

**From:** Carl L. Zimmerman, Ph.D. (GIS Coordinator for the CT GIS Office, DAPA-OPM)  
**To:** The Connecticut GIS Advisory Council  
**Re:** Strategic Goals and Objectives for the 2023 Connecticut Geospatial Strategic Planning Process  
**Date:** October 24<sup>th</sup>, 2023

**Summary:**

*This document includes the five proposed Strategic Goals generated (SEE BOTTOM OF DOCUMENT) for the first annual Geospatial Strategic Planning Process and includes related objectives and activities for each item. Please review and prepare comments for the Advisory Council meeting on October 26<sup>th</sup>, 2023. These goals, as part of the CT Geospatial Strategic Plan, will be presented at the GIS Day on November 15<sup>th</sup>, 2023.*

**INTRODUCTION**

The GIS Office coordinates and manages statewide GIS data acquisition, coordination, and related geospatial technologies. The GIS Advisory Council (GAC) and the GIS Office have a statutory requirement under C.G.S. Sec. 4d-92 for an annual five-year plan:

(a) There is created a Geographic Information Systems Advisory Council to consult with the Geographic Information Officer, designated pursuant to section 4d-91, on matters relating to (1) the coordination, procurement, processing, storage and distribution of free and public geographic information systems data; and (2) the powers and duties described in section 4d-90. In the course of such consultation, the advisory council shall (A) develop (i) priorities regarding the performance of any action described in subdivisions (1) and (2) of this subsection, and (ii) an annual five-year plan for such performance, and (B) make recommendations to the Geographic Information Officer concerning such priorities and plan.

The GIS Office is developing the first annual Geospatial Strategic Plan which looks out over a five-year time horizon (2023-2028). It includes three components:

- Data Collection Plan (April to June 2023),
- Strategic Plan (July to Oct. 2023), and
- Implementation Plan (Oct. to Nov. 2023)

The primary goals of the initial strategic planning process are to receive input from stakeholders and create a baseline of their priorities; find critical themes and issues related to GIS data and geospatial capacity; and operationalize plans to address those themes.

The Data Collection phase surveyed over 100 stakeholders, interviewed 32 subject matter experts and community leaders, and collected data on stakeholder issues and societal and technological themes. Stakeholders were asked about community, organizational, and professional themes along with questions regarding the structure and mission of the new GIS Office, the GIS Advisory Council<sup>3</sup> (GAC), relevant datasets, and related geospatial technologies. Findings were presented to the GAC in June 2023.

There were over 50 issues identified in the Data Collection phase. Some of the most important included:

1. The role of the GIS Office and communication with stakeholders
2. Support of local communities and organizations
3. The role of the GAC
4. Increasing the utility of the GeoData Portal
5. GIS data, standards, acquisitions, and services
6. Funding issues related to imagery and data acquisition
7. Societal and equity issues

## PREVIOUS CT GEOSPATIAL PLANNING

GIS data acquisition, coordination, and management have been perceived by many CT stakeholders as inadequate since the 2000s. AppGeo<sup>1</sup> (2007) produced a GIS strategic planning document for CT, and Emily Wilson and the GIS Network working group<sup>2,5</sup> (2021) conducted wide-ranging interviews with users of GIS data such as State Agencies and councils of government (COGs) to evaluate services, gaps, strengths, and weaknesses. These important evaluation documents identified issues that led to the passing of implementation legislation for the GIS Office in 2021.

## EXTERNAL SOCIAL AND TECHNOLOGICAL TRENDS

External factors influence policies, implementation goals, and force operational adjustments. They can also be opportunities as GIS data and geospatial technologies are well-suited for assessing demographic and social change issues. Several important social and environmental issues were identified in a literature review including data standards and interoperability; our aging population; social justice and equity issues; issues in the housing market; and climate change or extreme weather events.

In the technology realm, the fields of digital mapping and GIS are rapidly evolving and will influence policies for government (e.g., privacy). These issues include interoperability and the use of data standards; the growth of data and the movement to cloud computing; the increasing use of machine learning (ML) and artificial intelligence (AI); and the role of GIS as an integrating tool for analyzing societal problems like climate.

## STRATEGIC PLANNING GOALS AND OBJECTIVES

Identifying Strategic Goals is a management activity used to set priorities, goals, and objectives for an organization and to assess and adjust the operational direction, often with measurable or quantifiable goals. In this Geospatial Plan, Strategic Planning goals emerge from the findings of the Data Collection phase and issues identified by stakeholders. After conducting stakeholder interviews, surveys, and literature review, we synthesized and aggregated an extensive amount of information. Over 50 important issues surfaced, and these were ranked and consolidated into a smaller list using both internal review and external stakeholder outreach. The GIS Office compiled a final list after internal review and consideration of several potential formats and models for the Strategic Planning output. The U.S. Dept. of Commerce<sup>4</sup>, Geospatial Strategic Action Plan was identified as a desirable template for output of the Strategic Planning phase because of its clear linkages between goals, objectives, and activities.

