



**SCGIS State Outreach
And
Strategic Plan:
Final Draft Version 3.2**



Prepared By:



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Foreword

South Carolina's history in the development and use of Geographic Information Systems (GIS) spans a period of more than 30 years. There is a well-developed GIS community of stakeholders that includes distinguished public and private sector participants, and leading academicians.

The current strategic planning process has been focused on outreach to stakeholders from all sectors, to develop a plan with statewide relevance. This effort was supported with assistance from Cooperative Agreements Program (CAP) of the Federal Geographic Data Committee (FGDC) as part of the Fifty States Initiative to advance the National Spatial Data Infrastructure (NSDI).

The South Carolina Geographic Information Council (SCGIC) administered the project, and the State GIS Coordinator provided support and direction. The work would not have been possible without the input contributed by GIS stakeholders across different levels of government and different geographic regions within South Carolina.

Distribution Notice

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Contact Information and Feedback

Feedback is welcome. To provide feedback, please contact Tim De Troye, State GIS Coordinator, via phone (803-734-3894) or email detroyet@gis.sc.gov. Additional information on this project, as well as other activities of the SC Geographic Information Council, available data sets, resources and GIS information are available at <http://www.gis.sc.gov>.

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1 EXECUTIVE SUMMARY

This document is built on findings and recommendations from statewide outreach on Geographic Information Systems (GIS), conducted from October 2008 through February 2009. Oversight for this process was provided by the State GIS Coordinator under the auspices of the South Carolina Geographic Information Council (SCGIC).

A strong consensus emerged from a series of workshops (held between November 12th and 20th, 2008, in five locations around the state) that SCGIC should pick a focal point for its GIS coordination activities, and take a campaign approach to accomplish. The primary topic of interest was the need for fully routable statewide street centerlines.

This is a topic that most of the workshop participants were well acquainted with, because everyone needs street data for a variety of applications, ranging from public safety to planning and economic development. The value and importance of accurate and current street data was emphasized. Workshop participants from a number of counties pointed out that commercial applications, such as Google Maps and on-board navigation systems in cars often use data that originates from public sources, but they lag behind the most current version of the data by about two years. This is unacceptable for certain applications, especially emergency management.

Participants praised the state program that initiated the capture of street centerlines for E911, but expressed concerns over its unrealized potential for statewide applications across jurisdictions. The job of aggregating and integrating street data at the state-level is not done for E911 data sets. Regional and local stakeholders felt that data going up to the state as part of the statewide E911 program should be more fully utilized as a statewide asset. To clarify, SCDOT has statewide street data, but it was compiled for road management as opposed to emergency management, and does not include all local roads, nor addresses for routing vehicles to homes or businesses.

There is a need for state-level value-added data to come back as a benefit to the regional and local levels of government. Issues of concern do not stop at county borders, and the connectivity of street data across borders is needed to address regional and cross-jurisdictional matters. Therefore, the completion of fully routable street centerlines for all roads in the state, to apply toward the enhancement of economic development and public safety, was strongly endorsed.

Other specific recommendations to support effective use of the state's GIS assets on behalf of South Carolinians, include the following initiatives:

- Build a web-based parcel map pilot for a multi-county area; local stakeholders in Lexington County have expressed willingness to support this effort
- Support a web-based ortho-imagery service for statewide access

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- Nurture a *quid pro quo* between state agencies and local governments on sharing more accurate address points (e.g. for the precise location of data of mutual interest, such as hazardous waste sites, critical infrastructure, etc.)
- Provide a web-based geocoding service for statewide access

It was also strongly expressed that the state needs a senior political champion to move GIS programs forward on a statewide basis, in the midst of a difficult economic and political climate. While individual agency missions may be well-served, GIS coordination across levels of government could benefit from legislative and executive 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, and essential for sustaining support and continuing progress in challenging economic times.

A 'coalition of the willing' is needed across levels of government, with authority to leverage existing resources (people, data, and technology) to support new initiatives, for this plan to result in positive outcome. In fact, there are no requests for new funding in this plan. Since each of the recommended actions is highly feasible and common practice in many other states, South Carolina would not be embarking on any risky developmental territory, and would be able to take advantage of lessons-learned elsewhere.

2 CURRENT SITUATION

Brief Background and Context

A strategic planning and outreach effort was undertaken in South Carolina to advance the effective use of GIS within the state as a whole. This effort has resulted in findings and recommendations upon which this strategic plan is built. A question has 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. An effort was made with this planning cycle to reach out to a broader range of stakeholders, statewide.

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

Review of the 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 the regional stakeholder workshops in 2008, to acknowledge progress, and to identify work that still needs attention.

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 contributions to some important data collection efforts was given at the workshops, including street centerlines, orthoimagery, LiDAR, 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?
- Does data from one locality get aggregated with adjacent localities?
- If a state agency adds value, how does that value come back to the local data producers, and/or regional entities?

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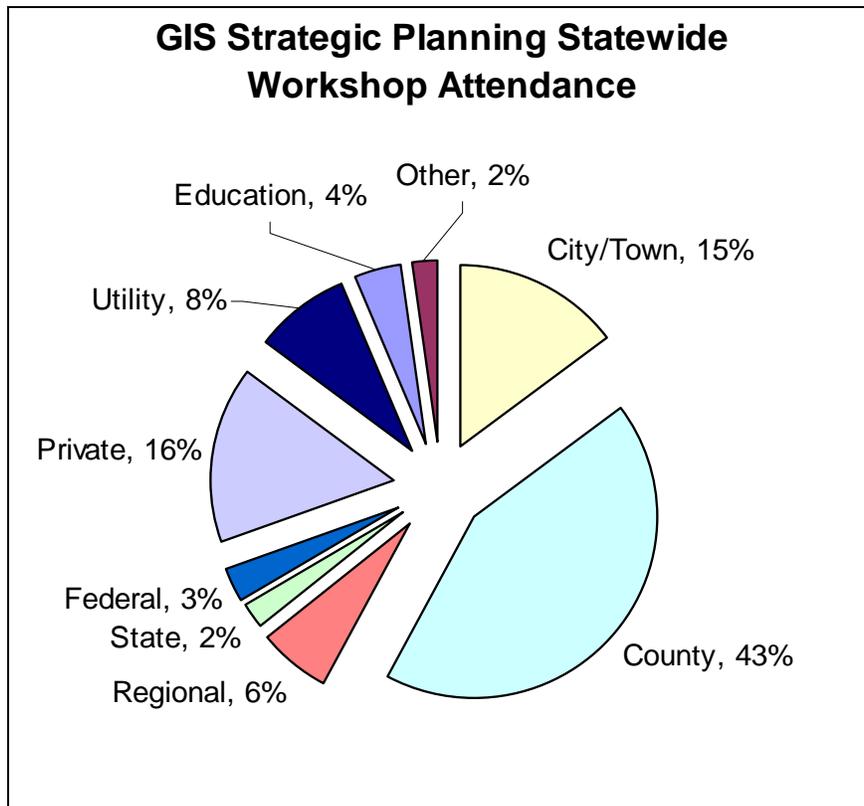
Another goal from 2001 was to “*Define and put in place an organizational structure and institutional relationships to support Statewide GIS coordination and use.*” With respect to this goal, incremental progress was appropriately recognized in organizational matters, including the formation of a South 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 did not provide measurement components
- It was a state-centric plan that did not reflect local concerns
- 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 adhere to it

