting internal business needs, sharing with other agencies, and public access.



Resources	Storage Location	Data or Services for Internal Business	Distribution to Agencies	Public Distribution
Internal	AGR, DHHS, DOI, DOT, DPI, DPS, SBE, DOC, WRC	AGR, DHHS, DPI, DOT, DPS, DOC	AGR, DOT, DPS	DOT, DPS, DENR
OITS	DENR, DCR, DOA, CGIA, DOC	DENR, DCR, DOA	DCR, DOA	DCR, DOA
NC OneMap		DOT, AGR, CGIA	CGIA, DENR, AGR, DOA, DOT, WRC	AGR, CGIA, DENR, DHHS, DOA, WRC
Cloud		DOA, DOT, WRC, CGIA		DOT, WRC

Part II: Opportunities for Consolidation

Due to the time constraints of the legislative request, the working group chose to focus on high-level issues surrounding staffing, funding, and hosting, as well as the six most widely used data sets and common services and applications used to analyze the data.

At the time of developing this report a parallel effort is in progress around IT Restructuring, with a report due to the General Assembly in December 2014. The Workgroup developing this report did so independently of IT Restructuring. IT Restructuring efforts and how to perform GIS consolidation initiatives would need to be considered if any policy changes to IT governance are approved by the General Assembly.

In addition, there is an integration point with the Government Data and Analytics Center (GDAC) that was out of scope for this report. The GICC is prepared to coordinate with the GDAC within the framework of the GDAC’s overall data responsibilities.

The GIS Working Group identified key information about the set of Core Data types, including what agency “owns” (manages and updates) the dataset that represents the best available (complete, consistent, current, reliable for application, and documented). All of the below areas could benefit from further discussions on coordination, ownership, and future planning.

Staffing

As previously mentioned, there are multiple instances of GIS personnel imbedded in agencies. Most of those resources manage applications that are close to and specific to the business areas that the GIS



functions support. The working group recommends that these personnel stay in their respective organizations in order to be responsive to and meet business needs of the agency. The working group believes the most significant changes that need to be made in this area are around consolidated thinking, including open sharing of data, lack of duplication, and combining of efforts that create or manage data in the same functional area of GIS. Detailed examples are included below.

Funding

The majority of the working group believes there are opportunities for more central application of funding to GIS initiatives. However, since many datasets are created at the local level, there are not many of these opportunities. Funding for centralized initiatives such as NC OneMap and AddressNC alleviates some of the cross-agency funding challenges, and an in-depth look by the GICC into areas such as Hosting, Hydrography, and Common Services could bring forth funding recommendations and cost savings. Another area that could be explored is through transactional fees such as permitting or licensing that could provide a funding stream for common GIS needs across the state.

Hosting

There are several goals for hosting geospatial data for state agencies and the public:

- Consistent, complete, current and reliable geospatial data, meeting requirements and standards for discovery and access as web services and downloadable data
- Efficient data management and efficient and reliable data access for state agencies and the public
- Redundant storage to assure access for GIS operations during emergency events

Current State

Multiple state agencies own geospatial datasets, including authoritative datasets, data compiled and integrated from local authoritative sources, and datasets derived from public data sources. Efficient, comprehensive, trusted geospatial discovery and access rely on an infrastructure for sharing files and web services as well as timely maintenance and data provision by data owners. NC OneMap currently serves as a portal for NC geospatial data shared by state agencies.

Network access to state geospatial data meets most state agency and public consumer requirements. NC OneMap has redundant servers at the Eastern Data Center and the Western Data Center. GIS operations in state agencies make copies of some geospatial datasets from NC OneMap and other sources for desktop analysis and derivation of new data in support of business processes.

As a special case, emergency operations require access to selected geospatial data during an event without reliance on network access. Emergency operations at the state level are supported for human-related events (Department of Public Safety, Division of Emergency Management) and agriculture-related events (Department of Agriculture and Consumer Services, Emergency Programs). Multiple agencies require access to geospatial datasets during an emergency event including DPS, NCDOT,



NCDA&CS and DENR as well as local governments, federal agencies, and the public. In terms of security, data hosted in the Joint Forces Command (JFCOM) infrastructure will be accessible to DPS emergency operations during an event.

Priority geospatial data of value to emergency operations may be replicated in the JFCOM infrastructure; likewise for the Multi-Hazard Threat Database hosted by NCDA&CS. New geospatial data generated during and after an emergency event may be valuable to multiple state agencies. Selected datasets of value to emergency operations may not be suitable for publication and consumption through a public portal (e.g., specific information about private businesses including livestock operations). NC OneMap is not currently hosting sensitive data. Users could be managed and authenticated if required.

Most datasets of value to emergency operations are suitable for public discovery and access via NC OneMap (e.g., orthoimagery, transportation, parcels, addresses, hydrography, governmental boundaries, elevation, building footprints, flood hazard areas, and government building locations). Currently, a hybrid approach to data hosting is in place. Some datasets are managed in the NC OneMap database for discovery and access. Other discoverable datasets are hosted by data owners.

Future State

Future data management requirements could include the following:

- All state geospatial data for public access will meet minimum service capabilities, enforced to assure quality
- For all GICC priority datasets, public discovery and access through NC OneMap is required as a first-stop portal
- For other non-sensitive geospatial data, public availability consistent with applicable standards is encouraged

Requirements for infrastructure need to take into account load balancing, disk storage space, security, and technical architecture system design. Conceptually, infrastructure could support all GICC priority datasets hosted in the EDC and WDC, with systematic transfer of selected data to state agencies to assure emergency access. See Figure 1.

The GIS hosting environment is recommended as an in-depth topic for the GICC.



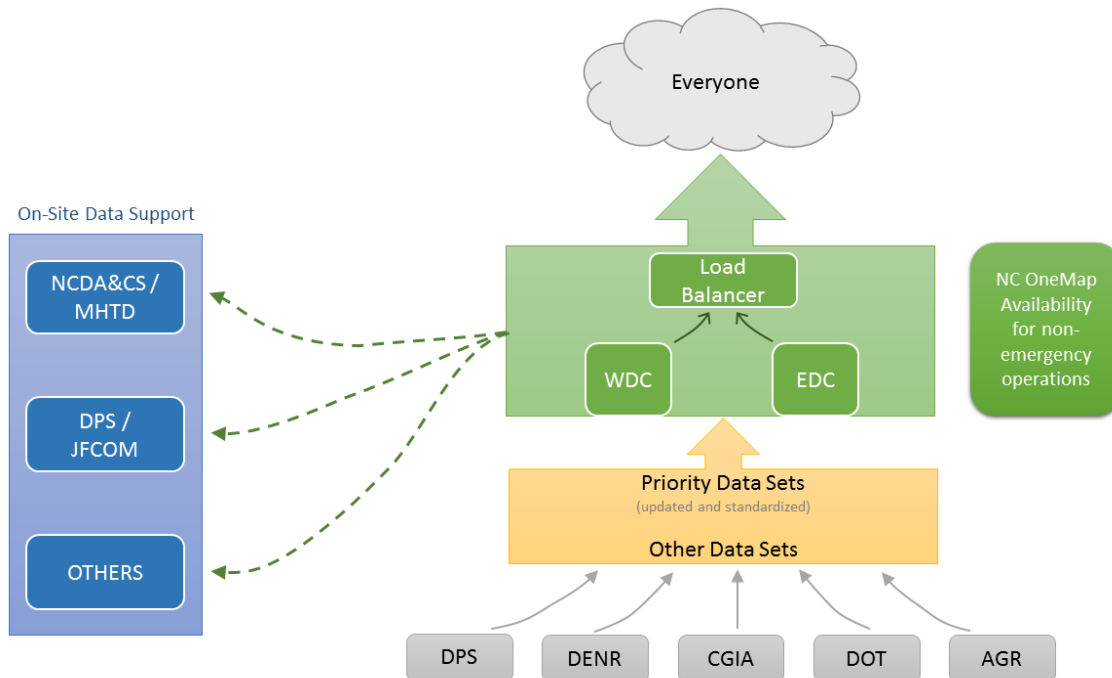


Figure 1. Geospatial Data Infrastructure Concept

Address Point Data

There are many parallel addressing efforts throughout the state, and the emphasis of the working group discussion was on the need to centralize coordination of address maintenance. Address data is represented as point locations. The value of address point data to core GIS functions (routing, address verification, geocoding) justifies its priority status. The major challenge is to create a dataset that meets business requirements for many agencies and applications, integrates updates from authoritative local government sources, meets a standard, and is maintained with enough frequency to meet business needs. A related opportunity is to develop a standard in partnership with local government addressing authorities since address assignment and maintenance is a local government responsibility.

A related opportunity is to identify or develop a standard for local government addressing where new addresses are assigned and maintained and re-assigned addresses are maintained (with aliases).

The State Board of Elections (SBOE) maintains a database of residential addresses that relates to voting district boundaries. The SBOE data is based on the best available county data. The Department of Revenue has address data in a static table. NCDOT will not have addresses ranges on the first release of statewide street centerlines (2015), but expects centerlines to have related address data in the future. Commercial products representing business locations (licensed to Department of Commerce) are available by license only, and therefore not shareable through NC OneMap. Business addresses obtained by the Employment Security Commission are restricted from publication.



The AddressNC project managed by CGIA is intended to provide an updated and complete statewide set of address points based on the best available county, municipal, and state agency data, both residential and nonresidential. Among other things, these centralized address points are essential to Next Generation 911 implementation and integral to complete Census population counts. However, the current CGIA effort is based on one-time funding (from NC Broadband), similar to the first iteration compiled in 2009 that had one-time funding (from the General Assembly). Sustained funding is critical to addressing initiatives in the state.

The working group observed that the definition of a voter's location could be a potential area for legislative action. Currently, the SBOE is required to maintain information about a residence's master bedroom location to determine voting district (which is used, for example, if a house crosses district lines). Utilizing the GPS coordinates of the house's point address would simplify this effort, make use of existing data, and not require the Board of Elections to maintain a separate database.

Roads/Street Centerlines

Roads, represented geographically by street centerlines, are moving towards a statewide integrated dataset. NCDOT is adding all local roads to the set of state-maintained roads to create a "best available" photo-revised seamless dataset. NCDOT is scheduled to publish all roads (including all "carriageways" as defined by the Federal Highway Administration) in calendar year 2015. A significant challenge will be to maintain the local-government-sourced part of this dataset and achieve frequent updates of published datasets. There is potential for feature extraction from orthoimagery and/or elevation data to support data maintenance. Applications such as school bus routing require an accurate and frequently updated roads network to assure quality and reliability. Accuracy and currency in address point locations, address ranges, and street centerlines is most compelling in 911 call answering, dispatching, and routing of emergency vehicles. Requirements for accuracy and currency (e.g., the Next Generation 911 requirement for updates within 24 to 72 hours) translate to the need for tools that save time, property and lives.

Hydrography

State agencies have numerous datasets representing streams. The DENR Division of Water Resources maintains a set of streams classified for water quality purposes. North Carolina legislation regarding water quality rules and regulations require the use of those classified streams as well as streams represented in soil surveys by the US Department of Agriculture, Natural Resources Conservation Service. Sources of stream delineation integrated in the National Hydrography Database (NHD) are predominantly US Geological Survey topographic maps, some dating to the 1970s.

CGIA led development of improved surface water features from 2005-2007 for 19 counties in western North Carolina based on one-time disaster relief funds. One-third of these features have been integrated into the NHD through federal funds from the US Geological Survey. The Floodplain Mapping Program developed representations of streams in flood hazard areas based on LiDAR elevation as part of



its analysis of water flow and flood risk. Some local governments have also developed GIS data for streams for purposes that include storm water. One challenge is to define requirements for a common representation of hydrography, and maintain the geometry based on elevation, imagery and field analysis. The group's recommendation is to have the GICC explore this topic in-depth to capture requirements and set standards.

Parcels

Parcel boundaries are created and maintained by county governments as part of their business processes. This data has tremendous value at a statewide level and is sustained in cooperation with the 100 county governments in North Carolina. A statewide standardized parcel dataset is partially constructed, supported by a grant project completed in April 2014, the result of collaboration between state agencies through the GICC Working Group for Seamless Parcels. Completion of the collection is planned for June 2015. Three state agencies also coordinated their efforts to collect county parcel data in support of business needs until the statewide set is complete. This has been and will continue to be a significant "win" for the state, and will provide extreme utility to a large group of statewide users.

Elevation

The statewide set of elevation data (derived from LiDAR) is in the process of being updated and improved through the Department of Public Safety in a five-phase project. LiDAR data is essential to deriving and depicting flood hazard areas. Detailed elevation data also supports accurate orthoimagery production among numerous public and private applications. DPS/NCEM have agreed to continue to share LiDAR data through by-request data feeds or via the online portal.

Orthoimagery

The statewide set of orthoimagery collected in 2010 is being updated in a four-phase program that will be completed in early 2016. Funding from the NC 911 Board was used in both phases in an effort to improve 911 response capability across the state. Image services from NC OneMap are being consumed by state agencies and the public, reducing data storage, file handling requirements, and duplication of effort. The state's GIS community is working with the 911 Board to provide a second wave of updates to the statewide orthoimagery collection. This effort needs to be sustained beyond the end of the current update cycle to ensure up-to-date mapping capability that can support first response and a multitude of other uses.

