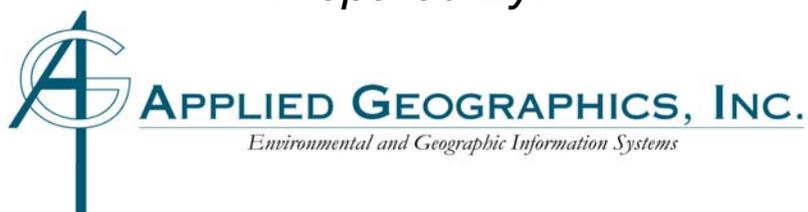# State Outreach and Strategic Planning:

Preliminary Findings
And
Recommendations

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1   Executive Summary

This document is a rapid compilation of initial findings and recommendations from the statewide outreach and strategic planning effort to-date. A strong consensus emerged from the Workshops (held between November 12th and 20th, 2008, in five locations) that the State should pick a focal point for its GIS coordination activities, and take a campaign approach to accomplishing it. The topic that rose to the top was **fully routable statewide street centerlines**.

This is a topic that most all stakeholders seemed to be well acquainted with, but one which no one thought was complete – **"the job is not done."** There was praise for the State program that initiated the capture of street centerlines, but concerns over its unrealized potential. In particular, regional and local stakeholders felt that data going up to the State as part of the statewide E911 program was not being fully utilized; and yet, there was strong belief in the potential for state-level value-added to come back as a benefit to the regional and local levels of government. Applications for statewide centerlines to **enhance economic development and public safety** were strongly endorsed; and, the need to be better prepared for another Hurricane Hugo type storm was voiced.

It was also strongly expressed that **the State needs a senior political champion** to move GIS programs forward on a statewide basis, including fully routable street centerlines, amongst other things. While individual agency missions may be well-served, the overall mission of **GIS coordination is not institutionalized**, and could benefit from legislative support. It is recognized as progress that a number of state agencies signed a Memo of Agreement to form the South Carolina Geographic Information Council (SCGIC) and to fund a State GIS Coordinator; this voluntary spirit is commendable, but potentially tenuous if current leadership changes.

2   Strategic Planning Methodology

- Kickoff Communication & Coordination
- Background Research and Document Review
- Regional Workshop Planning Meeting with Council
- Several One-On-One Interviews
- On-line Survey Questionnaire
- Five (5) Regional Stakeholder Meetings
- Preliminary Findings & Recommendations
- Ongoing, Iterative Interaction with SC GIC
- Development of a Strategic Plan

- Endorsement and Adoption by Stakeholder Community

- Ongoing Measurement

2.1 Review of 2001 GIS Strategic Plan and Statewide Progress

The "Strategic Plan for Statewide GIS Technology Coordination in South Carolina" (Plangraphics, 2001) was reviewed for previous goals and information content. This previous Strategic Plan was a substantial effort, preceded by an exhaustive Needs Assessment of state agencies. The plan document included a high-level mission statement and a set of six strategic goals that were **presented and discussed at this year's regional stakeholder workshops**, to acknowledge progress, and to identify work that still needs to be done.

One of the goals from 2001 was to *"Build and maintain geographic data important for users statewide."* In this regard, recognition of the State's positive contributions to some important data collection efforts was given at the workshops, including street centerlines, orthoimagery, LiDAR for improved elevation data, and geodetic control as notable examples. While any contributions to data collection and maintenance seem to be appreciated at the local level, questions were raised about the use of locally produced data when provided back to the State, if that is the case.

For example, for data shared with the State:

- What do state agencies do with it?

- Do data sets from one locality get aggregated with adjacent localities?

- If a state agency adds value, how does that come back to the local data producers, and/or regional entities?

Another one of the goals from 2001 was to *"Define and put in place an organizational structure and institutional relationships to support Statewide GIS coordination and use."* With respect to this goal, incremental progress was appropriately recognized in organizational matters, including the formation of a South Carolina Geographic Information Council (SCGIC) and the hiring of a State GIS Coordinator. These two items also correspond with two of the nine criteria for a successful statewide GIS program as stated by the Federal Geographic Data Committee (FGDC) and the National States Geographic Information Council (NSGIC) as part of the Fifty States Initiative to advance the National Spatial Data Infrastructure (NSDI).