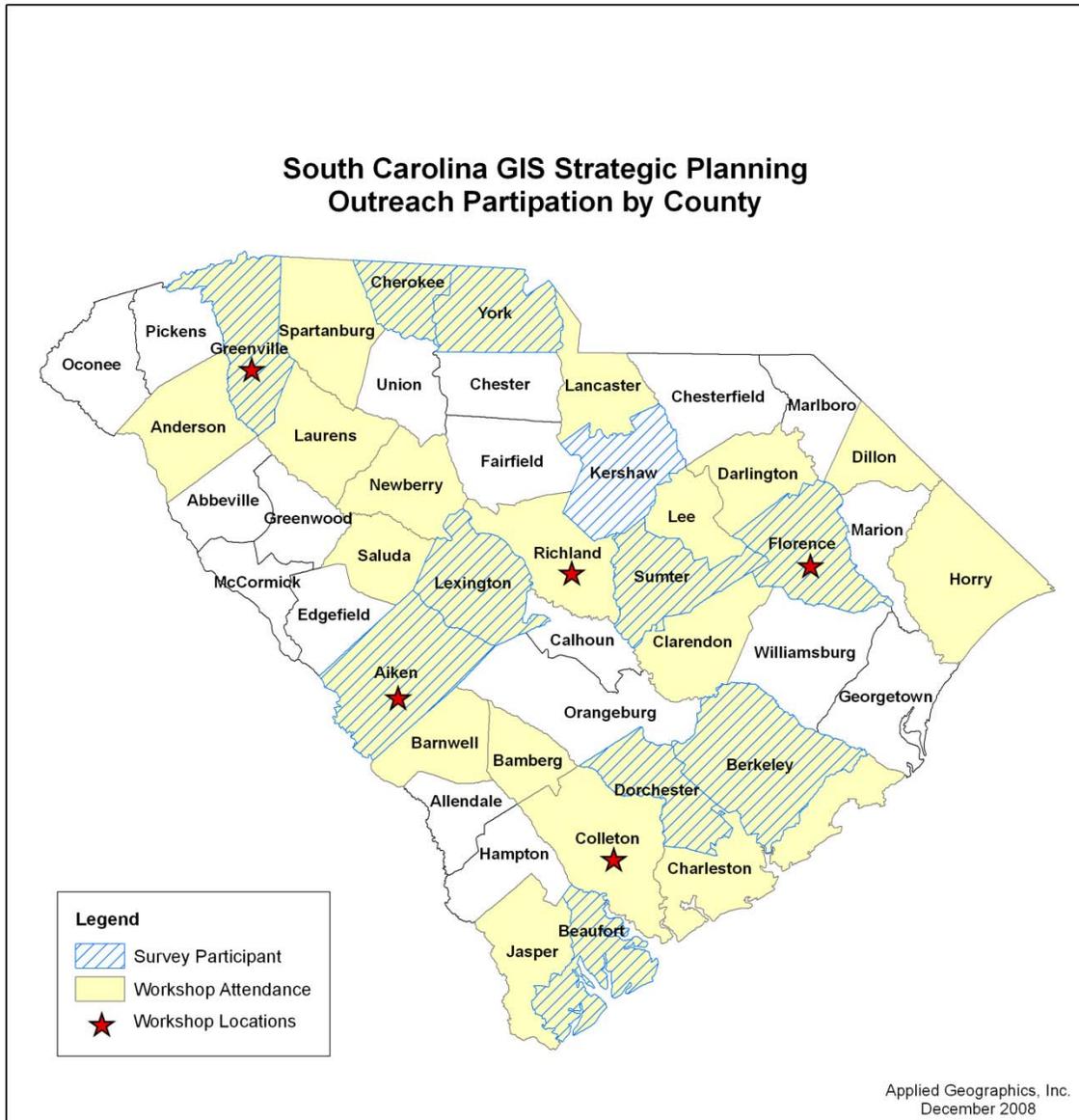
2.1 Who are the stakeholders?

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. There were 96 people from 26 counties that attended the five Regional Stakeholder Outreach Workshops. It is important to note in the graphic below that while the state attendance at the workshops was low, this was intended, as the focus of the outreach sessions was to facilitate greater communication and participation from the local level. Furthermore, separate planning and feedback sessions were held specifically with state-level personnel. Demographically, they came from the following sectors:



A “Preliminary Findings and Recommendations” report was produced immediately after the Workshops in November 2008, for presentation to the Council. This report was also posted on the SCGIS website to solicit feedback from stakeholders, providing an opportunity for comment and questions.

In addition, 38 people from 11 counties responded to an online survey that was conducted during November 2008. A report on the survey results was produced during late January – early February 2009. The demographic breakdown of survey respondents was very much like the workshop attendees; and, rather than present a substantially similar pie chart, the following is a map showing the geographic coverage represented by both the Workshop attendees and the Survey respondents. The participating counties represent 64% of the state’s land area, and 71% of its population.



In terms of the State participation in the Strategic Planning process, it is being coordinated by SCGIC, which is a voluntary state council made up of senior representatives from ten agencies (plus more expected), and a voting seat for the State Mapping Advisory Committee (SMAC), and an *ex officio* role for the Office of Chief Information Officer. Current membership (agency and technical representative) is as follows:

- Department of Natural Resources: Jim Scurry
- Office of Research and Statistics: Lew Lapine
- Department of Transportation: Donald McElveen
- Department of Commerce: Derek Graves
- Department of Health and Environmental Control: Jared Shoultz

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- Department of Probation, Parole, and Pardon Services: Tony Dukes
- Department of Revenue: Liz Mason
- Forestry Commission: Harry Blount
- Emergency Management Division: Amanda Loach
- Clemson University: Gene Eidson
- State Mapping Advisory Council: Cole McKinney, Catawba COG
- Office of Chief Information Officer: *Ex officio* member

Table of Stakeholder Outreach

Stakeholder Group	Did They Participate? (Yes/No)
Government:	
• Municipal	Yes
• County	Yes
• State	Yes
• Tribal	No
• Federal Regional	Yes
• Federal Headquarters	No
• Regional	Yes
Other:	
• Private Sector	Yes
• Non-Profit Organizations	Yes
• Academia	Yes
• General Public	Yes

2.2 Where are we now?

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

NSGIC “Nine Criteria” Status Table

Criteria	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.