While the 911 effort supports most business requirements, DOT has internal capability and available contracts to conduct aerial mapping when the specificity of detail required is not available from the 911 data, or for events such as post-emergency or post-natural-disaster. The working group did not see this overlap as a conflict or as an example of duplication.



County and Municipal Boundaries

State agencies collaborated to establish an official set of county boundaries and are coordinating maintenance of a compilation of municipal boundaries within the state that will be available to anyone who needs the data.

Common Processing Services

State agencies use GIS applications to analyze geographic data, derive new data, and display results on maps. In most instances, GIS applications are specific to department business processes. There are many GIS processes that require large datasets, significant computing resources, and/or complicated steps, and are applied by multiple departments. In these instances, an enterprise service that enables multiple agencies to perform common processing has potential to save time, save money, and enable GIS professionals to do more.

The GIS Working Group identified “geo-coding” services as a candidate for enterprise provision. Geo-coding converts address information into point locations representing the addresses. Geo-coding relies on a database of address points and/or a street centerline dataset with address ranges associated with street segments, complete and consistently formatted source addresses, and analyst expertise to apply GIS tools in iterative processing. It is inefficient for multiple agencies to obtain and maintain the comprehensive datasets required for effective geo-coding, particularly where geocoding is not required for business needs on a regular basis. An enterprise processing service has potential to meet state agency needs to locate, validate, and map address locations.

Enterprise Geo-coding capability is not currently a funded initiative.

Part III: The Potential Sale of GIS Data

There was unanimous agreement among working group members and members of the GICC that the selling of GIS data in North Carolina is neither feasible nor practical for the following reasons:

- (1) Data among government entities. Working group and council members felt it was counterproductive for a government entity to charge another government entity for the use or collection of GIS data. Operating as “ONE IT” – a statewide technology enterprise – means that one agency’s data should be readily available for other agency’s use.
- (2) The federal parallel. The acquisition of data often involves a leveraging or partnering with federal government agencies. Provisions associated with federal funding prohibits the selling of acquired data.
- (3) Data distributed to the public. Working group and council members strongly believe that data captured as part of executing the state’s business—data that is paid for directly and indirectly by North Carolina citizens and businesses—should be made public. Once data is made available



within North Carolina, it becomes virtually impossible to regulate the release of that data outside of the state. Additionally, the group felt that GIS data should remain subject to the North Carolina Public Records Law.

- (4) Difficult to draw a line. If the assumption is that North Carolina citizens should not pay for GIS data, but there was a movement to charge non-residents or business for the same data, it becomes unfeasible to identify or profile between users and groups. Restriction through licensing to North Carolina citizens would be difficult and potentially costly, and the restrictions would be difficult to enforce. However, without such restrictions, there is nothing that would keep a non-citizen from posing as a NC citizen to request data.
- (5) Data collected for business purposes. The state has many valid business needs for the collection, maintenance, and use of GIS data. The consensus among the working group was that even if the state never sold GIS data to recoup costs, the business need exists and the data should still be collected and maintained. They felt that once data is collected for valid business reasons, it should be available to anyone who needs or wants it.
- (6) Large data files. There was some discussion about whether a requester should be charged for files over a certain size. While it is common practice to charge requestors for a hard drive, most GIS data owners indicated that because of the speed of today's technology, downloading even large amounts of data is not overly time-consuming for employees. The digital environment has reduced the labor required to transfer a wider range of data volume.
- (7) Requests have and will continue to decline. With the proliferation of data available on the internet, along with faster download speeds and improved search capability, owners of GIS data in North Carolina have seen requests drop sharply over the past few years. The consensus was that if the state was to charge for data, people would simply go elsewhere. NC OneMap is intended to be web-based access to all NC mapping data. Maintaining a log-in to that data would be time- and cost-prohibitive.
- (8) Positive Economic Development Impact. The working group finds that the sharing of GIS data can have a positive impact on North Carolina's economic development efforts. A company looking to move to or expand in North Carolina can use GIS layers to easily assess potential sites for businesses across a number of metrics. Doing so openly and freely allows the business opportunities for growth and makes North Carolina even that much more attractive. The group wants business and citizens to think that North Carolina has the *best* data available, not the most restrictive.



Part IV: Summary and Recommendations

The GIS working group, led by the Office of the State CIO to answer questions posed in 2014 legislation, conducted lengthy and informative working sessions with participants across state government, both at the local and state levels. It was the opinion of the working group that:

- 1) The NC OneMap initiative should be fully funded to expand capability and hosting for all 37 priority datasets that could be made centrally available to anyone who requires the data
- 2) The GICC should be empowered to create, maintain, and enforce data standards for GIS in North Carolina
- 3) The GICC should review consolidation opportunities that may arise as a result of IT Restructuring initiatives; specifically other parallel efforts within the State, and with due consideration regarding dependencies.
- 4) Specific to GIS data, the GICC should coordinate with the GDAC within the framework of the GDAC's overall data responsibilities.
- 5) GIS staffing should remain as-is, close to the business lines inherent within state government. Should the NC OneMap initiative be expanded or fully funded, movement or addition of a limited number of resources might be required.
- 6) There are opportunities for better shared and more central use of funding. Enterprise initiatives such as NC OneMap and AddressNC, along with other opportunities identified by the GICC, need to be given recurring funding to maintain critical shared datasets within the state.
- 7) The state (potentially via the GICC) should study the state's hydrography requirements and assets in depth and propose a plan for management of such data.
- 8) The state (potentially via the GICC) should also assess the state's data management infrastructure requirements and propose a plan for management and funding of such data.
- 9) The state should pursue common processing services that could be managed centrally and consumed by GIS users in a chargeback model. That capability could be established within the Shared Services Division at OITS. Some initial funding for tools and staffing would be required.
- 10) The state should not pursue any type of chargeback model for the sharing of state GIS data.



Appendix A: GIS Survey - Data Use

Agency	Name	Source	Purpose
DHHS	Census Data	Census Bureau	Relate socio-economic variables with health data
DHHS	Census Tracts	Census Bureau	Basemap; relating socio-economic variables and reporting of health data
DHHS	Census Block Groups	Census Bureau	Basemap; relating socio-economic variables and reporting of health data
DHHS	Census Blocks	Census Bureau	Basemap; relating socio-economic variables and reporting of health data
DHHS	Census TIGER	Census Bureau	Basemap; Linework
DHHS	State Boundary	North Carolina Geodetic Survey	Basemap; state reporting of health data
DHHS	County Boundary	North Carolina Geodetic Survey/NC DOT	Basemap; county reporting of health data
DHHS	Address Points	NC Local Governments or Statewide CGIA or State Board of Elections	Geocoding Locator
DHHS	Parcels	NC Local Governments	Geocoding Locator & Quality Control Processes
DHHS	Street Centerlines	NC DOT (ISRN)	Basemap; Geocoding Locator and Routing (analysis on routing to services)
DHHS	Street Centerlines	NC Local Governments	Geocoding Locator
DHHS	Municipal Boundaries areas and points	NC DOT	Basemap; Geocoding Locator; Quality Control Processes
DHHS	ZIP Codes as areas	Vendor (doesn't exist anymore)	Basemap; Geocoding Locator; Quality Control Processes; ZIP code reporting of health data
DHHS	Hydrography	CGIA	Basemap; analysis of health data; toxicology reporting in fish
DHHS	Districts - Congressional	General Assembly	Reporting Health Statistics by Legislative District
DHHS	Districts – NC House	General Assembly	
DHHS	Districts – NC Senate	General Assembly	
DHHS	Orthophotography	CGIA	Basemap; Quality Control Processes
DHHS	Nationwide Hospitals (neighboring states)	Esri supplied data	Provide analysis on services beyond state lines
DHHS	NC School Districts	Department of Public Instruction	Regional Staffing; reporting health data by school district
DHHS	Schools	CGIA	Access to schools/school health reporting/Track dual use for community health
DHHS	Ambient Air Quality Testing Sites	NC Department of Environment & Natural Resources	Basemap; Health Analyses
DHHS	Ambient Water Quality Testing sites	NC Department of Environment & Natural Resources	Basemap; Health Analyses
DHHS	NC Public Water Supply Areas	NC Department of Environment & Natural Resources	Health Analyses
DHHS	NC DOT Bike Routes	NC DOT	Access to bike routes for healthy behaviors/planning
DHHS	Correctional Institutions	CGIA	Geocoding Locator/Prison health status reporting
DHHS	Convenience Stores	Nielsen/Department of Commerce	Corner Store Initiative and healthy eating; Tobacco Retail
DHHS	Grocery Stores	Nielsen/Department of Commerce	Corner Store Initiative and healthy eating; Tobacco Retail
DHHS	Nielsen Segmentation	Nielsen (Vendor)	Targeting media for Public Health messaging
DHHS	Superfund & Waste Sites	EPA/NC Department of Environment & Natural Resources	Health analyses and Health hazards
DHHS	NCHS Population Bridge Files	National Center for Health Statistics	Reporting of health data (computing rates)
DHHS	NC Railroads	NC DOT	Basemap
ORHCC	State and federal datasets. County-level data is the most commonly used.	US Census, DHHS SCHS	Business needs of office, thematic mapping



PSUC	Telephone Exchange Boundaries	Exchange Service Area Maps	Maintain dataset of Commission-approved exchange boundaries
DENR	Imagery	USGS Digital Orthophoto quads, National Agriculture Imagery Program, State Orthophoto program	Background for environmental and natural resource investigations using GIS
DENR	Infrastructure (roads, trails, etc.)	NC DOT, ESRI map services	Routing, background layers for environmental and natural resource investigations
DENR	Land use/Land cover	CGIA	Background for environmental and natural resource investigations using GIS
DENR	Political and social (Political boundaries, census blocks and data, USGS quadrangle boundaries)	CGIA	Background for environmental and natural resource investigations using GIS
DENR	Cadastral (parcels, federal and state owned lands, gamelands, etc)	CGIA, NC DACS	Background for environmental and natural resource investigations using GIS
DENR	Soils and geology	CGIA	Background for environmental and natural resource investigations using GIS
DENR	Terrain	CGIA, Floodplain Mapping	Background for environmental and natural resource investigations using GIS
DENR	Hydrography	CGIA	Background for environmental and natural resource investigations using GIS
AGR	911 Board statewide aerial photography	911 Board funds the multimillion dollar project.	To identify and map new features from the aerials. We use the aerials to determine how accurate GIS datasets are.
AGR	Street Centerlines and Major Roads.	We create a major roads dataset from data we get from NC DOT. We need a dataset for all roads (not just state maintained). In 2013 we got a roads dataset from TeleAtlas via the US Department of Homeland Security.	We geocode a lot of address data and require a statewide streets layer to accomplish this. We also display roads as a background layer and use it for searching.
AGR	NRCS SURGO Soils data.	Natural Resources Conservation Service (NRCS)	To determine where soils are best suited for agricultural and forest land uses. To predict realistic crop yields and growth rates for different species.
AGR	National Hydrography Dataset (NHD) streams	Natural Resources Conservation Service (NRCS) and the US Geological Survey (USGS)	To display where streams are on the landscape. Primarily used to comply with stream buffer regulations.
AGR	We have several GIS datasets relating to the NC State Fair. These datasets are solely used during the fair to track rides. NCDA&CS assigned vendors, carnival vendors, attractions, sponsors and other infrastructures. We also get orthorectified aerial photography from DOT during the fair.	DOT Photogrammetry has been gracious enough to fly orthorectified photography during the State Fair over the last few years. We map our datasets using this photography. Without their photography we could not afford to map the fair as accurately as we do. Without GIS the organizing of fair vendors would be impacted and largely held as institutional knowledge by one person.	To share, document and disseminate information on vendors, rides, attractions and general location information. The primary purpose of the vendor data is to track detailed site locations and assure similar products are distributed through the fairgrounds. Vendor location information is also used by food inspectors to assure public health. The data is commonly used by public safety including the American Red Cross, to communicate the locations of incidents during the fair.
AGR	Statewide Standardized Parcels	County governments create the parcel datasets but the attributes come in 100 formats. NCDA&CS obtains the county data from GTM and spends between 6 and 9 thousand dollars annually standardizing the attributes.	To quickly identify who owns the land where we have projects. To send communications to land owners within project boundaries.



