Secretary Jeffrey R. Beckham
Office of Policy & Management

CONNECTICUT

Annual Report on Geospatial Information Systems Coordination

Submitted to the General Assembly in Accordance with CGS Sec. 4d-90

Prepared by the Office of Policy and Management

January 1, 2025

Introduction

The Office of Policy and Management (OPM) functions as the Governor's staff agency. It plays a central role in state government, providing the information and analysis used to formulate public policy for the State and assisting State agencies and municipalities in implementing policy decisions on the Governor's behalf.

Pursuant to CGS Sec. 4d-90, OPM is responsible for statewide GIS coordination, including setting policies for the collection, management, and distribution of GIS data; setting standards for GIS data acquisition, management, and reporting; managing the creation and use of GIS applications within state agencies; and consulting with GIS stakeholders from municipalities, regional councils of governments (COGs), state agencies, and others. These responsibilities were assigned to OPM in 2013 when Public Act 13-299 eliminated the former GIS Council.

A major milestone for GIS coordination was reached in 2022 with the launch of the GIS Office and the hiring of a state Geographic Information Officer (GIO). Pursuant to CGS Sec. 4d-91, OPM hired the State's first GIO, Alfredo Herrera in December 2021. The GIO and GIS Office are situated within the Data and Policy Analytics Division within OPM, reporting directly to the Chief Data Officer, and coordinate GIS activities with the Intergovernmental Policy and Planning Division (IGPP) and others throughout OPM. In addition to the establishment of the GIS Office and GIO, CGS Sec. 4d-92 established the GIS Advisory Council with membership from several important stakeholder groups. Additionally, CGS. Sec. 16-330b established responsibilities for mapping

450 Capitol Avenue
Hartford, CT 06106
Phone: 860-418-6500

broadband availability and adoption through the GIS Office, with a map to be published on December 1st of every year.

As required by CGS. Sec. 4d-90, OPM reports annually to the Planning and Development Committee on activities performed under such section. This report covers activities performed during the year beginning January 1, 2024, and ending December 31, 2024.

Special Activities Summary:

- Received a Special Achievement Award from Esri for the work the GIS Office has been doing in establishing itself and a robust program of geospatial activity.
- The following staff were appointed and/or elected to national committees or groups:
    - Alfredo Herrera was elected by the group membership to serve on the National Geospatial Information Council (NSGIC) board of directors.
    - Carl Zimmerman was appointed to serve on the National Geospatial Advisory Committee.
- Continued to develop and expand the GIS data clearinghouse (CT Geodata Portal) to better serve the CT geospatial community by updating content within the CT Geodata Portal to increase visibility by search engine optimization (SEO), adding new pages, producing written content, and improving the website's structure. The Geodata Portal has seen consistent increases in traffic throughout the year with an average of 1,700 page-views per day.
    - Staff regularly edited and updated information on the CT Geodata Portal, such as staff changes, rotating new and noteworthy items, adding relevant GIS community events to the calendar, etc.

- The Office recently updated and released larger updates to the Portal, such as updating the design, layout, and information displayed on the Home, About, and Parcels pages.
- Staff began the development of data publication guidelines to ensure the quality and consistency of information available on the platform.
- Created and published the following new pages:
  - Housing
  - Resources
  - News and Events

- Acquired aerial imagery and LiDAR-derived elevation data for the entire state through a contract with Dewberry Engineers Inc. The data acquisition period for this project occurred in the spring of 2023 with data processing and data deliveries completed this year. To date, we have:
  - Created and run a quality assessment and control program for the LiDAR, Imagery, and GIS data acquisition.
  - Managed a statewide quality assurance / quality control (QA/QC) review process including training of reviewers and design of a QA/QC review portal across a wide group of stakeholders across a variety of sectors.
  - Reviewed and updated building production methods with the vendor.
  - Acquired all deliverables: Imagery, LiDAR, Digital elevation products, and buildings (2D and 3D).
  - Began distribution of data to local universities, towns, and other stakeholders.

- Created or updated data download and web mapping products.
- Wrote technical specifications for and executed a contract amendment for additional land cover and transportation data products.

