

NC OneMap Implementation Plan

Purpose and Vision

The North Carolina Geographic Information Coordinating Council (GICC) adopted four priority areas at its February meeting to serve as a guide for Council activities in 2003. These four areas are: (1) develop a **common understanding** of North Carolina data resources; (2) prepare an ongoing **data inventory** for all geospatial data holdings across North Carolina; (3) develop **data content standards** for key data themes along with cost projections for maintaining those themes; and (4) enable more widespread use of geospatial data through better **access and distribution** of the data. The adoption of *NC OneMap* as a new vision for North Carolina was a key step in executing the GICC work plan. This implementation plan builds on the vision and characteristics for *NC OneMap* adopted in May by the GICC.

Specifically, North Carolina aims to have a statewide framework of geographic information operational by the year 2005. That framework will promote the maintenance of economic vitality in our communities, public health and safety, and the quality of life for all North Carolinians. Our citizens will take the availability of geographic information for granted. This vision will be realized through the leadership of the GICC in collaborative endeavors with numerous organizations.

The foundation of the vision is a comprehensive statewide geographic data resource, called *NC OneMap*. Data content, accuracy and scales of the resource will be determined through consensus and in recognition of the critical uses to which it is applied. *NC OneMap* will serve the basic information requirements for decision-making in the community, statewide, and in support of national priorities. *NC OneMap* will provide information to support the daily business processes of numerous organizations and their functions. While any user may have a unique view of the resource and it ostensibly may be physically distributed and maintained by a variety of data producers, it will appear to users as consolidated and integrated.

NC OneMap will include data that are current and accessible over the Internet to all statewide sectors including government agencies, utilities, private firms, schools, universities and individual citizens. Data on the Internet will be free to search, discover, view and acquire. It will be available 24 hours per day and seven days per week.

Standards and procedures will ensure that data contain no unnecessary redundancies or inconsistencies, and that data are adequately and uniformly documented. Security measures will be implemented to protect confidential/restricted data and to limit access to any user's esoteric, local data.

Innovative partnerships and cooperative agreements between municipal, county, regional, state, federal agencies, and others will be in place to ensure that the geographic information infrastructure endures and continues to meet user needs.

Implementation Steps

The GICC will accomplish the vision by performing several steps – some concurrent – leading to an initial capability by the end of 2004. This overall timeline can be accelerated if the GICC defines an initial capability more conservatively, taking advantage of some existing layers while work continues on the ultimate *NC OneMap* data content, concentrated on local data sources. This will be used as a basis for building a complete, statewide resource as partnerships and funding are secured. *NC OneMap* will start with those communities ready to partner and participate. The GICC will need to develop a strategy to assist those communities that do not have GIS data resources including Bertie, Gates, Hertford, Hyde, Madison, Mitchell, McDowell, and Polk Counties.

Here are the necessary steps to accomplish the initial release of *NC OneMap* in keeping with the set of characteristics approved by the GICC (see Attachment A). Completion of these steps will establish a firm foundation for the growth of *NC OneMap* as a strategic North Carolina data resource.

1. Identify initial data themes to serve, including the seven framework data layers (i.e., aerial imagery [orthophotography], cadastral, surface waters, transportation, governmental units, geodetic control, and elevation).
2. Finalize data content standards for those themes.
3. Identify early partners, beyond the initial group that is participating in the National Map demonstration (i.e., Mecklenburg, Henderson, Wake, and Johnston).
4. Reach community data sharing agreements with those partners for those themes and other themes that the partner is willing to share.
5. Conduct outreach campaign to seek statewide participation and support.
6. Determine statewide data for achieving a complete basemap at a smaller scale with access to large scale, local data where agreements have been signed.
7. Evaluate policy issues related to serving data deemed sensitive by the Governor's Antiterrorism Task Force, US Department of Homeland Security, or other authorities.
8. Build and launch the web mapping site for *NC OneMap* with agreed upon data served that has been subjected to the above policy evaluation. [This step will build on the experimentation that has been part of the National Map demonstration web site.]
9. Develop a long-term plan to host *NC OneMap* in a true 24x7 facility.
10. Continue to develop and/or adopt data content standards for framework themes and any others that the Statewide Mapping Advisory Committee (SMAC) deems important for the partners and broad user community.
11. Derive the full potential set of data content for *NC OneMap* from the data inventory effort.
12. Develop a schedule for launch of data resources from additional communities.
13. Prepare and present cost projections to the GICC for making *NC OneMap* a statewide resource with wall-to-wall coverage that is maintainable.
14. Seek funding for full implementation of *NC OneMap* as a fully-maintained data resource.