To help improve the Strategic Plan going forward, **respectful criticisms from the workshops** included the following observations:

- The mission statement in 2001 was too generic to rally action-oriented support

- The goals were not specific enough to be measured

- It was a state-centric plan that did not reflect local aspirations

- It is not used to guide GIS activity or policy at the local or regional level in any consistent manner, if at all

- It is not apparent who was supposed to implement it, or that state agencies themselves are supposed to adhere to it, or not

2.2 Current Planning Oversight and Support

Oversight for this project is **provided by the South Carolina Geographic Information Council (SCGIC), courtesy of the State GIS Coordinator** who helped to organize and who attended all of the Regional Stakeholder Outreach Workshops. Local stakeholders graciously cooperated by providing facilities and equipment as needed to accommodate the workshop meetings. This project is supported by a Cooperative Assistance Program (CAP) grant from the Federal Geographic Data Committee (FGDC).

2.3 Information Gathering Activities

A variety of information has been gathered via document research, website review, on-line survey, interviews, and workshops. Key activities are summarized, below:

- Kick-off Teleconference with Tim De Troye (State GIS Coordinator) and Doug Calvert (SCGIC Chair), 10/03/08

- SCGIC Meeting in Columbia on 10/20/08

- Regional Stakeholder Outreach Workshops
    - Florence, 11/12/08
    - Columbia, 11/13/08
    - Aiken, 11/18/08
    - Greenville, 11/19/08
    - Walterboro, 11/20/08

- Interviews
    - Cole McKinney, State Mapping Advisory Council, 10/20/08
    - Tim De Troye, State GIS Coordinator, 10/20/08
    - Jim Scurry, DNR, 10/20/08
    - Jack Maguire, Lexington County, 10/21/08
    - Pat Bresnahan, Richland County, 10/21/08
    - Tony Dukes, Dept. of Probation & Parole, 10/21/08
    - Jared Shoultz, DHEC, 11/17/08
    - Lew Lupine, ORS/SCGS, 11/17/08

- On-line survey questionnaire (ongoing)
- Background Research and Document Review (ongoing)

3 Current Situation

A strategic planning and outreach effort is underway in South Carolina. This effort will result in findings and recommendations to advance the effective use of GIS within South Carolina, hopefully with the support and endorsement of local and regional stakeholders. A question emerged during this planning process which is telling: *"Whose plan is this, anyway?"* The perception of the Strategic Plan published in 2001 is that it was the State Agencies' plan.

3.1 Who are we?

This effort is being led by the State, but a conscientious effort is being made to reach out to **diverse GIS stakeholders across the state**. Total attendance at the five Regional Stakeholder Outreach Workshops was just over 100 people, and demographically they came from the following sectors:

GIS Strategic Planning Workshops
Registration Statewide

Other, 4%
Education, 3%
City/Town, 13%
Utility, 7%
Private, 11%
Federal, 2%
State, 4%
Regional, 7%
County, 49%

In terms of the State participation, it is being coordinated by the SC Geographic Information Council, which is a **voluntary state council** made up of senior representatives from eight agencies (plus more expected), and a voting seat for the State Mapping Advisory Committee (SMAC). Current membership is as follows:

- Department of Natural Resources
- Office of Research and Statistics
- Department of Commerce
- Department of Health and Environmental Control
- Department of Probation, Parole, and Pardon Services
- Department of Revenue
- Forestry Commission
- Clemson University
- State Mapping Advisory Council

3.2 Where are we now?

Organizational Status

The following table presents the current GIS status with respect to the National States Geographic Information Council "Nine Criteria for a Successful Statewide GIS Program":