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Criteria	Status	Status Description
2. A clearly defined authority exists for statewide coordination of geospatial information technologies and data production.	PARTIALLY 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, but the CIO is an <i>ex officio</i> member of the Council. 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 and involved in the process of geospatial coordination.	DOES NOT MEET	Currently, there is no known champion for GIS in either the Legislature or 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 some 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). State agency funding is focused on meeting mission requirements, and sometimes helps to cover specific project needs on a one-time basis.
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.

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NSDI is the “National Spatial Data Infrastructure” being coordinated at the national level by the Federal Geographic Data Committee (FGDC). FGDC has identified seven “Framework Layers,” which are listed in the table, below. In addition, other layers of significance are included. Status for data sets in South Carolina is described, along with availability to NSDI.

FGDC Framework Layer Status Table

Layer Name	Description	NSDI
Geodetic Control	Available Statewide	Yes
Cadastral	35 out of 46 counties complete; no statewide parcel layer	Yes/No – over 25% of SC counties make their data available via web services, the remainder are not available
Orthoimagery	USGS-county assisted high resolution imagery is available. Some orthos are also available through county web services. 1-meter CIR NAPP available from SCDNR, 1-meter natural color NAIP from USDA available through NRCS Geospatial Gateway	Yes
	Statewide high resolution orthoimagery – mainly county-maintained data sets	Yes/No – over 25% of SC counties make their data available via web services, the remainder are not available
Elevation	LiDAR completed for 19 counties, 5 counties are in progress; the goal is for statewide coverage	Yes
Hydrography	1:24,000-scale NHD, with some local resolution NHD from LiDAR derived breaklines are underway	Yes
Administration Units	County and state boundaries (Cartographic)	No – currently being updated by SC Geodetic Survey
	Municipal boundaries*	Yes/No – over 25% of SC

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		counties make their data available via web services, the remainder are not available
Transportation	State-maintained roads captured by DOT TIGER enhanced street files are available from US CENSUS Bureau	Yes
	Road centerlines captured at county-level as part of E911 program	Yes/No – over 25% of SC counties make their data available via web services, the remainder are not available
Structures	Several state agencies participate in maintaining multiple data layers (most of them by DHEC) including Police Stations, Correctional Facilities, Large places of Worship, Hospitals, Urgent Care Facilities, Nursing Homes, EMS providers, Fire Stations, Hazardous Waste Treatment and Disposal, Red Cross and hurricane Shelters, County Health Departments and Clinics, Food Facilities (Restaurant, School, Supermarket), and Funeral Homes	Yes
	Some counties have building footprints; EMD has a structures file for State buildings	No
Land Use	Statewide wetlands and land cover available from DNR	Yes
	Most counties have local land use	Yes/No – over 25% of SC counties make their data available via web services, the remainder are not available

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Address Points	30% address points coverage from Counties	No
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** Note: In South Carolina, municipal boundaries are maintained at the local level. They are supposed to send information pertaining to annexations to several state agencies including the Secretary of State and the Department of Transportation (DOT). The DOT notifies the municipal government organization if their annexation meets regulation. However, there is currently no agency or body empowered at the state level to enforce compliance. The only recourse available in the event of dispute between municipal and county organizations is through the court system. For this reason, any update to municipal boundary layers desired by Census must be addressed directly with the local government organizations individually. Some organizations make their (recognized/operational) municipal boundaries available via web services.*

The SCGIS website acts as a general GIS data portal to access downloadable data from other agencies throughout the state of South Carolina as well as links to county and municipal GIS sites. The URL follows:

<http://gis.sc.gov/data.html>

- SC Geodetic Survey
- SC Department of Commerce
- SC Department of Health and Environmental Control
- SC Department of Natural Resources
- SC Department of Probation Parole and Pardon Services
- SC Department of Transportation
- SC Forestry Commission
- SC Office of Research and Statistics

There is also a GIS data viewer known as “My South Carolina Map” (mySCmap), which allows anyone interested in data on SC to view data available from participants in the SC Catalog Team. The URL follows:

<http://myscmap.sc.gov/>

In addition, NSGIC created a GIS Inventory site (previously know as RAMONA), which has additional links on GIS data layers and personnel contacts. Not all organizations within South Carolina are currently participating in the program, but it still contains useful information.

<http://sc.gisinventory.net/>

Strength, Weakness, Opportunities, & Threats (SWOT)

The following four sections were developed directly from input collected from the workshops, interviews, and on-line survey. Strengths and weaknesses tend to be inward-looking.. Strengths are positive capabilities that enable action, whereas weaknesses are negative factors that diminish the likelihood of successful action.

Opportunities and threats tend to be outward-looking, but not entirely. When there are opportunities to accomplish goals, they should be identified (e.g. statewide fully-routable street centerlines for all roads). Likewise, threats (e.g. a weak economy) can cause problems if innovation is stifled.

NOTE: In each section, below, the numbering reflects the relative priority of the listed items, in a forced ranking.

2.3 Strengths

- 1) Local GIS programs across the state have produced significant locally-focused geographic data sets that are considered essential to local government operations
- 2) Several data development programs have created a strong precedent for state-local partnership on base map layers, such as street centerlines, orthoimagery, LiDAR for elevation, and geodetic control
- 3) There are many success stories and lessons-learned from over 30 years of GIS activity in South Carolina
- 4) A number of existing organizations in South Carolina have demonstrated capabilities in GIS data sharing and methodology
- 5) Successful GIS programs at the local-level are often strongly supported by local political and functional leadership
- 6) South Carolina is rich in GIS talent and expertise at both the local and state levels
- 7) Several state agencies have strong GIS programs to help meet departmental mission requirements
- 8) There are successful models of inter-jurisdiction regional collaboration at the local and regional level
- 9) The willingness amongst local governments to voluntarily participate in beneficial programs is paramount to successful coordination and collaboration

2.4 Weaknesses

- 1) Regional and statewide geographic data aggregation is lagging behind multiple other states including other southeastern states such as Florida and North

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- Carolina; for example, the job of creating fully routable streets for the entire state or at least for regions of the state, from the best available data sets, is incomplete
- 2) There is no consistent data distribution and licensing policy or common philosophy across state and local governments
 - 3) There is no senior political “champion” for statewide GIS initiatives
 - 4) Counties and state agencies lack a forum for open communication on current research and application development
 - 5) Although invited, not all state agencies using or considering GIS belong to SCGIC (e.g. SLED, and DPS)
 - 6) Not all localities have strong GIS programs, or they may lack resources and leadership to develop programs, resulting in data gaps
 - 7) There is a perception that the cost burden of GIS data development, maintenance, and applications is disproportionately shouldered by local government, particularly for a layer such as parcels, which all levels of government would like to use
 - 8) At the local-level, the perception (whether valid or not) is that state agencies are less interested in initiatives that cross jurisdictions when compared to local interest
 - 9) There is a perceived lack of trained personnel and training programs for GIS amongst local governments and state agencies

