CT GIS Webinar

What's new at the CT GIS Office

Date: September 11th, 2025

DAPACT

Connecticut GIS Office

CONNECTICUT
Policy and Management

About the Presenter

Alfredo Herrera

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Data & Policy Analytics Programs

GIS Office

DataLinkCT

Open Data

Impact & Evaluation

State Data Plan

GIS Office & Geographic Information Officer (GIO)

OPM's Geographic Information Systems (GIS) Office was established in 2022 following passage of Public Act 21-2 during the 2021 June Special Session.

It is directed by a Geographic Information Officer (GIO) and resides within the Data and Policy Analytics Unit of OPM.

GIS Office Responsibilities

- **GIS data coordination.** Coordinating the collection, compilation and dissemination of GIS data across the state, including from and to state agencies, regional councils of governments, municipalities and other constituencies;
- **Open data.** Managing a publicly accessible geospatial data clearinghouse;
- **Supporting economic development.** Using GIS to support economic development efforts in the state;
- **Outreach & training.** Provide training and outreach on the use of GIS;
- **Orthoimagery.** Administering a statewide orthoimagery and lidar program;
- **Guidance & Standards.** Adopting geospatial data standards, guidelines, and procedures;
- **Data processing.** Performing technical data processing to aggregate and organize existing datasets and create new datasets; and
- **Broadband mapping.** Develop broadband data and mapping in accordance with Public Act 21-159.

Vision Statement

"The CT GIS Office aims to be the leader in data collection, analysis, and dissemination for the Connecticut geospatial community. We will serve as a center for collaboration, innovation, and excellence in geospatial data. The GIS Office strives to improve the quantity and quality of geospatial data available to stakeholders to enable better decision-making through the power of geospatial analysis."

Mission Statement

"The mission of the CT GIS Office is to effectively coordinate and promote the development and sharing of geospatial information for Connecticut stakeholders. We support the geospatial community by facilitating capacity-building, providing expertise, and establishing policies for the collection, management, and distribution of geospatial information."

Data Collection Themes / Issues

- Coordination, sharing, and procurement of authoritative data sets
- Data as a service: highly reliable, accurate with metadata
- Guidelines, standards, and centralization
- Communication and training
- Social equity

Vision

The CT GIS Office seeks to be a center of excellence for geospatial data and analysis in Connecticut by leading the GIS community to standardized and efficient geospatial data collection, aggregation, and dissemination, enabling stakeholders at all levels to leverage high-quality data assets to inform decision-making.

Mission

The mission of the CT GIS Office is to coordinate the acquisition, development, and sharing of geospatial data in Connecticut. The GIS Office will develop and communicate standards for the management of GIS data and seek to support its use across local and state organizations.

Goals

- **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 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.

GIS Office Staff Update

Carl Z. resigned in July.

Recruitment for the GIS Coordinator position is now underway; position closed on the 10th.

CT Geographic Information Office (GIO)

- Alfredo Herrera – Geographic Information Officer
- Ashley Benitez – GIS Coordinator
- Recruitment Underway - GIS Coordinator
- Leah Hodges – GIS Analyst
- Sarah Hurley – GIS Analyst

Annual Update of Strategic Plan

- Updated memo and draft sent on June 20th, 2025
- Draft previously reviewed by GAC members
- Members sent comments
- Revisions incorporated into significantly update doc

To: Members of the GIS Advisory Council (GAC)

From: Carl Zimmerman, PhD, GIS Coordinator

Re: Annual Update of Geospatial Strategic Plan

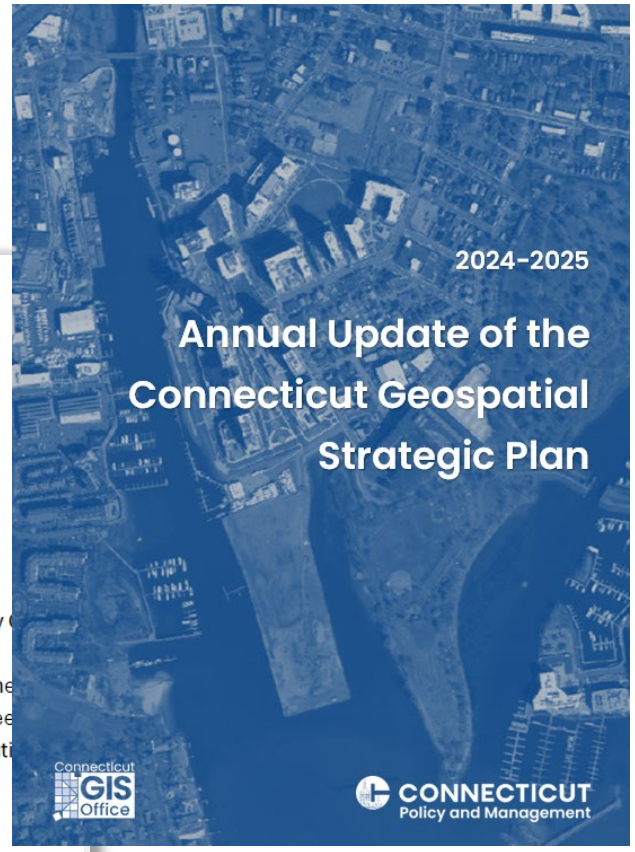
Date: 06.20.2025

Dear GAC members:

The first draft of the Annual Update of the Geospatial Strategic Plan was reviewed by members in the spring. Comments focused on making the Annual Update a progress/update report and less focused on being a stand-alone document about the GIS system. In addition, several members wanted to see a closer relationship betwee Annual achievements and the specific objectives and goals from last year's Geospati Strategic Plan.

The attached updated document (##v5) reflects those and other comments from members to make it more closely aligned with the Geospatial Strategic Plan. The most important part of the document is Tables 1-5, which provide specificity about progress for each objective. Summary information is provided in the executive summary and text. Additional details about the approaches are found in the Appendices.

I have attached the updated document for your review and will briefly discuss the status at the GAC's meeting next week. The expectation is that a vote on the approval of the document will be at the next meeting in August. Please contact me if you have comments or questions.



Connecticut GIS Office

Geodata Portal Highlights

https://geodata.ct.gov

The site has been live for over two years! Updates occur periodically.

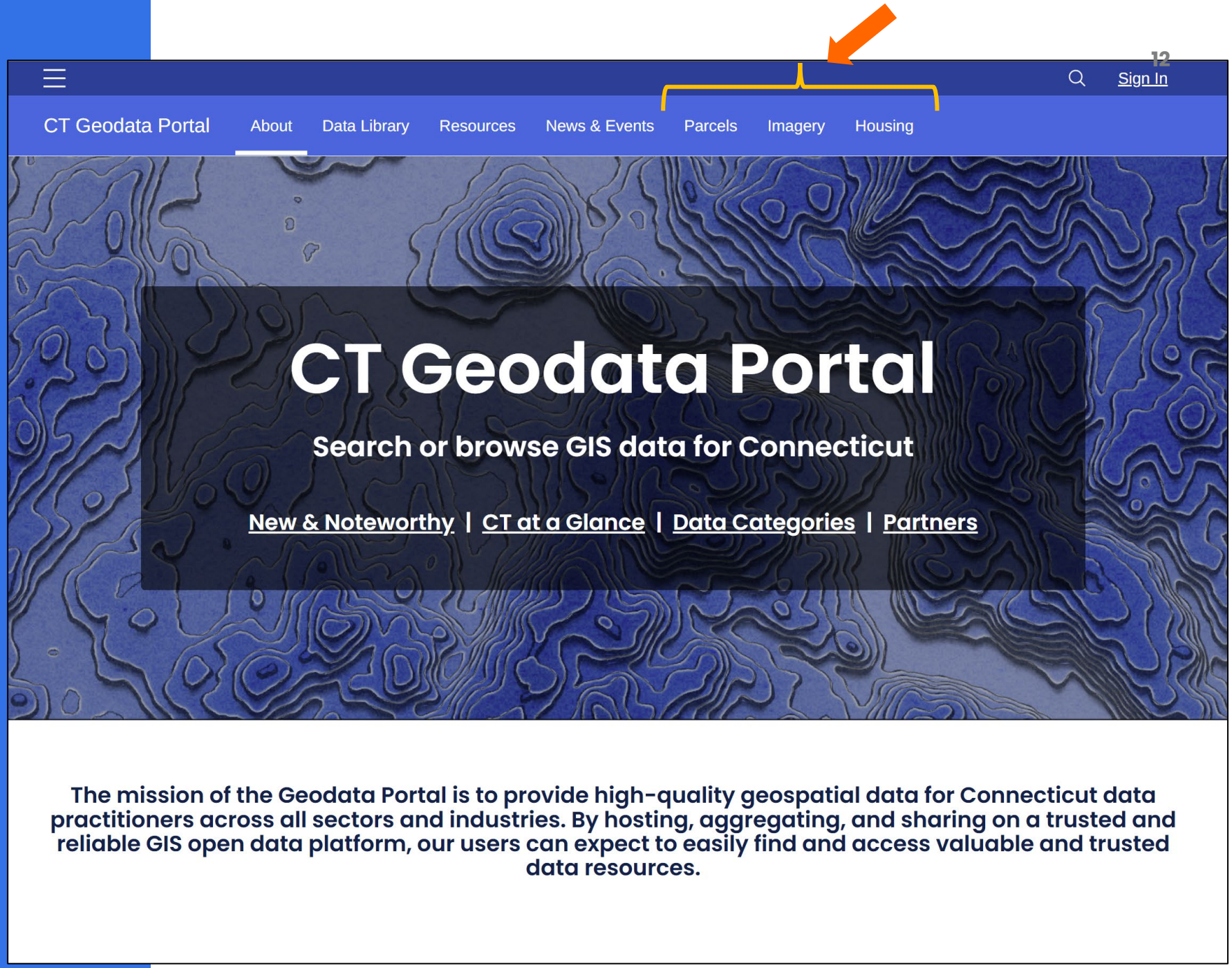
The Geodata Portal shares partner data and items to make it all available in one place.

