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A Case for a GIO in Georgia

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Overview

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- Organizational background (GISCC & Clearinghouse)
- Background
- Drawbacks to current situation
- Need for a GIO: Executive Summary & breakdown
  - Areas of missed opportunity
- Case for a GIO
  - Legal drivers
  - Technical drivers
  - Business drivers
- Advantages to Having a GIO
- Outstanding Needs
- Questions/Comments/Feedback

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GISCC & Georgia Clearinghouse

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- GISCC: Volunteer body of state, regional, and local government, private sector, and GIS professional representatives
- GISCC established by the Georgia Technology Authority (GTA), formerly the Georgia Information Technology Policy Council (ITPC), in 1996 to provide a more efficient and effective framework for the planning, budgeting, acquisition, and utilization of State GIS resources.
- The Georgia GIS Data Clearinghouse: Funded by GTA; serves as the implementation arm of the GISCC and official node of NSDI
- Clearinghouse provides an effective means for state agencies to share GIS data, reduce data duplication and development costs, foster joint development efforts, and develop statewide standards for GIS data collection and documentation.

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Clearinghouse Business Model

- 3 FTEs + basic operations funded by GTA through agreement with BOR
- 2 Nodes: UGA ITOS & GaTech CGIS (data library & service nodes, respectively)
- Basemap development funded by contributors (state agencies) organized through GISCC
- Clearinghouse recovers data dissemination costs via “for-fee” data (ex., aerial photography)
- Clearinghouse presence on Internet (repository)

http://gis.state.ga.us

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Background

To-date, Georgia has operated a statewide GISCC without a "political champion" or state funding for GIS data development or GIS initiatives.

Even without a champion, the GISCC has accomplished a great deal. Namely, the GISCC has developed several important basemap layers:

- Boundaries
- Transportation
- Hydrography
- Wetlands
- Aerial Photography (1993 panchromatic; 1999 CIR)

As a result of these coordinated basemap efforts alone, the GISCC has saved the state of Georgia over $1.2 million dollars.

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Need for GIO

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Although the Clearinghouse provides the most comprehensive collection of Georgia's geospatial assets, it is not representative of *all* significantly existing datasets because there is no requirement for the submission of data to the Clearinghouse.

- For example, only 6 of Georgia's 159 counties have voluntarily submitted their parcel data to the Clearinghouse when over half of the counties have parcel data in a vector format.
- In the event of an emergency or to fulfill national and state legal requirements, the Georgia GIS Clearinghouse *is not* currently enabled to provide a complete list of assets when queried.

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Need for GIO

Geospatial data should be developed and maintained in accordance with the following key data life cycle phases:

- Data planning
- Data collection and acquisition
- Data processing and documentation
- Data Storage and Access, and
- Data Maintenance and Archives

Because its members are volunteers and none hold decision-making positions in their respective organizations, the GISCC does not have the means to fully implement the GIS data life cycle for any organization.

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Success Stories

- G8 Summit
  - GIS in the command center for local familiarity
- ARC Oblique Imagery
  - Through coordinated efforts, ARC has outfitted metro ATL with oblique imagery & 1' orthophotography w/in past 18 months
- VALOR Program (SE GaRDC)
  - Valdosta & Lowdes County working together w/equal match from the RDC (positively impacting tax, police, EOS, etc.)

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Drawbacks to Being GIO-less

- Delayed basemap progress in Georgia (ex., 1999 imagery)
- Lacking inventories/coordination (no human inventory - $1.5 mill in Brian Nichols case; no equipment inventory – no state procurement or known expenditures, ROI)
- Missing federal funding

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Executive Summary (1/2)

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Strongly proposed in 2005 that Georgia establish a GIO (Geospatial Information Officer) as a statewide coordinator through civil appointment. This person shall have the authority to implement the following necessary actions:

- Require state agencies and local government to provide common access to their electronic maps, aerial imagery, and geographic data and/or associated metadata via the Georgia GIS Clearinghouse to ensure interoperability (with exception to records identified in O.C.G.A. 50-18-72).
- Obtain sustained funding for collection, creation, and maintenance of statewide electronic maps, aerial imagery, and geographic data.

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Executive Summary (2/2)

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LEGAL DRIVERS

- 11 Federal requirements, including Homeland Security, the E-Government Act of 2002, the Office of Management and Budget, the Census Bureau, and Intelligence Reform.
- > 15 key State agencies of Georgia provide functions for which GIS is crucial, including, but not limited to: GDOT, GBA, DHR, DNR, OHS/GEMA, and DCA.

TECHNICAL DRIVERS

- Georgia GIS Clearinghouse already exists as a one-stop data resource. Therefore, the vehicle and justification is in-place to collect and serve all geospatial data to state constituents from one resource. Only lacking element is an accountable, enforceable means of doing so.