2.5 Opportunities

- 1) Be the best in the nation in aggregating at least one “framework” layer; for example, street centerlines represent a data layer where progress has been made at both the state and local levels, independently; the potential exists to conflate the geometry and attributes from both sources to create a statewide later suitable for transportation logistics and emergency dispatch, resulting in fuel savings and faster response to emergencies
- 2) Harness the willingness of certain local stakeholders to support regional pilots focused on property parcels, which is another “framework layer”
- 3) With the talent pool resident in South Carolina, there is potential to attract geospatial data and location-based service industries, as well as other industries to the state using the superior site selection capabilities of GIS to analyze all the relevant variables, including geographic, economic, and demographic considerations
- 4) There is an opportunity for the member agencies of the SCGIC to better manage their GIS activities through coordination across state agencies by enlisting other state agencies not currently belonging to SCGIC to become contributing members (e.g. SLED and DPS)

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- 5) 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
- 6) Build on the ground-breaking work of the Budget Control Board to educate the State Legislature and the Governor's Office on the benefits of GIS to achieve better government, cost savings, economic development, and service to citizens
- 7) Communicate progress in state programs to improve awareness of activities across state agencies and their constituents

2.6 Threats

- 1) Without the best available data readily available and useable for applications such as site selection, South Carolina might lose jobs and economic development to states with more sophisticated statewide spatial data infrastructure
- 2) State and local entities need a forum to share data and application development in order to maximize return on investment for the South Carolina as an enterprise, which is an impediment to enterprise-wide initiatives
- 3) Without more effective use of GIS, duplicate and triplicate spending will continue, and the potential to improve the benefits to citizens through more efficient and effective use of GIS will be diminished. This occurs in regards to road centerline maintenance, but in other areas as well – such as LiDAR data acquisition.
- 4) The quality of life and the environment in which South Carolinians live will deteriorate due to poor decisions based on inadequate or inferior geographic information if the information is not made available to decision makers and decision making organizations regardless of who authored it; and, if the organizations do not adopt spatially enabled decision making methodologies to derive full value from the information.
- 5) There is a risk from inadequate geospatial infrastructure for statewide disaster preparedness such that response to or mitigation of a catastrophic manmade or natural event will be less effective

3 VISION & GOALS

The following sections take into consideration the strengths, weaknesses, opportunities and threats described above, and also the past efforts to advance GIS in South Carolina. The result is a streamlined mission statement, an endorsement of previous strategic goals, and the introduction of key success factors and pilot projects for moving forward.

3.1 Mission Statement

The mission statement provides strategic goals and success factors to be acted upon. The following mission statement is proposed:

Lead the nation in collaboration and utilization of geospatial resources which achieve statewide goals to positively impact the lives of South Carolinians.

3.2 Strategic Goals

The Strategic Plan completed in 2001 was focused primarily on state agencies. Nonetheless, the ensuing goals were broad enough to create a solid long-term framework to guide statewide programmatic activities. They should be revisited periodically, as they were during the current strategic planning effort, for relevance and adaptability. The recent conclusion was that they still have relevance; and therefore, they are repeated, below:

- 1) Define and put in place an organizational structure and institutional relationships to support Statewide GIS coordination and use.
- 2) Create policies, procedures, and tools to encourage and enable joint GIS development and access and pursue joint projects.
- 3) Build and maintain geographic data important for users Statewide.
- 4) Establish a formal process and technical infrastructure for providing GIS data and services.
- 5) Establish, manage, and provide outreach and educational programs and services.
- 6) Explore and pursue effective partnerships and funding strategies to support GIS initiatives.

In addition to these strategic goals, more specific success factors are needed to focus attention on implementation and measurement of results. Given the lack of resources to move aggressively on all fronts, a focused and prioritized effort is needed; and, some goals will receive greater attention than others, based on success factors.

Recommended success factors developed from input from the workshops, interviews, and public comment on Preliminary Findings are described in the following section.

3.3 Goal Success Factors

- 1) Define and put in place an organizational structure and institutional relationships to support Statewide GIS coordination and use.
 - a. In the ongoing spirit of collaboration and relationship-building beyond state agencies, continue outreach and liaison as key activities of SCGIC and the State GIS Coordinator, and work collaboratively toward a shared vision for GIS

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- b. Continue an open and transparent planning process, and provide existing stakeholder organizations (e.g., GAASC, SCARC, Regional User Groups, the Municipal Association, and the County Association) with opportunities for public review and comment to help move the plan forward
 - c. Seek endorsement from existing stakeholder organizations on the intentions of the strategic plan
 - d. Make the necessary arrangements to get all of the key state agencies formally committed to the recommendations in goals #3 and #4 (below), namely:
 - A multi-county pilot project to make statewide street centerlines fully routable
 - A multi-county property parcel data pilot
 - A statewide orthoimagery service
 - A quid pro quo between state agencies and local governments on data of mutual interest (such as the precise locations and address points for hazardous sites)
 - A statewide geocoding service
- 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, Geodetic Control, and LiDAR programs
 - b. Promote existing regional-local models of collaboration, such as the Berkeley County Consortium
 - c. See joint efforts described under the next goal (and associated success factors), and align policies, procedures, and tools to be successful in accomplishing the goal to build geographic data statewide;
 - d. Leverage lessons-learned from the pilot projects to enhance the statewide GIS knowledge-base
- 3) Build and maintain geographic data important for users Statewide.
- a. Create fully routable street centerlines for *all* roads to support statewide applications by integrating data compiled from local government sources via the statewide E911 program, and data maintained by SCDOT on roads maintained by the state; this is something on which SC can potentially achieve national recognition and leadership, and which can help SC be better prepared for the next storm of the same or greater magnitude as Hurricane Hugo in 1989; begin with a pilot area comprising several counties, and bring the key state and local agencies into the project to collaborate from the get-go (e.g. DOT, DHEC, E911, SLED, participating local government organizations); describe the expected benefits to local participants

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- 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; shape awareness of data and processing needs for both property and jurisdictional boundaries, and pursue benefits from applications such as economic development
 - 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. Continue to close the loop on open ended, one-way data flow up to the state from local sources, i.e., proactively provide value-added data back to local authorities; examples might include sharing data on hazardous waste sites that are permitted by the state – develop a specific list of all the possibilities for action; in turn, local authorities could provide enhanced addressing information to more precisely geocode such items of mutual interest
 - b. Provide a statewide geocoding service accessible to users at both state and local levels of government
 - c. Focus on repeatable and sustainable processes for maintaining statewide data layers, such as fully routable statewide street centerlines, from data of multiple sources, including state and local
- 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 “GIS Show and Tell” for State Legislators and their staff when the Legislature is in session; enlist the support of the Budget and Control Board for this purpose, and time it to have tangible results from one or more of the pilot projects to demonstrate
 - c. Collect success stories, benefits, 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
 - d. Continue and increase current levels of communication as necessary to strengthen state outreach and liaison activity, which also supports goal #1
 - e. Encourage GIS practitioners to strengthen their qualifications and gain professional status through programs such as the GIS Certification Institute’s

