The Need for a Statewide GIS Center in Connecticut

Geographic Information Systems (GIS) is mapping technology that combines geographic data, software and human skill to explore, measure, analyze, and share outputs via maps, dashboards and applications. GIS is used to make decisions and answer questions throughout government. It is used to route 911 calls and direct first responders, to plan roads and identify dangerous intersections, prevent and respond to disasters like the COVID-19 pandemic and Post-Tropical Cyclone Sandy; and to manage property assets. It is the basis for all land and real estate development that drives our economy. It provides leaders with the tools needed to make informed, data-driven policy decisions. And that's just the beginning.

Connecticut needs a coordinating body for GIS. The current situation is problematic and costly.

1. Connecticut's existing GIS framework is inconsistently managed with unnecessary redundancies and critical gaps.
2. The result is increased costs, decreased services, inefficiency, and a sub-par toolset for economic development, environmental protection, public health and safety, planning and prioritization.
3. Most states have invested in the creation of a State GIS Center and experience a clear return on their investment. Connecticut is well behind peer states and at a competitive disadvantage, while not efficiently maximizing the available resources to provide paramount value to the taxpayer.

Supporters for a Connecticut GIS Center include private firms, academia, utility companies, municipalities, councils of governments (COGs) and state agency staff.

A State GIS Center will, among other things:

- Coordinate state agencies, regional entities, municipalities and others;
- Manage a geospatial data clearinghouse for public access as a companion to the State Open Data Portal;
- Support economic development efforts within the state;
- Administer geospatial data creation and acquisition (such as aerial imagery, elevation, parcels);
- Adopt geospatial data standards, guidelines and procedures to ensure consistency and quality;
- Provide training and outreach; and
- Perform technical data processing to aggregate existing datasets and create new ones.

How Connecticut Currently Organizes and Manages GIS

The State of Connecticut does not have any centralized capacity, management, or policy for GIS. What resources do exist are scattered across dozens of agencies, levels of government, academia, and the private sector. As a result, data are created or purchased by different entities, oftentimes redundantly, with different standards, for different areas, and for individual purposes.

State Agencies. Multiple state agencies rely heavily on GIS, with support ranging from four full-time GIS staff to none. Some agencies have GIS budgets, but most do not. Some have the ability to create and share data, and many do not. Where GIS capacity does exist, it is often taken for granted or treated as a bonus asset, based on the fortuitous skills of employees whose primary job duties do not include GIS.

Councils of Governments (COGs) possess a wealth of GIS expertise and data. Their mapping and GIS data analysis support transportation and land use planning, community development, open space inventories, and public safety planning programs. Not all COGs, however, have full-time GIS staff or equivalent technical or data resources.

Municipalities. Every town in Connecticut uses GIS. Parcel information is central to a municipality's function for assessment, conservation, permitting and public safety. The method of maintaining and using GIS varies widely from multiple GIS staff to a part-time person or reliance on a consultant.

Universities. CT ECO and MAGIC at the University of Connecticut (UConn) have been the state's unofficial data clearinghouses for decades. CT ECO continues with unstable funding, and although it meets some needs of the data clearinghouse, funding is limited and inadequate to the state's overall needs.

CT ECO (CT Environmental Conditions Online), a UConn/CT DEEP partnership, is a website that provides CT's statewide aerial imagery, elevation and more in multiple ways including map viewers. https://cteco.uconn.edu.
MAGIC – Map and Geographic Information Center, UConn Libraries. http://magic.lib.uconn.edu/

Even with a lack of formal coordination, motivated GIS professionals across Connecticut have managed to execute several mission-critical data acquisitions for aerial imagery. A data acquisition planning group consists of staff from state agencies, COGs, municipalities and UConn. As a result of this voluntary cooperation, Connecticut has several premier datasets despite the lack of an official state effort. The State cannot count on the ongoing goodwill and spirit of cooperation to fill this need indefinitely. The benefits of an ongoing, professional, reliable GIS Center would be immediate and evident.

Lessons from Other States

Most U.S. states have a GIS coordinating body, including all New England states except Connecticut (Table 1). Each coordinates data acquisition efforts, provides data standards, ensures data quality including updates, partners with state agencies, prioritizes needs, stores data and administers a clearinghouse or portal that provides access. Our recommendations include many lessons learned from other states.

		Home	By Statute	Oversight	Approx. Budget	Staff (FTE)
ME	MEGIS	State Agency	Yes	Maine GeoLibrary Board	$1,400,000	5
MA	MassGIS	State Agency	Yes	Agency Director	$2,000,000	15.8
NH	NH GRANIT	University	No	3 Committees	$350,000	2.75
RI	RIGIS	University	Yes	Executive Committee	$75,000	0.8
VT	VCGI	State Agency	Yes	Agency Director	$1,000,000	8 + university

Table 1. New England State GIS Center Summary. *MEGIS=Maine Office of GIS, MassGIS=Massachusetts Bureau of Geographic Information, NH GRANIT= New Hampshire Geographically Referenced Analysis and Information Transfer System, RIGIS=Rhode Island Geographic Information System, VCGI=Vermont Center for Geographic Information (VCGI).*

The Framework

Goal. The CT GIS Center will oversee the coordination, procurement, processing, storage, and distribution of free and public GIS data with the following requirements:

1. Established via State Statute. The CT GIS Center, an Advisory Council and a stable funding mechanism should augment the existing statutory authority of CGS Sec. 4d-90. This is a common thread among successful state GIS centers as it establishes a policy basis. A strong foundation and predictable funding translates to a functional agency.
2. Be a stand-alone entity with a Geographic Information Officer (GIO). The GIO will lead the CT GIS Center, report to the Governor, have influence over state and federal policies, input to budget and financial matters, input to technology decisions at the state enterprise level and coordination responsibility of activities within and across all levels of government.
3. Dedicated staff. Lead by the GIO, staff responsibilities will include, at a minimum:
   - organizing spatial data creation and acquisition (such as aerial imagery, elevation, parcels);
   - overseeing a statewide GIS data clearinghouse/portal to provide public access;
   - creating data standards, guidelines and procedures to ensure consistency and quality;
   - providing training and outreach;
   - performing technical data processing to aggregate existing GIS datasets and create new ones.
4. Be directed by an Advisory Council. The Council should consist of, at a minimum, state agencies who are already primary GIS super users (DOT, DEEP, DESPP, OPM) and representatives from other sectors including COGs, municipalities, utilities, universities, the private sector and the CT GIS Network. The Advisory Council would set priorities and create a multi-year work plan.
5. Funding. Stable funding is critical for staffing and reliable data acquisition, especially statewide aerial flights. The CT GIS Center needs the ability to apply for and accept grants for specific projects and data needs. It should also include funds to collaborate with state universities to capitalize on their expertise in data processing, technology innovation, training and outreach.

For more information, visit https://ctgis.uconn.edu/ct_gis_center/.

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