Five primary goals were identified for the Strategic Plan, with objectives and activities linked to each goal.

- **Goal 1:**
  - Use effective governance, policies, and standards to manage geospatial data.
- **Goal 2:**
  - Implement a sustainable funding model for imagery acquisition, GIS data, and geospatial technologies.
- **Goal 3:**
  - Increase access to data, spatial analysis, web services, and visualization capabilities for local and regional governments, community organizations, the private sector, and other stakeholders.
- **Goal 4:**
  - Provide direct analytic support and enhance capacity building for State Agencies.
- **Goal 5:**
  - Broaden communication and engagement across different levels of government and other organizations.

The tables below (pg. 4) include the entire list of five goals, related objectives, and associated activities. Please provide any written comments to the CT GIS Coordinator ([carl.zimmerman@ct.gov](mailto:carl.zimmerman@ct.gov)) or the CT GIO ([alfredo.herrera@ct.gov](mailto:alfredo.herrera@ct.gov)).

#### References utilized:

1. AppGeo. 2007. Connecticut Enterprise GIS. State OF CT, Geospatial Information System Council. Found at: [https://www.fgdc.gov/grants/2006CAP/relateddocs/103-06-3-CT-Strategic\\_Plan\\_10\\_04\\_2007.pdf](https://www.fgdc.gov/grants/2006CAP/relateddocs/103-06-3-CT-Strategic_Plan_10_04_2007.pdf)
2. CT GIS Network. 2021. CT GIS Legislation. UCONN.edu. Found at: [https://ctgis.uconn.edu/ct\\_gis\\_center/ct\\_gis\\_legislation/](https://ctgis.uconn.edu/ct_gis_center/ct_gis_legislation/)
3. DAPA, OPM. GIS Advisory Council. State of Connecticut website. Found at: [https://portal.ct.gov/datapolicy/gis-office/advisory-council?language=en\\_US](https://portal.ct.gov/datapolicy/gis-office/advisory-council?language=en_US)
4. US Dept of Commerce. 2023. Department of Commerce Geospatial Strategic Action Plan. <https://www.commerce.gov/sites/default/files/2021-10/US-Dept-of-Commerce-Geospatial-Strategic-Action-Plan.pdf>
5. Wilson, E and CT Statewide Working Group. 2021. Presentation on a Statewide GIS Center. Found at: [https://www.cga.ct.gov/pd/related/20210205\\_GIS%20Informational%20Forum/Feb4PublicForumGIS\\_PD.pdf](https://www.cga.ct.gov/pd/related/20210205_GIS%20Informational%20Forum/Feb4PublicForumGIS_PD.pdf)

## FIVE STRATEGIC GOALS

### **Goal 1:** *Use effective governance, policies, and standards to manage geospatial data*

<b>Objectives</b>	<b>Activities</b>	<b>Notes</b>
<b>Objective 1.1:</b> Implement and strengthen data standards and governance to facilitate reliable access to authoritative versions of the NSDI core data sets so that they are Findable, Accessible, Interoperable, and Reusable	A. Define standards and governance for NSDI data sets and provide supplemental technical documentation.	
	B. Standardized parcel geometry and assessment data for all 169 towns of CT and statewide addressing standards are a focus	
	C. Create a regular forum with stakeholders to discuss issues related to governance, interoperability, technical issues, and standards	
	D. Provide incentives and support to COGs and private sector consultants who support data standards and governance	
<b>Objective 1.2:</b> Expand the role of the Geodata Portal as a key source of authoritative geospatial data	A. Enhance metadata standards and improve overall data quality	
	B. Find additional partners for data sharing	
<b>Objective 1.3:</b> Develop data management, architecture, and analytic capacities including automated data checks with the GIS Office	A. Build or acquire capacity to conduct automated checks on acquired or created data sets	
	B. Provide staff with analytic tools and access to technical training such as attending professional conferences	
<b>Objective 1.4:</b> Explicitly identify stewards, producers, and consumers of all data sets and maintain an inventory of key data sets (existing and desired)	Create an annual survey of critical data sets and stakeholders	
<b>Objective 1.5:</b> Conform to principles and guidance laid out in the State Data Plan	Review projects and documents for conformity to the State Data Plan in conjunction with the Chief Data Officer.	