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(GISCI) GIS Professional (GISP) designation, which has been endorsed by five other states (CA, NC, NJ, OH, and OR) to-date

- 6) Explore and pursue effective partnerships and innovative funding strategies to support GIS initiatives.
 - a. Document exemplars for the consideration of others, such as the Berkeley County Consortium, the Charleston Regional Development Alliance, and the GIC's Method and Tiers data accuracy project
 - 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
 - c. Identify and pursue sustainable funding strategies for successful programs

4 REQUIREMENTS

4.1 Inventory of Existing Infrastructure & Suitability Assessment

Most of the State Agencies comprising the SC Geographic Information Council have existing infrastructure, including technology and personnel, to support their mission requirements for GIS. Based on the predominant technology in use, i.e. ESRI products, there is an inherent ability to share data and to interoperate across networks. This is the enabling technology for broadening the use of Web services, for example, which can be potentially accessed and utilized by stakeholders across different sectors and levels of government.

Examples of data sharing and interoperability across state agencies is already happening, so the challenge is to determine the political feasibility of leveraging this existing infrastructure more widely, to achieve some of the goals of this strategic plan. One very specific example is to open access to a geocoding service such as that used by DHEC, to include other State Agencies and potentially local governments.

4.2 Data Status

There is a wealth of data available in South Carolina, but a lack of integration efforts to create layers of statewide significance, other than what is needed to meet individual agency mission requirements. For the pilots envisioned in this Strategic Plan (i.e., fully routable street centerlines for a multi-county area, web-based parcel GIS for a multi-county area, web-based ortho-imagery server, and a statewide geocoding service), the necessary data exists, but not in an integrated fashion.

The current status in South Carolina for each of the seven NSDI framework data layers was shown in a table in Section 2.2 "Where Are We Now?" For the recommended pilot

projects, a number of data decisions and questions need to be resolved, including the following examples:

- What combination of E911 and SCDOT street centerline data should be used to achieve the goal of fully routable street centerlines for all roads?
- What combination of street attributes should be used?
- Is there a dataset with statewide address ranges for all streets?
- Are address points available for a pilot area? They could be derived from the parcel pilot, potentially, and integrated with the street centerlines pilot.
- What is the source of authoritative political boundaries for use in a multi-county parcel map pilot?
- What CAMA attributes should be integrated into the parcel map pilot, and what is the source?
- Is the ortho-imagery from counties available for a pilot, and if not, what are the constraints?
- Is imagery available for the contemplated area for the parcel map pilot?
- Permission should be sought as a courtesy to use parcels from counties abutting Lexington County (the leader of the parcel map pilot initiative). This should not be a problem with Aiken County, for example, but Richland County has a policy of selling its parcels for a high price. Alternatively, parcels for Richland are available from the City of Columbia, but this might be a politically sensitive issue that requires a discussion with political leaders.

4.3 Technology Requirements

It is believed that most of the recommended pilots have suitable technology platforms readily available, but this has not been verified. One question, for example, is what might be necessary to serve statewide ortho-imagery with acceptable performance. Also, as user traffic increases on either the parcel map pilot or the street centerlines pilot, server requirements may commensurately increase. The use of a cloud computing service could be considered for its scalability without a capital investment in hardware, but there would be costs incurred on a “metered” basis (related to how much processing, storage, and bandwidth is actually utilized). There may also be licensing issues with software vendors when migrating to a model that opens site access to users outside of the licensed organization, so this should be reviewed.

4.4 Resource Requirements

It is assumed that new financial resources will be scarce to none; and so, the pilot projects are based on a coalition of the willing, and leveraging existing resources. In the short-term, creative assistance can be sought from willing stakeholders on a collaborative basis; but at this time, no institutional funding that represents an increase over current budgets will be sought. This is a somewhat tenuous approach, but in the current economic and political climate, new resources of any kind are highly unlikely. Longer-term, additional grant funding could be sought, as well as budgetary accommodations to help sustain the programs that are most beneficial to South Carolinians.

In the meantime, new collaborative approaches are needed to creatively address statewide needs that have been identified through outreach efforts as part of the strategic planning process. Existing resources must be leveraged for there to be short-term success, and creative approaches are needed. One possibility for additional support would be using interns from the University of South Carolina, given the strong GIS programs and relevant subject matter being studied at the university.

While acknowledging uncertainty for the future, the expectation is that short-term success will attract greater support and attention for long-term resource alignment with the goals of this strategic plan.

4.5 Standards

Standards may vary by agency and mission requirements. They include voluntary consensus standards, *de facto* market standards, and mandated specifications. There is a solid understanding of the value of standards for data sharing and interoperability in South Carolina. A number of state agencies endorse National Mapping Standards and more recent geospatial standards from the Federal Geographic Data Committee (FGDC). These address many of the data themes suggested for pilot projects. References for finding these standards include:

- <http://nationalmap.gov/gio/standards>
- http://www.fgdc.gov/standards/standards_publications/

In addition to Federal standards, South Carolina has developed standards specific to the state's GIS needs, including standards for "Road Centerline Attribute Content and Spatial Development" and "Address Database and Address Road Centerline Content." These standards can be found at the following URL:

- <http://www.ors.state.sc.us/digital/standards.asp>

The pilot projects recommended in this strategic plan will benefit from alignment with appropriate standards. However, not all available data is expected to be standardized from the get-go. In time, migration toward the appropriate standards is desirable, and the actual data will help identify what makes sense for South Carolina. The emphasis in this plan is on the desired outcomes, more than on implementation details that might recommend specific standards.

