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**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, 2024

## 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 Geospatial Information Systems (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.

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 OPM's [Data and Policy Analytics Division](#), 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 broadband availability and adoption through the GIS Office, with a map to be published on December 1<sup>st</sup> of every year.

As required by CGS. Sec. 4d-90, OPM reports annually to the Planning and Development Committee on activities performed during the year beginning January 1, 2023, and ending December 31, 2023.

## Special Activities Summary:

- Hired additional staff to increase capacity:
  - Carl Zimmerman – GIS Coordinator
  - Leah Hodges – GIS Analyst
  - Sarah Hurley – GIS Analyst

- 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 optimizing SEO, adding new pages, producing written content, and improving the website's structure. The Geodata Portal has seen consistent increases in traffic throughout the last quarter of the year with an average of 1,000 page-views per week.
  - The GIS Office and UConn held a webinar introducing stakeholders to the Geodata Portal platform and how to use it. Link to the recording [here](#).
- Acquired aerial imagery and LiDAR-derived elevation data for the entire state through a contract with Dewberry Engineers Inc. was executed. The data acquisition period for this project occurred in the spring of 2023 with data processing nearly complete and data deliveries beginning to occur in four blocks covering the state and finishing mid-year 2024. To date, the office has:
  - Received Pilot data, which was then assessed and reviewed before authorization of data production work.
  - Created and reviewed the specifications of derived products and other ambiguous specifications such as the 3D building models and LiDAR vegetation classification parameters.
  - Developed a quality control and assessment program for the review and acceptance of the imagery, elevation, and other derived data.
- Collected and processed municipal digital parcel files and computer-aided mass appraisal (CAMA) files from councils of government (COGs), as required annually by [CGS Sec. 7-100I](#).
  - Implemented an automated verification of parcel and CAMA submissions to allow for faster processing and process replication.
  - 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.
  - Completed the validation, harmonization, aggregation, and publication of a singular [statewide parcel dataset](#) with parcel and CAMA data from all 169 municipalities in CT.
- Completed the following broadband mapping-related activities:
  - Fourth bi-annual collection of Internet Service Provider (ISP) availability and adoption data per [CGS. Sec. 16-330b](#).
  - Support for DEEP broadband planning and grant process for both American Rescue Plan Act (ARPA) and [Broadband Equity, Access, and Deployment \(BEAD\)](#) Program.
  - Publication of updated adoption and availability maps on the [broadband mapping portal](#) per [CGS. Sec. 16-330b](#).
  - Support the Commission on Educational Technology (CET) [Digital Equity Plan](#) by providing the following:
    - Support and review for the creation and implementation of the UConn survey design and analysis.
    - Provide maps and mapping analyses as needed.
    - Create and deploy a community anchor institutions (CAI) survey to help augment information on broadband access.

- Presented to COGs on broadband access and adoption as a means of facilitating stakeholder engagement.
  - Presented Connecticut Conference of Municipalities (CCM) survey results and analysis to the CCM board.
  - Cooperated with the FCC to improve the accuracy of federal broadband maps through meetings and fabric and availability challenges.
  - Conducted regular meetings with ISPs to improve data collection methods, ensure high levels of accuracy in both state and federal mapping, and promote cooperation toward state goals of universal broadband access.
  - Aggregated and geocoded a dataset of CAI for DEEP based on sources outlined in the [Initial Proposal for the Bead Program Volume 1](#). The final dataset was comprised of CAI from several categories and included each of their addresses and broadband availability as determined by the FCC/CostQuest broadband location fabric.
- Started work on the first GIS Strategic Plan with a 5-year horizon in accordance with [CGS Sec. 4d-92](#). The following activities were completed:
    - Initiated the Data Collection phase of the strategic planning process which included creating survey and interview questions, distribution of the survey amongst CT GIS stakeholders, engagement with key stakeholders via interviews, and analysis and synthesis of the survey and interview results.
    - Held stakeholder outreach meetings and activities with both internal and external stakeholders to help guide the direction and priorities of the strategic plan.
    - Created a set of five strategic goals derived from the results of both the data collection process and the stakeholder engagement. This led to the creation of specific objectives, activities, and deliverables that the GIS Office and GIS Advisory Council will use as a guide for measuring progress and performance.
    - Developed Mission and Vision statements for the GIS Office.
    - Presented the strategic goals to the GIS community on GIS Day in Waterbury, articulating the process used to arrive at them as well as some of the details of the objectives and activities.
    - A draft document of the Strategic Plan and Data Collection Plan is slated for internal and external review in early January 2024 ahead of its publication.
  - Designed, developed, and published the [first issue of the GIS Office Newsletter](#) in November after the October 2023 GIS Advisory Council Meeting. The Newsletter aims to provide the greater CT GIS community with updates and a line of communication directly from the GIS Office. The first issue had 1000+ views that included readers from other State of CT agencies, the public, and from state agencies outside of CT. A new issue of the newsletter will continue to be published after every GIS Advisory Council meeting.