- Collected and processed municipal digital parcel files and computer-aided mass appraisal (CAMA) files from Regional Councils of Government (COGs), as required annually by CGS Sec. 7-100l.
  - Improved the process of verifying and integrating the parcel and CAMA submissions to allow faster processing and process replication.
    - Designed and implemented a new Parcel schema to improve data structure and facilitate data validation and integration.
    - Coordinated the integration of a new field into the CAMA schema to ensure confidentiality of protected records, working with COGs and Vendors to help implement this change.
    - Created and updated Python scripts for the consolidation of CAMA and Parcel data, automating data transformation processes to maintain consistency across datasets.
  - Improved the rate of submission and adherence to the schema of the CAMA standard through increased outreach to the COGs, municipalities, and their respective vendors.
    - Developed a Metadata Survey and Dashboard to track and visualize Parcel and CAMA data for towns and COGs, to help aid data transparency and accessibility.

        - Updated the Parcel and CAMA Website to include the new Schema and File geodatabase submission requirements.
    - Completed the validation, harmonization, aggregation, and publication of a singular statewide parcel dataset with parcel and CAMA data from all 169 municipalities in CT.
        - Consolidated multiple CAMA datasets into a unified dataset.
        - Produced the 2024 Parcel and CAMA Layer, incorporating updated data and ensuring its accuracy.

- Collaborated with four (4) other New England States (Rhode Island, Massachusetts, Vermont, and Maine) to submit a joint United States Geological Service 3D Hydrography (3DHP) Program Data Collaboration Announcement (DCA) proposal to map hydrography throughout Connecticut and the region with the GIO and Connecticut serving as the lead applicant. If accepted, this project would leverage the newly acquired elevation data to more accurately map water and its flow across the landscape.

- The GIS Office completed the development and allocation of a $2 million grant program, funded by the American Rescue Plan Act (ARPA), to support Connecticut's COGs in addressing parcel and CAMA data issues. Significant effort was dedicated to developing a comprehensive scope of work, informed by an analysis of the parcel and CAMA data transmitted to OPM by the COGs in accordance with CGS Sec. 7-100l.

- A prioritization framework was developed focusing on issues of recency, match rates, completeness of CAMA fields, and geometric quality of parcel data.
- The scope of work and prioritization framework were refined through discussion with stakeholders such as GIS Coordinators at the COG level as well as municipal parcel and CAMA vendors.

- Completed the following broadband mapping-related activities:
  - Completed two successful data requests to Internet Service Providers (ISPs) for data on availability and adoption in September and October in accordance with CGS. Sec. 16-330b.
  - Publication of updated adoption and availability maps on the broadband mapping portal per CGS. Sec. 16-330b.
  - Presented a poster on "Broadband Mapping in Connecticut: Measuring and Tracking Access and Adoption" at the ESRI 2024 User Conference Map Gallery and at the Fall NEARC 2024 Conference. This poster presented an overview of the work the GIS Office does to process and leverage public and provider-submitted data to measure and track broadband deployment in the state.
  - Supported DEEP's Broadband Office by transmitting data submitted by ISPs and sharing data analyses conducted by our office.
  - Supported in the development of DEEP's second biannual Broadband Report. This report provides an analysis of broadband access and adoption efforts across Connecticut, highlighting progress, and

opportunities to enhance connectivity for all residents and further bridging the digital divide.

  - Updated the list of community anchor institutions (CAI) to include entity numbers and federal identifiers as available from the datasets used to list libraries in Connecticut.
  - Provided analysis to compare the list of CEN members to the CAI list to understand where the reported FCC upload/download rates are below what CEN has reported.

- Completed work on the first GIS Strategic Plan with a 5-year horizon in accordance with CGS Sec. 4d-92.
  - The Plan was adopted unanimously by the GIS Advisory Council on April 25, 2024
  - Initial work on the annual update of the Strategic Plan has begun and is expected to finish in April of 2025.

- Continued to publish issues of the GIS Office Newsletter after each meeting of the GIS Advisory Council Meeting. The Newsletters aim to provide the greater CT GIS community with updates and a line of communication directly from the GIS Office. New issues of the newsletter will continue to be published after every GIS Advisory Council meeting. An example of this work was displayed at the ESRI 2024 User Conference Map Gallery as a virtual submission.