4.6 Organizational Needs

This plan is not proposing any reorganization or increase in GIS staff. Rather, it is focused on concentrating some attention on the goals and success factors endorsed by the SCGIC and GIS stakeholders who had input to this plan, including the pilot projects. As addressed in Section 4.4 on "Resource Requirements," the assumption is that progress

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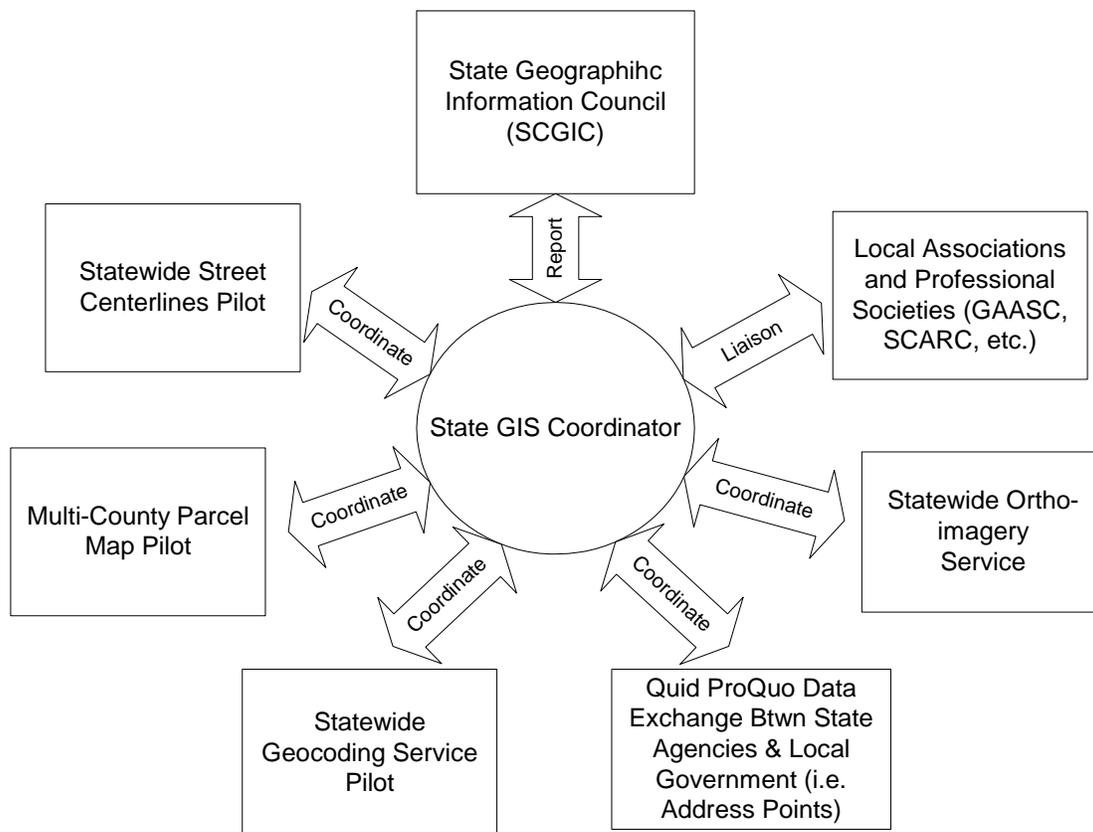
will be made by a coalition of the willing on a voluntary basis, with the appropriate support of leadership to move forward as feasible in a collaborative and creative manner.

It is not reasonable to assume that the State GIS Coordinator can manage and perform all of the recommended pilot projects. However, it is reasonable to expect that he can help identify and coordinate the parties willing to participate, and contribute expertise and reach out to other experts to facilitate progress.

There may be a need for policy-level support on some of the initiatives. For example, if local government is the source of parcel data, data usage and distribution restrictions may apply, as a function of licensing agreements. A legal opinion might be needed on such matters, to determine the state's rights and responsibilities for using local data.

The following chart shows the set of relationships that the State GIS Coordinator needs to maintain to be successful at implementing the SCGIS Strategic Plan.

Relationships for Implementing the SCGIS Strategic Plan



4.7 Assessing Risk

The main risk in implementing this strategic plan is the lack of funding and resources to hold teams accountable for making it happen. It depends on voluntary participation, and on leadership support. Given this operating reality, expectations must be realistic about schedules and desired outcomes.

5 IMPLEMENTATION PROGRAM

As part of the SCGIS Strategic Plan, this section describes each of the recommended pilot projects and support activities for continued outreach, without prescribing detailed implementation plans. It is important for the willing participants to be consulted and involved in implementation details.

5.1 Implementation of Pilot Projects

The following pilot projects are defined in this Strategic Plan as ways to move forward on the strategic goals built on the findings of the state's outreach effort. They are complementary to each other and synergistic. The State GIS Coordinator will help cross-pollinate the efforts.

1. **Routable Street Centerlines**: Create a fully routable street centerlines database for statewide applications for all roads
 - a. Begin with a pilot area comprising several counties
 - b. Include state and local roads
 - c. Bring the key state agencies and local entities into the project to collaborate from the get-go (e.g. DOT , ORS , E911, DHEC, SLED, etc.)
2. **Multi-County Parcels**: Aggregate and integrate property parcel data across several adjoining counties, as a model for regional and statewide aggregation
 - a. Act on the willingness expressed by regional stakeholders to embark on a County-led pilot (i.e. Lexington County)
 - b. Determine what data is required as well as best practices
 - c. Survey current demand and applications for parcel data amongst SCGIC members
3. **Statewide Ortho-imagery Web Service**: Publish existing aerial ortho-image data, which is being collected at the local level with state and federal support, by deploying a Web service
 - a. Find support for efforts underway at Geodetic Survey to serve ortho-imagery for statewide access
 - b. Scope the necessary hardware, software, and bandwidth requirements
 - c. Identify any county restrictions on publishing this imagery
4. **Address Points**: Develop a statewide address points layer with voluntary participation from local government organizations
 - a. Solicit enhanced addressing information (i.e. address points) from local authorities to more precisely geocode items of mutual interest

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- b. Proactively provide value-added data back to local authorities
 - c. Provide information to local authorities on how data is being used by the state agencies in order to benefit citizens within their communities and increase the quality of life
 - d. Establish a potential tie-in to the other pilot projects
5. **Statewide Geocoding Service**: Establish a statewide geocoding service and make it available to state and local organizations
- a. Eliminate duplicate efforts across state agencies to develop the same services
 - b. Assess existing geocoding services
 - c. Leverage improved address data from the other pilot projects

5.2 Phasing & Milestones

The following schedule assumes a five-year time horizon for the Strategic Plan, and uses the Fiscal Year as a relatively coarse unit of time. Many activities are ongoing. There is a heavier schedule of activities planned for the first two years, with the assumption that the plan will be recalibrated as progress is reviewed and priorities re-evaluated going forward.