Criterion	Status	Status Description
1. A full-time, **paid coordinator** position is designated and has the authority to implement the state's business and strategic plans.	**MEETS**	The State GIS Coordinator was hired by the SC Geographic Information Council (SCGIC) in 2007. The position is funded under a voluntary Memo of Agreement (MOA) that provides for cost-sharing across SCGIC members. The position is housed and administratively supported in the Department of Natural Resources.
2. A clearly **defined authority** exists for statewide coordination of geospatial information technologies and data production.	**MEETS**	The South Carolina Geographic Information Council (SCGIC) was formed in 2006 on a voluntary basis amongst participating state agencies, who signed a Memo of Agreement (MOA) for this purpose.
3. The statewide coordination office has a **formal relationship with** the state's Chief Information Office (**CIO**).	**PARTIALLY MEETS**	The CIO role is being redefined in SC. A member of SCGIC serves on the "Agency Technical Advisory Committee," looking at Information Technology issues and applications, including Business Intelligence.
4. **A champion** (politician or executive decision-maker) is aware	**DOES NOT**	Currently, there is no known champion for GIS in either the Legislature or

and involved in the process of geospatial coordination.	**MEET**	Governor's Office.
5. **Responsibilities for developing** the National Spatial Data Infrastructure (**NSDI**) and a State Clearinghouse are assigned.	**MEETS**	These responsibilities reside with the SCGIC, which is sponsoring a State Outreach and Strategic Planning effort to identify future strategies for building statewide spatial data infrastructure in the context of NSDI.
6. The ability exists to work and **coordinate with local governments**, academia, and the private sector.	**PARTIALLY MEETS**	This is accomplished by active outreach and participation in organizations with diverse GIS stakeholder representation. There has also been State assistance provided to local governments for programs such as orthoimagery acquisition.
7. **Sustainable funding** sources exist to meet project needs.	**PARTIALLY MEETS**	GIS programs at the local level are funded largely from local appropriations based on tax revenue. Some support comes from E911 (for street centerlines), and other support comes from the Federal Government as disbursed by the State (e.g., for orthos and LiDAR).
8. GIS Coordinators have the **authority to enter into contracts** and become capable of receiving and expending funds.	**DOES NOT MEET**	This authority resides in the State Agencies that belong to the Council.
9. The **Federal government** works through the statewide coordinating authority.	**PARTIALLY MEETS**	The USGS Liaison works with the Council and the State GIS Coordinator, but other Federal contacts are made that bypass this coordination channel, such as DHS working directly with SLED.

Data Status

The following table presents the current status in South Carolina for each of the seven National Spatial Data infrastructure framework data layers, plus Structures:

Layer	Status
Cadastral (parcels)	35 out of 46 counties complete; no statewide parcel layer
Political Boundaries	TBD
Hydrography	TBD
Imagery	All counties have Orthoimagery since 2002
Elevation	LiDAR completed for 7 counties, in progress for 16 counties
Transportation (Air, Roads, Inland Waterways, Rail, Transit)	Road centerlines captured at county-level as part of E911 program; State-maintained roads captured by DOT
Geodetic control	Available statewide
Structures	TBD

3.3 Strengths

- Local GIS programs across the state have produced **significant locally-focused geographic data sets** that are considered essential to local government operations

- Generally, **GIS programs at the local-level are often strongly supported** by local political and functional leadership

- **South Carolina is rich in GIS talent and expertise** at both the local and state levels

- Several data development programs have created a strong **precedent for state-local partnership on base map layers**, such as street centerlines, orthoimagery, LiDAR imagery for elevation, and geodetic control

- **Several state agencies have strong GIS programs** to help meet departmental mission requirements

- There are **many success stories and lessons-learned** from over 30 years of GIS activity in South Carolina

- There are **many existing organizations in South Carolina with an interest in GIS data sharing** and methodology

- There are **successful models of inter-jurisdiction regional collaboration** at the local and regional level

- There is a **willingness amongst local governments to voluntarily participate in beneficial programs** where they see a positive return back to their own constituents

3.4 Weaknesses

- There are **data gaps in some parts of the state**

- Not all localities have strong GIS programs, or resources to develop them – the so called **"GIS have-nots"**