AGR	Natural Heritage Program's GIS datasets	From the Natural Heritage program in DENR	To identify where natural heritage site and occurrences are in NC.
DCR	Orthoimagery, all years	NC OneMap	Site mapping
DCR	Tax parcels	NC OneMap; county GIS offices	Historic property and district boundary mapping
DCR	NCDOT boundaries and roads	NCDOT	Navigation
DCR	Miscellaneous street maps and background imagery.	ESRI	Navigation
DCR	USGS_Scans (hand-marked HPO field maps)	Historic Preservation Office paper map files.	Site mapping; review and comparison of old and new data
DCR	Orthoimagery, all years	NC OneMap	Site mapping
DCR	Tax parcels	NC OneMap; county GIS offices	Historic property and district boundary mapping
DCR	NCDOT boundaries and roads	NCDOT	Navigation
DCR	Miscellaneous street maps and background imagery.	ESRI	Navigation
DCR	USGS_Scans (hand-marked HPO field maps)	Historic Preservation Office paper map files.	Site mapping; review and comparison of old and new data
DOA	State Owned Complex Layer	State Property Office	Maintain inventory of State Owned Land
DOA	State Owned Building Layer	State Property Office	Maintain inventory of State Owned Buildings
DOA	County Parcel Layers	Department of Agriculture	Quality Control
DOA	Imagery	NC OneMap	Quality Control
DOA	Roads	NCDOT	Quality Control
DOA	Hydrography	NC OneMap	Quality Control
DCR	Miscellaneous street maps and background imagery.	ESRI	Navigation
DCR	USGS_Scans_OSA	Office of State Archaeology paper map files	Site mapping
DCR	Orthoimagery, all years	NC OneMap	Site mapping
DCR	Tax parcels	NC OneMap; county GIS offices	Site area boundary and review area boundary mapping
DCR	NCDOT boundaries and roads	NCDOT	Navigation
DCR	Miscellaneous street maps/background imagery	ESRI	Navigation
WRC	County Boundary	NC OneMap, NC Geodetic Survey	Mapping, analysis
WRC	Orthoimagery	NC OneMap	Mapping, engineering design
WRC	County Parcels	NC OneMap, individual counties, other NC state agencies	Mapping, analysis
WRC	State Owned Lands	NC OneMap, NC DOA's SPO	Mapping, analysis
WRC	Federally Owned Lands	NC OneMap, federal agencies	Mapping, analysis
WRC	NC DOT Roads	NC OneMap, NC DOT	mapping
WRC	Hydrology – various datasets	NC OneMap, NC DWR, USGS	Mapping, engineering design, analysis
WRC	Descriptive boundaries of joint-coastal-inland waters	NC DMF	Mapping, analysis, grant writing
WRC	Municipal Boundaries	NC OneMap	mapping
WRC	Contour and elevation data	NC DOT, NC OneMap, NC Flood Maps	Mapping, engineering design
WRC	Wetlands	NC OneMap, NC DCM, USGS	Mapping, analysis, grant writing
WRC	Railroads	NC OneMap	Mapping
WRC	Submerged Aquatic Vegetation (SAV)	NC OneMap, NC DMF	Mapping, engineering design, analysis, grant writing
WRC	Coastal Fishery Nursery Areas	NC DMF, NC OneMap	mapping, analysis
WRC	Inland Primary Nursery Areas (IPNA)	NC CGIA ?	Mapping, analysis, grant writing
WRC	Biodiversity/Wildlife Habitat Assessment (BWAH)	NC OneMap, NC DENR's Natural Heritage Program	Mapping, analysis, grant writing
WRC	Natural Heritage Element Occurrences, Dedicated Nature Preserves, Managed Areas & Natural Areas	NC OneMap, NC DENR's Natural Heritage Program	Mapping, analysis, grant writing
WRC	Bailey's Ecoregions	Various federal and other sources	Mapping, analysis, organization
WRC	River Basins	NC DWR	Mapping, analysis, grant writing
DOI	County boundary	NC OneMap (all)	General mapping and presentation of data



DOI	Cities		
DOI	Fire Districts & Stations	We develop the fire districts after the inspection.	Fire Insurance ISO ratings
DOI	Municipalities		
DOI	Roads – ISRN		
DOI	State Owned Building Footprints		Building Code compliance
DOI	State Owned Land Universities		
DOI	Orthophoto imagery		
DOI	Photovoltaic power plant locations		
DPI	County Centerline File	Most school districts are using a centerline file that initially was imported from a county GIS system export. From that point forward, most school systems edit their own map, although some import updated county government centerline data. Some districts are still using a centerline file that began as a scratch-digitized dataset in the early 1990's or before.	1. Addressing – for locating students, bus stops and schools
DPI	Other data generated within TIMS for use in school bus routing: Student addresses; school attendance boundaries; bus stops; bus routes.		
NCEM	Benchmark control		
NCEM	Flood zones lines and flood zone area - Cobra zones, High Water Marks, Cross sections,	NCEM	Show the 100 and 500 yr. flood zone to determine the hazard area for FEMA
NCEM	Flood Rasters	NCEM	Allows for the site to function and show the height of the water at any location of the flooded areas
NCEM	Building Footprints	NCEM	Used to show what is within the flood zone. Risk is calculated within each building to determine what the risk is per structure
NCEM	Parcels\ tax data	Counties	Used to apply information to the buildings for usage and value as well as size of structure
NCEM	Public Safety locations	NCEM	Used for department efficiencies
NCEM	Animal farms and locations	Agriculture	Used during event for emergency response
NCEM	Master facilities (healthcare)	OEMS- AG	Used during event for emergency response
NCEM	Nuclear Facilities and power plants	NCEM	Used during event for emergency response
NCEM	Dams	DENR	Used for water release studies
NCEM	Aviation locations	DOT	Used for flight information in data collection.
NCEM	Rail roads	DOT	Used for emergency response and analysis for events
NCEM	State property	State Property	Used for analysis of risk,
NCEM	State and county owned lands	State Property and counties	Used for analysis of risk
NCEM	Federal owned lands	NC OneMap	Used as reference
NCEM	Shorelines	Coastal in DENR	Used as coastal reference for engineering studies and coastal modeling as well as remote sensing information
NCEM	Streamlines	NCEM	Product from flood studies. Several layers
NCEM	State Parks	NC OneMap	Used as a background layer
NCEM	County and municipal boundaries	Geodetic Survey and counties	Used as the boundaries
NCEM	ETJ's	Counties	Required for FEMA products
NCEM	Imagery	NC OneMap	background
NCEM	LiDAR	NCEM	Baseline for all terrain and flood studies
NCEM	Census Population Data	Census Bureau	Population for impacted areas. Used for emergency response
NCEM	Precipitation	University of Iowa	Used for emergency response



NCEM	Flood gages	USGS NCEM	Used for flood alert and warning
NCEM	Gas Stations	Agriculture	Used for emergency response
NCEM	Towers- microwave and phone	Private	Used for emergency response
NCEM	Water and sewer-	DENR	Used for emergency response and risk impact
NCEM	Fire Stations and districts	Agriculture	Emergency response
NCEM	Emergency Medical Services	Agriculture-OEMS	Emergency response
NCEM	Law enforcement- police, highway patrol, sheriff	NCEM- Counties	Emergency response
NCEM	Court systems	DOJ	Emergency response
NCEM	Roads	DOT	Base for many projects
NCEM	Bridges		
CGIA	Orthoimagery	CGIA	Public discovery and access; analysis for technical services; mapping
CGIA	Parcels	CGIA/county governments	Public discovery and access; analysis for technical services and data development
CGIA	Address Points (residential, commercial, ancillary)	CGIA/county and municipal governments	911 call routing; public discovery and access; analysis for technical services and data development
CGIA	Street centerlines	NCDOT	911 call routing; Public discovery and access; analysis for technical services; mapping
CGIA	County Boundaries	Department of Public Safety, Geodetic Survey	Analysis, planning, mapping, information requests
CGIA	Municipal Boundaries	NCDOT	Analysis, planning, mapping, information requests
CGIA	Geodetic Control	Department of Public Safety, Geodetic Survey	Public discovery and access, control for orthoimagery projects
CGIA	Digital Elevation Models	NCDOT, derived from LiDAR from Department of Public Safety, Geospatial and Technology Management	Public discovery and access, elevation for orthoimagery projects, analysis and mapping
CGIA	Watersheds and basins	Department of Environment and Natural Resources, Division of Water Resources	Public discovery and access, mapping, information requests, and analysis
CGIA	Agricultural Imagery	Department of Agriculture & Consumer Services	Public discovery and access; information requests and analysis
CGIA	Streams	Department of Environment and Natural Resources, Division of Water Resources	Public discovery and access; analysis, mapping, and data development
CGIA	Streams, detailed	CGIA	Public discovery and access; analysis, mapping and data development
CGIA	State-Owned Land	Department of Administration, State Property Office	Public discovery and access; information requests and analysis
CGIA	Land Managed for Conservation and Open Space	Department of Environment and Natural Resources, Natural Heritage Program	Public discovery and access; information requests and analysis
CGIA	Railroads, airports, bridges and other transportation	NCDOT	Public discovery and access, analysis, planning, mapping, information requests
CGIA	Flood zones	Department of Public Safety, Geospatial and Technology Management	Analysis, planning, mapping, information requests
CGIA	Community colleges and universities	CGIA	Public discovery and access
CGIA	Census boundaries and selected statistics	US Census Bureau / State Data Center	Public discovery and access; analysis; mapping
CGIA	Hazardous waste (multiple files)	Department of Environment and Natural Resources, Division of Waste Management	Public discovery and access; analysis;
CGIA	Historic districts and buildings	Department of Cultural Resources, State Historic Property Office	Public discovery and access
CGIA	Hospitals	Department of Health and Human Services, State Center for Health Statistics	Public discovery and access; analysis; mapping



CGIA	Geology	Department of Environment and Natural Resources, NC Geological Survey	Public discovery and access; analysis; mapping
CGIA	Land Cover	US Geological Survey	Analysis
CGIA	Natural Heritage Program Areas	Department of Environment and Natural Resources, Natural Heritage Program	Public discovery and access; analysis; mapping
CGIA	NC House and Senate and Congressional Districts	NC General Assembly	Public discovery and access; mapping
CGIA	Public Water Supply Sources	Department of Environment and Natural Resources, Division of Water Resources	Public discovery and access; analysis; web application
CGIA	Public Water Systems (service areas)	CGIA	Public discovery and access; analysis; mapping
CGIA	Sewer Systems (service areas)	CGIA	Public discovery and access; analysis; mapping
CGIA	Schools, nonpublic	Department of Administration	Public discovery and access; analysis; mapping
CGIA	Schools, public	CGIA/DPI	Public discovery and access; analysis; mapping
CGIA	Shellfish Growing Areas	Department of Environment and Natural Resources, Division of Marine Fisheries	Public discovery and access; analysis; mapping
CGIA	Soils	US Department of Agriculture / NC Department of Agriculture & Consumer Services	Public discovery and access; analysis; mapping
CGIA	National Pollution Discharge Elimination Sites	Department of Environment and Natural Resources, Division of Water Resources	Public discovery and access; analysis; mapping
CGIA	Water Supply Watersheds	Department of Environment and Natural Resources, Division of Water Resources	Public discovery and access; analysis; mapping
CGIA	Surface Water Intakes	Department of Environment and Natural Resources, Division of Water Resources	Public discovery and access; analysis; mapping
DOT	NCDOT LRS Arcs	NCDOT GIS	NCDOT priority road system
DOT	NCDOT LRS Routes	NCDOT GIS	NCDOT priority route system
DOT	NCDOT Road Characteristics	NCDOT GIS	NCDOT priority road characteristics
DOT	NCDOT Road Shields (Labels)	NCDOT GIS	Statewide shields and labels on state maintained roads
DOT	NCDOT Milemarker Hatching	NCDOT GIS	Milemarker hatching generated from route mileage values for LRS Routes
DOT	NCDOT Speed Limits	NCDOT Traffic Safety	Non-statutory speed limits
DOT	NCDOT Ordinances	NCDOT Traffic Safety	Ordinance use of the road network
DOT	NCDOT Truck Network	NCDOT Traffic Safety	Routes allowed for use by trucks
DOT	NCDOT NCMIN Tiers	NCDOT GIS	Tier designations on NCDOT priority roads
DOT	NC County Boundaries	NCDOT GIS	NC county boundaries provided as polygon, lines, and shorelines
DOT	NCDOT Division Boundaries	NCDOT GIS	NCDOT Division boundaries
DOT	NCDOT District Boundaries	NCDOT GIS	NCDOT District boundaries
DOT	NC State Boundary	NCDOT GIS	NC State Boundary
DOT	NC Municipal Boundaries	NCDOT GIS	Powell Bill compliant city boundaries
DOT	NC Integrated Statewide Road Network (ISRN)	NCDOT GIS	All NC road system for geocoding & routing
DOT	NC LiDAR surface Grid	NCDOT GIS	3D surface analysis
DOT	NC LiDAR Elevation Contours	NCDOT GIS / NC OneMap	Elevation contours from LiDAR
DOT	NC FEMA Elevation Data	FEMA	Elevation and contours
DOT	NC Flood maps	NC Floodplain Mapping	Flood maps
DOT	NCDOT Bridges	NCDOT GIS	NCDOT maintained bridge locations
DOT	NC Smoothed urbanized boundaries	NCDOT Strategic Planning	Smoothed 2000 census urban areas
DOT	NC MPO/RPO Boundaries	NCDOT Strategic Planning	MPO & RPO boundaries
DOT	NCDOT Bike Routes	NCDOT Bicycle & Pedestrian	Bike routes
DOT	NCDOT Bike and Pedestrian Crash Data	NCDOT Bicycle & Pedestrian	2007-2011 statewide bike and pedestrian crash data
DOT	NCDOT Bike and Pedestrian Facilities	NCDOT Bicycle & Pedestrian	Geodatabase of existing and proposed bike/pedestrian facilities - project is in initial stages