### Legislative Work and Initiatives

The GIS Office participated in the following legislative activities:

- Submitted testimony to the Planning and Development committee on HB 6648 - An Act Concerning the Online Recording, Indexing, and Searching of Municipal Land Records and Maps.

- The GIO was appointed to the task force to Study the Online Recording, Indexing, and Searching of Municipal Land Records and Maps.
- Supported the OPM Climate & Infrastructure Policy Development Coordinator in submitting testimony on HB 6764 - An Act Concerning a Study of Energy Data Collection and Public Access.
- Held a meeting with the Main Street Working Group to explore the possibility of GIS Office mapping support.
- Presented to the Energy & Technology Committee as part of an interagency (DEEP, DAS, OCC, CET, and CEN) presentation on the advancement of broadband access and adoption in CT.

#### General Activities Summary:

The following GIS coordination activities were conducted by OPM in 2022:

- 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 appointed as co-chair of the Council of Councils working group.
  - Presented on the imagery acquisition program at the 2023 Annual meeting.
- Attended and presented at quarterly meetings of the [CT GIS Network](#) and functioned as the state government representative on the 17-member [Steering Committee](#). The GIO presented the State of CT GIS at the GIS Day event in Waterbury, CT.
- Presented a draft plan to the CT COG executive directors describing the GIS Office's effort to provide grant assistance to improve municipal parcel and CAMA data quality.
- Created an updated homepage for the [GIS Office](#) and [GIS Advisory Council](#) to facilitate the finding of important information regarding the office and its activities.
- Collected and processed utility service locations for a second time to improve and expand the state's address database and developed a new schema for a next-generation address fabric for Connecticut in coordination with DESPP. The GIS Office has also begun outreach to COGs and municipalities to better understand their address maintenance process in an effort to enable more and better data sharing between levels of government on this topic.