- Regional and **statewide geographic data aggregation is lagging** much of the nation

- There is **no consistent data distribution and licensing policy or common philosophy** across state and local governments

- There is a perception amongst regional stakeholders that most of the **cost burden to advance the effective use of GIS** in the state is on local governments

- There is a perception that **GIS matters are wide open at the state-level, without a clear sense of direction** or sense of urgency to do anything specific

- State **Legislators and the Governor's Office are not sold on the value and importance of GIS** to better government and service to citizens

- There is **no senior political "champion"** for statewide GIS initiatives

3.5 Opportunities

- There is an opportunity to **be the best in the nation in aggregating at least one "framework" layer**, such as street centerlines; this is a data layer where progress has been made, but the job of creating fully routable streets for the entire state, or at least for regions of the state, is incomplete

- There is an opportunity to **harness the willingness of certain local stakeholders to support regional pilots focused on "framework" layers** other than centerlines, such as property parcels

- With the GIS talent pool resident in South Carolina, there is **potential to attract geospatial data and location-based service industries** to the State

- There is an **opportunity of for the member agencies of the SCGIC to better coordinate and manage GIS activities** and resources across state agencies

- Institutional mechanisms to help fund and manage GIS activities could win support if the benefits were clear to the potential participants, such as **discounts from consolidated purchasing power**

3.6 Threats

- There is a threat in a competitive global economy that **South Carolina might lose jobs and economic development to states with more sophisticated statewide spatial data infrastructure**

- There is a perceived **lack of programs at the state level that clearly advance the effective use of GIS**, which could:

  o Undermine existing efforts to overcome frustration and gain renewed support from local and regional stakeholders

  o Result in continued loss of credibility for state efforts

  o Reinforce a belief that there is too much talking and not enough action at the state level

  o Reinforce a belief that the state agencies are more concerned about their own mission requirements than with more effective statewide use of GIS to reduce duplication of effort and maximize return on investment for the state as an enterprise

- There is a risk that the places where South Carolinians live will deteriorate due to poor decisions based on **inadequate geographic information**

- There is a risk from **inadequate statewide preparedness for a disaster** of manmade or natural causes that will not be prevented or mitigated with the help of superior geographic information

4 Vision & Goals

4.1 Mission Statement

The Mission Statement previously stated in the "Strategic Plan for Statewide GIS Technology Coordination in South Carolina" (Plangraphics, 2001) was a high-level, conventional statement of purpose, as follows:

> *"To facilitate, coordinate, and promote the effective development, sharing, and use of geographic information within South Carolina for the benefit of citizens."*

As mission statements go, it is non-controversial, non-prescriptive, and non-disagreeable – all good traits in ordinary circumstances. However, it has not served to **rally enthusiasm and commitment** to the importance of its purpose. Feedback from the workshops has suggested that is too generic and uninspiring.

The mission statement should provide the rallying flag for strategic goals that can be programmatically implemented. Going forward, an alternative for consideration is the following statement of mission:

> *"Lead the nation in the aggregation of geospatial data sets that demonstrably meet statewide needs for greater economic, education, health, and safety advantages for South Carolinians, through superior collaboration and outstanding utilization of geospatial technology.*

4.2 Strategic Goals

The following six strategic goals were the long-term programmatic goals to support the South Carolina GIS mission statement from the 2001 timeframe.

- Define and put in place an **organizational structure and institutional relationships** to support Statewide GIS coordination and use.
- Create **policies, procedures, and tools to encourage and enable joint GIS development and access** and pursue joint projects.
- **Build and maintain geographic data** important for users Statewide.

- Establish a **formal process and technical infrastructure for providing GIS data and services**.

- Establish, manage, and provide **outreach and educational programs and services**.

- Explore and pursue **effective partnerships and funding strategies** to support GIS initiatives.

Going forward, these strategic goals still have relevance, but more specific success factors are needed to **focus attention on implementation and measurement of results**. Recommended success factors based on input from the workshops and interviews are described in the following section.