**Goal 2: Implement a sustainable funding model for imagery acquisition, GIS data, and geospatial technologies**

<b>Objectives</b>	<b>Activities</b>	<b>Notes</b>
<p><b>Objective 2.1:</b> Use a program evaluation approach to understand the social and economic benefits of imagery and other geospatial data including identify cost savings and economic efficiencies</p>	<p>Identifying key projects that demonstrate the maximum value of geospatial data in an analytic, social, and economic sense through stakeholder interviews and outreach</p>	
<p><b>Objective 2.2:</b> Facilitate outreach opportunities to improve the visibility of GIS Office and educate decision makers on the benefits of geospatial technologies and GIS data</p>	<p>Participate in engagement activities at OPM, legislative events, conferences, and hearings.</p>	
<p><b>Objective 2.3:</b> Understand available management, strategic, and operations options for acquiring funding to implement periodic capture of imagery and other data products</p>	<p>A. Inventory municipal and COG imagery, and spatial data needs</p>	
	<p>B. Identify funding and cooperative partnership opportunities with towns, federal entities, and state agencies</p>	

**Goal 3: Increase access to data, spatial analysis, web services, and visualization capabilities for local governments, community organizations, the private sector, and other stakeholders**

Objectives	Activities	Notes
<p><b>Objective 3.1:</b> Provide access to foundational social, cadastral, administrative, and environmental data and services for communities</p>	<p>A. Create core sets of environmental, social, and administrative layers at standard geographies that can be easily integrated into a web mapping environment.</p>	
	<p>B. Build web applications to provide data services (such as a cadastral data viewer), support administrative functions, and perform spatial analysis,</p>	
<p><b>Objective 3.2:</b> Create a baseline inventory of data and analytic requirements for under-resourced communities</p>	<p>A. Visit each geographic region of the state periodically to foster relationships and identify stakeholder needs</p>	
	<p>B. Use direct outreach to private sector consultants, and COGs who work with municipalities</p>	
<p><b>Objective 3.3:</b> Expand ancillary data outputs and interoperability from procured or processed geospatial data</p>	<p>A. Improve analytic capabilities in raster processing and automation to provide additional data services from imagery and other data.</p>	
	<p>B. Develop automated federation to mirror data sets to and from Open Data Portal</p>	
	<p>C. Provide access to automation for analytic and geospatial workflows</p>	
<p><b>Objective 3.4:</b> Identify partnerships with stakeholders to find common services</p>	<p>Evaluate and develop architectures that support data and administrative services that can be shared</p>	

**Goal 4: Provide direct analytic support and enhance capacity building for State Agencies**

Objectives	Activities	Notes
<p><b>Objective 4.1:</b> Improve geospatial literacy and ethical use of geospatial data across Agencies and enlarge the community of practice for the state workforce</p>	<p>Provide direct trainings, learning materials, and technical support to Agencies including consultancy-type services</p>	
<p><b>Objective 4.2:</b> Enhance access to geospatial analytic services and improve analytic capacities of Agencies</p>	<p>A. Build agency-specific web applications for critical data sets</p> <p>B. Provide regular technical and analytic assistance such as a regular help desk or office hours</p> <p>C. Encourage spatialization of data to improve interoperability</p>	
<p><b>Objective 4.3:</b> Enable access to templates and automation for standard workflows such as converting non-spatial data to spatial data types</p>	<p>Provide access to automation and scripting on GitHub</p>	
<p><b>Objective 4.4:</b> Initiate, develop, and maintain business and Agency relationships to understand mandates, processes, and operational needs</p>	<p>A. Create a standard intake form to track contacts with Agencies</p> <p>B. Establish a skills and capabilities inventory of all Agencies to support agency capacity</p> <p>C. Reestablish interagency working group to identify projects and share knowledge</p> <p>D. Assist with the evaluation of geospatial models, analytic frameworks, and spatial analysis for stakeholders</p> <p>E. Reach out to Agencies and present a structured introduction to GIS data and geospatial topics, either individually or in larger groups</p>	
<p><b>Objective 4.5:</b> Support increased access to GIS desktop software and open-source scientific computing tools</p>	<p>A. Benchmark GIS application usage against other state to understand adoption and usage trends</p> <p>B. Facilitate increased access to desktop GIS software (ESRI and open-source) and identify options for supporting it</p>	

**Goal 5: Broaden communication and engagement across different levels of government and other organizations**

Objectives	Activities	Notes
<b>Objective 5.1:</b> Provide consistent communication and facilitate stakeholder cooperation on policy, data, and technologies and improve access to best practices and new techniques	A. Develop a communication plan/strategy	
	B. Participate and present at the GIS network, have periodic and consistent attendance at public events	
<b>Objective 5.2:</b> Make the GIS Office the recognizable face of GIS data and geospatial capacity in CT	Develop branded materials to represent the GIS Office	
<b>Objective 5.3:</b> Broaden overall geo-literacy and access to training materials for new and existing users	Provide a curated education and learning website and direct training opportunities	
<b>Objective 5.5:</b> Collaborate with CT institutions of higher education to utilize their cutting-edge skill sets to solve community problems and provide technological leadership	Create Hub sites or events where communities and academics can learn more about each other.	
<b>Objective 5.6:</b> Support geospatial literacy and geographic education programs for k-12 and Community Colleges	Curate training materials, such as podcasts and lesson plans for k-12 and Community Colleges in conjunction with other stakeholders	
<b>Objective 5.7:</b> Support vocational and professional training programs for GIS, geospatial technologies, and data science	Establish standards or a framework for skills-oriented geospatial and analytic credentials	