The attached matrix (separate document) describes these steps further with a set of tasks for each step, policy or other issues that are pertinent, a list of the relevant *NC OneMap* characteristics,

and a timeframe for completing each step. A discussion of public records and security issues related to *NC OneMap* appears in Attachment B.

Free Access Versus Cost Recovery

CGIA is moving away from the cost recovery model for distribution of data in what has been previously called the Corporate Geographic Database. This previous form of data distribution never resulted in substantial resources for the agency (approximately 2% of annual revenues) and the goal during this calendar year is to move data access and distribution totally to the Internet. Users can view and download data as they see fit with some throttling mechanism planned so that “statewide download” is not allowed for bandwidth reasons. An FTP site is also planned for users who want large volumes of data. In the remaining cases where users do not wish to download themselves, CGIA will perform the task for them and charge an hourly rate as a service – but all data will be accessible and downloadable from the Internet.

One of the key assumptions behind *NC OneMap* is that data available through this resource will be redistributable, without restriction. This means that if Chatham County data is accessible through *NC OneMap* and available for download, then any other organization can perform such a download free of charge and repackage it with other data and provide it to another organization who may or may not offer the repackaged data free of charge. As community data sharing agreements are developed, this assumption will be stated clearly.

Dependence on Cooperation

This is the most difficult part of the implementation plan for *NC OneMap* in some respects due to the difficult funding outlook that all public sector agencies face today. In parts of North Carolina and in certain essential functional areas, data are being developed and maintained to meet ongoing business processes. This is true of cadastral and aerial imagery (orthophotography) data in county GIS operations. Other framework themes such as surface waters and elevation do not have a consistent, statewide funding source for their collection and maintenance at map scales that are needed for many decision makers.

The community data sharing agreements serve as a means to generate partnerships among the data provider and user organizations across North Carolina. These are no-cost agreements where CGIA and local governments agree to share data free of charge without restriction. These agreements assume that CGIA and the local government will maintain the data that each provides under the agreement. Several of these agreements are in place and meeting the needs of each organization. *NC OneMap* will build on this concept.

The GICC will need to consider situations where one of the following statements is true: (1) data are simply not available from a particular county, municipality, state agency, or federal agency at a scale useful to most users; and (2) data are not being maintained on a regular basis from one of these partners. Since these situations do currently exist, the GICC needs to develop a strategy for seeking funds to ensure a complete statewide *NC OneMap* resource for critical data themes. In the meantime, *NC OneMap* can grow and develop in terms of content and statewide coverage.

Some communities are already contributing to the National Map demonstration site that has many similarities to what is envisioned for *NC OneMap*. These and other communities in North Carolina are ready to participate in *NC OneMap* and can provide the resources necessary to make their data available on an ongoing basis while other communities will not be able to support this effort completely without funding and/or technical support. Completion of the initial data inventory effort will be a first indicator of where there are current, available data resources and also where those data resources need to be developed.

Roles of CGIA and GICC Committees

The implementation of *NC OneMap* requires active, ongoing participation from each of the standing committees of the GICC. The proposed roles of CGIA and these committees are described below.