See next page for Gantt chart of schedule

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Strategic Goals and Success Factors	Schedule Type	Fiscal Year				
		2010	2011	2012	2013	2014
1) Organizational structure and institutional relationships	Ongoing					
a. Continue statewide outreach and liaison as key activities	Ongoing					
b. Continue an open and transparent planning process	Ongoing					
c. Seek endorsement of stakeholders for Strategic Plan	FY 2010					
d. Get commitments to support the five pilot projects	FY 2010					
2) Encourage and enable joint GIS development and access and pursue joint projects	Ongoing					
a. Publicize existing state-local models of joint effort	Ongoing					
b. Promote existing regional-local models of collaboration	Ongoing					
c. Align policies, procedures, and tools to be successful in accomplishing the goal to build geographic data statewide	FY 2011					
d. Leverage lessons-learned from the pilot projects	FY 2011					
3) Build and maintain geographic data important for users Statewide	Ongoing					
a. Create a fully routable street centerlines pilot project for statewide applications	FY 2010					
b. Embark on a County-led pilot to aggregate and integrate property parcel data across several adjoining counties	FY 2010					
c. Create an aerial orthoimagery web service for the State's existing imagery	FY 2011					
4) Establish a formal process and technical infrastructure for providing GIS data and services.	Ongoing					
a. Provide value-added back to local authorities (i.e. sites of mutual interest in return for address points)	FY 2010-11					
b. Provide a statewide geocoding service	FY2011					
c. Focus on repeatable and sustainable processes for maintaining data of local origin	Ongoing					
5) Establish, manage, and provide outreach and educational programs and services	Ongoing					
a. Produce and share a set of talking points for all GIS stakeholders to use	FY 2010					
b. Conduct a "show and tell" for State Legislators and their staff on pilot project results with help from BCB	FY 2011					
c. Collect and publish GIS success stories and lessons-learned, and publish on the SCGIS website	Ongoing					
6) Explore and pursue effective partnerships and funding strategies to support GIS initiatives	Ongoing					
a. Document exemplars for the consideration of others	FY 2010-11					
b. Work toward institutional mechanisms for geospatial activities in which local governments can voluntarily participate	Ongoing					
c. Identify and pursue sustainable funding strategies	FY 2011-14					

5.3 Budget Plan

As described in Section 4.4 on “Resource Requirements,” there will not be any new budget requests to implement this plan. It will be undertaken by leveraging existing resources where feasible, and using voluntary support. As a point of information, the one pilot project that could benefit the most from a funding component would be the statewide ortho-imagery web service, due to hardware, software, and bandwidth requirements. These requirements are being assessed as part of the plan, going forward.

5.4 Marketing the Program

Building awareness of the findings of the state’s outreach efforts for GIS coordination needs **go beyond GIS circles**. Some of the ideas that came out of the workshops for promoting GIS in the state include:

- Collect and share success stories
- Present on statewide initiatives at non-GIS events
- Provide support to “show and tell” days for the Legislature
- Develop a set of talking points for all GIS stakeholders to use when speaking to non-GIS leadership people and potential supporters, including the benefits

5.5 Measuring Success & Recalibration

Progress on implementing this plan will be monitored by the State GIS Coordinator, and on a regular basis, status will be presented to the SCGIC for feedback and redirection as necessary. In addition, as part of ongoing outreach, the Coordinator will report on progress at regularly scheduled meetings of statewide stakeholder groups, such as GAASC and SCARC, amongst others.

6 EXPECTED BENEFITS FROM PILOT PROJECTS

The following is a qualitative assessment of the key benefits expected to accrue from the proposed pilot projects. As the projects get underway and begin to make progress, a more detailed reckoning of actual benefits will be made.

6.1 Routable Street Centerlines

There has been a proliferation of location-based services (LBS) and products in recent years, for both consumers and professionals. A common ingredient of most of them is a street centerline data set that allows users to display a map of streets and to show location of virtually anything related to an address. Everyone seems to be familiar with a service such as Google Maps, where you can get directions to the address of where you might want to go. This type of service is widely accessible and easy-to-use.

The data comes mostly from public sources, and is then integrated and enhanced by private companies that supply Google and others with data. The largest such companies are NAVTEQ (owned by Nokia, a Finish company) and TeleAtlas (owned by TomTom, a Dutch company). However, there is a lag between when the public sources update their street centerline files and when the data actually appears in a commercial service or product. This lag is commonly believed to be about two years.

During the regional stakeholder workshops, several counties reported that changes they had made to their files (such as the addition of new streets), and had passed along to companies such as NAVTEQ and TeleAtlas, did not show-up in the commercial products after even more than two years. The counties hear about it from consumers who use on-board navigation devices for their cars, when they end-up getting lost. On-board navigation devices use signals from Global Positioning Satellite (GPS) technology, which is also widely used in hand-held devices.

The expected benefits to the state from a street centerlines pilot project revolve around the creation of an authoritative source of all roads in the state, compiled from multiple sources, including counties and state sources. The state cannot rely on two-year old data served back to it from commercial sources, when the commercial entities typically gather the data from the state and counties to begin with – the public sector needs reliable, accurate, and current data that originates in the public sector to be integrated and used for public purposes, including public safety, transportation, and other road-centric applications.

South Carolina has a couple of great sources of accurate road data, namely, roads from the E911 program and roads from SCDOT. The E911 data is from individual counties, but has the desirable quality of comprising all roads. The SCDOT data is nicely integrated, statewide, but only included roads maintained with public highway funds. These data sets represent ideal raw material, and integration and conflation effort will yield useful results for serving the above-mentioned public purposes, as well as become an attractive potential resource to location-based services companies.

When a hurricane of the same magnitude as Hugo hits South Carolina, resources need to be deployed from across the state, in an effective and timely manner. Routing across jurisdictions demands the best data available for all roads, and the street centerlines pilot will be a step toward understanding the full scope of what is needed to accomplish this goal.

6.2 Multi-County Parcels:

South Carolina has a great opportunity to lead the nation in a long-standing need: dependable property ownership and parcel map data as an essential ingredient to a modern information-based economy. Many decisions are based on the property that we own, or would like to own. This includes loans and mortgages for individuals. It also includes site selection for economic development.

Part of the nation's current economic distress is based on bad loans and foreclosures across the country. It is now recognized at the highest levels of government that this problem should have been anticipated sooner. The patterns of bad loans and foreclosures could have been more readily mapped if reliable parcel map data was available. The parcel map is a canvas upon which many economic variables can be displayed, such as demographic data, environmental data, and public health data.

In South Carolina, most counties have parcel data, because it is fundamental to tax appraisals and collections at the local level. However, very little has been done to integrate parcel data across county lines, to achieve a better regional perspective, and ultimately, a better state perspective of land ownership patterns. It has been shown in a number of states that efforts to create statewide parcel layers pay-off in terms of creating a platform of data for economic decision-making and policy-making. States that have made progress in this regard include Tennessee, Montana, and Massachusetts. Others are at varying stages of pursuing initiatives to compile statewide parcel layers, but South Carolina has the opportunity to be amongst the leaders.

It is a unique time to move forward with the proposed multi-county pilot, and it could become a model for collaborative statewide activity between and across levels of government. It exemplifies the "coalition of the willing" approach that is necessary in these economic times. Lexington County, an award-winning GIS user in the state, has volunteered leadership and resources to move forward on assembling an integrated parcel data set from several adjacent counties, to build a foundation for beneficial applications for all participants.