- Created a dashboard that allows users to visualize different facets of housing data for Connecticut. It is a product of state, federal, and private sector data and includes 19 housing maps.
    - The dashboard is a public resource developed by the CT Office of Policy and Management (OPM), CT Department of Housing (DOH), and CT Department of Economic and Community Development (DECD)
    - Version 1 was released to the public in February 2024. Since then, OPM developed a new and improved workflow for publishing and updating the housing data (Python scripts), updated the dashboard, republished all datasets, rebuilt maps, and updated dashboard front-end layout design to optimize user experience. A new version should be published to the public in January 2025 at Housing | CT Geodata Portal.
- Additionally, the GIS Office helped to develop a portion of the Housing and Segregation Study in a StoryMap (Housing Programs in Connecticut)
- This work was presented in a webinar on Dec 12, 2024: 2024 Webinar Library | Center for Land Use Education and Research and included as a virtual submission at the ESRI 2024 User Conference Map Gallery.

General Activities Summary:

The following GIS activities were conducted by OPM in 2024:

Convened the Geographic Information Systems (GIS) Advisory Council, established pursuant to CGS Sec. 4d-92, on a bimonthly basis. The Advisory Council workgroups continued their work on the following:

- Statewide Aerial Imagery and LiDAR data acquisition
- GIS Clearinghouse Recommendations
- Parcel Drafting Standards
- Municipal parcel data and CAMA report (the GIS Advisory Council adopted this workgroup in the October 2022 meeting)
- Strategic Plan Development

- Participated as a regular member of the National States Geographic Information Council (NSGIC) activities, contributing to the NSGIC community through regular communications with GIS leaders from other states and presenting on broadband mapping activities.
  - GIO continued role as co-chair of the Council of Councils working group.
  - Presented at the midyear and annual meetings as well as virtual and in-person GIO Academy sessions on a variety of different topics.
  - Alfredo Herrera elected to the Board of Directors.

- Attended and presented at quarterly meetings of the CT GIS Network, the GIO functioned as an ex-officio member and Ashley Benitez as a member-at-large on the 17-member Steering Committee.

- Continued to maintain and update a homepage for the GIS Office and GIS Advisory Council to facilitate the finding of important information regarding the office and its activities.

- Designed and created new and updated legislative maps for the CT House of Representative districts, CT State Senate districts, and CT Congressional districts to serve as informational tools for identifying legislative boundaries and posted them to the GIS Office website.

- Co-presented with a representative from UConn Center for Land Use Education and Research (CLEAR) at the fall conference of the Northeast Arc Users Group on the imagery acquisition program data that is now available and explained potential uses.

- Began work on the 2024-2025 CT Geospatial Strategic Plan Update consisting of reviewing the new annual plan, conducting background research on new trends in the geospatial industry, and evaluating the focus of the annual document.

- Participated in the development of the CT State Data Plan (2024-2025), which included creating external stakeholder surveys and presentations, editing the document, participating in stakeholder and user events to support the document's creation and serving on the Data Analysis and Technology Advisory (DATA) Board.

- Continued to develop and refine proposals to use American Rescue Plan Act (ARPA) funds to support statewide GIS data collection programs to support the allocation of broadband resources, particularly to unserved and underserved

areas. Such programs were included in Governor Lamont's ARPA plan (pages 26-27) and enacted in SA 21-15. The GIS Office was successful in obligating all of the ARPA funds it was allocated by December 31, 2024.

- Coordinated with the University of Connecticut concerning the development of web-based applications, data hosting of imagery and elevation data on Connecticut Environmental Conditions Online (CT ECO), and creating a webinar series educating stakeholders on how to use GIS resources and other related topics.

- During Connecticut's Sustainability & Resiliency Week, presented on "Using State Sustainability and Resilience Data" to highlight ways to access state data on sustainability and resilience, through the state's open data and GIS transparency efforts. Participants learned how to use the Open Data Portal, and the Geodata Portal, and what kinds of data are collected and posted to each, including new data on parcels, properties, and aerial imagery data.