CGIA:

- Negotiate data sharing agreements with partners
- Prepare outreach materials and conduct outreach on behalf of the GICC
- Develop *NC OneMap* web site
- Pursue hosting of the site in a 24x7 facility

Statewide Mapping Advisory Committee (SMAC):

- Accelerate its work on review and establishing data content standards for framework themes
- Reach consensus on the use of these content standards in delivering data over *NC OneMap*

Local Government Committee (LGC):

- Encourage its constituents to respond to the data inventory effort so that the GICC has a clear and complete picture of data holdings, resources required to develop and maintain the data, how this data is made available, and any restrictions on access currently or projected due to homeland security concerns
- Present any critical issues to the GICC
- Participate in design of *NC OneMap* to meet local and regional needs beyond city and county borders
- Perform outreach efforts for local government agencies and others to foster participation and support of *NC OneMap*

State Government GIS Users Committee (SGUC):

- Encourage its constituents to respond to the data inventory effort so that the GICC has a clear and complete picture of state-level data holdings, maintenance issues such as staff

and/or funds for keeping those data updated, and any restrictions on access currently or projected due to homeland security concerns

- Present any critical issues to the GICC
- Participate in design of *NC OneMap* to meet the needs of state agencies
- Perform outreach efforts for state government agencies and others to foster participation and support of *NC OneMap*

Federal Interagency Committee (FIC):

- Encourage its constituents to respond to the data inventory effort so that the GICC has a clear and complete picture of federal data holdings, maintenance issues such as staff or funds for keeping those data updated, and any current or projected restrictions on access because of homeland security directives
- Present any critical issues to the GICC
- Work with the GICC to identify funding opportunities at the federal level
- Participate in design of *NC OneMap* such that it meets the needs of FIC users
- Perform outreach efforts for federal government agencies and others to foster participation and support of *NC OneMap*

GIS Technical Advisory Committee (GIS TAC):

- Identify any technical issues that need to be addressed for *NC OneMap* such as integration of metadata and handling of historical versions of data layers
- Convene work groups as needed to evaluate those issues and resolve them (in cooperation with the LGC, FIC, SGUC, and SMAC)
- Based on the evaluation, present technical policy or other issues or concerns to the GICC

Resources

Data development and enhancement will be needed to fill holes, update those layers that have been difficult to maintain for various reasons, and establish new mechanisms to keep the data maintained over time. This calls for federal, state, and local investments in the data resource.

Grants to counties and municipalities would be helpful to foster more participation in *NC OneMap*. Grants could be focused on data investments as well as other resources that local governments need to enable their contribution to *NC OneMap*.

Some ongoing staff resources will be needed to devote to this effort at CGIA and elsewhere. The extent to which the *NC OneMap* effort goes above and beyond normal work duties of staff in state and local agencies is something that should be discussed and addressed where necessary.

Hardware and software investments will need to be made to ensure that the “characteristics” are achieved, such as true 24x7 operation. Ongoing investments will also need to be made for system maintenance as *NC OneMap* grows and technology changes.

Timeframe for Completion

The attached document provides a list of the 14 steps described earlier along with specific tasks and a timeframe for accomplishing them. Each step is also mapped back to the *NC OneMap* characteristics that were adopted at the May GICC meeting.

The steps and the timeframe for each are summarized below.

	<u>Step</u>	<u>Timeframe</u>
1.	Identify initial data themes to serve.	Sep – Nov 2003
2.	Finalize data content standards for those themes.	Sep 2003 – Mar 2004
3.	Identify early partners.	Sep – Nov 2003
4.	Reach community data sharing agreements with partners.	Oct 2003 – Jan 2004 (ongoing)
5.	Conduct outreach campaign to seek statewide participation.	Sep 2003 – Aug 2004
6.	Determine statewide data for achieving complete basemap.	Dec 2003 – Feb 2004
7.	Evaluate policy issues related to serving sensitive data per Governor or US Homeland Security directives.	Sep 2003 – Feb 2004
8.	Build and launch the web mapping site for <i>NC OneMap</i> .	Jan – Jun 2004
9.	Develop long-term plan to host <i>NC OneMap</i> for 24x7 operations.	Jan – Jun 2004
10.	Derive the full potential set of data content for <i>NC OneMap</i> .	Jan – Mar 2004
11.	Continue to develop and/or adopt content standards.	Jan – Sep 2004
12.	Develop a schedule for launch beyond early partners.	Jun – Aug 2004
13.	Prepare and present cost projections for statewide <i>NC OneMap</i> .	Apr – Jun 2004
14.	Seek funding for full implementation of <i>NC OneMap</i> .	Jun – Dec 2004