DOT	NCDOT Rail tracks	NCDOT Rail	NC rail tracks
DOT	NCDOT Rail crossings	NCDOT Rail	NC rail crossings
DOT	NCDOT Rail facilities	NCDOT Rail	NC rail facilities
DOT	NCDOT Railroad Trespasser Sites	NCDOT Rail	Reporting layer for stakeholders
DOT	NCDOT Train Crash Sites	NCDOT Rail	Reporting layer for stakeholders
DOT	NCDOT Amtrak Train Stations	NCDOT Rail	Reference layer
DOT	NCDOT Functional Class	NCDOT Transportation Planning	Functional classification for NCDOT priority roads
DOT	NCDOT AADT Segments	NCDOT Traffic Survey	Annual Average Daily Traffic – linear segments
DOT	NCDOT AADT stations	NCDOT Traffic Survey	Annual Average Daily Traffic – Count stations
DOT	NCDOT STIP – Roads	NCDOT TIP	Transportation improvement Program road projects
DOT	NCDOT STIP – Bridges	NCDOT TIP	Transportation improvement Program bridge projects
DOT	NCDOT Prioritization - Projects	NCDOT Prioritization	Prioritization of potential future projects
DOT	NCDOT Prioritization - TMC	NCDOT Prioritization	
DOT	NCDOT Prioritization - Capacities	NCDOT Prioritization	
DOT	NCDOT Prioritization - Non-Interstates STRAHNet	NCDOT Prioritization	
DOT	NCDOT Prioritization - NC Bike Incidents	NCDOT Prioritization	
DOT	Esri Street Map Premium	Esri / NAVTEQ	NAVTEQ street map data
DOT	NCDOT Comprehensive Transportation Planning (CTP)	NCDOT Transportation Planning	Long range transportation planning projects
DOT	NCDOT Exit points	NCDOT Asset Management	Exit number/letters for off ramp locations
DOT	Geotechnical Borings	NCDOT Geotechnical	Track and display geotechnical boring locations
DOT	CME Boundaries	NCDOT Right-of-way	Division 1 CME boundaries
DOT	NCDOT Maintenance Yards	NCDOT Asset Management	NCDOT maintenance yards
DOT	NCDOT Residue Property	NCDOT Division Offices	NCDOT lands purchased for projects
DOT	Office of State Properties Facilities	NC Office of State Properties	State owned facilities
DOT	NCDOT Facilities	NCDOT Facility Management	NCDOT owned facilities
DOT	NCDOT Ferry Routes	NCDOT Division 1	NCDOT Ferry routes
DOT	NCDOT Ferry Route Centroids	NCDOT Division 1	
DOT	NCDOT Ferry Dolphin	NCDOT Division 1	NCDOT unattached man-made marine structure
DOT	NCDOT Ferry facilities	NCDOT Division 1	NCDOT Ferry facilities
DOT	NCDOT Ferry ramps	NCDOT Division 1	NCDOT Ferry ramps
DOT	NCDOT Ferry 30 Mile Buffers	NCDOT Division 1	30 mile buffers from each ferry location
DOT	NCDOT Piers	NCDOT Divisions	Piers utilized by NCDOT Division offices
DOT	Public School Location Map	NCDOT	Inventory Resource and Planning tool for Maintenance Activities on School Bus Drives
DOT	Volunteer Fire Departments and EMS Stations Location Map	NCDOT	Inventory Resource and Planning tool for Maintenance Activities on VFD and EMS Station Drives
DOT	State Highway Patrol Stations Location Map	NCDOT	Inventory Resource and Planning tool for Maintenance Activities on SHP drives and parking.
DOT	Snow Removal Sections Maps by County	NCDOT	Inventory Mapping and Planning
DOT	Maintenance Sections by County	NCDOT Asset Management	Create and implement cyclical maintenance plans within each county. Also used to channel information regarding planned activities to other NCDOT operational units and planning organizations.
DOT	Striped Road Inventory by County	NCDOT Asset Management	Create and budget for striping plans based on cyclical maintenance plans. Also used to channel information regarding planned activities to other NCDOT operational units and planning organizations.



DOT	Current and Future Pavement Maintenance Plans	NCDOT Asset Management	Plan and budget for future pavement maintenance activities based on cyclical maintenance plans. Also used to channel information regarding planned activities to other NCDOT operational units and planning organizations.
DOT	Current and Future Vegetation Management Plans	NCDOT	Plan and budget for future vegetation management activities based on cyclical maintenance plans. Also used to channel information regarding planned activities to other NCDOT operational units and planning organizations.
DOT	Pavement Condition Scores	NCDOT Pavement Management	Various pavement maintenance planning maps created using the pavement conditions scores and skid test results
DOT	NCDOT Aerial Imagery	NCDOT Photogrammetry	Imagery/orthoimagery collected for specific project locations
DOT	NCDOT Vector Data(planimetric & terrain)	NCDOT Photogrammetry	Vector generated data from orthoimagery base
DOT	NCDOT Aerial Images with Mission Boundaries	NCDOT Photogrammetry	Image holdings layer for search abilities
DOT	State Water Ways	US Army Corps	State water channels
DOT	NCDOT Planned Paint Routes	NCDOT Asset Management	Plan and track paint crews
DOT	NCDOT Division Resurfacing Maps	NCDOT Asset Management	Resurfacing projects
DOT	NCDOT DMS Locations	NCDOT STOC	Dynamic message signs
DOT	NCDOT CCTVs	NCDOT STOC	Highway cameras
DOT	TIMS Incidents	NCDOT STOC	Current road closures, lane closures, etc.
DOT	TIMS Adverse Weather	NCDOT STOC	Current county wide adverse weather conditions
DOT	NCDOT Non-NBIS Pipes	NCDOT Division 6	Location of all Non-NBIS Pipes for Division 6. This is all pipes greater than 54" and less than 20 foot in length (Federal Size).
DOT	NCDOT Cross Line Pipes	NCDOT Division Offices	Shows location of all cross line pipes under 54". It shows depth, size, length, type, year installed, and any comments.
DOT	NCDOT Proposed Resurfacing & BST routes	NCDOT Asset Management	Shows other departments proposed locations of resurfacing and bst routes
DOT	NCDOT History of Resurfacing and BST 2006 to 2013	NCDOT Asset Management	These layers show the history of where we have esurfaced since 2006.
DOT	NCDOT Contract Resurfacing	NCDOT Asset Management	Tracks Contract Resurfacing roads
DOT	NVDOT AST (Rodoil Unit)	NCDOT Asset Management	Tracks new work and retreated AST roads
DOT	NCDOT Bridge Projects	NCDOT Asset Management	Tracks bridge replacements and detours
DOT	NCDOT Crack Sealing	NCDOT Pavement Management	Tracks state forces and contract crack sealing roads
DOT	NCDOT DDC	NCDOT Asset Management	Track DDC projects
DOT	NCDOT Division Assets Property	NCDOT Asset Management	Tracks property that is annually inventoried
DOT	NCDOT Pavement History	NCDOT Pavement Management	Tracks various different road treatments (hot in place, shingles, mirco...etc.)
DOT	NCDOT Road Addition Petitions	NCDOT Asset Management	Local roads to be added to the state system
DOT	NCDOT Plant Beds	NCDOT Asset Management	Track plant beds across the division
DOT	Billboards	NCDOT Asset Management	Inventory of billboards on state maintained roads
DOT	NCDOT Guardrails	NCDOT Asset Management	Inventory of guardrails on state maintained roads
DOT	NCDOT Capped Island	NCDOT Asset Management	Inventory of capped islands
DOT	NCDOT Small Pipe Inventory	NCDOT Asset Management	Inventory of small pipes
DOT	NCDOT Remarketing Contract	NCDOT Asset Management	Proposed traffic lines for contract for 2013
DOT	NCDOT Remarketing	NCDOT Asset Management	Track pavement markings for Traffic Services



DOT	NCDOT Highway Safety Improvement Program (HSIP) Locations	NCDOT Traffic Safety	The purpose of this dataset is to spatially display sites that meet HSIP warrants.
DOT			
DOT	NCDOT Crash Data	NCDOT Traffic Safety	Multitude of datasets that display crash data in a spatial format.
DOT	NCDOT 2008 – 2012 Fatal Crashes	NCDOT Traffic Safety	Fatal crash locations on state maintained roadways
DOT	NCDOT Stormwater Controls – BMPs	NCDOT Hydraulics	Locations of stormwater controls in North Carolina
DOT	NCDOT Illicit Discharge Point	NCDOT Hydraulics	Illicit discharges are generally any discharge into a storm drain system
DOT	NCDOT Industrial Outfalls	NCDOT Hydraulics	This layer contains the locations of industrial outfalls in North Carolina.
DOT	Implicit Outfalls 2009 [24k Streams]	NCDOT Hydraulics	Support the various program areas to ensure compliancy with the various management measures as outlined in the Department's NPDES stormwater discharge
DOT	Implicit Outfalls 2009 [19 Western Counties]	NCDOT Hydraulics	This layer contains the locations of implicit outfalls in North Carolina for the 19 western counties included in the Streambed Mapping Project.
DOT	Field Inventory Program database	NCDOT Hydraulics	Purpose: to support the various program areas to ensure compliancy with the various management measures
DOT	NCDOT Project CAD Files and Surveys	NCDOT Hydraulics	This data includes design and survey data in CAD files generated by Hydraulic Design Unit during hydraulic design phase of NCDOT projects.
DOT	NCDOT Division 1 NonNBIS Pipes	NCDOT Division 1	Location, condition, asset number for all pipes large than 48" but not considered bridge structure
DOT	NCDOT Division 1 Maintenance Pipes	NCDOT Division 1	Location, condition, asset number for all pipes smaller than 48"
DOT	NCDOT Division 1 Septic Fields	NCDOT Division 1	Location of Septic fields of state facilities in Div 1
DOT	NCDOT Division 1 Traffic Cabinets	NCDOT Division 1	Location, asset, condition of traffic signal cabinets
DOT	NCDOT Division 1 Traffic Count Station	NCDOT Division 1	Location, asset, condition of traffic signal count stations
DOT	NCDOT Division 1 Traffic Count Sensor	NCDOT Division 1	Location, asset, condition of traffic signal sensors
DOT	NCDOT Division 1 Traffic Dynamic Message Sign	NCDOT Division 1	Location, asset, condition of traffic message signs
DOT	NCDOT Division 1 Traffic Junction Box	NCDOT Division 1	Location, asset, condition of traffic junction box's
DOT	NCDOT Division 1 Traffic Overhead Signs	NCDOT Division 1	Location, asset, condition of traffic overhead signs
DOT	NCDOT Division 1 Traffic Signal Pole	NCDOT Division 1	Location, type, asset, condition of traffic poles
DOT	NCDOT Division 1 Facilities	NCDOT Division 1	Location, asset, condition of facilities
DOT	NCDOT Division 5 Roadside Environmental Herbicide Map	NCDOT Division 5	A GIS map of locations in Division 5 where herbicides are applied.
DOT	NCDOT Division 5 Shoulder Drain Locations	NCDOT Division 5	A GIS map of shoulder drain locations across Division 5.
DOT	NCDOT Various Division 5 Project Surveys	NCDOT Division 5	Land surveys needed for various Division 5 projects.
DOT	NCDOT Drainage Features of Stokes County	NCDOT Divisions	We are currently collecting the location and condition of all the drainage features located on state maintained roads in Stokes County
DOT	NCDOT Archaeological Site Boundaries	NCDOT Archaeological	Cultural resources review spatial data, like archaeological site locations, is used in project planning and decision making for NEPA and Section 106 of the National Historic Preservation Act



DOT	NCDOT Archaeological Areas of Potential Effects	NCDOT Archaeological	Archaeological Areas of Potential Effects (APE) demarcates the project area for review for cultural resources specific to archaeology.
DOT	Cemeteries, NCDOT Statewide	NCDOT Archaeological	An inventory of cemeteries is being compiled across the state. This data will help guide planning and cultural resources management.
DOT	NCDOT – Driveway Permits	NCDOT	Location and information about approved driveway permits.
DOT	NCDOT Milemarkers	NCDOT GIS	Point feature class of mile marker posts. Stagnate layer created in 2007
DOT	NCDOT Fuel Depots	NCDOT Asset Management	Point feature class of NCDOT fuel depots; for internal use only.
DOT	NCDOT PBMC Infrastructure Inventory	NCDOT Asset Management	This is the infrastructure inventory used to assess contractor performance on Division 10 interstate maintenance contract.
DOT	NCDOT NCTA Infrastructure Inventory	NCDOT Asset Management	Inventory of roadway assets along the turnpike corridors in Division 5. Used for condition assessment/performance measurement.
DOT	NCDOT 2012 Airport Pavement Management System	NCDOT Aviation	Shape files of the 63 general aviation airport pavement edge lines (footprint)
DOT	NCDOT Airport Runway and Approach Data	NCDOT Aviation	To map/identify runways and runway approach obstructions for public use airports.
DOT	NCDOT Geotech Subsurface Locations	NCDOT Geotechnical	To provide the x,y locations, basic descriptions, and server location of completed subsurface investigation reports
DOT	NCDOT GeoEnvironmental Section Environmental Data	NCDOT Geotechnical	To maintain and access locations ongoing NCDOT GeoEnvironmental data and locations of environmental concerns
DOT	NCDOT Wetland Model	NC DENR	A raster depicting wetland locations as a result of LiDAR-based prediction model. The wetland locations are used to aid in the assessment and avoidance of potential wetland impacts during the permitting process.
DOT	NCDOT Kinston Bypass Ditch Lines	NCDOT	These ditch line data were generated to help estimate lateral drainage effect on wetlands for the Kinston bypass project R-2553.
DOT	NCDOT NES Mitigation Geodatabase	NCDOT	This database stores the boundary and tabular data associated with our on- and off-site mitigation sites throughout the state. It helps fulfill our regulatory commitment for record-keeping and reduces research time.
DOT	NCDOT Kinston Bypass Lateral Effect Polygons	NCDOT	Polygons representing the estimated lateral drainage effect of ditches for Kinston bypass, R-2553
DOT	NCDOT Transportation Roadway Design Plans	NCDOT Roadway Design	Geometrically describing the alignments of roadways and the right of way and easement boundaries
DOT	NCDOT IRI (International Roughness Index)	NCDOT Pavement Management	Statewide Pavement Condition Survey, International Roughness Index
DOT	NCDOT NHS (National Highway System)	NCDOT TIP Unit	Statewide National Highway System
DOT	NCDOT Pavement Conditions	NCDOT Pavement Management	Statewide Pavement Condition Survey – Rating Number
DOT	Local Agency Centerline Data	NC Counties and Municipalities	Centerline road data
DOT	Local agency Parcel Data	NC Counties	Parcels
DOT	NC Soil Survey Data	NC Counties	County by county coverage
DOT	Census – Blocks, BG, Tracks	Census Bureau	Blocks, BG, and tracks
DOT	Census – TIGER	Census Bureau	TIGER linework