BUSINESS DRIVERS

- Federal Government no longer developing new statewide digital base map themes, with exception to projects considered national priorities or special projects appropriated by congress (ex., flood hazard mapping program).
- Millions of federal funds lost from the lack of asset inventories and coordination.

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Legal Drivers: Federal (1/2)

- President George W Bush's *Comprehensive National Strategy for Homeland Security: Protecting Critical Infrastructure and Key Assets*
  http://www.whitehouse.gov/news/releases/2002/07/20020716.html
- Executive Order: Strengthened Management of the Intelligence Community
- http://www.whitehouse.gov/news/releases/2004/08/20040827-6.html
- Office of Management and Budget (OMB)
- http://www.whitehouse.gov/omb
- H.R. 2458, E-Government Act of 2002
- http://www.cio.gov/archive/e_gov_act_2002.pdf
- Geospatial One-Stop (GOS), aka Geodata.gov
- http://www.geodata.gov
- OMB Circular A-16 (Coordination of Geographic Information and Related Spatial Data Activities, 1990, revised in 2002)
- http://www.whitehouse.gov/omb/circulars/a016/a016_rev.html
- 109th Congress, Committee on Government Reform
- http://reform.house.gov/FC

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Legal Drivers: Federal (2/2)

- Executive Order 12906/13286 Coordinating Geographic Data Acquisition and Access (1994)
- http://www.fgdc.gov/publications/documents/geninfo/execord.html
- National Spatial Data Infrastructure (NSDI)
- http://www.fgdc.gov/nsdi/nsdi.html
- The Clinger-Cohen Act of 1996
- http://www.washington.edu/accessit/articles?104
- Intelligence Reform and Terrorism Protection Act of 2004: DHS Geospatial Management Office
- http://www.mapps.org/SupportingFiles/documents/Intelligence-Terrorism_Final_Bill.pdf
- Public Law 106-554 Library of Congress' National Digital Information Infrastructure and Preservation Program (aka Digital Preservation Program), 2000
- http://www.digitalpreservation.gov
- Prosecutorial Remedies and Other Tools to End the Exploitation of Children Today (PROTECT) Act of 2003 (i.e., Amber Alert)
- http://www.amberalert.gov

Legal Drivers: State

- **O.C.G.A. 32-4-2, Georgia Department of Transportation's (GDOT) statutory purpose**
  - O.C.G.A. 32-4-2 (a)(1): Prepare an official map of Georgia reflecting changes as soon as reasonably possible. Filed with the Secretary of State for public inspection.
  - O.C.G.A. 32-4-2 (a)(1): Prepare county maps as often as reasonably possible, but not less than once every five-years.
  - O.C.G.A. 32-4-2 (a)(2)(A): Prepare an official list of all portions or features that have been named by Act or Resolution to specify highway system route number, county, zip code, official citation, brief biographical, historical or relevant description of the person, place, event, or thing commemorated by such naming. The list shall include all public roads, bridges, or interchanges and may be contracted to a state historical society to be provided in electronic format free to the public on the Internet.
  - O.C.G.A. 32-4-2 (b): Keep written records of the mileage on all public roads, state highway and county roads with changes to be revised as soon as is reasonably possible. Records should indicate paved or unpaved, road conditions, status, type and use, and other information needed for long range planning and construction and maintenance.
  - O.C.G.A. 32-4-2 (e): Official record of state highway system consisting of an official map, among other things.

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Legal Drivers: Local

- **GASB34/35 (Government Accounting Standards Board, Statement 34 and 35)**
- 1979 - defines how state and local governments are to report their assets via financial statements for determining values and depreciation.
- **CMOM (Capacity, Management, Operations, and Maintenance)**
- Requires organizations to inventory their sewer systems and demonstrate that they measure up to design capacity.
- **NPDES (National Pollutant Discharge Elimination System)**
- 1972 CWA derivative – reporting requirements include watershed delineation, stormwater asset inventories (outfalls, drains, pipes, overflow stations, etc.), and wet/dry weather sampling locations/results identified. .
- **President Bush's Comprehensive National Strategy for Homeland Security**
- Drives many of the operations in local government to help *secure the infrastructure and assets vital to our public health, safety, political institutions, and economy*.
- **Community Comprehensive Planning**
- Local governments shall participate in compiling a Georgia database and network to serve as a comprehensive source of information available, in an accessible form, to local governments and state agencies … shall collect, analyze, and disseminate information with respect to local governments, regional development centers, and state agencies.

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Legal Drivers: Technical

- Clearinghouse already exists as a one-stop data resource. The GISCC is established; the Committee has a business plan, guidelines, policy(ies), mission, vision, etc.
- Next natural step would be for Georgia to create and empower a GIO to utilize these vehicles/tools to the maximum extent practicable, i.e., to compile a complete inventory of geospatial assets via the Clearinghouse and to chair the GISCC and really use the organization to make greater positive impact on state stakeholders.