Attachment A NC OneMap Characteristics

1. *NC OneMap* data are free to view and download in accordance with federal and state privacy, security, and data confidentiality laws.
2. *NC OneMap* data are redistributable, without restriction.
3. *NC OneMap* is accessible 24 hours per day and seven days per week on the Internet and data are searchable using keyword and geographic prompts.
4. *NC OneMap* includes the minimum of seven framework data themes, including geodetic control, elevation, orthophotography, surface waters, cadastral, streets and other transportation features, and jurisdictional boundaries.
5. *NC OneMap* includes other critical and strategic data, such as land use, land cover, water lines and systems, sanitary sewer lines and system; and demographics, but is not limited to these themes.
6. Although map scale is not specified, *NC OneMap* data are derived from large map scales and/or high resolution sources that are typical of products traditionally derived by counties and municipalities.
7. Historical and temporal data will be maintained and available.
8. *NC OneMap* provides data that represent the most current version of a data holding.
9. *NC OneMap* data are reliably maintained by the data provider organization through partners and formal arrangements.
10. *NC OneMap* data are reliably funded through partners and cost shares.
11. *NC OneMap* provides data that are based on accepted and published standards.
12. *NC OneMap* data are documented using published standards.
13. Policy oversight for *NC OneMap* is provided by the NC Geographic Information Coordinating Council and administrative oversight is provided by the NC Center for Geographic Information and Analysis.

Attachment B

Public Records and Security Issues Related to *NC OneMap* Implementation

Privacy Versus Openness

The GICC needs to help determine whether confidential or restricted data can be made available from *NC OneMap* and partner servers. If we begin with the seven framework themes (i.e., aerial imagery [orthophotography], cadastral, surface waters, transportation, governmental units, geodetic control, and elevation), certain of these themes may need to be “manipulated” or restricted. Policy decisions at local and state levels will drive whether these data layers are removed from further consideration on *NC OneMap* or if their content needs to be modified for presentation on *NC OneMap* – e.g., removal of areas with geographic features of concern from the aerial imagery (orthophotography) layer or removal of certain attributes before making the data available over the Internet. Data access and distribution is a GICC priority area with the goal of bringing consistency to this issue across the state for each data layer.

The GICC can help derive a policy recommendation. At a minimum GICC members and GIS coordinators need to convey what data are being restricted on their local websites in their organizations and what the future direction looks like. As far as data themes beyond the framework themes, the GICC and its constituent organizations need to be part of the decision making process that determines layer by layer what should be offered through *NC OneMap*. For example, the GICC and its committees can determine whether land cover and water and sewer lines are safe to serve over the Internet. Guidance from the Governor’s Anti-Terrorism Task Force will be needed on some of these questions. Absent such guidance, the GICC will adhere to the public records law when there is uncertainty. In any case, *NC OneMap* will follow state and federal laws concerning presentation of personal data such as health or financial information. In the majority of cases with GIS data layers, this is not an issue. Cadastral data and the attributes included for that layer is an exception.

Security Versus Accessibility

The use restrictions related to homeland security are still being defined. The initial goal of *NC OneMap* should be to serve some basic GIS themes such as the framework data themes and critical local themes. Federal, state, and local guidance at the beginning of implementation will drive what is served first.

If new restrictions or directives are established concerning the serving of a particular data layer, then *NC OneMap* will not publish that data layer. As the policy landscape is clarified, additional data layers will be served through *NC OneMap*. The GICC will guide CGIA and the other partners on what data should be served.