DOT	NC ITS Devises	NCDOT Traffic Systems Operations	A geo-located inventory of ITS devices in NC. This includes Dynamic Message Signs, Closed Circuit TV traffic cameras, etc.
DOT	APNET – Submerged Aquatic Vegetation	Albemarle-Pamlico National Estuary Partnership	Areas identified in this layer may require specific conservation and mitigation measures. Avoidance of these areas is encouraged.
DOT	NC Conservation Tax Credit Properties	NC DENR	Documents properties that re certified by the Conservation Tax Credit Program and are protected in perpetuity. Impacts should be avoided.
DOT	NC Critical Habitat for Threatened and Endangered Species	USFWS	This layer identifies habitat for specific federally endangered species. Coordinate with USFWS.
DOT	NC Landscape Habitat Indicator Guides	NC DENR	This dataset identifies core areas important for supporting species or ecosystems that require landscape-scale blocks of habitat to survive. Occurrence data for indicator species are used to determine in-tact habitat areas that are mapped from aerial photography. This dataset is important for showing unfragmented landscapes statewide for use in planning.
DOT	NC Historic Resources	NC Historic Preservation Office	This layer includes National Register (NR) historic district locations, as well as Determined Eligible (DE/DOE) sites.
DOT	NCWRC Boat Access	CGIA	Various uses within organization
DOT	Districts- NC house	CGIA	Various uses within organization
DOT	Districts- NC senate	CGIA	Various uses within organization
DOT	Districts-congressional	CGIA	Various uses within organization
DOT	EMS Location	CGIA	Various uses within organization
DOT	hydraulics units- 14 digits	CGIA	Various uses within organization
DOT	Hydrologic Units - River Basins	CGIA	Various uses within organization
DOT	Hydrologic Units - Sub Basins	CGIA	Various uses within organization
DOT	Hydrography - 1:24,000-scale	CGIA	Various uses within organization
DOT	Hydrography - 1:24,000-scale	CGIA	Various uses within organization
DOT	Hydrography - 1:24,000-scale	CGIA	Various uses within organization
DOT	Hydrography - Major	CGIA	Various uses within organization
DOT	Hydrography - NC Streambed Mapping Project	CGIA	Various uses within organization
DOT	Pre-Regulatory Landfill	CGIA	Various uses within organization
DOT	Lands Managed for Conservation and Open Space	CGIA	Various uses within organization
DOT	Potential Emergency Shelters	CGIA	Various uses within organization
DOT	Swine Lagoons	CGIA	Various uses within organization
DOT	Stream Gaging Stations USGS points	CGIA	Various uses within organization
DOT	Townships	CGIA	Various uses within organization
DOT	Zip Codes	CGIA	Various uses within organization
DOT	Fire Stations	CGIA	Various uses within organization
DOT	Hospitals	CGIA	Various uses within organization
DOT	NC Landmarks	CGIA	Various uses within organization
DOT	Colleges-Universities	CGIA	Various uses within organization
DOT	Churches	CGIA	Various uses within organization
DOT	Cemeteries	CGIA	Various uses within organization
DOT	Century Farms July 2012	CGIA	Various uses within organization
DOT	Golf Courses	CGIA	Various uses within organization
DOT	Public Buildings	CGIA	Various uses within organization
DOT	Correctional Institutions	CGIA	Various uses within organization
DOT	EEPdatabase 2012	CGIA	Various uses within organization
DOT	Mitigation polys 20130419	CGIA	Various uses within organization
DOT	NC Dam Locations 2012	CGIA	Various uses within organization
DOT	NC Mines	CGIA	Various uses within organization
DOT	2012 DWQ Assessment - 303d	CGIA	Various uses within organization
DOT	2013 DWQ Assessment - 303d	CGIA	Various uses within organization
DOT	Wild_Scenic_Rivers	CGIA	Various uses within organization



DOT	Clean Water Mgmt Trust Fund Properties	CGIA	Various uses within organization
DOT	Shellfish Growing Areas	CGIA	Various uses within organization
DOT	PaddleTrails_AccessPoints	CGIA	Various uses within organization
DOT	National Parks	CGIA	Various uses within organization
DOT	National Forests	CGIA	Various uses within organization
DOT	Law Enforcement Locations	CGIA	Various uses within organization
DOT	Land Water Consv Fund Properties_6f	CGIA	Various uses within organization
DOT	Land Trust Priority Areas	CGIA	Various uses within organization
DOT	Coastal Reserves	CGIA	Various uses within organization
DOT	County Seats	CGIA	Various uses within organization
DOT	Hazardous WasteSites	CGIA	Various uses within organization
DOT	Nursing Homes	CGIA	Various uses within organization
DOT	Medical Facilities	CGIA	Various uses within organization
DOT	NRCS_Soils_Primefarmland_mapservice	CGIA	Various uses within organization
DOT	NC1Map_Political	CGIA	Various uses within organization
DOT	NC1Map_Emergency_Law_Enforcement	CGIA	Various uses within organization
DOT	NC1Map_Animal	CGIA	Various uses within organization
DOT	NC1Map_Landcover	CGIA	Various uses within organization
DOT	NC1Map_Hurricanes	CGIA	Various uses within organization
DOT	NC1Map_Health	CGIA	Various uses within organization
DOT	NC1Map_Habitat	CGIA	Various uses within organization
DOT	NC1Map_Energy	CGIA	Various uses within organization
DOT	EnvironmentalJustice_2000	CGIA	Various uses within organization
DOT	2010_Orthoimagery	CGIA	Various uses within organization
DOT	Coastal_Orthoimagery_Imagery_2012	CGIA	Various uses within organization
DOT	Greenways	CGIA	Various uses within organization
DOT	NC1Map_Emergency_Law_Enforcement	CGIA	Various uses within organization
DOT	Conservation tax credit properties	CGIA	Various uses within organization
DOT	Land Trust Conservation Properties	NC Conservation Fund	Various uses within organization
DOT	NC beach access sites	CGIA	Various uses within organization
DOT	Geology	CGIA	Various uses within organization
DOT	Geology- dikes	CGIA	Various uses within organization
DOT	Geology- faults	CGIA	Various uses within organization
DOT	Hazard substance disposal sites	CGIA	Various uses within organization
DOT	Stormwater_reference20121231	CGIA	Various uses within organization
DOT	Shellfish Growing Areas	DENR	Various uses within organization
DOT	Ambient water quality monitoring sites	CGIA	Various uses within organization
DOT	Animal operations permit	CGIA	Various uses within organization
DOT	Discharging coalitions monitoring sites	CGIA	Various uses within organization
DOT	Fish community sampling sites	CGIA	Various uses within organization
DOT	High quality water outstanding resource water	CGIA	Various uses within organization
DOT	Local Watershed Plans - EEP	CGIA	Various uses within organization
DOT	Natural Heritage Element Occurrences	CGIA	Various uses within organization
DOT	Paddle Trails - Coastal Plain	CGIA	Various uses within organization
DOT	Public Water Supply Water Sources	CGIA	Various uses within organization
DOT	Significant Natural Heritage Areas	CGIA	Various uses within organization
DOT	Water Supply Watershed	CGIA	Various uses within organization
DOT	State Parks	DENR-Parks and Recreation	Various uses within organization
DOT	Employment Data	Dept. Of Commerce	Various uses within organization
DOT	Coastal Marinas points	DENR Coastal management	Various uses within organization
DOT	Schools - Private	DOA-CGIA	Various uses within organization
DOT	State-Owned Lands	DOA-CGIA	Various uses within organization
DOT	Schools - Public	DPI-CGIA	Various uses within organization
DOT	DWQ Classifications	DWQ	Various uses within organization
DOT	TroutStreamsDWQ_arcs	DWQ	Various uses within organization
DOT	TroutWatersWRC_polys	DWQ	Various uses within organization
DOT	Hydrography	DWQ Headwater Stream Mapping model	Various uses within organization
DOT	Landcover - 1996	EarthSat-CGIA	Various uses within organization
DOT	Landfills	EPA-CGIA	Various uses within organization
DOT	Airport Reference Point	Federal Aviation Administration (FAA)	Various uses within organization



DOT	Runway End Points	Federal Aviation Administration (FAA)	Various uses within organization
DOT	Electronic Airport Layout Plans	Federal Aviation Administration (FAA)	Various uses within organization
DOT	Flood Risk Information System (FRIS)	FRIS	Various uses within organization
DOT	Hospital locations	Health/Human Services-CGIA	Various uses within organization
DOT	Asphalt Plants	NCDOT HICAMS	Asphalt plants
DOT	Watershed boundaries generated from NC Streamstats	USGS	Various uses within organization
DOT	Hurricane storm surge areas- fast moving storms	National Hurricane Center-CGIA	Various uses within organization
DOT	hurricane storm surge areas- slow moving storms	National Hurricane Center-CGIA	Various uses within organization
DOT	County Streets	NC Counties	Various uses within organization
DOT	HPOWeb	NC Dept. of Cultural Resources	Various uses within organization
DOT	NC CREWS wetland areas	NC Division of Water Quality	Various uses within organization
DOT	DWQ Permitted Animal Operation Facilities, March 2013	NC DWQ	Various uses within organization
DOT	Point source discharges	NC DWQ	Various uses within organization
DOT	303d stream designations	NC DWQ	Various uses within organization
DOT	EEP database	NC Ecosystem Enhancement Program	Various uses within organization
DOT	Floodzone Maps	NC Flood Map website	Various uses within organization
DOT	LiDAR Flood Maps	NC Flood mapping Program	Various uses within organization
DOT	Flood Maps and Water Quality information	NC Flood Maps	Various uses within organization
DOT	Flood Mapping Hazard	NC Floodplain Mapping	Various uses within organization
DOT	NC Floodplain Mapping LiDAR	NC Floodplain Mapping	Various uses within organization
DOT		NC Wildlife Resources Commission	Various uses within organization
DOT	Public Mountain Trout Waters		
DOT	Anadromous Fish Spawning Areas	NCDMF/CGIA	Various uses within organization
DOT	Fish Nursery Areas	NCDMF/CGIA	Various uses within organization
DOT	North Carolina Gas Stations	North Carolina Department of Agriculture and Consumer Services, Emergency Programs Division	Various uses within organization
DOT	Federal land ownership	North Carolina Natural Heritage Program	Various uses within organization
DOT	NRCS Web Soil Survey	NRCS	Various uses within organization
DOT	Soils - General	NRCS	Various uses within organization
DOT	SSURGO Soils tabular database and supporting spatial layer	NRCS	Various uses within organization
DOT	Landslides	CGIA	Various uses within organization
DOT	Public Libraries	CGIA	Various uses within organization
DOT	Horizontal and Vertical Geodetic Control Data for North Carolina	State Planning, Geodetic Survey	Various uses within organization
DOT	National Wetlands Inventory	USFWS-CGIA	Various uses within organization
DOT	USGS Gages	USGS-CGIA	Various uses within organization
DOT	NC State Gamelands	WRC-CGIA	Various uses within organization
DOT	Post-Secondary Education Sites	US Education Statistics (Cohort Yr 2013)	Understanding relative enrollment, number and types of awards given by each school in NC
DOT	Health Needs By County	UNC-Sheps Center	Comparing top three active health professional by county to respective population to ascertain shortages
DOT	NC Tourism Comparison by County	NC Tourism	Geospatial representation of the Tourism Economic Impact Model
DOT	NC Military Working Lands/Operational Usage	NC Military Affairs Commission	Flight Paths/Training Lands/Air Corridors
DOT	Air Quality Discharge Points	NC DENR-Air Quality Section	Locations of air pollution sources including manufacturing facilities, power plants, food storage facilities, and heating plants.