Data Collection Portal created Spring of 2025.

Initiative pages for important topics and datasets.

- Parcels
- Housing
- Imagery
- More Coming Soon...

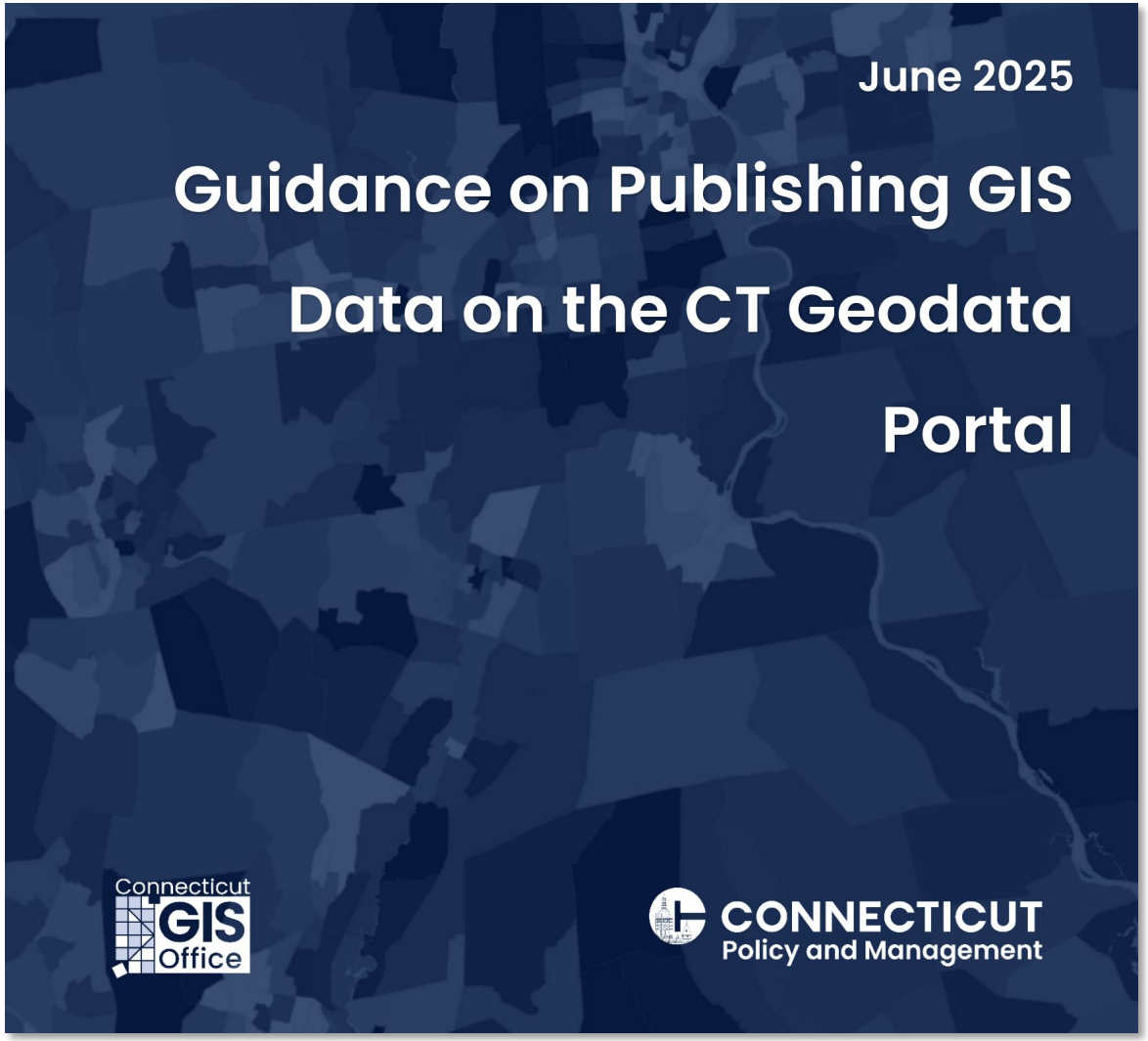
Initiative Pages



Recent updates to the CT Geodata Portal

- New pages created and updated layouts
  - New **Imagery** page
  - New **Resources** page, continually evolving
  - **About** page updates

Geodata Portal Publishing Guidelines



Final draft is published here:
CT GIS Office Guidance Documents

Parcels and Location Data

Parcel and CAMA Data Updates

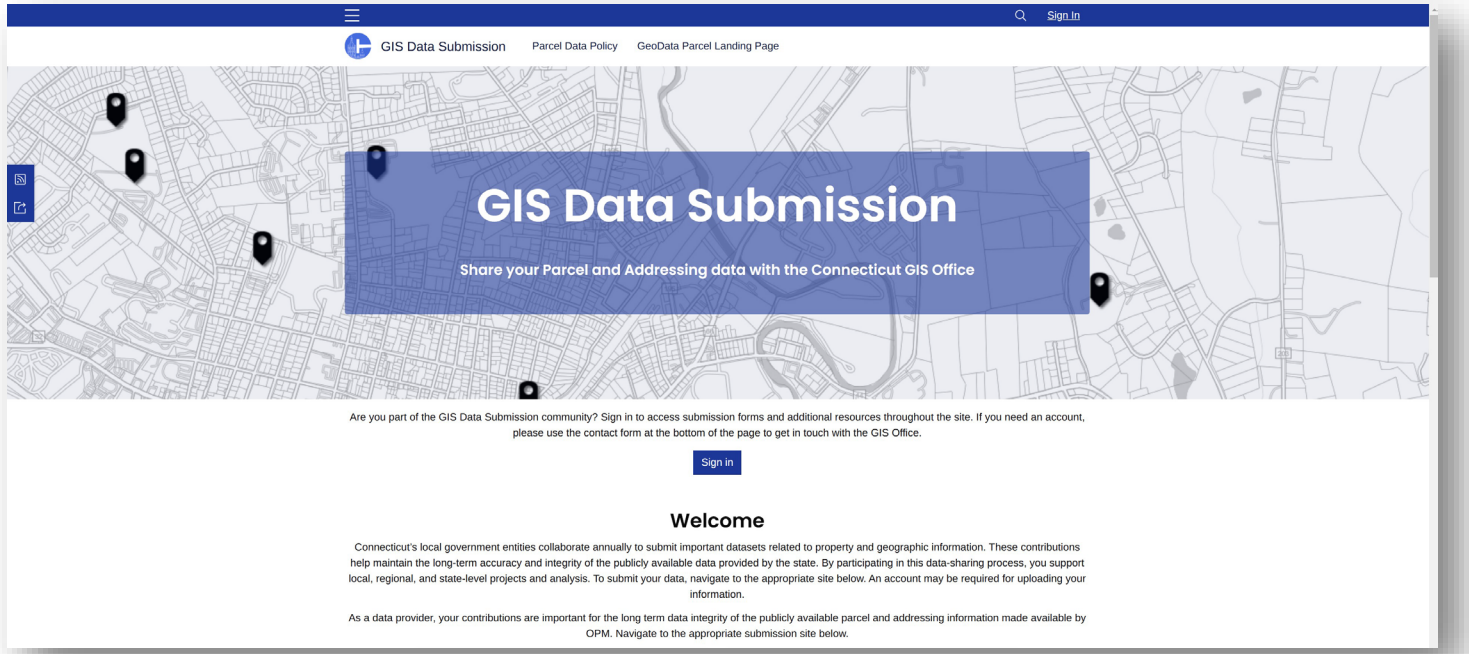
https://geodata.ct.gov/pages/parcels

2025 Collection Updates

- This year's focus is on Parcel Type Field.
- The Updated domain is available in the FGDB on the Parcel and CAMA Data Policy site.