- Coordinated with state agencies regarding the use of the State Open Data and Geodata portals to host or federate authoritative GIS datasets for public access. Developed federation methodologies and procedures to reduce fragmentation and allow access to agency-level GIS portals for DEEP, DOT, and CT ECO through the State Geodata and Open Data portals.

- Created materials and engaged with several Agencies to encourage the use of GIS data and analysis and provided a variety of consulting and solutions:
    - Department of Social Services
        - Service Area Map and Analysis
    - Department of Correction
    - Secretary of the State
        - Assisted in the migration to a new voter registration system
    - Office of Early Childhood
    - Department of Energy and Environmental Protection
    - Department of Transportation
        - Executed an MOU to improve the mapping quality of State Highway Rights of Way.
    - Department of Administrative Services
    - Department of Revenue Services
    - Division of Emergency Management and Homeland Security
        - Millstone radiation grid map and workflow to visualize potential radiation around the Millstone Nuclear Power Plant
    - OPM IGPP and the Climate and Infrastructure Policy Advisor
    - Department of Public Health
        - Local Health Department Map
    - Department of Consumer Protection
    - Department of Children and Families
        - Published DCF boundaries by Town, Area, and Region
    - Department of Veterans Affairs

        - Worked to publish datasets and create a lookup tool that shows the Veteran Representatives (and contact information) for each town. This included developing an editing workflow for updating the backend of the dataset over time.
        - DVA Office of Advocacy and Assistance District Offices | CT.gov (tool is linked at the Municipal Veterans Representative Program button)
        - Find a Veterans Representative
    - Department of Agriculture

- Compiled high-value GIS data inventories from state agencies prepared annually under CGS Sec. 4-67p and published such inventories in the CT Data Catalog.

- Continued the partnership with the DECD State Historic Preservation Office (SHPO) to develop their first GIS application, named ConnCRIS, for providing greater access to information about cultural resources in CT. Some of the cultural resources included in ConnCRIS are historic buildings, historic properties, and archeological sites.
    - Presented on this project at the NSGIC Midyear Conference

- Identified and hosted a UConn PhD candidate (Durga Joshi) as an intern to create downstream products using the new statewide 2023 elevation data, with a primary focus on tree and canopy products. Initial data analysis and

production are finished, and statewide vegetation and tree data sets will be covered in a statewide presentation in early 2025.

- Assisted the CT Bipartisan Infrastructure Law Team (CT BILT) on understanding the requirements needed to report progress on investments facilitated by the Bipartisan Infrastructure Law.
    - Collaborated with DAPA colleagues to create the BILT tableau dashboard which included creating a map of CT visualizing the number of IIJA/BIL projects and implementing agencies for each municipality

2025 Outlook

With the hiring of a GIS Coordinator in the first half of 2024, the GIS Office and OPM experienced a return to the increased capacity to coordinate with and support state agencies, councils of government, municipalities, utilities, and others. The continued development of the State GIS Office, led by the GIO, will help Connecticut to improve and coordinate with peers in the northeast and nationally.

The GIS Advisory Council will continue to convene and advise OPM on GIS priorities and policies. This 14-member council is nearly complete, with only one vacancy assigned to be filled by the ranking member of the Planning and Development Committee.

With these changes, 2025 is anticipated to be another transformative year for GIS in Connecticut. Some of the activities on the horizon include:

- The completion and publication of the GIS Strategic Plan update.
- The release of imagery and elevation data, along with associated derivative products, will be conducted in collaboration with UConn CLEAR, USGS, and

NOAA. Additionally, the GIS Office will communicate with and train stakeholders about its availability.

- Further development of the Geodata Portal to include more state agencies and collaboration with existing partner agencies to align contributing open data portals more closely.
- Further support and coordination with stakeholders of the geospatial community of all governmental levels, private industry, and the academic community.
- Collaboration with the CT Department of Transportation on the improved mapping of State Highway Rights of Way.
- Coordinate with the nine Councils of Government to improve parcel and CAMA data quality.

Improvements will continue as the GIS Office develops according to the GIO's vision and in alignment with the Geospatial Strategic plan for the GIS Office's operation and role within state government and beyond. OPM looks forward to reporting on the progress of the GIS Office in years to come.