Ideally, *NC OneMap* would serve a broad spectrum of data from as many authoritative sources who wish to make their data available and the system would be powerful enough to select the appropriate data at the appropriate scale to answer a query or contribute to a decision. Policy makers including the Governor and the General Assembly would rely on the *NC OneMap*

resource to answer questions about geography as they craft budgets, consider policies, make changes to existing laws, and create new laws. Those uses may well require some form of password-protected *NC OneMap* which accesses data sets that are not available to the general public. The thought here is that we need to walk before we run and move deliberately to establish the foundation to allow us to walk now and consider more data and uses of *NC OneMap* as we move forward.

Step	Tasks	Policy and Other Issues	NC OneMap Characteristics	Timeframe for Completion	
1.	Identify initial data themes to serve.	Review framework themes and availability. Review other themes and availability. Evaluate security concerns.	security concerns for Internet availability	4,5,6,7	Sep-Nov 03
2.	Finalize data content standards for those themes.	Complete standard for each framework theme. Complete standard for other themes identified. Present standards to GICC for adoption.	security concerns for Internet availability buy-in from data providers	4,5,6,7,8,11,12	Sep 03-Mar 04
3.	Identify early partners.	Review current set of signed community data sharing agreements. Evaluate results of data inventory effort. Confirm participation in NC OneMap.	redistribution of data technology available for NC OneMap security concerns for Internet availability	2,9	Sep-Nov 03
4.	Reach community data sharing agreements with partners.	Present NC OneMap vision to potential partners. Develop agreements for those communities with available data. Define implementation timeframe for each partner.	redistribution of data technology available for NC OneMap security concerns for Internet availability local policy issues	2,9	Oct 03-Jan 04 (ongoing)
5.	Conduct outreach campaign to seek statewide participation.	Review results of data inventory effort. Develop outreach materials to present to potential partners. Present NC OneMap vision and activities at appropriate forums.			Sep 03-Aug 04
6.	Determine statewide data for achieving complete basemap.	Review existing Corporate Geographic Database holdings. Review existing Federal data holdings. Select large-scale layers that are being actively maintained.	current and future maintenance	4,5	Dec 03-Feb 04
7.	Evaluate policy issues related to serving sensitive data per Governor or US Homeland Security directives.	Participate on FGDC Work Group on data policies. Discuss issues with IRMC staff and GICC members. Determine what can/cannot be shown. Document results for input into NC OneMap design process.	security concerns for Internet availability	1,13	Sep 03-Feb 04
8.	Build and launch the web mapping site for NC OneMap.	Obtain "lessons learned" from National Map demonstration effort. Design the application. Test the application with partners Deploy the application.		13	Jan-Jun 04

9.	Develop long-term plan to host NC OneMap for 24x7 operations.	Define the requirements for 24x7 operations. Consider facilities that would accommodate this definition. Determine costs for hosting at the various locations.	restrictions imposed by provider organization funding	3	Jan-Jun 04
10.	Derive the full potential set of data content for NC OneMap.	Evaluate results of data inventory effort. Develop list of layers. Seek comment from GICC user committees.		4,5,6,7	Jan-Mar 04
11.	Continue to develop and/or adopt data content standards.	Determine need for content standards for full set of data layers. Give SMAC responsibility to develop the standards. Present the new standards to GICC for adoption.		11,12	Jan-Sep 04 (ongoing)
12.	Develop a schedule for launch beyond early partners.	Determine readiness based on progress with data sharing agreements. Assess technology needs for each partner.			Jun-Aug 04
13.	Prepare and present cost projections for statewide NC OneMap.	Evaluate results of data inventory effort. Discuss future plans with partners including funding plans. Develop cost estimate for participation by each partner.		10	Apr-Jun 04
14.	Seek funding for full implementation of NC OneMap.	Brief GICC on cost projections and available resources to accomplish. Brief General Assembly and others on NC OneMap vision and needs. Identify and pursue funding mechanisms.		10	Jun-Dec 04