DOT	Benthic Monitoring Results	NC DENR - DWQ	Locations where benthic macroinvertebrate monitoring has occurred to enhance water quality assessment and plan review of Trust Fund project applications. The file enables users to review the rating of water quality for each sampling site based on the monitoring results.
DOT	Bottom Sediment Sampling Sites	Albemarle-Pamlico Estuarine Study Research Project Researcher - John Wells	Locations of bottom sediment sample sites researched by John Wells; Albemarle-Pamlico Estuarine Study (APES) Publication 89.05: A Scoping Study of the Distribution, Composition, and Dynamics of Water-Column and Bottom Sediments: Albemarle-Pamlico Estuarine System.
DOT	Census Zipcode Tabulation Areas, 2000	Census Bureau	
DOT	Census Environmental Justice, 2000	Census Bureau	
DOT	Closed Shellfish Harvesting Areas	NC DENR – Environmental Health Services Section	Areas where shellfish harvesting is prohibited by law.
DOT			
DOT	Conditionally Approved Shellfish Harvesting Areas - arcs	NC DENR – Environmental Health Services Section	Areas which are conditionally approved open or closed for shellfish harvesting due to significant rainfall events.
DOT	Conditionally Approved Shellfish Harvesting Areas - polygon	NC DENR – Environmental Health Services Section	Areas which are conditionally approved open or closed for shellfish harvesting due to significant rainfall events.
DOT	Conservation Easements, US Fish and Wildlife Service	US Fish and Wildlife Service	This file represents the boundaries of conservation easements for US Fish and Wildlife Service properties.
DOT	Dedicated and Registered Areas (Authorized Use)	NC DENR - Division of Parks and Recreation, Natural Heritage Program	The Natural Heritage Program developed the Dedicated/Registered Areas digital data to document properties which are either Dedicated Nature Preserve or Registered Heritage Areas
DOT	Digital Orthophoto Quarter Quadrangles (DOQQ) - 1993 Black and White	CGIA/NC DOT	A digital image of an aerial photograph in which displacements caused by the camera and the terrain have been removed. Each image represents 1/4 of a standard USGS 7.5 minute quadrangle map extent.
DOT	Digital Orthophoto Quarter Quadrangles (DOQQ) - 1998 Color Infrared	CGIA/NC DOT	A digital image of an aerial photograph in which displacements caused by the camera and the terrain have been removed. Each image represents 1/4 of a standard USGS 7.5 minute quadrangle map extent.
DOT	Digital Orthophoto Quarter Quadrangles (DOQQ) Grid	CGIA/NC DOT	
DOT	Discharger Coalitions' Monitoring Sites	NC DENR - DWQ	Point locations of sample sites where water quality is routinely sampled by one of a number of coalitions for their member discharger sites. Each member is a permitted National Pollutant Discharge Elimination System discharger.
DOT	Districts - North Carolina House 2001	North Carolina General Assembly, Information Systems Division	North Carolina House Districts; first effective for the 2001 elections.
DOT	Districts - North Carolina Senate 2001	North Carolina General Assembly, Information Systems Division	North Carolina Senate Districts; first effective for the 2001 elections.
DOT	Districts - North Carolina US Congressional, 2001	North Carolina General Assembly, Information Systems Division	Boundaries of North Carolina Congressional Districts; effective for the 2001 elections.



DOT	Emergency Operation Centers	NC Department of Agriculture, NC Emergency Management office	Point locations of Emergency Operation Centers developed by the NC Dept. of Agriculture from an address listing provided by the NC Emergency Management office.
DOT	Game Lands - Wildlife Resources Commission	NC Wildlife Resources Commission	All publicly owned game lands managed by the NC Wildlife Resources Commission and as listed in "Hunting and Fishing Maps for North Carolina Game Lands 2003-2004".
DOT	Groundwater Incidents, unverified	NC DENR - DWQ	Data from the PERF database (DENR, DWQ- Groundwater Section). Mostly leaking underground storage tanks.
DOT	Groundwater Recharge/Discharge	NC DENR - DWQ	Areas where groundwater continually feeds into streams during dry periods; predominantly marshes and high aquifers.
DOT	Heavy Metal and Organic-Rich Mud Pollutant Sample Sites	East Carolina University -- Geology Department and School of Medicine	Research sample sites where physical measurements were taken and samples chemically analyzed to determine the nature of the sediments and levels of concentration of various elemental pollutants.
DOT	Historic Natl. Register Districts (Restricted)		
DOT	Historic Natl. Register Structures (Restricted)		Historic sites (POINTS ONLY) on National Register of Hist. Places or of significance as determined by DCR, Div. Archives and History. Restricted to DOT use only.
DOT	Historic Study List Districts (Restricted)		
DOT	Historic Study List Structures (Restricted)		
DOT	Hydrogeology - NC Piedmont and Blue Ridge		The Hydrogeologic Unit Map of the Piedmont and Blue Ridge regions of North Carolina as produced by Charles Daniel and R.A. Payne. Linework digitized from US Geological Survey Water-Resources Investigations Report 90-4035.
DOT	Macrosite Boundaries (Authorized Use)	NC DENR -- Division of Parks and Recreation, Natural Heritage Program	
DOT	Managed Areas (Authorized Use)	NC DENR -- Division of Parks and Recreation, Natural Heritage Program	The Natural Heritage Program developed the Managed Areas digital data to document lands having some conservation interest. Public lands and nature preserve owned or managed by private conservation organizations are included.
DOT	Megasite Boundaries (Authorized Use)	NC DENR -- Division of Parks and Recreation, Natural Heritage Program	
DOT	National Pollutant Discharge Elimination System Sites (NPDES) - Major	NC DENR - DWQ	Surface water discharge locations as recorded on permits issued for National Pollutant Discharge Elimination System Sites (NPDES).
DOT	National Pollutant Discharge Elimination System Sites (NPDES) - Minor	NC DENR - DWQ	Surface water discharge locations as recorded on permits issued for National Pollutant Discharge Elimination System Sites (NPDES).
DOT	NC 100K Quad Neatlines	US Geological Survey	USGS 100K Quad Neatlines
DOT	NC 24K Quad Neatlines	US Geological Survey	USGS 24K Quad Neatlines



DOT	Peat Deposits of the Pamlico Peninsula	US Department of Energy NC Energy Institute	The location and thickness of peat deposits within the studied counties as delineated in a research project conducted for the US Department of Energy by Roy L. Ingram and Lee J. Otte.
DOT	Recreation Projects - Land and Water Conservation Fund	NC DENR - Division of Parks and Recreation	Boundaries of Recreation Projects that were constructed using Land and Water Conservation Funds. These areas cannot be redeveloped without a permit, and include recreation sites; district, county, municipal, and community parks; playgrounds; greenways; natural trails; beach access; state boating access; and some state forests (State parks are not included).
DOT	Sanitary Sewer Systems - Discharges	North Carolina Rural Economic Development Center	Locations where treated wastewater is released into a receiving stream or body of water.
DOT	Sanitary Sewer Systems - Land Application Areas	North Carolina Rural Economic Development Center	Locations where treated wastewater or sludge is applied to be absorbed into the soil.
DOT	Sanitary Sewer Systems - Pipes	North Carolina Rural Economic Development Center	Locations of pipelines for wastewater distribution.
DOT	Sanitary Sewer Systems - Pumping Stations	North Carolina Rural Economic Development Center	Locations of devices or facilities used to force wastewater from one elevation or location to another within a wastewater system.
DOT	Sanitary Sewer Systems - Treatment Plants	North Carolina Rural Economic Development Center	Locations of facilities used to treat wastewater and the related appurtenant works.
DOT	Sanitary Sewer Systems - Type A Service Areas	North Carolina Rural Economic Development Center	Type A service areas are defined as existing community sanitary sewer systems including collection lines, transport lines, or pumping and treatment facilities which serve the general public and accept domestic wastewater.
DOT	Sanitary Sewer Systems - Type B Service Areas	North Carolina Rural Economic Development Center	Type B service areas are existing community sanitary sewer systems which serve the general public and accept domestic wastewater, but generally represent small, private, business, industrial, mobile home, multi-family housing or single subdivision systems which have very limited potential future economic development impact.
DOT	Sanitary Sewer Systems - Type P Service Areas	North Carolina Rural Economic Development Center	Type P service areas are planned or proposed public community sanitary sewer system service areas, outside of current service area boundaries, where public systems do not currently exist. Type P systems are areas which have been identified as having sufficient need and population density to support viable public systems and which have an existing minimum potential user density of 40 existing potential connections per mile of wastewater collection line.
DOT	Shellfish Strata (1:12,000)	NC DENR - Division of Marine Fisheries	Areas depicting presence of underwater habitat of different species including oysters, clams, and scallops.
DOT	Significant Aquatic Endangered Species Habitats	NCWRC	The extent of endangered or threatened aquatic species populations and the tributaries and headwaters of their habitats.



DOT	Solid Waste Facilities	NC DENR - Division of Solid Waste Management	Active municipal solid waste landfills and permit numbers in North Carolina.
DOT	Stream Gaging Stations - Unverified	NC DENR - Division of Water Resources	Locations of all continuous-record stream gaging stations and all discontinued gages that have a record spanning at least ten years. This data is unverified.
DOT	Stream Gaging Stations - USGS		
DOT	Submersed Rooted Vasculars - point	NOAA -- National Marine Fisheries Service, Beaufort Laboratory, Southeast Fisheries Science Center Albemarle-Pamlico Estuarine Study	One dataset containing eight point features and one containing polygon data, both depicting occurrences of Aquatic Beds of Rooted Vascular Plants, predominantly submersed rooted vasculars (SRV) but including some floating rooted vasculars (FRV). The nomenclature and definitions for all data described here are consistent with V.V. Klemas, J.E. Dobson, R.L. Ferguson, and K.D. Haddad, "A Coastal Land Cover Classification System for the NOAA CoastWatch Change Analysis Project," Journal of Coastal Research, 1993, 9(3):862-872.
DOT	Submersed Rooted Vasculars - polygon	NOAA -- National Marine Fisheries Service, Beaufort Laboratory, Southeast Fisheries Science Center Albemarle-Pamlico Estuarine Study	
DOT	Water Distribution Systems - Intakes, Surface Water	North Carolina Rural Economic Development Center	Locations where raw water is drawn into a water system from a surface water source.
DOT	Water Distribution Systems - Master Meters	North Carolina Rural Economic Development Center	Locations of master meters. A master meter is defined as a device generally used to measure the volume of water flow to bulk purchasers whereby the water is intended for resale to users within the purchaser's system.
DOT	Water Distribution Systems - Pipes	North Carolina Rural Economic Development Center	Locations of pipelines for water distribution.
DOT	Water Distribution Systems - Type A Service Areas	North Carolina Rural Economic Development Center	Type A Water Systems are existing systems for provision to the public of piped water for human consumption which serve fifteen (15) or more connections or which regularly serve at least 25 year-round residents.
DOT	Water Distribution Systems - Type B Service Areas	North Carolina Rural Economic Development Center	Type B Water Systems are existing systems defined as public "Community Water Systems", which generally represent small private, mobile home, multi-family housing or single subdivision systems which have very limited potential future economic development impact.
DOT	Water Distribution Systems - Type P Service Areas	North Carolina Rural Economic Development Center	Type P systems are areas that have been identified as having sufficient need and population density to support viable public systems and which have an existing minimum potential user density of 20 existing potential connections per mile of waterline.
DOT	Water Distribution Systems - Water Pumping Stations	North Carolina Rural Economic Development Center	Locations of water pumping stations. A water pumping station is defined as a device or facility used to force water from one elevation or location to another within the water supply or distribution system.
DOT	Water Distribution Systems - Water Storage Tanks	North Carolina Rural Economic Development Center	Locations of natural or manmade facilities where water is stored for a water system.



DOT	Water Distribution Systems - Water Treatment Plants	North Carolina Rural Economic Development Center	Locations of treatment plants where raw water is treated and purified for human consumption.
DOT	Water Distribution Systems - Wells, Groundwater Intakes	NCDOT	Locations where raw water is drawn into a water system from an underground source.
DOT	Wetland Restoration and Enhancement - Coastal NC	NC DENR - Division of Coastal Management	
DOT	Critical Areas	NCDOT HSP	
DOT	DFIRM Panels	Flood Risk Information System (FRIS)	
DOT	Drainage Area of Selected Sites (DASS)	NCDOT Hydraulics Unit	
DOT	Ecoregions	US - EPA	
DOT	FEMA Stream Study Type	FEMA	
DOT	Flood Zones	Flood Risk Information System (FRIS)	
DOT	CAMA County Boundaries	NC DENR - DCM	



Appendix B: GIS Survey – Data Sharing

Agency	Name	Storage Location	How is it distributed	Customers
DHHS	Births	Local geodatabase/SDE	*see special note at the end of Appendix B	Public Health Programs, Universities, Researchers, Other government entities, General Public
DHHS	Deaths	Local geodatabase/SDE	*see special note at the end of Appendix B	Public Health Programs, Universities, Researchers, Other government entities, General Public
DHHS	Cancer Incidence	Local geodatabase/SDE	*see special note at the end of Appendix B	Public Health Programs, Universities, Researchers, Other government entities, General Public
DHHS	Behavioral Risk Factor Surveillance System	Local geodatabase/SDE	SCHS Website; PDF	Public Health Programs, Universities, Researchers, Other government entities, General Public
DHHS	North Carolina Hospitals (and free standing Emergency Departments)	Local geodatabase/SDE	NC OneMap	Public Health Programs, Universities, Researchers, Other government entities, General Public
DHHS	NC Licensed Medical Facilities	Local geodatabase/SDE	NC OneMap	Public Health Programs, Universities, Researchers, Other government entities, General Public
DHHS	Private Wells	Local geodatabase/SDE	Private well testing data is available only by request	Public Health Programs, Universities, Researchers
DHHS	Other Providers	Local geodatabase/SDE	Internal use only	Central Cancer Registry for Case Reporting & Finding
DHHS	Regions (various divisions of counties within the state)	Local geodatabase/SDE	Maps – PDF and Powerpoint Slides	Mostly DHHS Programs for various staffing or reporting
PSUC	Telephone Exchange Boundaries	Local Server	Email, upon request	Public Staff, Utilities, General Public
DENR	Geology - Dikes	Working copies on NC DENR file servers; publication copies at NC OneMap	NC OneMap	State, County, and Local Governments; commercial users; regulated community
DENR	Geology - Faults	Working copies on NC DENR file servers; publication copies at NC OneMap	NC OneMap	State, County, and Local Governments; commercial users; regulated community
DENR	Ambient Water Quality Monitoring Sites	Working copies on NC DENR file servers; publication copies at NC OneMap	NC OneMap	State, County, and Local Governments; commercial users; regulated community
DENR	Animal Operation Permits	Working copies on NC DENR file servers; publication copies at NC OneMap	NC OneMap	State, County, and Local Governments; commercial users; regulated community
DENR	Public Water Supply Water Sources Including Ground Water and Surface Water Sources	Working copies on NC DENR file servers; publication copies at NC OneMap	NC OneMap	State, County, and Local Governments; commercial users; regulated community
DENR	1:24000-scale Hydrography with Water Quality Classifications	Working copies on NC DENR file servers; publication copies at NC OneMap	NC OneMap	State, County, and Local Governments; commercial users; regulated community