Parcel Type
Standard Parcels
Right of way (ROW)
Water
Condo Main
Condo Unit
Flag

New CAMA and Parcel Submission site



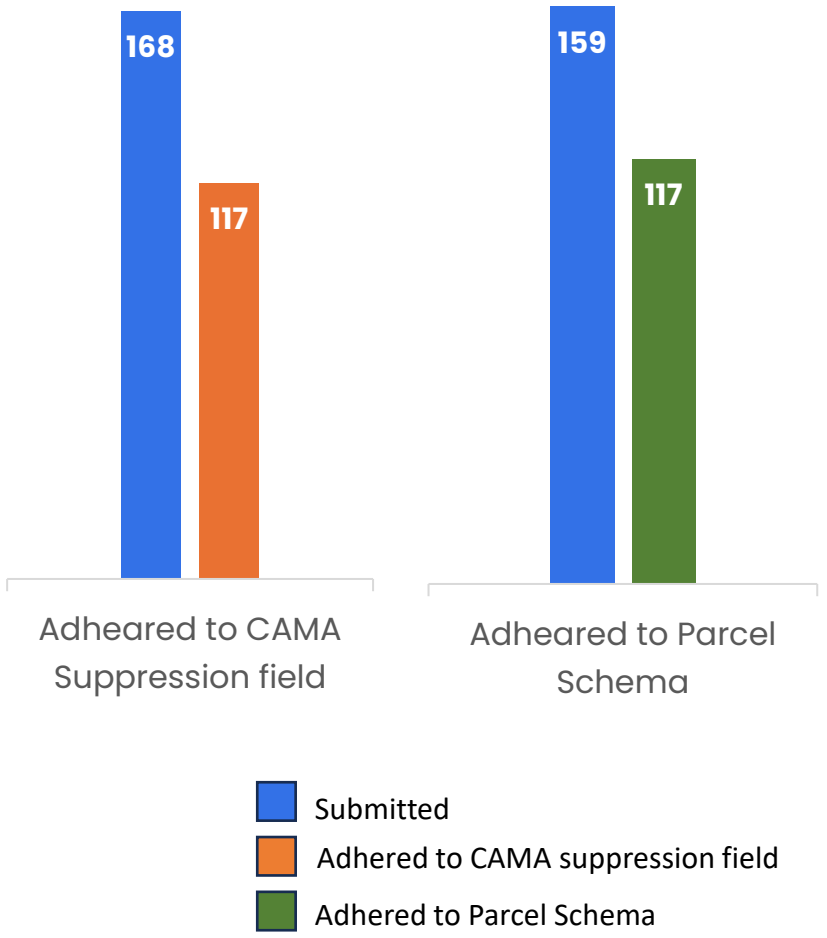
2025 Parcel and CAMA Collection

The 2025 parcel and CAMA consolidation is finished

-"Property Zip" and "Mailing Zip" fields added to the dataset

***Results*:**

- **159 towns submitted Parcels**
  - 117 adhered to the parcel standard
- **168 towns submitted CAMA**
- **131 Towns Suppress Data**
  - 117 complied with the submission field
  - 38/169 towns do not suppress information
  - 23 out of compliance for suppression



Parcel and CAMA Improvement Grants

Funding to the Council of Governments to support the improvement of municipal parcel and CAMA data

Targets:

Recency	Match Rates	Data Completeness	Geometry

Total funds: $2.04 million (American Rescue Plan Act)

Distributed based on the number of towns.

The GIS Office provided data analyses on these targets.

Tiered Prioritization

Primary

- **Recency:** For municipalities that have not submitted updated data in the past years.
- **CAMA to Parcel Match Rate:** Every CAMA entry must have a corresponding parcel in the parcel layer. For municipalities with match rate of 98 or lower.

Secondary

- **Completeness of CAMA Fields:** Ensuring that the 40 attribute fields included in the Connecticut State Parcel Layer are as fully populated as possible.
- **Parcel to CAMA Match Rate:** Verifying that non-assessable parcels, such as rights-of-way and public lands, are correctly identified, and that all assessable properties have a corresponding parcel in the GIS and are correctly linked to CAMA. For municipalities with a match rate of 99 or lower.

Tertiary

- **Geometric Quality of Parcels:** Remaining funds may be distributed to municipalities for the improvement of the geometric quality of parcels following recommendations from the GIS Office and GIS Advisory Council.

2024-2026 Parcel and CAMA Grants

- COGs are at different stages of engagement for the grant-funded contracts. Some have initiated or completed work for municipalities.
- ~2% of the total $2 million grant fund has been spent to date.
- Work is being carried out through a mix of in-house efforts and vendor partnerships.
- Significant work has gone into digitizing condominiums using 2023 building footprints.
- Ongoing discussions focused on standardizing key CAMA and parcel fields such as Parcel ID and State Use Codes (abstract coding system to classify and report residential, commercial, industrial, vacant land, etc.)

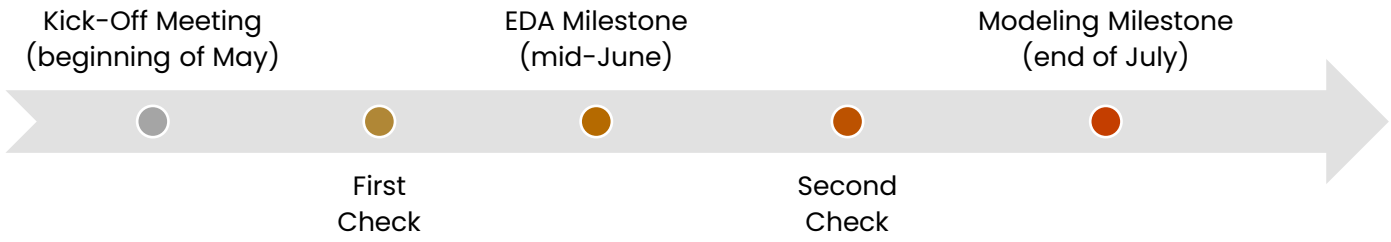
Statewide Addressing Updates

UConn's M.S. Data Science Applied Capstone

Two teams of students working towards designing and testing a methodology to support the maintenance of a master address dataset derived from different sources.

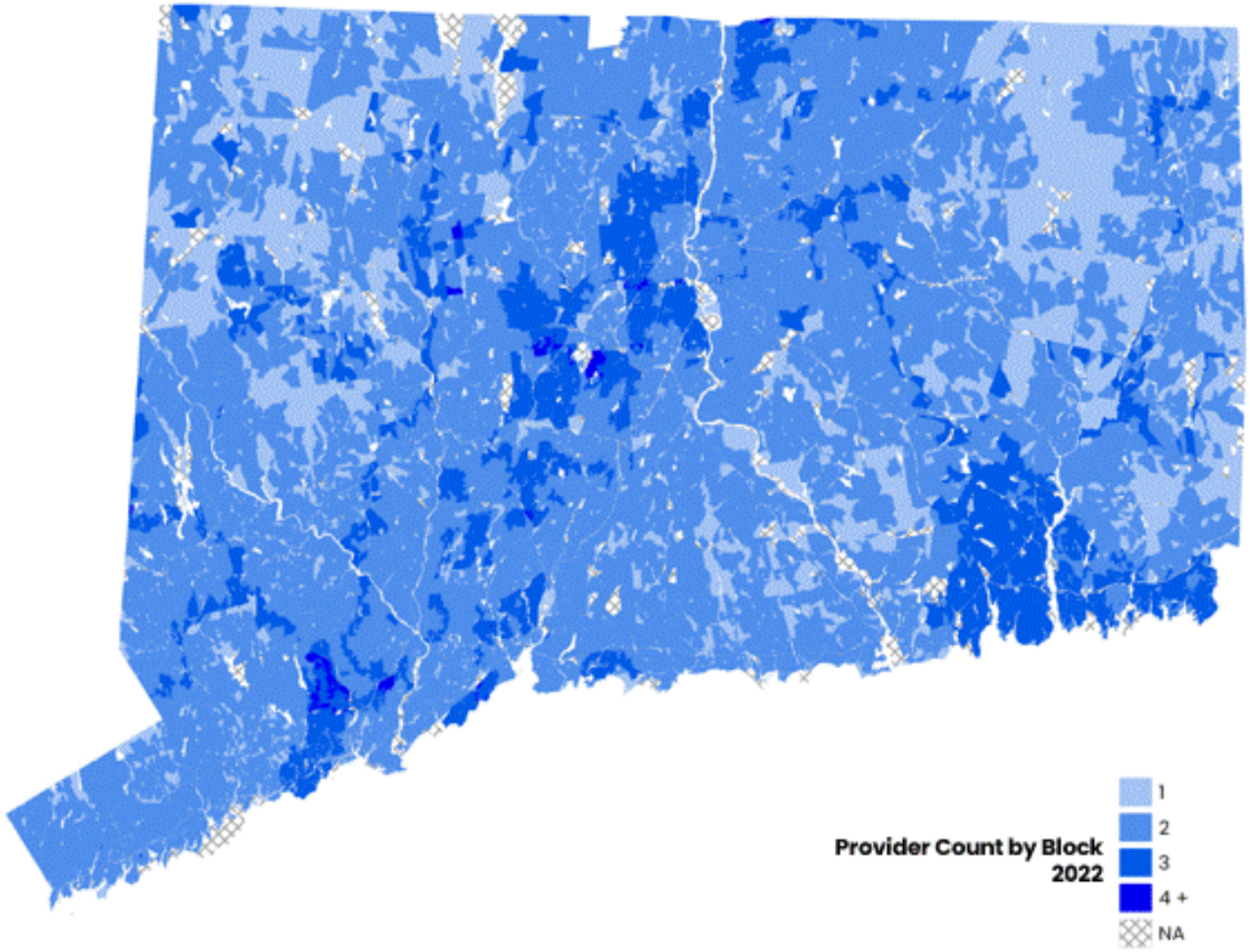
Targets:

- Weighting system
- Confidence intervals
- Classification (*valid, needs review, invalid*).



Broadband Mapping

https://broadbandmaps.ct.gov/



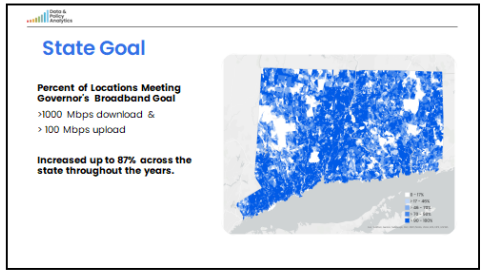
Change of No. of Internet Service Providers per Census Block (2022 vs 2024)

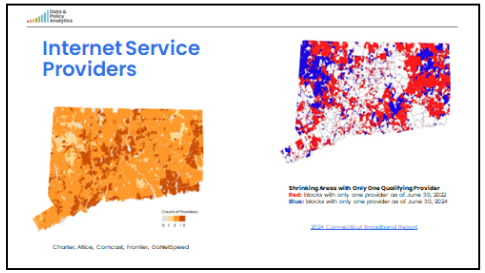
Broadband Mapping

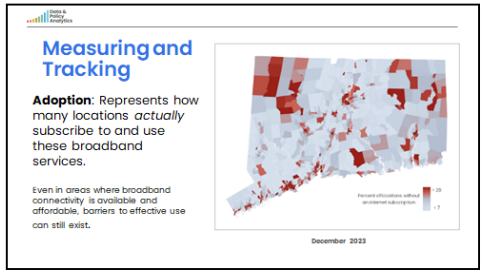
In progress:

- CT Broadband Data Collection (data as of December 31, 2024).
  - Conducted meetings with ISPs to request data on availability and adoption with data aligning Fabric Version 6.
  - No changes to schema.
- Working on several updates to Broadband Hub.
  - Visit our hub and let us know your suggestions!

Intro to Broadband Data in CT
Webinar recording available:
https://clear.uconn.edu/webinars/2025-webinar-library/

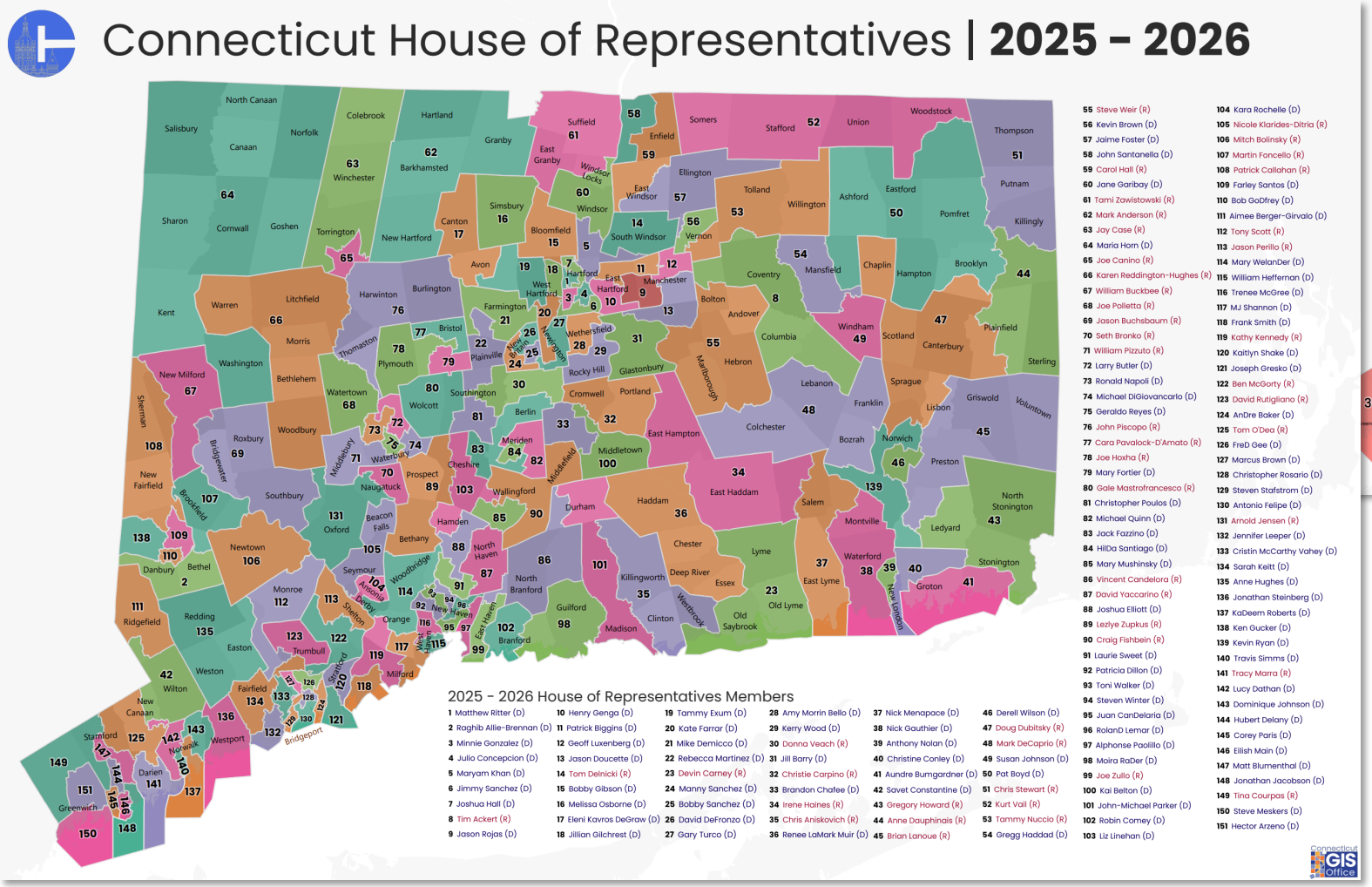


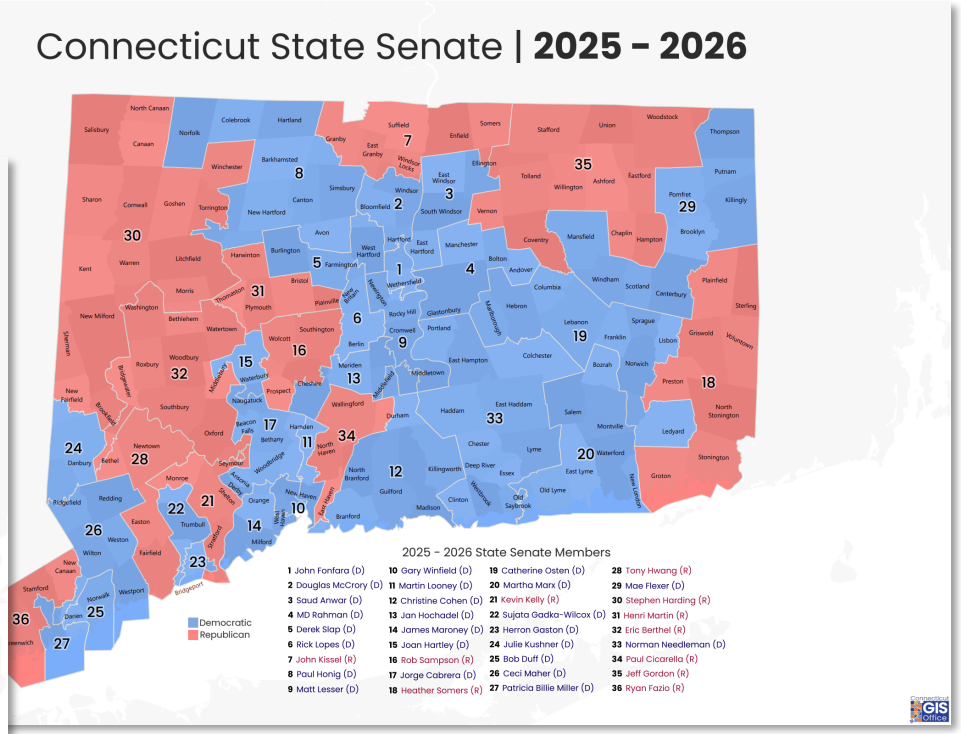




Availability: presence of broadband internet service that meets a minimum standard of speed and quality at a specific location
Adoption: the extent to which households or individuals subscribe to and use broadband internet services that are available to them.
Fabric: Broadband Serviceable Location Fabric (Fabric) is a dataset developed by CostQuest of all locations where fixed broadband internet access service is or could be installed.
FCC: Federal Communications Commission
ISPs: Internet Service Providers

Legislative Maps



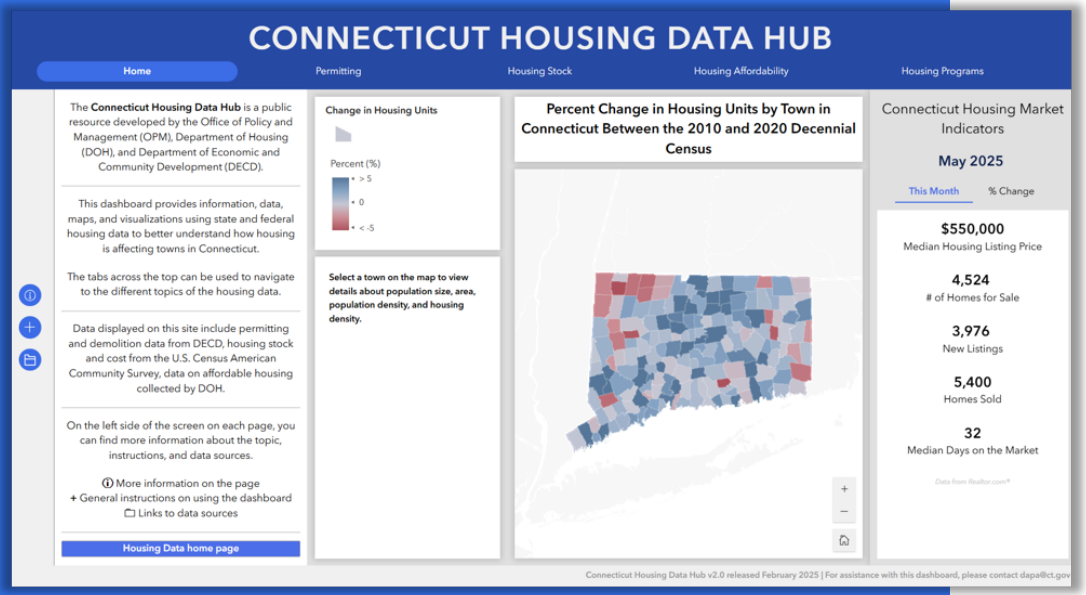


New legislative maps by district with current elected representatives, including versions colored by party.

Link to see all maps: GIS Office - Legislative Maps

Link to layers: Geodata Portal layers

CT Housing Data Hub



https://geodata.ct.gov/pages/housing

- A dashboard that allows users to visualize different facets of housing data for Connecticut.

- Most recent updates include:

1. New backend workflow to managing the data
2. Updated layout and formatting to be more streamlined
3. Switched from RedFin to Realtor.com for housing market indicator data
4. Updated map symbology using meaningful thresholds

Imagery and Lidar Updates

Imagery and LiDAR Update

- IC work status
  - Some reprocessing by Ecopia is still underway to capture areas at the state border.
- Transportation Layers are still being processed.
  - We anticipate these will be done by mid-September.
- 2026 flight planning started
  - Kick-off meeting planned for Early October.

IC Status

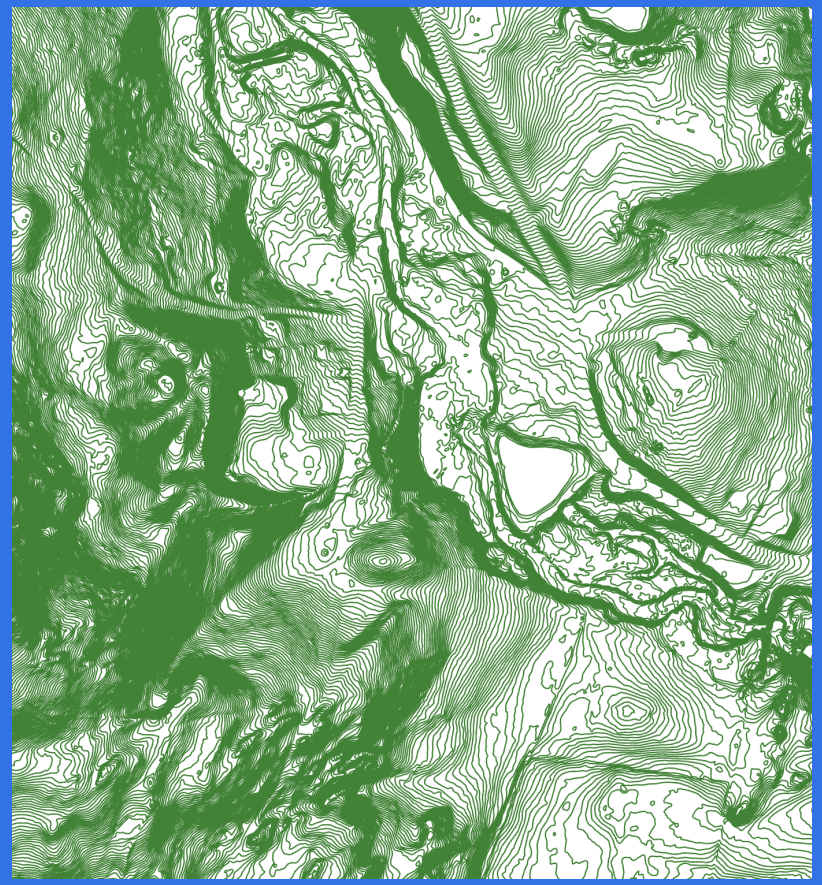
- Ecopia making progress on lidar derivative products (IC)
- Slight delay because of reclassification of pavement in golf courses
- Initial pilot delivery expected by end of July
- Two groups of deliverables
  - Impervious cover
    - Driveways, roads, sidewalks, etc.
    - Buildings being compared against Dewberry's
  - Pavement/Transportation markings
- Operational goals
  - Complete QA/QC
  - Place IC components in web services based on priority/importance

IC Sample Data

Impervious Cover

Driveways, roads, sidewalks, etc.
Buildings being compared against Dewberry's

Contours



- Contours are lines of equal elevation derived from the 2023 Lidar.
- The GIS Office has produced and published a 1-foot contour data set for CT, available as a vector tile service
- 5-foot feature service layer is available in a beta version
- Currently working to produce and publish a 1-foot feature service layer.

Vegetation Rasters

- Received (2m pixels) from Durga Joshi, intern from UCONN (student of Prof. Chandi Witharana)

CHM (Canopy Height Model)

- Canopy Height Model (CHM) is the height / distance between the ground and the treetops above the ground

FHD (Foliage Height Diversity)

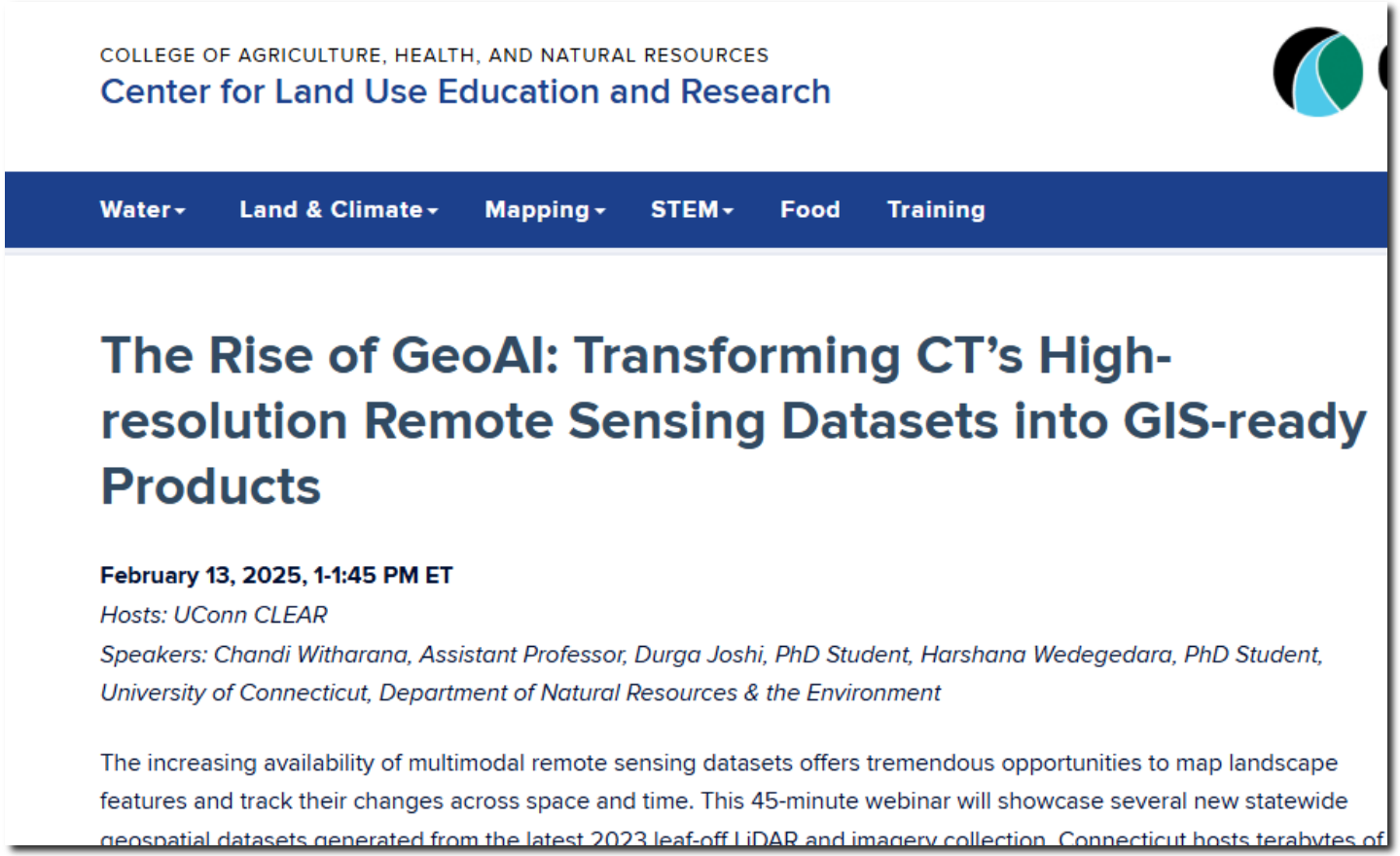
- A metric that quantifies the vertical distribution of plant structure in the forest canopy
- Reflects the number of canopy layers and how evenly foliage is spread among them.
- Tracks structural changes over time

PAI (Plant Area Index)

- Green leaf area and other plant parts area per unit of ground area
- PAI is used to estimate when plants change seasonal growth stages and how

Vegetation Data

- GIS Office Intern
  - Durga Joshi, PhD Candidate



COLLEGE OF AGRICULTURE, HEALTH, AND NATURAL RESOURCES

Center for Land Use Education and Research

Water Land & Climate Mapping STEM Food Training

The Rise of GeoAI: Transforming CT's High-resolution Remote Sensing Datasets into GIS-ready Products

February 13, 2025, 1-1:45 PM ET

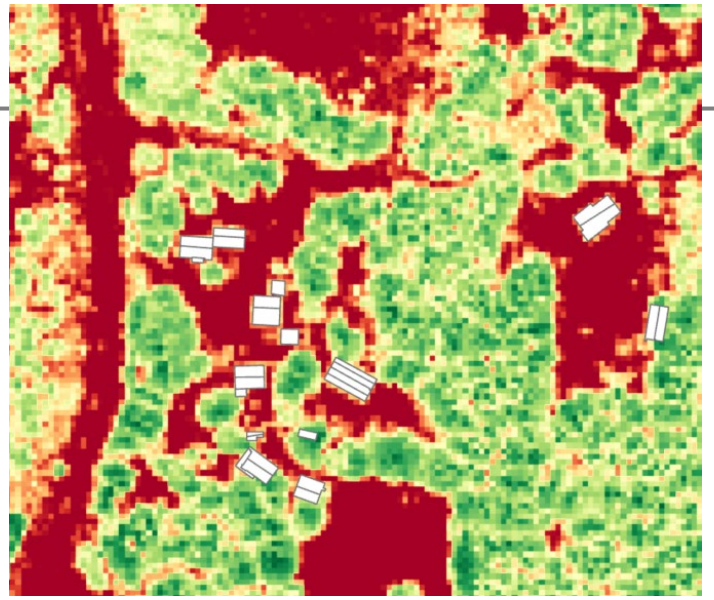
Hosts: UConn CLEAR

Speakers: Chandi Witharana, Assistant Professor, Durga Joshi, PhD Student, Harshana Wedegedara, PhD Student, University of Connecticut, Department of Natural Resources & the Environment

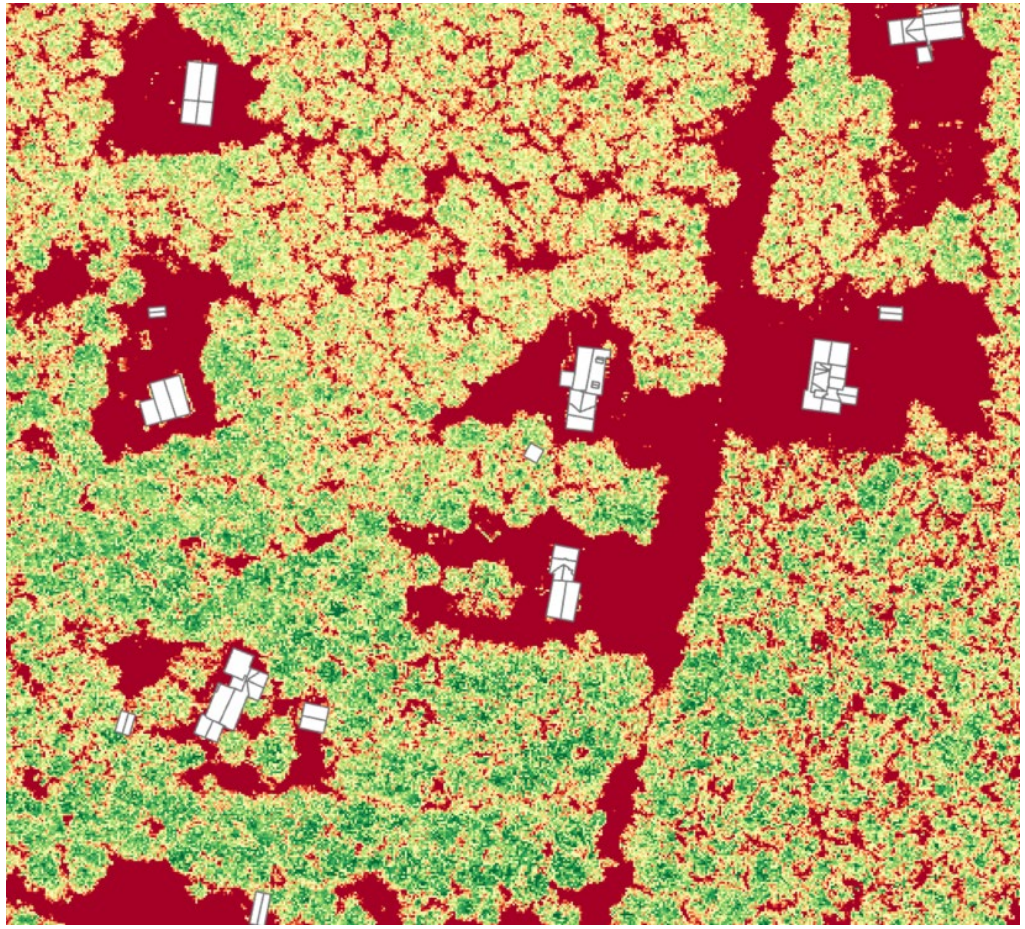
The increasing availability of multimodal remote sensing datasets offers tremendous opportunities to map landscape features and track their changes across space and time. This 45-minute webinar will showcase several new statewide geospatial datasets generated from the latest 2023 leaf-off LiDAR and imagery collection. Connecticut hosts terabytes of

[CLEAR Webinars | Center for Land Use Education and Research]

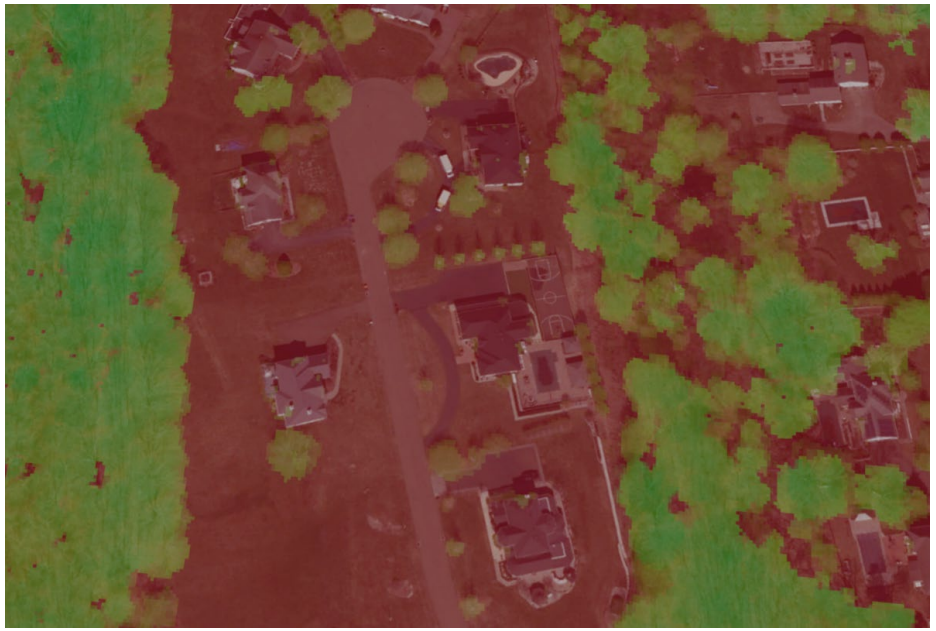
Statewide Veg Data sets



Foliage height diversity (FHD)



Plant area index (PAI)

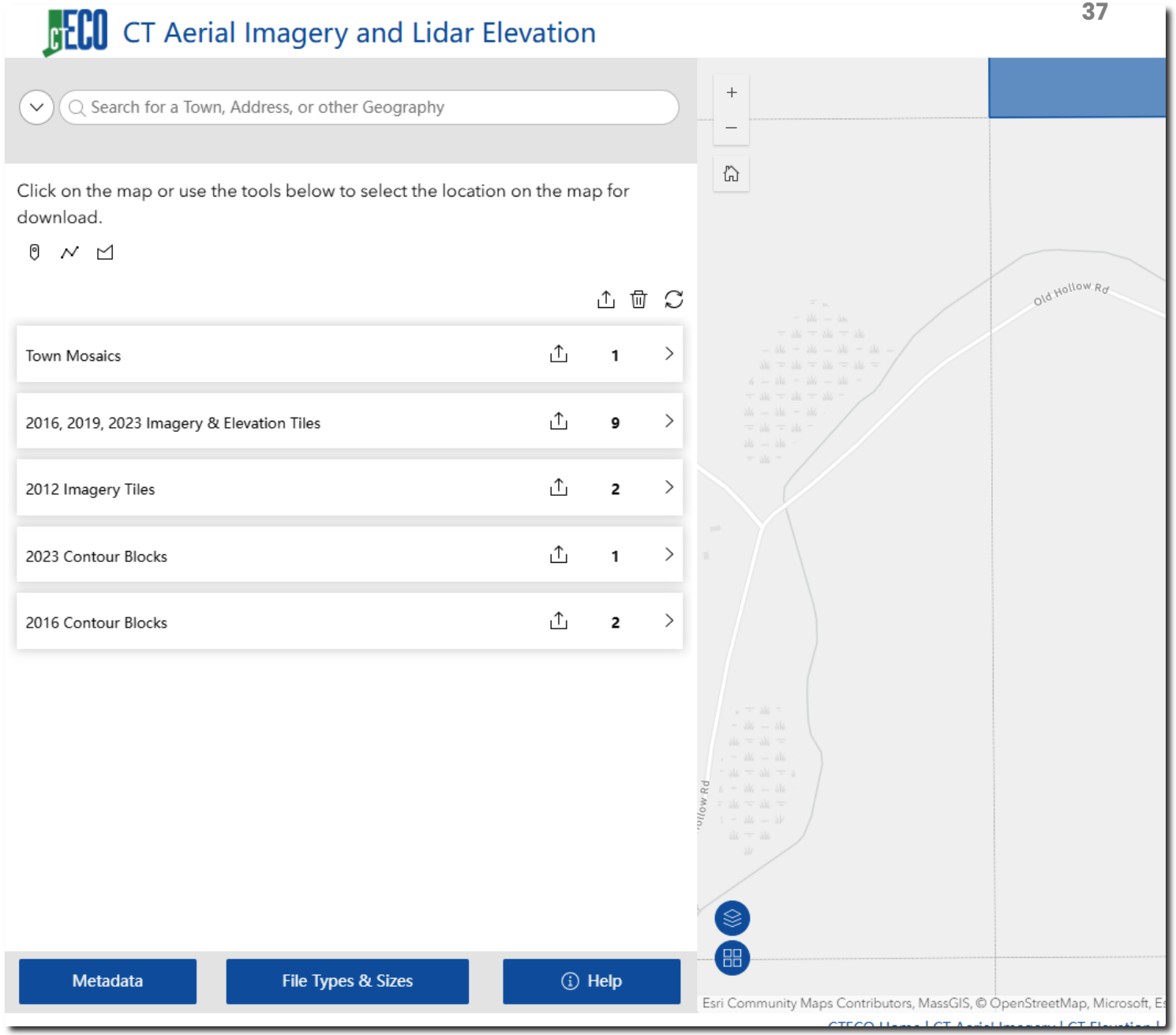


Canopy Height Model (CHM)

Planning for Next Imagery and Lidar Capture

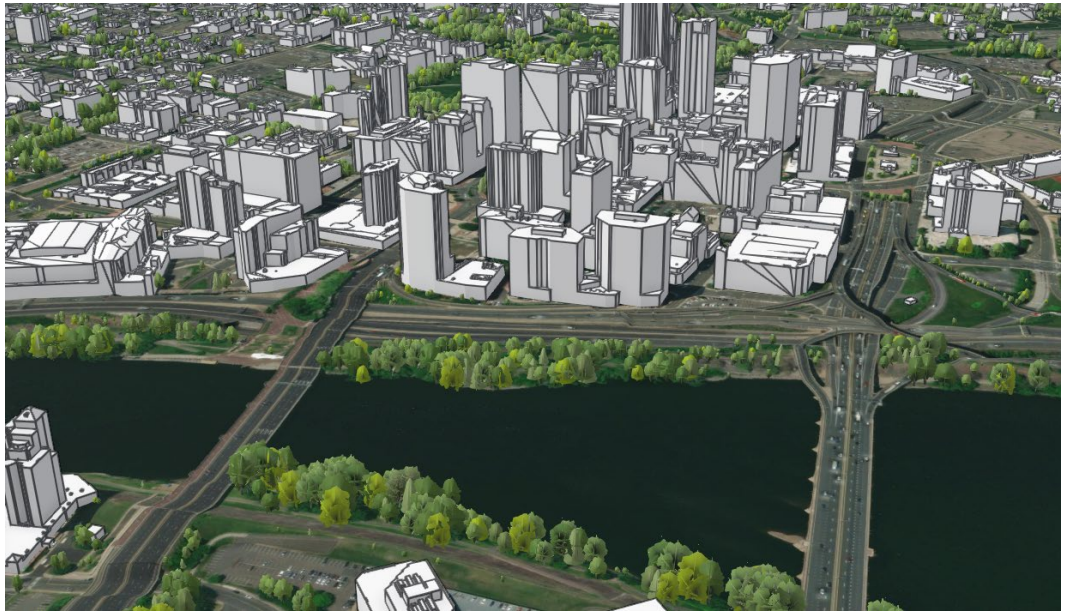
- Kickoff meeting is scheduled for early October
- Flight in early Spring of 2026

CT ECO Download App



Hydrography and Water Mapping

Where We Are Now: A Patchwork of Flood Data



National Hydrography Dataset (NHD) at 1:24,000 scale.

FEMA DFIRMs: Incomplete, inconsistent coverage.

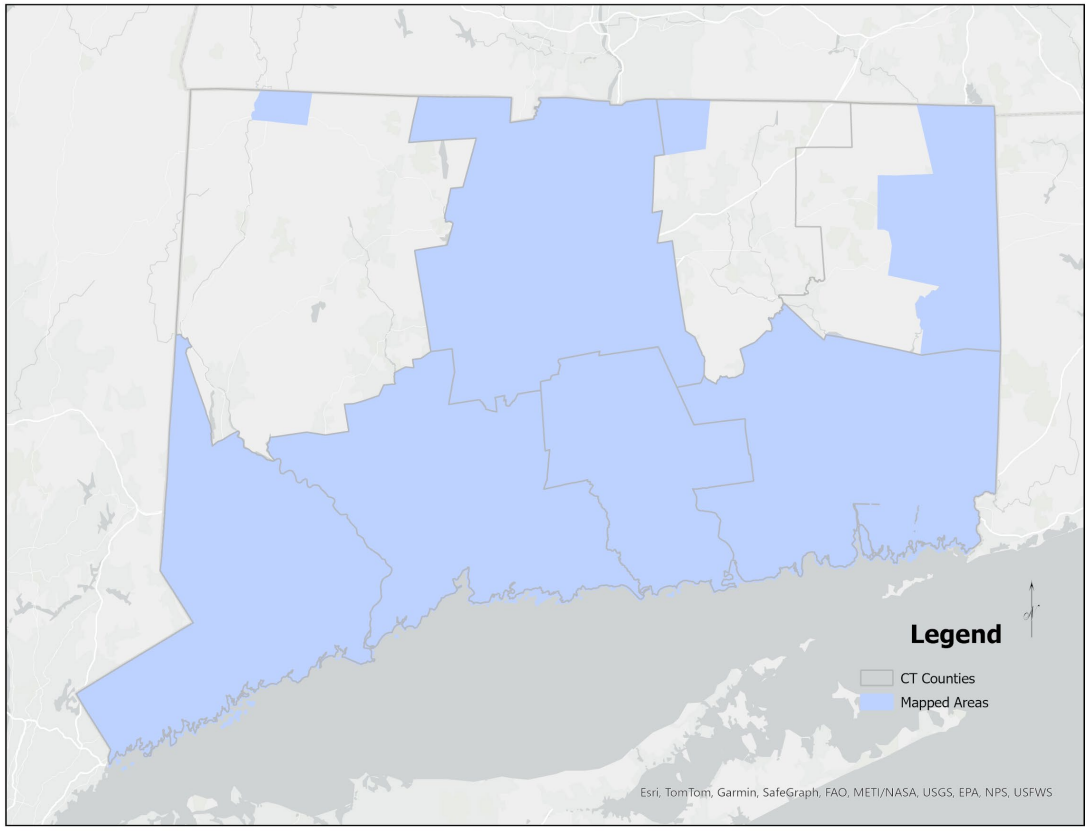
High-resolution Elevation Data, Impervious Cover, and structure data available.

Drainage network data availability and quality varies locally and lacks standardization (MS4).

Full vulnerability analyses only for state transportation assets.

What We're Missing

FEMA's National Flood Hazard Layer (NFHL)



FEMA maps are often outdated or missing

Hydrography hasn't been updated statewide since the 1980s

Local drainage data is inconsistent

No unified network for statewide hydrologic modeling

High Resolution Elevation Data

2023 Capture of the Following:

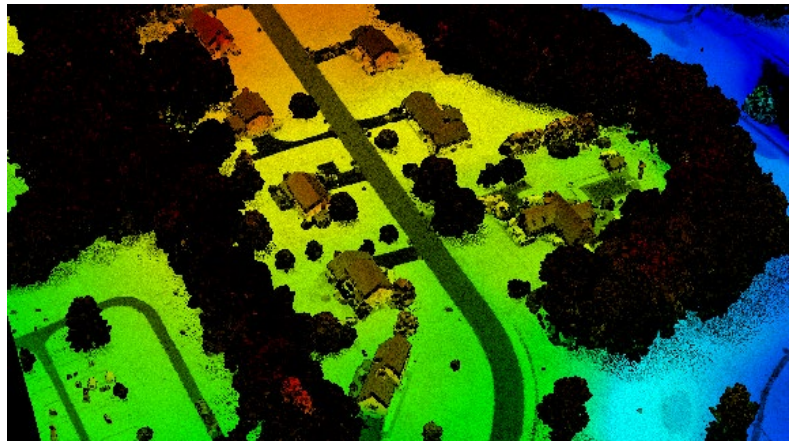
3” imagery

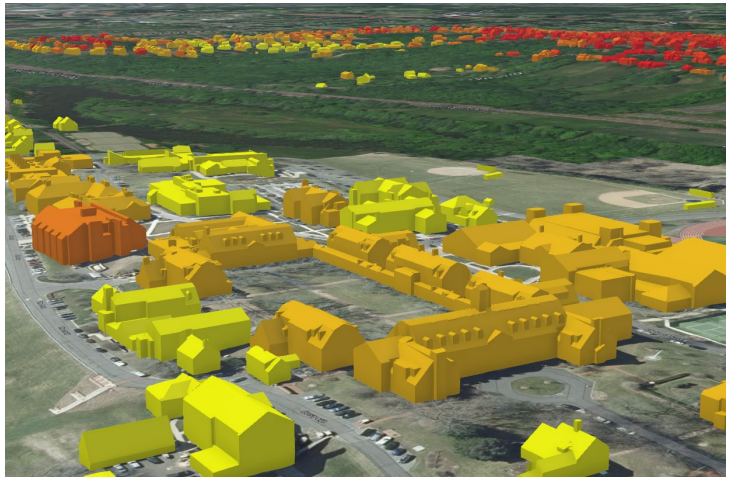
QL1 LiDAR

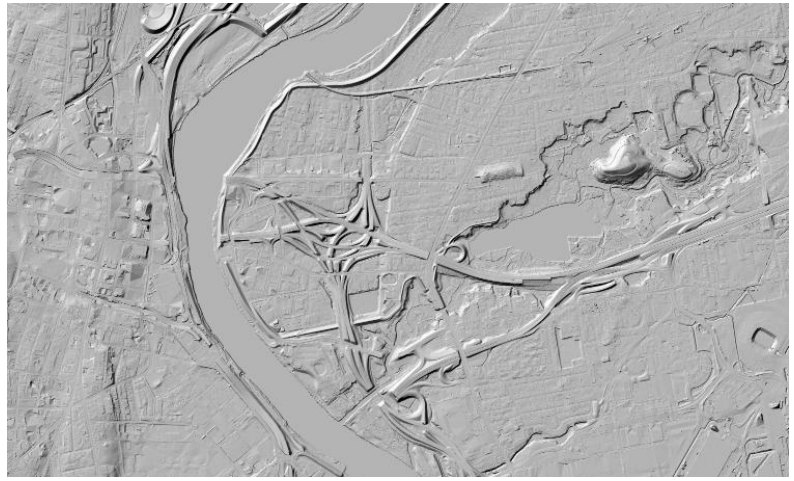
2D/3D Buildings

Impervious Cover

Other Potential Derivatives





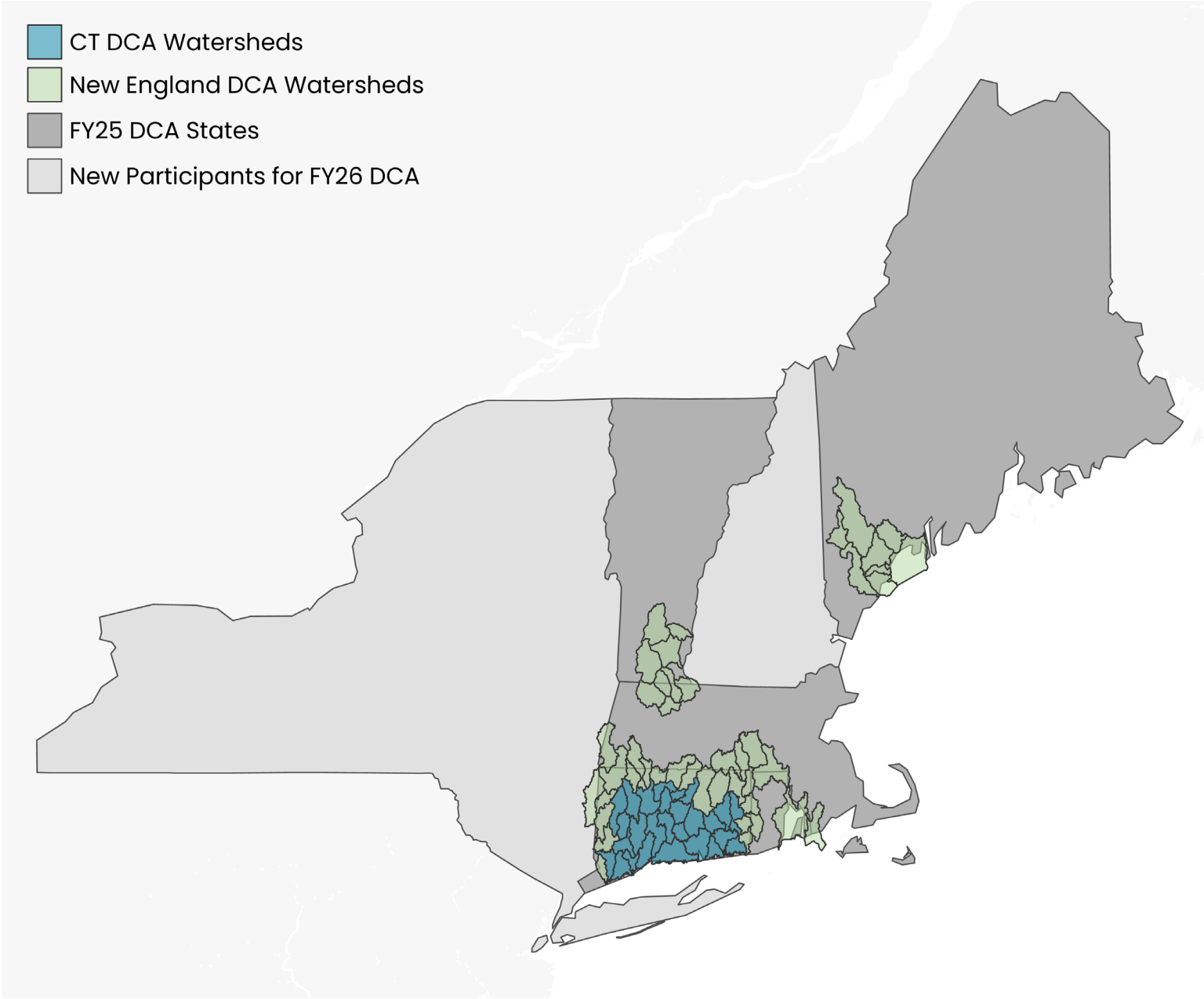


The New England 3DHP Regional Partnership

FY 25 DCA not funded.

Same partners for FY26*.
- CT, RI, MA, VT, & ME

Modified focus for CT joint submission. Second CT submission to help complete most of the state

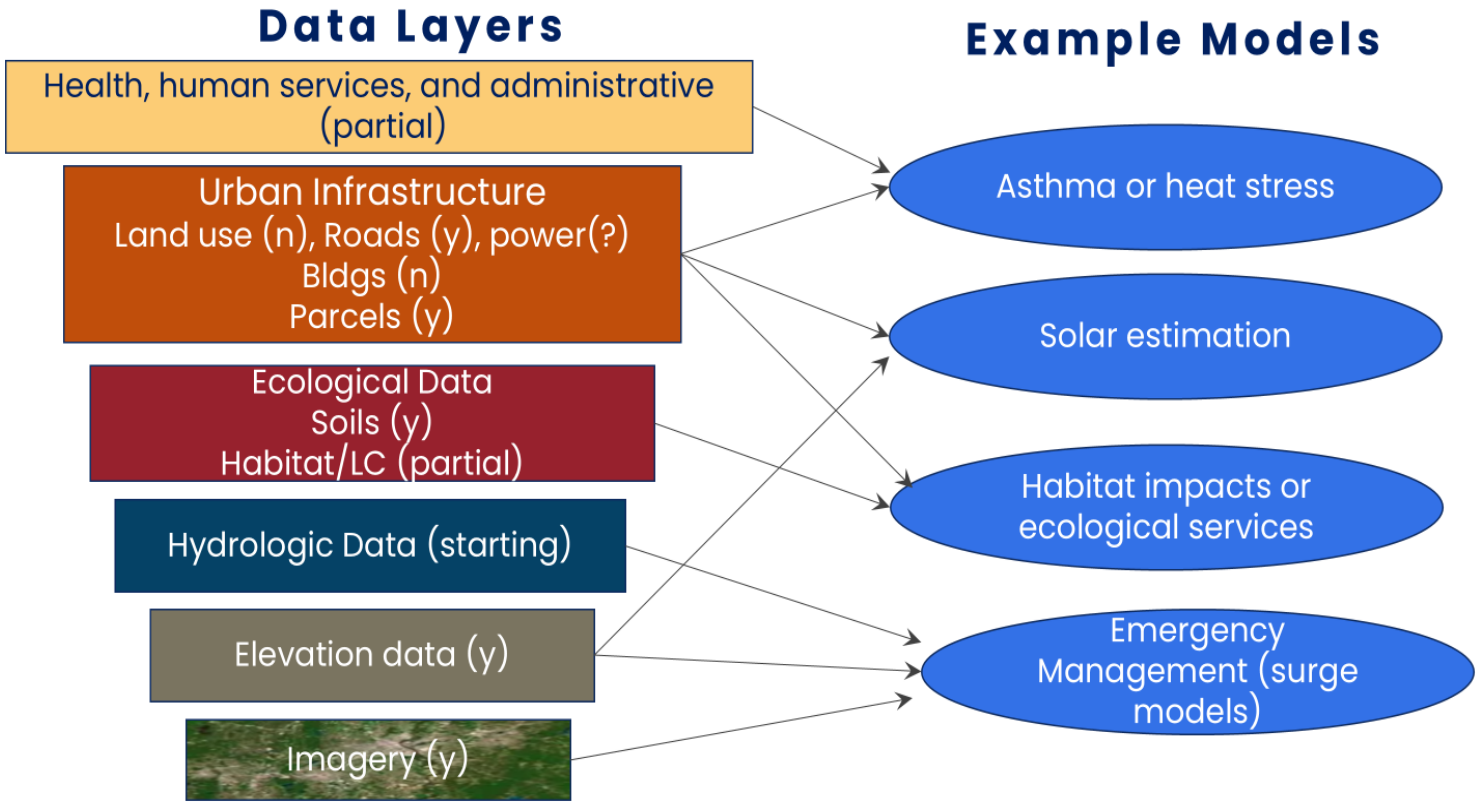


Make Once, Use Many Times

This visual shows that even partial or incomplete datasets can still inform effective planning tools. The key is to start connecting them early, structure them well, and ensure the models evolve as the data improves.

Better foundational data has a greater positive effect on these models than any other single improvement.

Downstream Effects of Good Foundational Data



Interagency Working Group: Emergency Management

- Emergency Management Data Work Group
  - Kick-off meeting on July 9th, 2025
  - Initial goal is to conduct a needs assessment of emergency management data sets for **rapid access**
  - Long-term goal: Fostering interagency cooperation, planning, and unaddressed data and access issues

PA 25-33 Culvert and Bridge Data Collection

Sec. 8. (NEW) (Effective July 1, 2025) On or before May 1, 2028, and annually thereafter, each municipality shall submit a geospatial data file of each culvert and bridge within the control and boundaries of such municipality to the regional council of governments of which it is a member in a form and manner prescribed by the Office of Policy and Management, in consultation with the Departments of Transportation and Energy and Environmental Protection.

MS4 Drainage Network Data

Because Connecticut has strong compliance across regions and municipalities with MS4 mapping requirements, a wealth of detailed information is available to help reduce the uncertainty of how water flows through urban and suburban areas.

GIS Office + CLEAR Webinar Series

The webinar series is kicking off again on September 10th

- GIS Office Activities Update for the year to date.

Coming Soon:

- All about water and hydrography series
- Sept 25th – Mapping Water in Connecticut: An Introduction
- Oct. 23rd – Part 2
- Nov. 13th – Part 3

Questions?

Connecticut GIS Office