4.3 Success Factors for Each Goal

1) Define and put in place an **organizational structure and institutional relationships** to support Statewide GIS coordination and use.

   a. Progress has been made in this regard, including the formation of SCGIC and the hiring of a State GIS Coordinator; however, there is a perception that the Council is state-agency-centric, and not a statewide body; **it is not recommended that a new organization be formed**, nor even that representation on the Council be broadened to include all stakeholder interests;

   b. It is **recommended that the key existing organizations** (e.g., GAASC, SCARC, the Municipal Association, and the County Association, etc.) **be the ongoing target of outreach and collaboration,** including review and endorsement of recommendations that emanate from the current planning effort

   c. Make the necessary arrangements to **get all of the key state agencies formally committed to the recommendations in goal #3 (below)**, namely:

      - A project to make statewide street centerlines fully routable

      - Support for a property parcel data pilot

      - Support for serving orthoimagery statewide

2) Create **policies, procedures, and tools to encourage and enable joint GIS development** and access and pursue joint projects.

   a. **Publicize existing state-local models of joint effort**, including Street Centerlines for E911, Orthoimagery, and LiDAR programs, for example

   b. **Promote existing regional-local models of collaboration**, such as the Berkeley County Consortium, for example

     c.   See joint efforts described under the next goal, and **align policies, procedures, and tools to be successful in accomplishing the goal to build geographic data statewide** and associated success factors

3) **Build and maintain geographic data** important for users Statewide.

     a.   **Create a fully routable street centerlines for statewide applications** – "finish what was started" – by integrating data compiled from local government sources via the statewide E911 program; this is something on which SC can achieve national recognition and leadership; this will also help SC be better prepared for the next storm of the same or greater magnitude as Hurricane Hugo in 1989, for example; begin with a pilot area, such as a Council of Government (COG) jurisdiction comprising several counties; bring the key state agencies into the project to collaborate from the get-go (e.g. ORS, DOT, DHEC, E911, SLED)

     b.   In parallel, **act on the willingness expressed by regional stakeholders to embark on a County-led pilot to aggregate and integrate property parcel data across several adjoining counties**, as a model for regional and statewide aggregation

     c.   **Find collaborative support for efforts underway to serve orthoimagery for the State**, to publish data that is being collected at the local level with state and federal support

4) Establish a **formal process and technical infrastructure for providing GIS data and services**.

     a.   Close the loop on open ended, one-way data flow up to the state from local sources; proactively **provide value-added data back to local authorities**; examples might include sharing data about underground storage tanks that are permitted by the state, or hazardous waste sites – there are probably many more examples, and a specific list of the possibilities should be developed for action; in turn, local authorities might provide enhanced addressing information to more precisely geocode such items of mutual interest

     b.   **Consider opening access to the geocoding service developed by DHEC** to other users at both state and local levels of government

     c.   **Focus on repeatable and sustainable processes** for maintaining fully routable statewide street centerlines from data of local origin and authentication

5) Establish, manage, and provide **outreach and educational programs and services**.

   a. Produce and share a set of **talking points for all GIS stakeholders** to use when talking to leadership and other interested parties about the value and importance of GIS

   b. Conduct a **"show and tell" for State Legislators and their staff** at the next GIS Day (November 2009); enlist the support of the Budget and Control Board for this purpose

   c. Collect and publish **success stories and lessons-learned on applying GIS** over the years in SC, and publish on the SCGIS website and other forums; develop case studies (including lessons-learned) for the Graniteville train wreck and Hurricane Hugo to highlight how GIS was used, and how it could be used in more substantial ways given greater awareness and preparation for the next disaster

6) Explore and pursue **effective partnerships and funding strategies** to support GIS initiatives.

   a. **Document exemplars for the consideration of others**, such as the Berkeley County Consortium, and the Charleston Regional Development Alliance

   b. Work toward **institutional mechanisms to fund and manage geospatial activities in which local governments can voluntarily participate** if they see benefit; assess to what degree current mechanisms work or do not work, and **avoid unfunded mandates**