DENR	2012 Integrated Reporting Water Quality Assessments	Working copies on NC DENR file servers; publication copies at NC OneMap	NC OneMap	State, County, and Local Governments; commercial users; regulated community
DENR	2012 Overall Integrated Reporting Water Quality Ratings	Working copies on NC DENR file servers; publication copies at NC OneMap	NC OneMap	State, County, and Local Governments; commercial users; regulated community
DENR	Fish Community Sampling Sites	Working copies on NC DENR file servers; publication copies at NC OneMap	NC OneMap	State, County, and Local Governments; commercial users; regulated community
DENR	Benthic Monitoring Sites	Working copies on NC DENR file servers; publication copies at NC OneMap	NC OneMap	State, County, and Local Governments; commercial users; regulated community
DENR	National Pollutant Discharge Elimination System Sites (NPDES)	Working copies on NC DENR file servers; publication copies at NC OneMap	NC OneMap	State, County, and Local Governments; commercial users; regulated community
DENR	Water Supply Watersheds	Working copies on NC DENR file servers; publication copies at NC OneMap	NC OneMap	State, County, and Local Governments; commercial users; regulated community
DENR	Ecosystem Enhancement Program Targeted Local Watersheds	Working copies on NC DENR file servers; publication copies at NC OneMap	NC OneMap	State, County, and Local Governments; commercial users; regulated community
DENR	Paddle Trails - Coastal Plain	Working copies on NC DENR file servers; publication copies at NC OneMap	NC OneMap	State, County, and Local Governments; commercial users; regulated community
DENR	Brownfields Agreement Sites	Working copies on NC DENR file servers; publication copies at NC OneMap	NC OneMap	State, County, and Local Governments; commercial users; regulated community
DENR	Active Permitted Landfills	Working copies on NC DENR file servers; publication copies at NC OneMap	NC OneMap	State, County, and Local Governments; commercial users; regulated community
DENR	Dry-cleaning Solvent Clean-up Act Program Sites	Working copies on NC DENR file servers; publication copies at NC OneMap	NC OneMap	State, County, and Local Governments; commercial users; regulated community
DENR	High Quality Water and Outstanding Resource Water Management Zones	Working copies on NC DENR file servers; publication copies at NC OneMap	NC OneMap	State, County, and Local Governments; commercial users; regulated community
DENR	DENR DWR Animal Operations	Working copies on NC DENR file servers; publication copies at NC OneMap	NC OneMap	State, County, and Local Governments; commercial users; regulated community



DENR	Conservation Tax Credit Properties	Working copies on NC DENR file servers; publication copies at NC OneMap	NC OneMap	State, County, and Local Governments; commercial users; regulated community
DENR	Biodiversity/Wildlife Habitat Assessment (BWA) - July 2013	Working copies on NC DENR file servers; publication copies at NC OneMap	NC OneMap	State, County, and Local Governments; commercial users; regulated community
DENR	North Carolina Ridge Law Final 2006 - Ridge Lines	Working copies on NC DENR file servers; publication copies at NC OneMap	NC OneMap	State, County, and Local Governments; commercial users; regulated community
DENR	Estuarine Benthic Habitat Mapping	Working copies on NC DENR file servers; publication copies at NC OneMap	NC OneMap	State, County, and Local Governments; commercial users; regulated community
DENR	Stormwater Reference	Working copies on NC DENR file servers; publication copies at NC OneMap	NC OneMap	State, County, and Local Governments; commercial users; regulated community
DENR	Shellfish Growing Areas (March 2014)	Working copies on NC DENR file servers; publication copies at NC OneMap	NC OneMap	State, County, and Local Governments; commercial users; regulated community
DENR	Surface Water Intakes	Working copies on NC DENR file servers; publication copies at NC OneMap	NC OneMap	State, County, and Local Governments; commercial users; regulated community
DENR	Submerged Aquatic Vegetation - SAV	Working copies on NC DENR file servers; publication copies at NC OneMap	NC OneMap	State, County, and Local Governments; commercial users; regulated community
DENR	Geology	Working copies on NC DENR file servers; publication copies at NC OneMap	NC OneMap	State, County, and Local Governments; commercial users; regulated community
DENR	Federal Lands in North Carolina (July 2014)	Working copies on NC DENR file servers; publication copies at NC OneMap	NC OneMap	State, County, and Local Governments; commercial users; regulated community
DENR	Managed Areas in North Carolina (July 2014)	Working copies on NC DENR file servers; publication copies at NC OneMap	NC OneMap	State, County, and Local Governments; commercial users; regulated community
DENR	Natural Heritage Element Occurrences (July 2014)	Working copies on NC DENR file servers; publication copies at NC OneMap	NC OneMap	State, County, and Local Governments; commercial users; regulated community
DENR	Natural Heritage Program Natural Areas (July 2014)	Working copies on NC DENR file servers; publication copies at NC OneMap	NC OneMap	State, County, and Local Governments; commercial users; regulated community



DENR	Strategic Habitat Area Nominations (Region 1)	Working copies on NC DENR file servers; publication copies at NC OneMap	NC OneMap	State, County, and Local Governments; commercial users; regulated community
DENR	r3_boundary	Working copies available on NC DENR file servers and temporarily available to public via ArcGIS Online	ArcGIS Online	Strategic Habitat Area Advisory Committee Members, public.
DENR	r3_proposed_S HAs_Sep2014	Working copies available on NC DENR file servers and temporarily available to public via ArcGIS Online	ArcGIS Online	Strategic Habitat Area Advisory Committee Members, public.
DENR	R3_TotalAlterationScore_Dissolve	Working copies available on NC DENR file servers and temporarily available to public via ArcGIS Online	ArcGIS Online	Strategic Habitat Area Advisory Committee Members, public.
AGR	Parcels in Agricultural land use	In NCDA&CS's centralized SDE database.	Via the web application http://www.ncmhtd.com/EnvironmentalPrograms/AgAssessment/	Primarily for internal use, DENR Conservation planning tool and other conservation partners.
AGR			and map services that are discoverable via NC OneMap	
AGR				
AGR	National Agriculture Imagery Program (NAIP) statewide aerial and CIR low resolution photography.	In NCDA&CS's centralized database.	We have Web Map Services (WMS) for 2008, 2009, 2010 true color and color Infrared (CIR), 2012 color and CIR and 2014 color and CIR. This data is created by USDA FSA. We just host map WMS services for the extent of NC so GIS users can get the most recent aerials available. This is 1 meter resolution and leaf on. It is not a substitute for high resolution leaf-off. Our WMS services are all discoverable via NC OneMap	Any public and/or private sector GIS user who needs recent aerials or CIR. In the last 30 days 262 distinct IP addresses that have made WMS queries on our WMS services
AGR	Seven Forest Action Plan data layers including Working Forests, Wildfire Risk, Threats, Urban Forests, Rural Priority and Urban Priority landscapes.	In NCDA&CS's centralized database.	Via the web application http://www.ncmhtd.com/NCFS/ForestActionPlanPriorityLayers/	Any public and/or private sector GIS user who is interested in forest related data.
AGR	Forest Tract Location	On a NCDA&CS file server and in a centralized SDE database.	Distributed database model transitioning to Enterprise Database	Primarily for internal use, other state/federal agencies, conservation partners.



AGR	Forest Tract Area	On a NCDA&CS file server and in a centralized SDE database	Distributed database model transitioning to Enterprise Database	Primarily for internal use, other state/federal agencies, conservation partners.
AGR	Stewardship Plan Area	On a NCDA&CS file server and in a centralized SDE database	Distributed database model transitioning to Enterprise Database	Primarily for internal use, other state/federal agencies, conservation partners. Data required by U.S. Forest Service State & Private Forestry Stewardship Program.
AGR	Forest Practices Guidelines (FPG) for Water Quality Locations	On a NCDA&CS file server and in a centralized SDE database	Distributed database model transitioning to Enterprise Database	Primarily for internal use, other state/federal agencies, conservation partners. Data collected in association with the state Sedimentation Pollution Control Act.
AGR	Wildfire Location	On a NCDA&CS file server and in a centralized SDE database	Distributed database model transitioning to Enterprise Database	Primarily for internal use, other state/federal agencies, conservation partners.
AGR	Significant Wildfire Area	On a NCDA&CS file server and in a centralized SDE database	Distributed database model transitioning to Enterprise Database	Primarily for internal use, other state/federal agencies, conservation partners. Reported for compliance with the National Incident Management System Incident Command System (ICS) 209 reporting of wildfires.
AGR	Forest Health Survey Area	On a NCDA&CS file server and in a centralized SDE database	Distributed database model transitioning to Enterprise Database	Primarily for internal use, other state/federal agencies, conservation partners.
AGR	Forest Health Survey Flight Line	On a NCDA&CS file server and in a centralized SDE database	Distributed database model transitioning to Enterprise Database	Primarily for internal use, other state/federal agencies, conservation partners.
AGR	Community Wildfire Protection Plan Areas of Concern	On a NCDA&CS file server and in a centralized SDE database	Distributed database model transitioning to Enterprise Database	Primarily for internal use, other state/federal agencies, conservation partners.
AGR	Fire Districts	On a NCDA&CS file server and in a centralized SDE database	Distributed database model transitioning to Enterprise Database	Primarily for internal use, other state/federal agencies, conservation partners. Data to be integrated with Department of Insurance Office of State Fire Marshal records.
AGR	Community Wildfire Protection Plan Resource Points	On a NCDA&CS file server and in a centralized SDE database	Distributed database model transitioning to Enterprise Database	Primarily for internal use, other state/federal agencies, conservation partners.
AGR	Priority Areas	On a NCDA&CS file server and in a centralized SDE database	Central office database	For internal use, other state/federal agencies, conservation partners.
DCR	HPO_Historic_Data	OITS server	Web mapping service; NC OneMap; HPOWEB (all versions); shapefile downloads	NCDOT and other state and federal agencies conducting project reviews under Section 106 of the National Historic Preservation Act and N.C.G.S. 121-12; environmental review consultants; survey and National Register consultants; all HPO staff; students; general public
DCR	(Historic properties and districts points and boundaries)			
DCR	HPO_ER_Layers (APE boundaries)	OITS	Web mapping services; HPOWEB (NCDOT, Internal versions)	NCDOT and other state and federal agencies; ER consultants; HPO Staff
DCR	HPO_USGS_Scans	OITS	Web mapping services; HPOWEB (NCDOT, Internal versions)	NCDOT and other state and federal agencies; ER consultants; HPO Staff
DCR	(hand-marked map collection)			



DCR	Crowdsourcing	OITS	Web mapping services; HPOWEB (NCDOT, Internal versions)	NCDOT and other state and federal agencies; ER consultants; HPO Staff
DCR	(Unverified locations)			
DCR	HPO_TaxCredit_Data	OITS	Web mapping services; HPOWEB (Internal version)	HPO staff
DCR	(Historic Preservation Tax Credit projects)			
DCR	DCR_NHTF (DCR owned Natural Heritage Trust Fund lands)	OITS	Not distributed	HPO/DCR staff
DCR	DCRsites (public museums statewide)	OITS	Web mapping service	General public
DCR	Grants-Covenants	Local network	Not distributed	HPO staff
DOA	State Owned Complex Layer	Database Server OITS/ArcGIS Server OITS	Web service or Geodatabase	State Agencies, Private Companies, General Public
DOA	State Office/Warehouse Leases	Database Server OITS/ArcGIS Server OITS	Web service or Geodatabase	State Agencies, Private Companies, General Public
DOA	State Owned Building Layer	Database Server OITS/ArcGIS Server OITS	Web service or Geodatabase	State Agencies, General Public
DOA	State Government Center Parking Layer	Database Server OITS/ArcGIS Server OITS	Web service or Geodatabase	State Agencies, General Public
DCR	NCmarkers	OITS server	Web mapping service; online web map	General public, students, tourists
DCR	(Highway Historical Markers with attributes)			
DCR	OSA_Mercator	OITS	Shapefiles	Restricted distribution to NCDOT archaeological staff and qualified professional archaeologists conducting project reviews under Section 106 of the National Historic Preservation Act and N.C. G.S. 121-12. Requests for data are evaluated on a case by case basis.
DCR	(site points and polygons; review area polygons and lines)			
DCR	USGS_Scans_OSA	OITS	TIF scans	Restricted distribution as above
WRC	Boating access areas	Local network & server, NC OneMap	NC OneMap, web map application, by request	Staff and public
WRC	Public fishing areas	Local network & server	Web map application, by request	Staff and public
WRC	Game lands	SQL Server Enterprise Geodatabase	NC OneMap, web map application, KMZ file, by request	Staff and public