- Developed and implemented an address verification process to quantitatively confirm the validity of addresses across multiple sources of data throughout the state (E911, ISPs).
- 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, which included examples of the data products and updated timelines for delivery.
- Presented to the UConn School of Public Policy at workshops titled "Pursuing the Digital Frontier: Data Management and Digital Governance Functions" and "Access to Administrative Data" for executive leadership and all College of Liberal Arts and Sciences students and faculty.
- Presented at the Connecticut Data Collaborative's 2023 Conference on the Geodata Portal and the benefits, limitations, and importance of geospatial data.
- 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.
- 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 hosting webinars educating stakeholders on how to use GIS resources.
- Coordinated with the DEEP Environmental Justice Division and the University of Connecticut's Connecticut Institute for Resilience & Climate Adaptation (CIRCA) in providing a methodology review of the [Environmental Justice Screening Tool](#) which resulted in a set of recommendations on how to improve the tool in the future as the DEEP EJ Division will be developing it further.
- Participated on a panel at the 2023 CIRCA Summit discussing the importance of equity in the availability, communication, and dissemination of open 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 Administrative Services
  - Department of Revenue Services
  - Division of Emergency Management and Homeland Security
  - OPM IGPP and the Climate and Infrastructure Policy Advisor
    - Web map for stakeholder usage
    - Plan of Conservation and Development (POCD) mapping support
  - Department of Public Health
  - Department of Agriculture
    - Farmland Conservation and Farmers Market Applications
- 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](#).
  - Worked in 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.
    - Assisted SHPO and their vendor in developing ConnCRIS to ensure that the State's GIS Standards were maintained.
    - Advised SHPO with the hiring process of a GIS Professional to manage the maintenance of the ConnCRIS application and assist with other mapping and data needs of the department.
  - Assisted the CT Bipartisan Infrastructure Law Team (CTBILT) on understanding the requirements needed to report progress on investments facilitated by the Bipartisan Infrastructure Law.
  - Assisted in diagnosing and solving previous inconsistencies with the Municipal Fiscal Indicators dashboard datasets.
    - [Municipal Fiscal Indicators Dashboard | Connecticut Data](#)
  - Further refined agency guidance for open data related to the retirement (or archiving) of data, publication of new data and automation of data feeds from agencies, documentation of datasets through the use of clear metadata, and standard enterprise and agency-level agreements for interagency data sharing, pursuant to C.G.S. 4-67p and 4-67z.
  - Cleaned and geocoded cannabis conviction address dataset provided by DESPP in order to determine Disproportionately Impacted Areas (DIA) in Connecticut. The CT Social Equity Council approved the 2023 DIA recommended map in August 2023 and the 2023 approved tracts have been published to the CT Open Data Portal.
    - [Disproportionately Impacted Areas, Identified for Public Act 21-1, An Act Concerning Responsible and Equitable Regulation of Adult-Use Cannabis | Connecticut Data](#)

2023 Reports, Policies, and Standards:

- Worked with the CAMA working group of the GIS Advisory Council to create and publish version 5 of the CAMA reporting standard and continued to work to create version 6 of this standard which will be used to collect data from municipalities in 2023.
- Continued work to produce a parcel drafting guidance document for all GIS parcel data submitted to the state to promote uniformity in the way parcel data is digitized throughout the state. A draft of the document is currently under review and is slated to be completed in early 2024.
- Worked within the context of the GIS Advisory Council to develop policies, recommendations, and guidelines on several topics listed below. This work is ongoing and will continue.
  - Aerial Imagery Acquisition
  - GIS Clearinghouse data (both the site itself and the data contained therein)
  - Address management and maintenance processes
  - Parcel and Assessment data
  - Strategic Planning for GIS

## 2024 Outlook

With the hiring of a GIS Coordinator and two GIS Analysts in the first half of 2023, the GIS Office and OPM experienced an increase in its capacity to coordinate with and support state agencies, municipalities, utilities, and others through centralized services and coordination. The further development of the State GIS Office, led by the GIO, will help Connecticut to improve and coordinate with peers in the northeast and nationally. As the GIS Office supports the State’s broadband mapping efforts under [CGS. Sec. 16-330b](#), the GIS Office will be hiring for a new GIS Coordinator with a broadband focus after the departure of staff from that position at the end of the year. The recruitment is currently underway and the position will be filled as the hiring process concludes.

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, 2024 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.
- The receipt of imagery and elevation data with associated derivative products and publication thereof in collaboration with UConn CLEAR, USGS, and NOAA.
- The creation and announcement of a statewide parcel viewer using the newly created [statewide parcel dataset](#).
- Further development of the Geodata Portal to include more state agencies.
- 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 creation of an updated and accurate addressable road centerline dataset to be share publicly on the Geodata Portal.
- Development of a public statewide geocoder that uses address points, parcels, and the new centerline to more accurately place address locations.

Improvements will continue as the GIS Office develops according to the GIO's vision 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.