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Business Drivers (1/3)

- The Federal Government is no longer developing new statewide digital base map themes, with exception to projects considered national priorities or special projects appropriated by congress (ex., flood hazard mapping program). Therefore, states must now take the lead on developing all state priority map layers that do not have federal appropriations.

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Business Drivers (2/3)

- As of 2005, 42 other states have GIS councils to ensure that major investments in GIS are planned & coordinated among state agencies & other interested parties. The Georgia GISCC serves this function as a volunteer body without funding.
- Over 45 states have a GIS Clearinghouse.
- The Georgia GIS Clearinghouse has over 9,350 active, registered users, per January 2005. Therefore, there has been a major constituency demand for Georgia GIS data, even though GIS is just now becoming a recognizable acronym.
- Over 25 states in the United States have GIOs.

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Business Drivers (3/3)

- ~$3,000 of federal funds lost per uncounted person from the 2000 census.
- 122,980 people undercounted in Georgia.
- Effect of the Census 2000 undercount on federal funding of eight major programs over a ten year period, 2002-20012:
  - Medicaid, Foster Care, Rehabilitation Services Basic Support, Child Care and Development Block Grant, Social Services Block Grant, Substance Abuse Prevention and Treatment Block Grant, Adoption Assistance, and Vocational Education Basic Grants.

Estimated Effect of 2000 Census Undercount On Federal Funding for Georgia (thousands of dollars):						
2002	2003	2004	2005	2006	2007	2002-2012
-1,056	-14,265	-15,441	-16,735	-18,105	-19,598	-208,754

Source: 2001 PricewaterhouseCoopers Census Study
http://govinfo.library.unt.edu/cmb/cmbp/reports/default.asp.htm

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GIO Requirements

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GIO will have technical skills in GIS and the ability to work with diverse partners at all levels of government. Responsibilities include:

- Facilitate coordination of GIS activities amongst state agencies, RDCs, and local government, enforce the adoption of appropriate data sharing and data standards, employ best practices, and assist in seeking federal and other funds to support initiatives involving GIS;
- Chair the GISCC and identify GIS needs and requirements of state agency projects/programs, RDC and local government GIS needs;
- Facilitate the education and training of agency staff in GIS concepts and applications;
- Facilitate state agency GIS standards development;
- Receive PeopleSoft reports from state agencies regarding GIS requirements from proposals;
- Expand Georgia GIS efforts;
- Coordinate efforts with GISCC on federal programs such as the Geo-Spatial One Stop and the National Map, and between national coordination organizations such as the National States' Geographic Information Council; and
- Facilitate the coordination between local governments, state agencies, and the federal government, where applicable.
- GIO should be fully supported in his/her activities by the State Chief Information Officer (CIO) and GIS staff across state government.

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Advantages to Having a GIO

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- With vision, Georgia could establish agency workflows– state, regional, and local – to create, maintain, and submit their geofiles and/or geofile metadata to the Georgia GIS Clearinghouse to build an Enterprise GIS. Measures toward this goal can start with standard contract verbiage requiring a geofile(s) deliverable per any state, regional, and locally-issued award.
- Once empowered and enhanced by comprehensive data holdings in standard formats, the Clearinghouse could greatly improve Georgia's operations, specifically with disaster mitigation and relief efforts. If the coast is devastated by a hurricane, other natural disaster, or terrorist, for example, the Clearinghouse centralized repository could be of great value per the following reasons:
  - Data is safe.
  - Clearinghouse could be used as a remote central command center for disaster or emergency.
  - With minimal services at a disaster site, a laptop and plotter could set up an entire operation initially with help from the Clearinghouse.
  - Remote briefings would be greatly enhanced. Centralized GIS could redesign emergency plans and business processes.
  - We could be ready for any operation – emergency or routine.

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Outstanding Needs (1/2)

- Standards (cadastral, archiving, etc.)
- Inventories: Asset/intelligence/resource
- Adopt topologic rules for core datasets
- Training of the above to all state, regional, and local agency governments in a regional forum to enhance data sharing and build partnerships in data development, analysis, and modeling
- Use Clearinghouse as a centralized application for viewing, querying, and plotting datasets (i.e., add functionality)

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Outstanding Needs (2/2)

- Geodetic control monuments
- DEM
- Imagery
- Address-ranged roads
- Parcels
- Landuse
- Critical Infrastructure
- Bathymetry
- Groundwater
- …

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Additional Information

- Web links
- Suggestions for geofile funding mechanisms
- More source references

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Endorsements

- GISCC collaborated with the Regional Development Centers on Case verbiage and a letter of endorsement from Directors

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Thank you!

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"Case for a GIO in Georgia"
http://gis.state.ga.us/Coordination/GISCC/Meetings/meetings.shtml

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