WRC	Game land infrastructure (roads, trails, gates, parking areas, camping, waterfowl blinds, scouting areas, food plots, dove fields, etc.)	SQL Server Enterprise Geodatabase	Web map application, by request	Staff and public
WRC	No wake zones	Local network	web map application	Staff and public
WRC	No wake zone markers and other US ATON markers maintained by the NCWRC	Local network	By request	Staff and public
WRC	Shooting ranges	Local server	Web map application, by request	Staff and public
WRC	Fish attractors	Local server	Web map application, downloadable files (txt, xls, gpx)	Staff and public
WRC	Public Mountain Trout Waters	Local server, local PC	Web map application, NC OneMap	Staff and public
DOI	NCHILB inspector distribution	Network and ArcGIS online	ArcGIS online	Facebook
DOI	Fire District and Fire Station	Network	Shapefile are email	NC Emergency Management and NC OneMap
DPI	TIMS Data	Local School District	Generally not requested or distributed. Special requests would be coordinated through the TIMS support office at ITRE or UNC Charlotte.	
NCEM	Benchmark control			
NCEM	Flood zones lines and flood zone area - Cobra zones, High Water Marks, Cross sections,	NCEM	Web service and geodatabase	Publicly available
NCEM	Flood Raster's	NCEM	Web service	Publicly available
NCEM	Building Footprints	NCEM	Web service and geodatabase	Portion publicly available and provided to the counties. Remainder will be available when the project is complete
NCEM	Streamlines	NCEM	GDB	Publicly Available in data download
NCEM	School Facility Schematics	NCEM	Secure Web service	School Officials; Local First Responders, Emergency Managers, Law Enforcement
NCEM	LiDAR	NCEM	LAS	Publicly available from website
CGIA	Statewide Orthoimagery	NC OneMap/OITS servers	Image services and downloadable data from the NC OneMap Geospatial Portal; offline copies available on request	NC 911 Board and Public Safety Answering Points. State, local, and federal government agencies. Private businesses and organizations. Educational institutions and citizens.
CGIA	NC Parcels	NC OneMap/OITS servers, and Carbon Cloud (Carbon Project, Inc.)	Web service from Carbon Cloud, and web services and downloadable data from NC OneMap	State, local, and federal government agencies, private businesses and organizations, educational institutions, citizens with GIS capability.
CGIA	NC Address Data	NC OneMap/OITS servers	Web services and downloadable data from NC OneMap	State, local, and federal government agencies, private businesses and organizations, educational institutions, citizens with GIS capability.



DOT	Bike Routes	SDE	Geospatial web service; file download via website	NCDOT, business partners, other state and local agencies, public
DOT	Bridges	SDE	Geospatial web service; file download via website	NCDOT, business partners, other state and local agencies, public
DOT	Functional Class	SDE	Geospatial web service	NCDOT, business partners, other state and local agencies, public
DOT	NCMIN Tiers	SDE	Geospatial web service; file download via website	NCDOT, business partners, other state and local agencies, public
DOT	NHS	SDE	Geospatial web service	NCDOT, business partners, other state and local agencies, public
DOT	NCDOT Material Suppliers	Esri Cloud	Geospatial web service	NCDOT, business partners, other state and local agencies, public
DOT	County Boundaries	SDE	Geospatial web service; file download via website	NCDOT, business partners, other state and local agencies, public
DOT	NCDOT NC Rail System	SDE	Geospatial web service; file download via website	NCDOT, business partners, other state and local agencies, public
DOT	AADT Count Stations	SDE	Geospatial web service; file download via website	NCDOT, business partners, other state and local agencies, public
DOT	AADT Counts	SDE	Geospatial web service; file download via website	NCDOT, business partners, other state and local agencies, public
DOT	Ferry Routes	Esri Cloud	Geospatial web service	NCDOT, business partners, other state and local agencies, public
DOT	NCDOT Division Boundaries	SDE	Geospatial web service; file download via website	NCDOT, business partners, other state and local agencies, public
DOT	NCDOT District Boundaries	SDE	Geospatial web service	NCDOT, business partners, other state and local agencies, public
DOT	Road Characteristics	SDE	Geospatial web service; file download via website	NCDOT, business partners, other state and local agencies, public
DOT	STIP Bridges	SDE	Geospatial web service	NCDOT, business partners, other state and local agencies, public
DOT	STIP Roads	SDE	Geospatial web service	NCDOT, business partners, other state and local agencies, public
DOT	24K Quad Index	SDE	Geospatial web service	NCDOT, business partners, other state and local agencies, public
DOT	Truck Network	SDE	Geospatial web service; file download via website	NCDOT, business partners, other state and local agencies, public
DOT	State Maintained Roads	SDE	Geospatial web service	NCDOT, business partners, other state and local agencies, public
DOT	Shield Labels	SDE	Geospatial web service	NCDOT, business partners, other state and local agencies, public
DOT	Posted Roads – Light Traffic	SDE	Geospatial web service	NCDOT, business partners, other state and local agencies, public
DOT	NCDOT PCS – Skid Data	Oracle Spatial	Geospatial web service	NCDOT, business partners, other state and local agencies, public
DOT	Speed Limits	SDE	Geospatial web service	NCDOT, business partners, other state and local agencies, public
DOT	Smoothed Urban Boundaries	SDE	Geospatial web service; file download via website	NCDOT, business partners, other state and local agencies, public
DOT	NCDOT Fuel Depots	SDE	Geospatial web service	NCDOT, business partners, other state and local agencies, public
DOT	Mile Marker Hatching	SDE	Geospatial web service	NCDOT, business partners, other state and local agencies, public
DOT	Fatal Crashes	SDE	Geospatial web service	NCDOT, business partners, other state and local agencies, public



DOT	Unpaved Roads	SDE	Geospatial web service	NCDOT, business partners, other state and local agencies, public
DOT	NCDOT PCS – Jointed Concrete	Oracle Spatial	Geospatial web service	NCDOT, business partners, other state and local agencies, public
DOT	NCDOT PCS – Combined Data	Oracle Spatial	Geospatial web service	NCDOT, business partners, other state and local agencies, public
DOT	NCDOT PCS – Continuously Reinforced Concrete	Oracle Spatial	Geospatial web service	NCDOT, business partners, other state and local agencies, public
DOT	NCDOT PCS – IRI	Oracle Spatial	Geospatial web service	NCDOT, business partners, other state and local agencies, public
DOT	NCDOT PCS - Asphalt	Oracle Spatial	Geospatial web service	NCDOT, business partners, other state and local agencies, public
DOT	Bare Pavement	SDE	Geospatial web service	NCDOT, business partners, other state and local agencies, public
DOT	Airports	Esri Cloud	Geospatial web service	NCDOT, business partners, other state and local agencies, public
DOT	MPO & RPO Boundaries	SDE	Geospatial web service; file download via website	NCDOT, business partners, other state and local agencies, public
DOT	Municipal Boundaries	SDE	Geospatial web service; file download via website	NCDOT, business partners, other state and local agencies, public
DOT	NCDOT Mitigation Sites	Esri Cloud	Geospatial web service	NCDOT, business partners, other state and local agencies, public
DOT	NCDOT Concrete Certifications	SDE	Geospatial web service	NCDOT, business partners, other state and local agencies, public
DOT	NCDOT Fatal Crashes	SDE	Geospatial web service	NCDOT, business partners, other state and local agencies, public
DOT	NCDOT Facilities	Esri Cloud	Geospatial web service	NCDOT, business partners, other state and local agencies, public
DOT	Highway Safety Improvement Program (HSIP) Sections	Esri Cloud	Geospatial web service, file download via website	NCDOT, business partners, other state and local agencies, public
DOT	Highway Safety Improvement Program (HSIP) Intersections	Esri Cloud	Geospatial web service, file download via website	NCDOT, business partners, other state and local agencies, public
DOT	Unstable Slope	Esri Cloud	Geospatial web service	NCDOT, business partners, other state and local agencies, public
DOT	Highway Exits	Esri Cloud	Geospatial web service	NCDOT, business partners, other state and local agencies, public
DOT	Strategic Transportation Investments Results	Esri Cloud	Geospatial web service	NCDOT, business partners, other state and local agencies, public
DOT				
DOT				
DOT	Traffic Incidents	Process that geo-enables tabular data stored in Oracle and provided through a web service	Geospatial web service	NCDOT, business partners, other state and local agencies, public
DOT	Hazardous Weather	Process that geo-enables tabular data stored in Oracle and provided through a web service	Geospatial web service	NCDOT, business partners, other state and local agencies, public
DOT	Traffic Cameras	File server	Geospatial web service	NCDOT, business partners, other state and local agencies, public



DOT	LRS Arcs	SDE	Geospatial web service; file download via website	NCDOT, business partners, other state and local agencies, public
DOT	LRS Routes	SDE	File download via website	NCDOT, business partners, other state and local agencies, public
DOT	Integrated Statewide Road Network (ISRN)	File server	File download via website	NCDOT, business partners, other state and local agencies, public
DOT	Contour & Elevation Data	File server	File download via website	NCDOT, business partners, other state and local agencies, public
DOT	Statewide Comprehensive Transportation Plan	File server	Geospatial web service, delivered electronically when requested	NCDOT, business partners, other state and local agencies
DOT	Aerial Imagery	Esri Cloud	Geospatial web service, delivered electronically when requested	NCDOT, business partners, other state and local agencies, public
DOT	Geotechnical Boring Locations	File server	Delivered electronically when requested	NCDOT, business partners, other state and local agencies
DOT	Bike & Pedestrian Crash Data	File server	Delivered electronically when requested	NCDOT, business partners, other state and local agencies
DOT	Parcel Advanced Acquisition Funding Tracking System (PAAFTS)	File server	Delivered electronically when requested	NCDOT, business partners, other state and local agencies, public
DOT	Illicit Discharge Point	File server	Delivered electronically when requested	NCDOT
DOT	Plant Beds	File server	Delivered electronically when requested	NCDOT, business partners, other state and local agencies
DOT	Road Addition Petitions	File server	Delivered electronically when requested	NCDOT, business partners, other state and local agencies
DOT	NC Structure Locations	File server	Delivered electronically when requested	NCDOT, business partners, other state and local agencies, public
DOT	P3 Average Commute Times	SDE	Geospatial web service	NCDOT, business partners
DOT	P3 Average Congested Speed	SDE	Geospatial web service	NCDOT, business partners
DOT	P3 CTP Highway New Locations	SDE	Geospatial web service	NCDOT, business partners
DOT	P3 CTP Highways	SDE	Geospatial web service	NCDOT, business partners
DOT	P3 CTP Junctions	SDE	Geospatial web service	NCDOT, business partners
DOT	P3 CTP Minor	SDE	Geospatial web service	NCDOT, business partners
DOT	P3 Facility Type	SDE	Geospatial web service	NCDOT, business partners
DOT	P3 Funding Regions	SDE	Geospatial web service	NCDOT, business partners, other state and local agencies, public
DOT	P3 LRS Segments	SDE	Geospatial web service	NCDOT, business partners, other state and local agencies, public
DOT	P3 Non-Interstate STRAHNET Routes	SDE	Geospatial web service	NCDOT, business partners
DOT	P3 STI Projects	SDE	Geospatial web service	NCDOT, business partners, other state and local agencies, public
DOT	P3 Speed Limit	SDE	Geospatial web service	NCDOT, business partners



DOT	P3 Transportation Terminals	SDE	Geospatial web service	NCDOT, business partners
DOT	Implicit Outfalls 24K Streams	SDE	Geospatial web service	NCDOT
DOT	Implicit Outfalls (19 Western Counties)	SDE	Geospatial web service	NCDOT
DOT	Industrial Outfalls	SDE	Geospatial web service	NCDOT
DOT	Drainage Area of Selected Sites (DASS)	SDE	Geospatial web service	NCDOT
DOT	Location data for crashes involving "wrong way" drivers	File server	File download via website	NCDOT, business partners, other state and local agencies, public
DOT	Location data for crashes involving teen drivers	File server	File download via website	NCDOT, business partners, other state and local agencies, public
DOT	Location data for crashes involving motorcycle crashes	File server	File download via website	NCDOT, business partners, other state and local agencies, public
DOT	Location data for fatal crashes	File server	File download via website	NCDOT, business partners, other state and local agencies, public
DOT	Location data for crashes involving animals	File server	File download via website	NCDOT, business partners, other state and local agencies, public
DOT	Location data for crashes involving alcohol	File server	File download via website	NCDOT, business partners, other state and local agencies, public
DOT	High Frequency crash location data	File server	File download via website	NCDOT, business partners, other state and local agencies, public
DOT	Variety of other crash related data	File server, database	Delivered electronically when requested	NCDOT, business partners, other state and local agencies, public

Special Note for DHHS Datasets:

Most of DHHS State Center for Health Statistics (SCHS) health datasets, with exception of deaths, are confidential and protected data and are not shared at the patient level; researchers may request these data after approval from an Institutional Review Board (IRB). Aggregated data at various levels of geography (regions, counties, census tracts) may be distributed depending on the requested data/level of geography to ensure confidentiality. The leading causes of death, some birth variables, and cancer incidence 5-year rates are reported at the county level yearly and distributed via PDF on the SCHS website. (Currently working on using ArcOnline to create interactive display and services of these data)