6.3 Statewide Ortho-imagery Web Service:

Ortho-imagery is created by taking aerial photographs or data from other remote sensing technology and correcting the image for distortion. This results in an accurate image from which you can take measurements, and upon which other data can be displayed. This is important, because it becomes an instant "basemap" that is useful for both professional and consumer applications.

Anyone familiar with Google Maps and turned on the "Satellite" option has seen this type of imagery when zoomed in far enough. Google switches from satellite imagery to aerial photographs as one zooms in closer to what is being viewed. Much like was discussed earlier in the context of street centerlines, the best data is typically captured by a public entity, and then used by both the private and public sectors for a wide-range of applications. Google gets its imagery from a variety of sources, for a variety of scales; but their mandate does not include the multitude of applications that the public sector must support with imagery. It is important to note that Google does not pay government entities for their imagery; as they are not the generators of the data, merely a consumer that then "redistributes" access to the data view their mapping applications.

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South Carolina has been collecting ortho-imagery for many years, and redoing areas on a regular cycle. This creates a huge volume of data, and every one involved in mapping and GIS applications desires access to the data, for both presentation and analytical applications. For example, imagery from two different time periods can be used for change detection, to see the impact of different land uses and growth patterns. It is also useful for agricultural and forestry applications, and for flood mapping, to name a few examples.

Cost-sharing has been used across levels of government to pay for ortho-imagery production, including federal, state, and county. This is a model that could be beneficial for other data types, too. The result has been an important asset that needs to be shared. It is a great example of where the state itself could save money and get a greater return on investment by having a central Web service where imagery could be accessed by state agencies, thereby reducing or eliminating the need for redundant storage and processing capacity. Image files are inherently large, even with compression.

There are network bandwidth issues as well as storage and processing requirements to contend with; and ultimately, resources are needed. Prototyping has been taking place that will help inform decision-making about the full scope and cost of an Ortho-imagery service going forward, but it is something that is widely needed, and will help avoid duplicative costs in the long-run.

6.4 Address Points:

It became clear from both interviews with state agency personnel and findings from the regional stakeholder workshops that there was a great opportunity in the making. Namely, the basis for two-way data sharing between state and local entities with value perceived on both sides. The specific opportunity revolved around sites of mutual interest, such as hazardous waste sites, public facilities, restriction zones, and critical infrastructure.

Various state agencies collect information about such sites, and mark their location to the best of their ability on maps, using a GIS technique called geocoding. This results in a match between the site's address and its approximate location on its street. It is an approximate location because most geocoding uses address ranges for a given street segment, and the location is interpolated along the range. A more desirable approach if higher levels of spatial accuracy is needed is to use address points.

Address points typical require local knowledge and local data. For example, local parcel data can be used to pinpoint an address to the actual property location. Local authorities with such knowledge and data would like other information about the sites in question, while the state would like to have the precise address points. This is the essence of the opportunity, and the basis for beneficial *quid pro quo* on data exchange.

Once address points are obtained, many location-based services (LBS) can be better supported. It is also a critical enhancement for emergency vehicle dispatching, for

routing the first responders to exactly the right location. Address points used in combination with other data, such as ortho-imagery or GPS data, have a synergistic effect. This makes it easier to verify exact locations, which is very important for police, fire, and EMT personnel.

This pilot gained momentum very quickly, with great cooperation from numerous counties to supply their address points to the State GIS Coordinator. A two-page flyer on the “South Carolina Address Points Program” is available on the SCGIS website.

6.5 Statewide Geocoding Service:

Geocoding was briefly explained above in the section on address points. It is a well-known GIS technique, and it has made it into the mainstream with applications such as finding directions on widely used websites such as Google Maps. In simple terms, an address is entered, and software matches it to a location on a map, or it returns a pair of coordinates to you so you can make your own map.

It is conservatively estimated that more than 80% of private and public business involves an address. Geocoding is a fundamental service needed across most organizations, in some way, shape, or form. One of the issues with geocoding was mentioned above in the context of address points – namely, the use of address ranges and interpolated locations rather than precise points. Another issue is the use of different street centerlines, which are another ingredient to the geocoding process. For example, one might get different results if geocoding using TIGER files from the Census Bureau rather than a county’s local roads (although cooperation with the Census Bureau has resulted in improvements in the matching geometry).

Geocoding is viewed as an enterprise-level service in most states, because it is desirable to get consistent results across state agencies when matching an address to a location on a map. This requires some decisions about authoritative data sources, and a server-based Web service that can be accessed across the network to support many users. This reduces departmental investments in duplicate infrastructure, and improves the consistency of results when geocoding the same address for different departmental purposes. For example, one wouldn’t want the same address to show-up in different locations on a map, depending on which geocoder each state agency might use. If they are using the same one, the results will be consistent.

It is a big plus that the address points initiative is proceeding nicely, because this data can be leveraged by a geocoding service for the benefit of all.

7 APPENDIX A. STRATEGIC PLANNING METHODOLOGY

General Approach

- 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 SCGIC
- Development of a Strategic Plan
- Endorsement and Adoption by Stakeholder Community
- Ongoing Measurement

Specific Information Gathering Activities

A variety of information was gathered via document research, website review, 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

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- 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
- Report on Preliminary Findings, 11/24/2009
- Public Review and Comment on Preliminary Findings, Nov. 2008 – Feb. 2009
- Online survey questionnaire, Nov. 2008 – Dec. 2008
- Background Research and Document Review, Oct. 2008 – March 2009
- Technical Discussion Paper produced for the SCGIS Council Tech Committee based Preliminary Findings and recommendations for pilot projects, 1/20/09
- Survey Analysis Final Report, 2/4/2009
- First Draft of Strategic Plan for review with State GIS Coordinator, 2/8/09
- Attendance and Strategic Planning Discussion at SCARC in Columbia, 2/9/09
- Public Review of Goals and Vision, February 2009
- Review of Goals and Vision by SCGIS Council, 3/2/09
- Refinement of Vision Statement by SCGIS Tech Committee, May 2009
- Final Draft of Strategic Plan reviewed by SCGIS Tech Committee, May 2009
- Presentation to SCGIS Council, 6/1/09

8 APPENDIX B. GIS STRATEGIC PLAN DOCUMENT HISTORY

Version #	Date	Description	Responsible Party
1.0	02/9/09	Draft Deliverable	AppGeo
2.1	05/18/09	Revised Draft	AppGeo
2.2	05/24/09	Revised Draft with Track Changes	SC State GIS Coordinator
3.0	05/25/09	Final Draft	AppGeo
3.1	11/10/09	Final Draft - minor grammar edits	SC State GIS Coordinator
3.2	01/08/09	Final Draft – added clarification to NSDI chart for available data sets	SC State GIS Coordinator

NOTES: