Broadband Mapping in Connecticut

Measuring and Tracking Access and Adoption

Last Updated: 7/31/2025

Data & Policy Analytics

Connecticut GIS Office

CONNECTICUT Policy and Management

Overview

A presentation on broadband data collection and mapping efforts in Connecticut—from program development and funding to ongoing work improving the state's location fabric and tracking broadband access and adoption.

Data & Policy Analytics Programs

GIS Office

DataLink CT

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 C.G.S. 16-330b.

Broadband Data Collection

Section 16-330b of Connecticut General Statutes:

- Directs the Office of Policy and Management to **develop and maintain a map showing broadband availability and adoption**, including download and upload speeds.
- Sets a **goal** for broadband access at speeds of **1 Gbps download and 100 Mbps upload**.
- Internet service providers submit data to OPM with the information required to develop and maintain an up-to-date broadband map showing the **availability** of broadband Internet access service and **subscription** by broadband Internet **speed** offered by such provider.

Broadband Data Collection

The GIS Office's role:

- Collecting and analyzing credible and relevant data on broadband access and adoption and using this data to inform residents, policy-makers and local-stakeholders.
- We create publicly available curated maps, web applications and datasets.

Broadband maps updated every year by December 1st.

Where it Started

The best and most complete source of data on broadband availability was the FCC's Form 477 data collection

- Internet service providers (ISPs) submitted biannual reports of the *census blocks* where they provide service as well as the maximum speeds and technology of transmission.
- Drawback: any census block that had even one location served was marked as served.

The Office of Policy and Management began collecting data from ISPs in March of 2022

- All wireline ISPs submitted two filings (data as of Dec 31, 2021 and data as of June 30, 2021) detailing availability and speeds at the address-level and the number of subscriptions, by speed tier, per census tract.
- This data was processed and matched with the e9-1-1 address point layer at the time.

Funding

American Rescue Plan Act of 2021 (ARPA)

- Largest federal COVID-19 relief investment in the state
- Governor Lamont focused on long-lasting transformative initiatives
- General Assembly recognized the opportunity and passed Special Act 21-1 (*An Act Concerning Legislative Oversight and Approval of COVID-19 Relief Funds*) to have governor's recommended allocations for the Coronavirus State Fiscal Recovery Fund (ARPA-CSFRF)

Funding

American Rescue Plan Act of 2021 (ARPA)

- $9.5m for Statewide GIS Capacity

"...develop critical data and infrastructure to assist in expansion of broadband access, through acquisition of high-quality aerial imagery data, improvements in municipal property and building data, development of data on impervious surfaces, and the related technical improvements and outreach and awareness activities to ensure effective use of the data by a wide range of stakeholders."

Statewide Aerial Imagery and Elevation

Two aerial imagery and elevation data acquisitions (2023 and 2026)

Uses

Telecommunications companies rely heavily upon aerial imagery to design, build-out, and maintain their infrastructure.

Municipalities, Regional Planning Organizations, and State Agencies: planning, permitting, and construction inspection processes that allow the telecommunications companies to expand and maintain their infrastructure.

Broadband mapping

Planimetric data such as building footprints. Important tool for understanding broadband accessibility, particularly in rural areas and for “curb-to-home” buildouts.

Accurately determine the potential impacts of physical infrastructure work

3D buildings visualize changes to the built environment

Parcel Improvements

Funds for each Councils of Government to distribute amongst their towns to conduct the work of improving their parcel and CAMA and narrowing the quality gap amongst municipalities throughout the state.

Focus: recency, match rates, completeness, and geometric quality.

Broadband mapping

Inform investments by mapping commercial, residential, and mixed-use properties and identifying gaps in connectivity at the property level.

Property information facilitates telecommunication providers with the ability to more easily identify properties and the owners/tenants they are required to notify as a part of the regulatory process when building or updating their physical infrastructure.

Municipal boundaries and Right of Way (ROW)

Accurate municipal boundary lines

Necessary to create a statewide parcel layer that shares a common geometry across towns as a means of simplifying and improving the cartographic representations of shared borders across the state.

ROW data

Statewide baseline for enhancing geographic and geometric data quality.

Benefits of improved boundaries and ROW include

More accurate representation of the built environment and administrative boundaries.

Utility to state agencies (OPM, DAS, CTDOT, DEEP), federal agencies, municipalities, regional planning organizations, and utility companies

Broadband mapping

Enhances ConnDOT's utility coordination for broadband installations.

Aids in permitting future fiber build-outs.

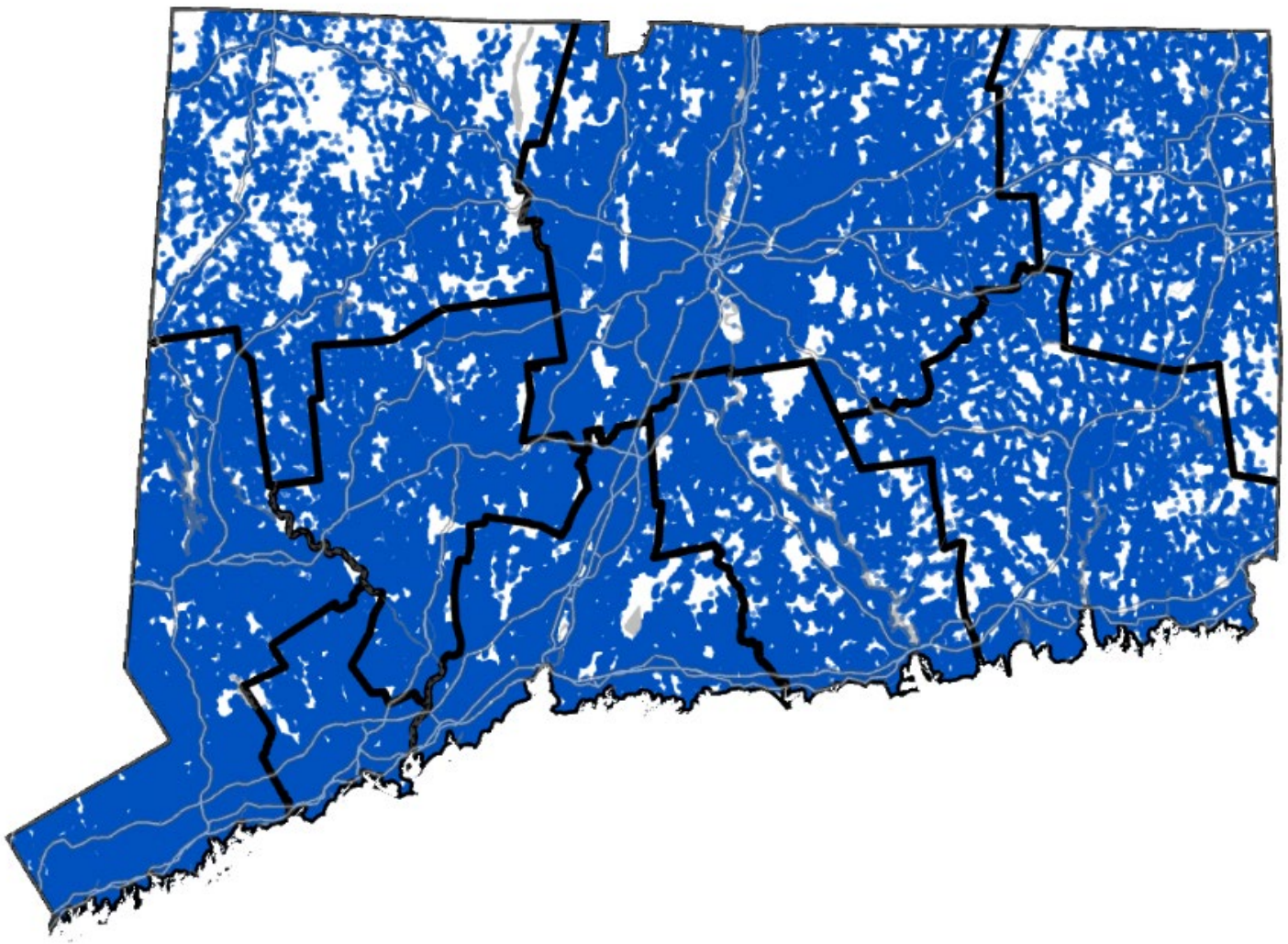
Now

- Maintaining data in geodata portal
- Measuring and tracking availability and adoption
- Continued collaboration and coordination with state agencies
  - Broadband Hub (multi-agency discussions)
  - Direct assistance to the state's Office of Telecommunications and Broadband

From points…

National Broadband Serviceable Location (BSL) Fabric

- Currently on version 7
- BSLs are defined by the FCC
- Locations challenges are submitted frequently



BSL Fabric: A dataset developed by CostQuest of all locations where fixed broadband internet access service is or could be installed.
FCC: Federal Communications Commission

Annual Timeline

← Updated Broadband Serviceable Location (BSL) Fabric

CT ISP Data Collection #1

Submissions requests, with additional time for corrections

New BSL fabric released

CT ISP Data Collection #2

Submissions requests, with additional time for corrections

Mar	Apr-May	Jun-Jul	Aug-Sept	Oct-Nov
FCC Broadband Data Collection Deadline Data as of December 2024 Submit fabric locations challenges		**Data Cleaning and Verification** Internal data cleaning and processing	**FCC Broadband Data Collection Deadline** Data as of June 2025	**Data Processing to Updating Maps of Availability and Subscription** Publish new maps by December 1st

Schemas

Table 1: Broadband Availability - Fields in Provider Submitted Data

Field	Description	Type	Example
PROVIDER_ID	Internet service provider unique identifier. Codes will be given out to each service provider with their SFTP credentials.	Text	01
LOCATION_ID	Unique identifier for the location served based on the FCC's Broadband Serviceable Location Fabric.	Text	01
TECHCODE	Technology used to deploy service defined by the following codes: 10 – Copper Wire 40 – Coaxial Cable / HFC 50 – Optical Carrier / Fiber to the Premises 60 – Geostationary Satellite 61 – Non-geostationary Satellite 70 – Unlicensed Terrestrial Fixed Wireless 71 – Licensed Terrestrial Fixed Wireless 72 – Licensed-by-Rule Terrestrial Fixed Wireless 0 – Other	Integer (short)	40
MAXDOWN	Maximum advertised download speed provided to location (in Mbps)	Float	987
MAXUP	Maximum advertised upload speed provided to location (in Mbps)	Float	35
LOW_LATENCY	The offered service is low latency, defined as having round-trip latency of less than or equal to 100 milliseconds based on the 95th percentile of measurements. Value must be one of the following codes: 0 – False 1 – True	Integer (short)	0
BUS_RES	Character identifying whether the service at the location is business-only, residential only or offered to both business and residential customers. B: Business-only service R: Residential-only service X: Business and residential service	String	R

Table 2: Fixed Subscription - Fields in Provider Submitted Data

Field	Description	Type	Example
PROVIDER_ID	Internet service provider unique identifier. Codes will be given out to each service provider with their SFTP credentials.	Text	01
TRACT	11-digit 2020 census tract FIPS code. Filers should also ensure that the tract code is stored as text rather than as a numeric value (otherwise, any leading zeros in the tract code will be dropped).	Text	09001010201
TECHCODE	Technology used to deploy service. 10 – Copper Wire 40 – Coaxial Cable / HFC 50 – Optical Carrier / Fiber to the Premises 60 – Geostationary Satellite 61 – Non-geostationary Satellite 70 – Unlicensed Terrestrial Fixed Wireless 71 – Licensed Terrestrial Fixed Wireless 72 – Licensed-by-Rule Terrestrial Fixed Wireless 0 – Other	Integer (short)	40
SUBSDOWN	Advertised download speed for active subscription at location (in Mbps). For addresses where service is available but not subscribed, value should be null.	Float	25
SUBSUP	Advertised upload speed for active subscription at location (in Mbps). For addresses where service is available but not subscribed, value should be null.	Float	3
CONNECTIONS	Total number of connections in the census tract.	Integer (short)	100
RES_CONNECTIONS	Total number of connections in this census tract that are considered "consumer" or "residential".	Integer (short)	75

To the hub!

Interact with- and download broadband data!

Dataset

Broadband Data by Block - 2024

State of Connecticut

The Connecticut Broadband Availability and Adoption Maps were created to help citizens and policymakers understand the strengths and weaknesses of broadband infrastructure in the state. Data is aggregated to the…

Type: **Feature Service** Date updated: **4/11/2025**
Tags: **CT, broadband, connectivity, internet, 2024** Date created: **1/17/2025**

Dataset

Broadband Data by Town - 2024

State of Connecticut

The Connecticut Broadband Availability and Adoption Maps were created to help citizens and policymakers understand the strengths and weaknesses of broadband infrastructure in the state. Data is aggregated to the…

Type: **Feature Service** Date updated: **4/4/2025**
Tags: **CT, broadband, connectivity, internet, 2024** Date created: **1/15/2025**

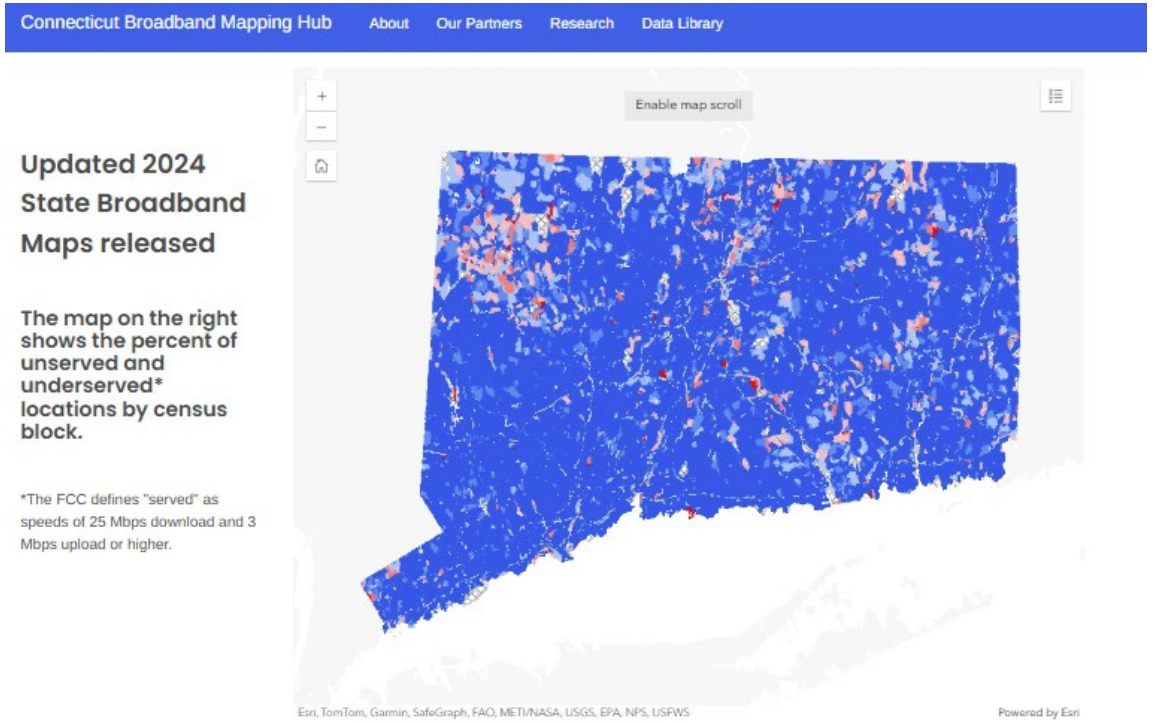
Dataset

Broadband Data by Tract - 2024

State of Connecticut

The Connecticut Broadband Availability and Adoption Maps were created to help citizens and policymakers understand the strengths and weaknesses of broadband infrastructure in the state. Data is aggregated to the…

Type: **Feature Service** Date updated: **2/24/2025**
Tags: **CT, broadband, connectivity, internet, 2024** Date created: **1/17/2025**



Broadband Availability and Adoption Applications

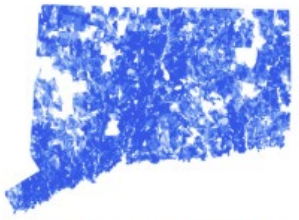
Use the applications below to explore broadband data across Connecticut

Connecticut Broadband Availability Map December 2024

The Connecticut Broadband Availability and Adoption Maps were created to help citizens...

Connecticut Broadband Adoption Map December 2024

The Connecticut Broadband Availability and Adoption Maps were created to help citizens…



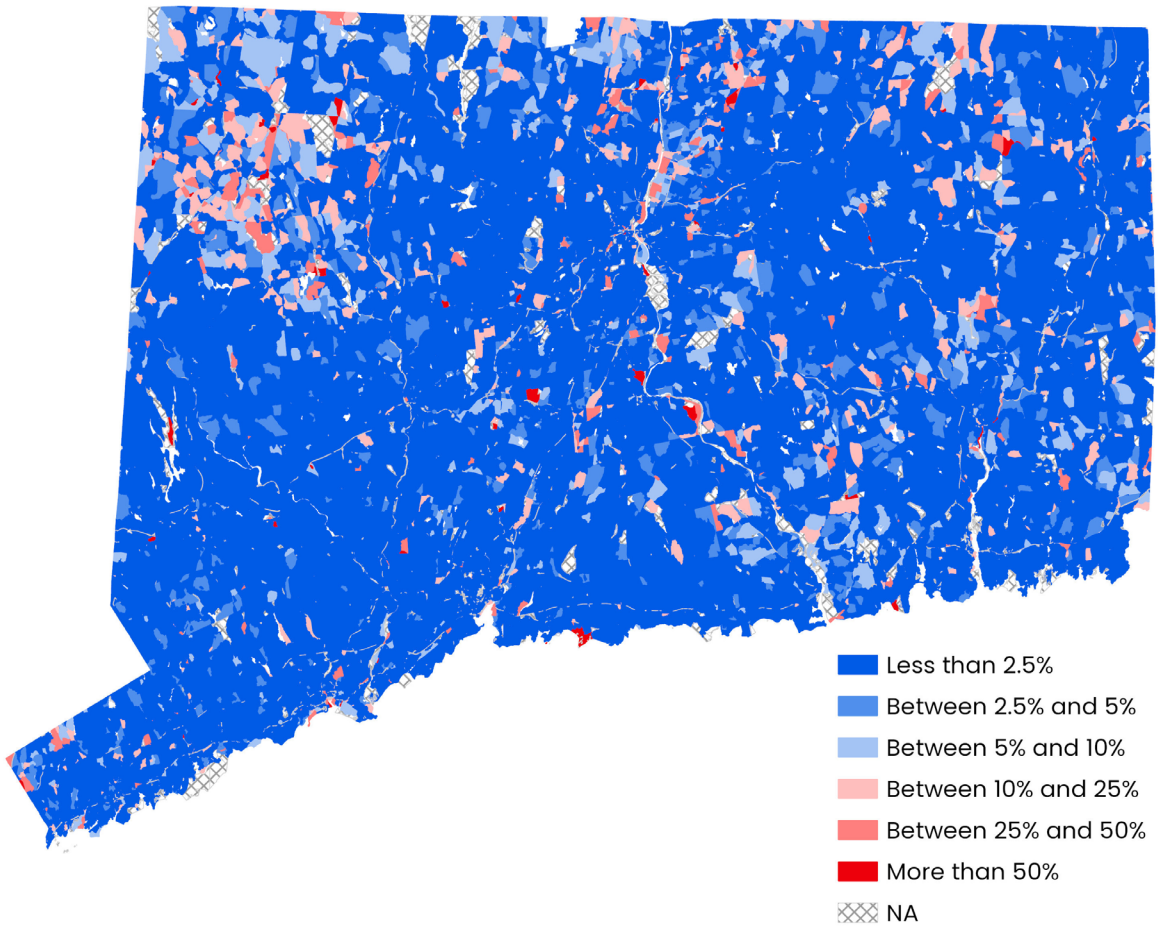
Progress to State Goal (1000/100) December 2024

Public Act 21-159 established a state goal of universal access to 1000 Mbps download and.

Measuring and Tracking

Availability: Refers to the presence of broadband services to a location. Locations are defined as unserved, underserved or served based on download and upload speed thresholds.

Unserved: <25 Mbps/3 Mbps
Underserved: <100 Mbps/20 Mbps
Served: >100 Mbps/20 Mbps

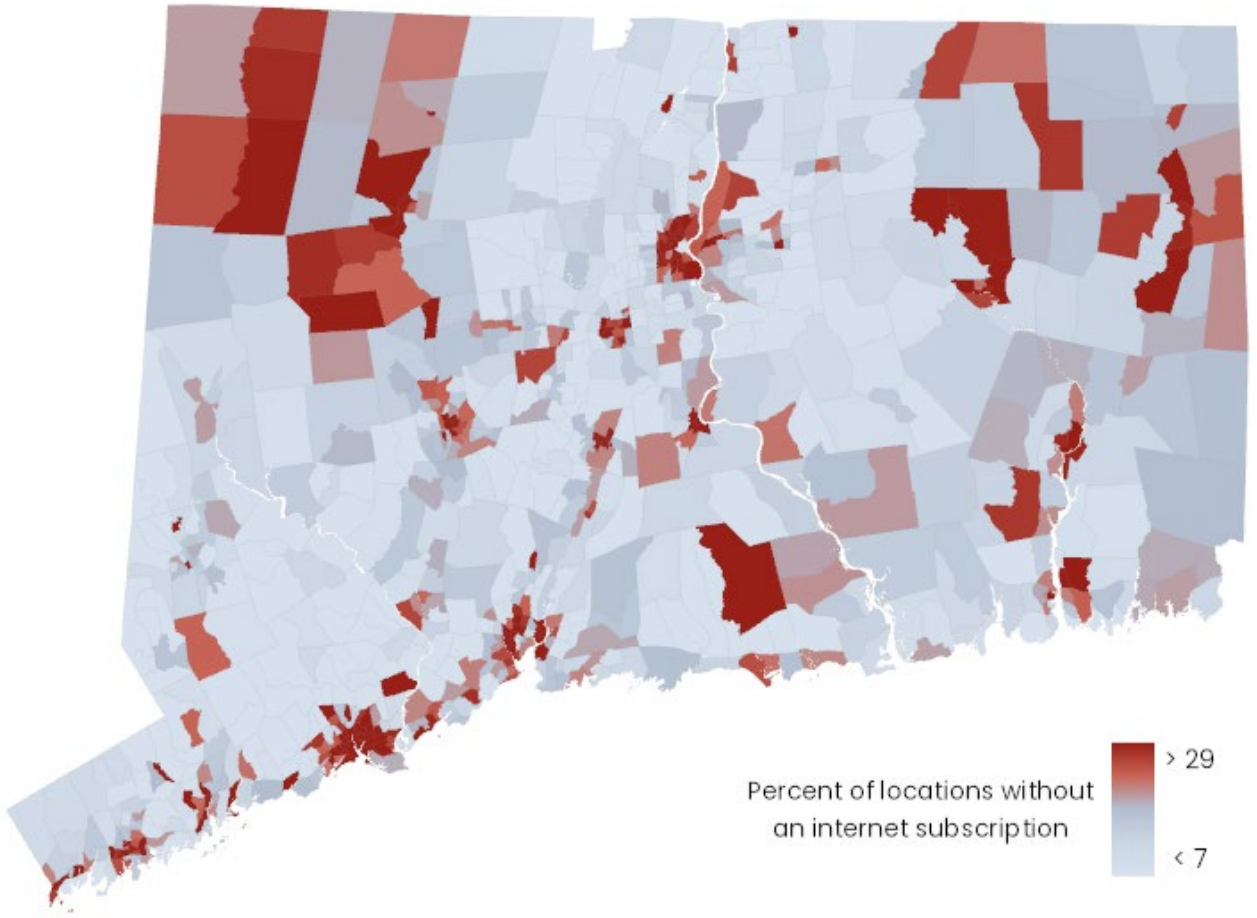


Percent of unserved and underserved locations by census block
December 2024

Measuring and Tracking

Adoption: Represents how many locations *actually subscribe to* and use these broadband services.

Even in areas where broadband connectivity is available and affordable, barriers to effective use can still exist.

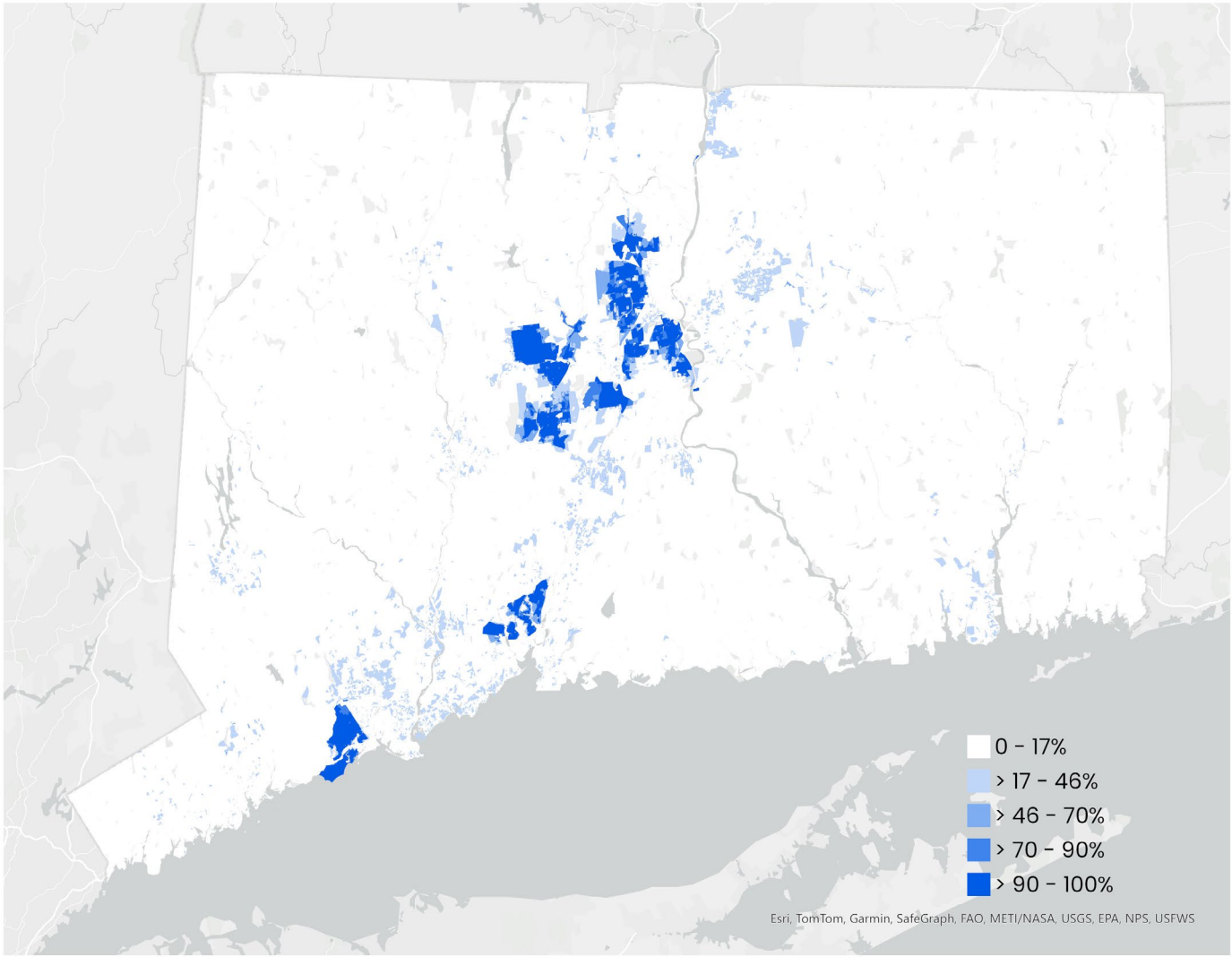


December 2024

Connecticut GIS Office

Broadband Mapping

2021 Map



Tracking Progress
Percent of Locations Meeting State's Goal of
>1000 Mbps download & > 100 Mbps upload

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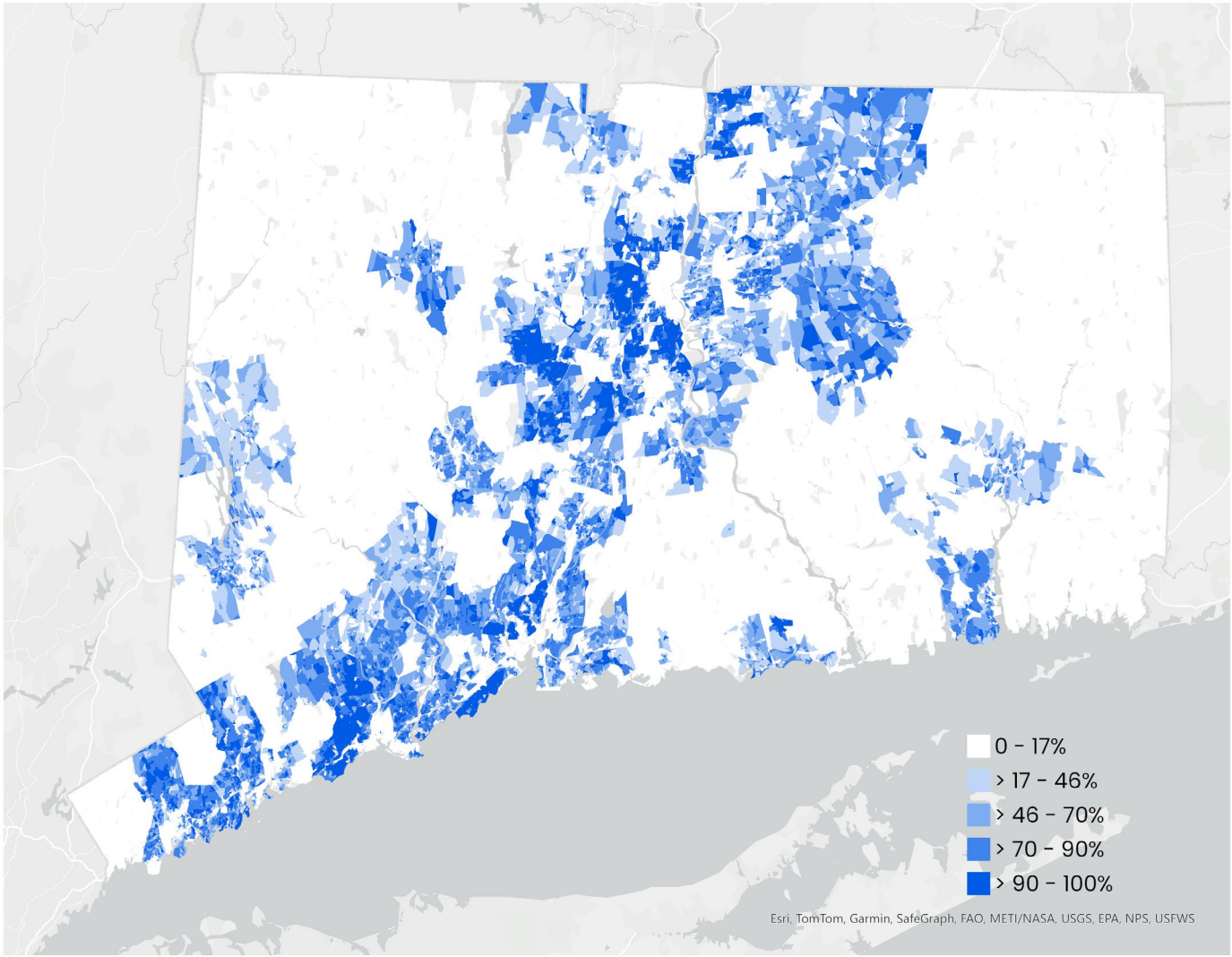
Broadband Mapping

2022 Map

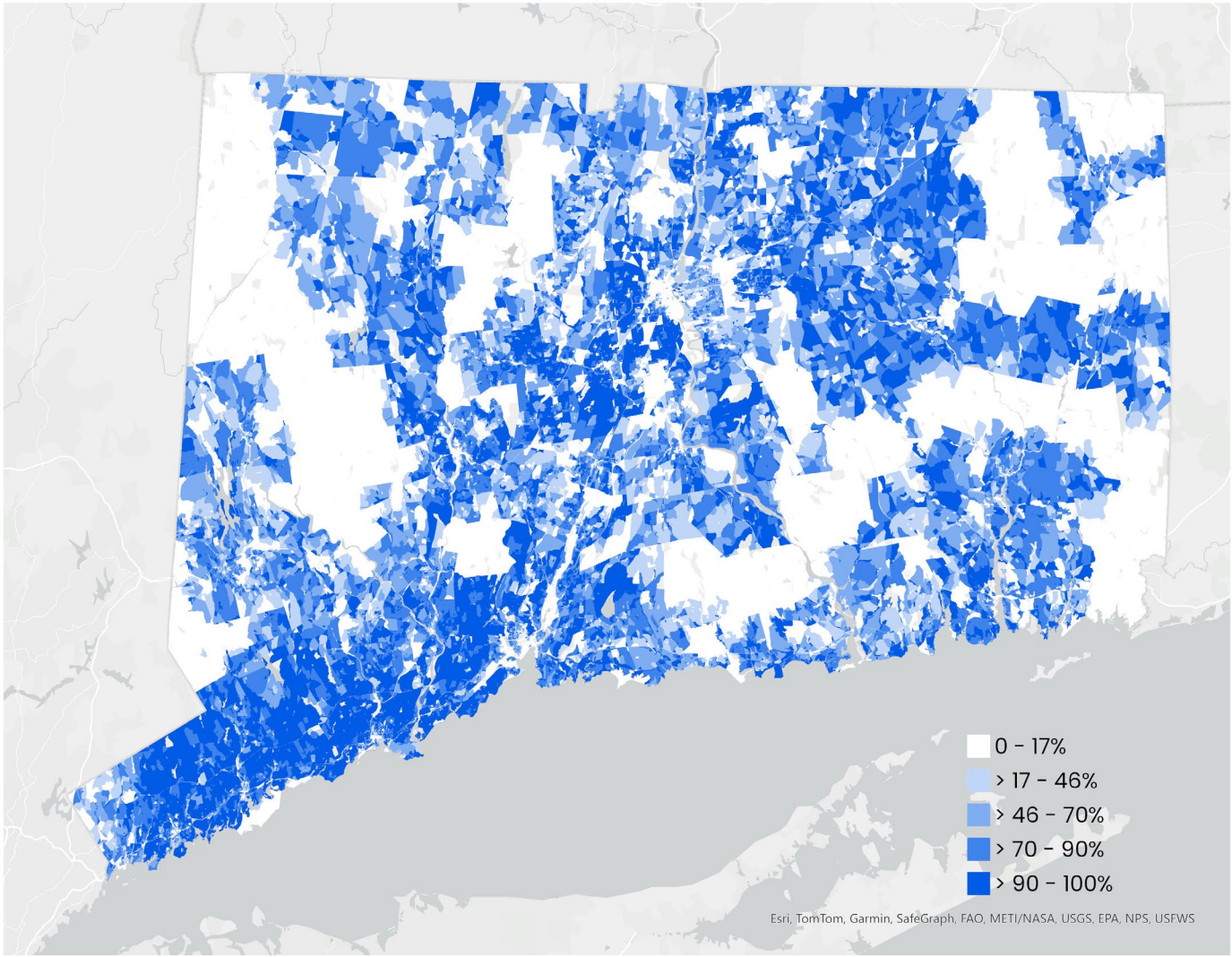


Tracking Progress
Percent of Locations Meeting State's Goal of
>1000 Mbps download & > 100 Mbps upload

Connecticut GIS Office

Broadband Mapping

2023 Map

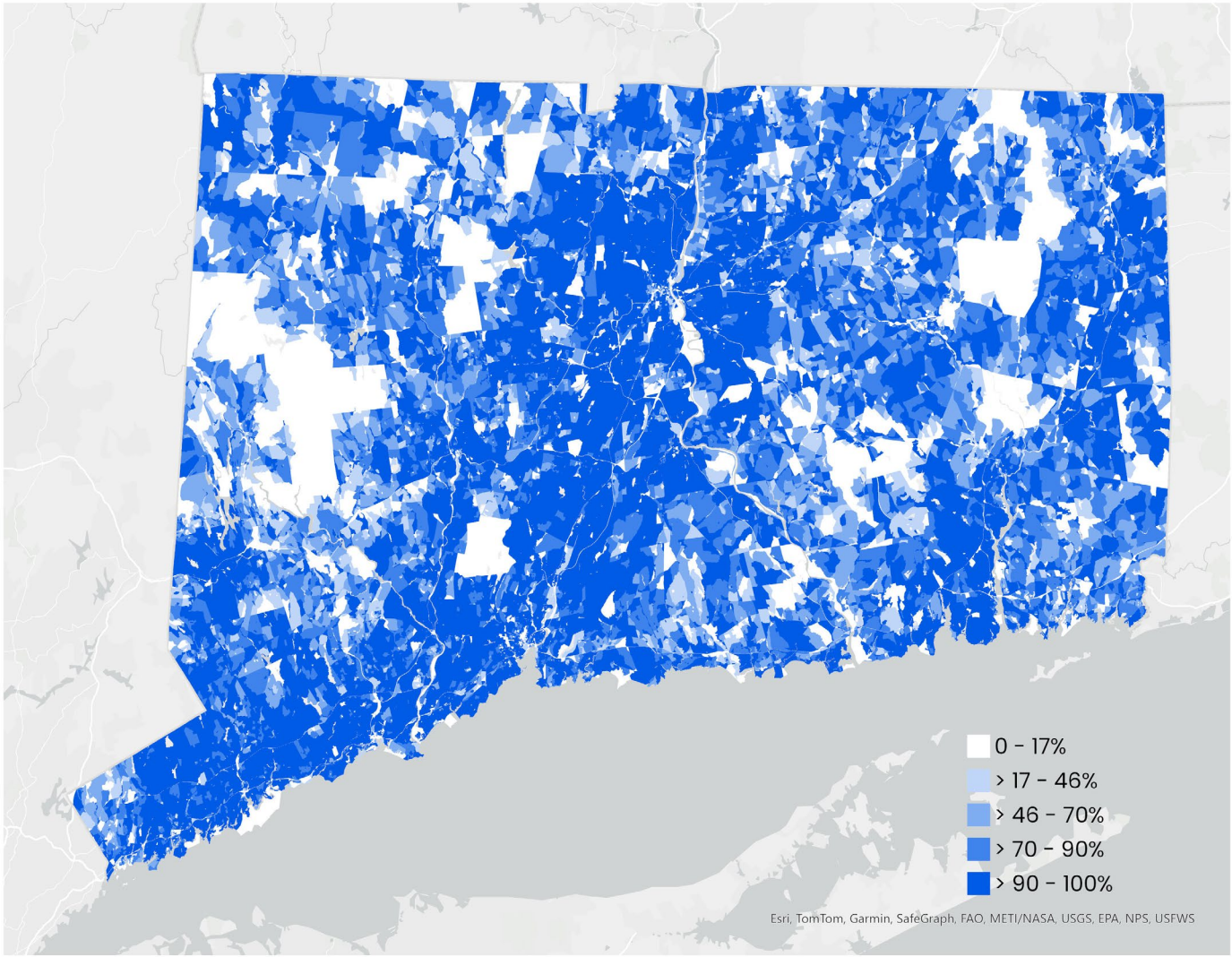


Tracking Progress
Percent of Locations Meeting State's Goal of
>1000 Mbps download & > 100 Mbps upload

Connecticut GIS Office

Broadband Mapping

2024 Map



Tracking Progress
Percent of Locations Meeting State's Goal of
>1000 Mbps download & > 100 Mbps upload

Broadband Technologies

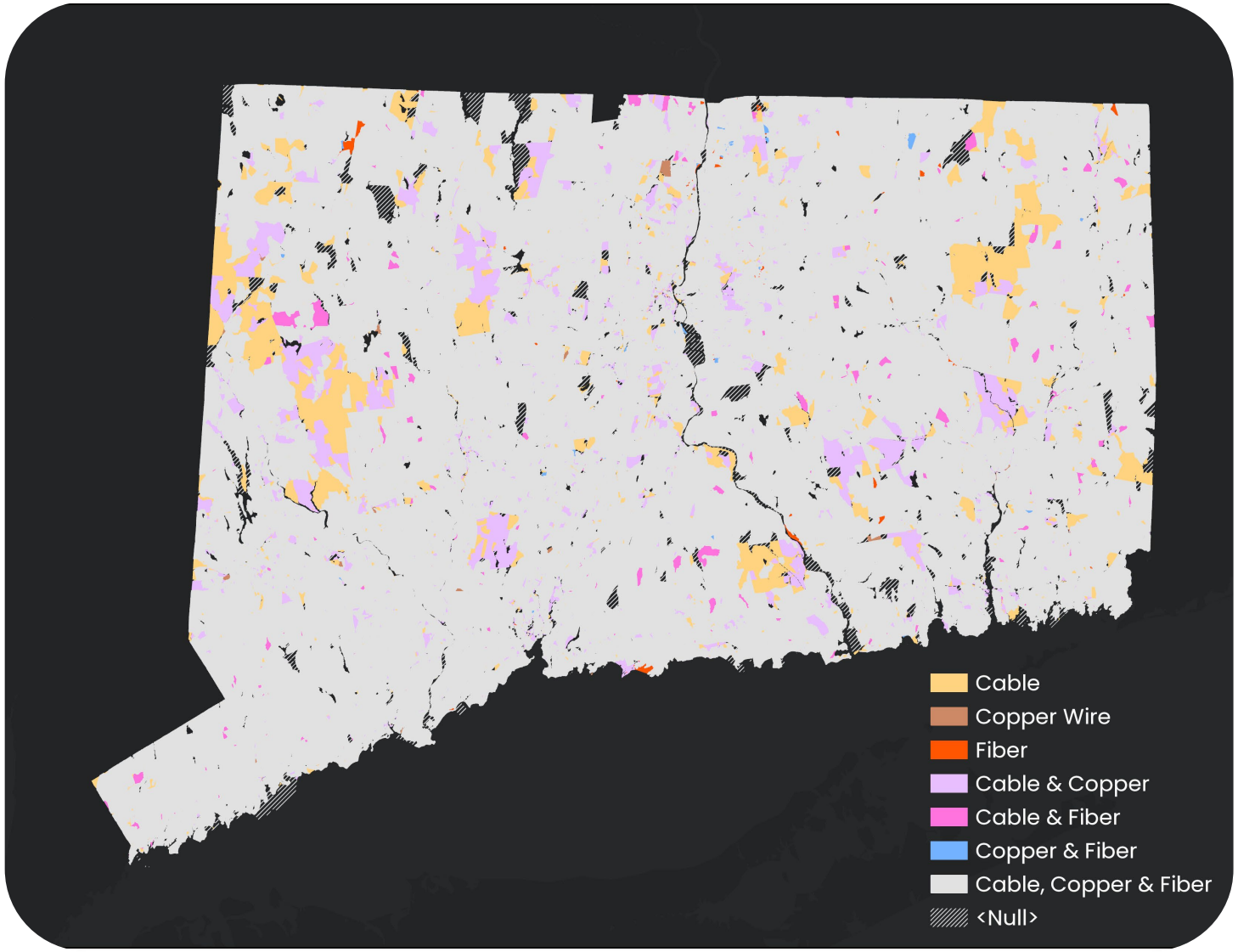
Fixed Broadband Technologies in Connecticut

Fixed broadband technologies provide internet services through stationary connections.

Copper: Traditional wired connections, widely used for DSL services.

Cable: Utilizes coaxial cables, common for high-speed internet access.

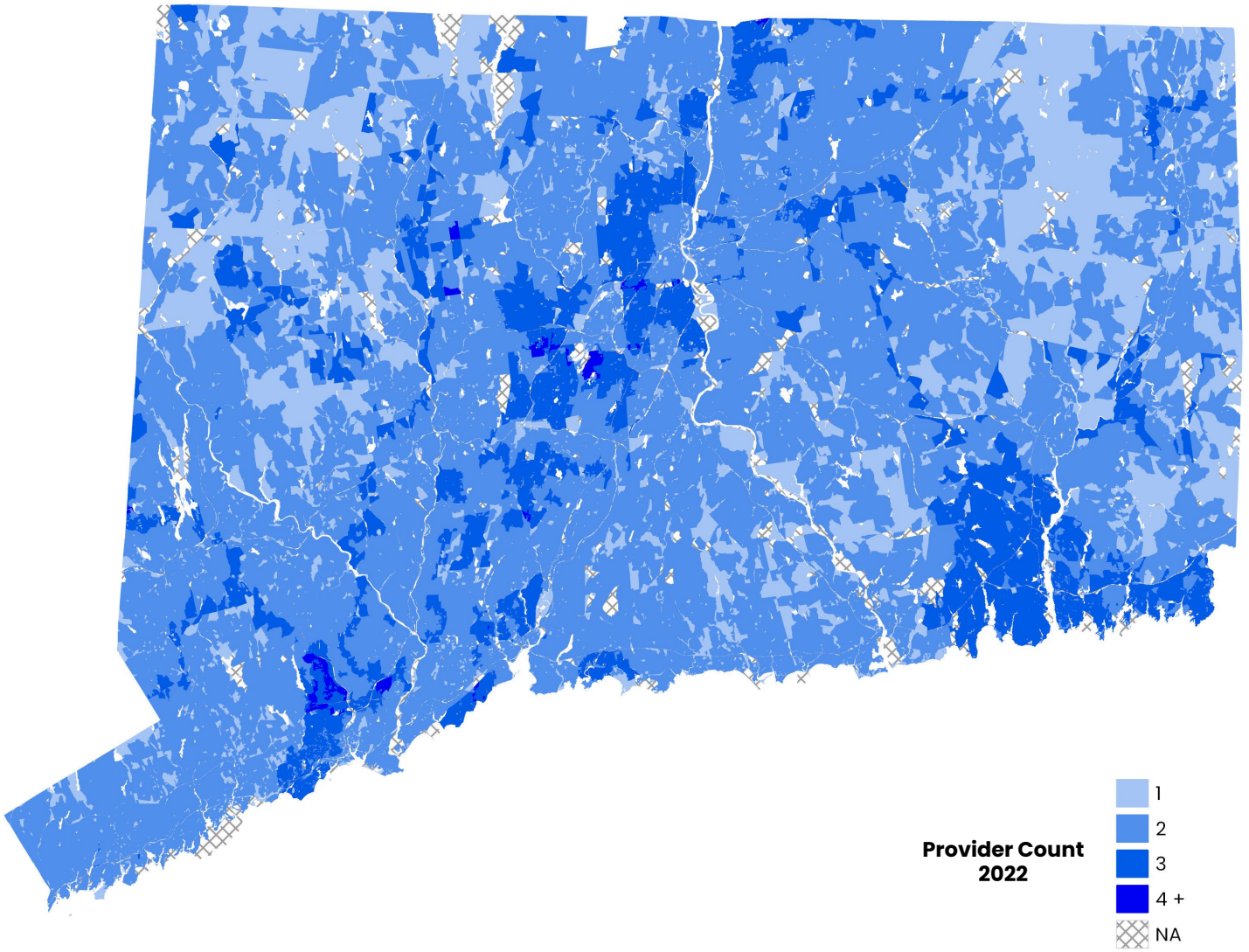
Fiber: Offers the highest speeds and reliability through optical fiber cables.



Fixed Broadband Technologies (2024)

Track Changes

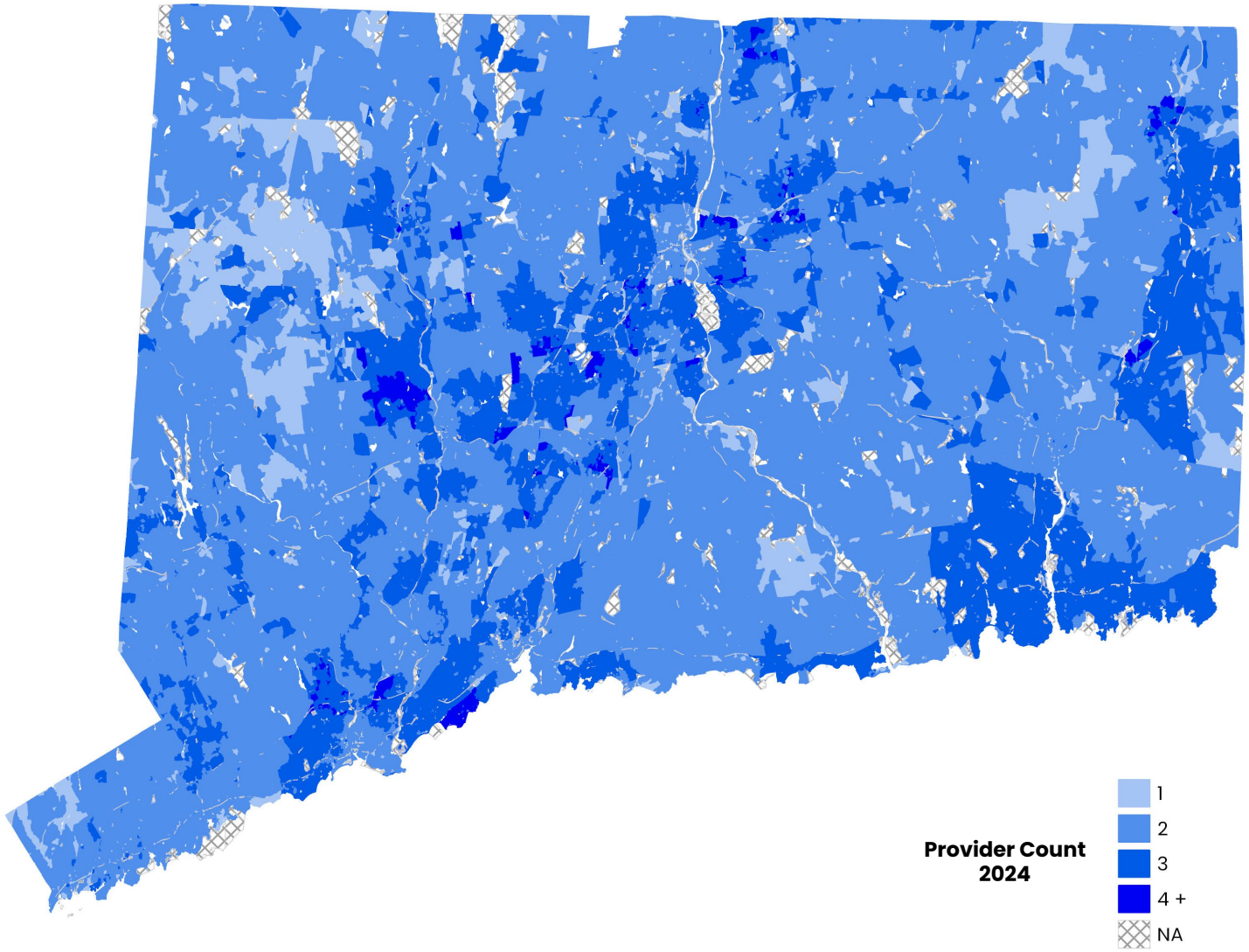
2022 Map



Changing count of service providers per census block.

Track Changes

2024 Map



Changing count of service providers per census block.

Broadband Snapshot

99.7% BSLs

Served

(≥ 100 down/20 up)

90.4% BSLs

State Goal

(≥ 1 Gig down/ 100 up)

7.2% households

Without an Internet Subscription

6.9%

Unserved Subscriptions

(< 25 down/3 up)

Questions?

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