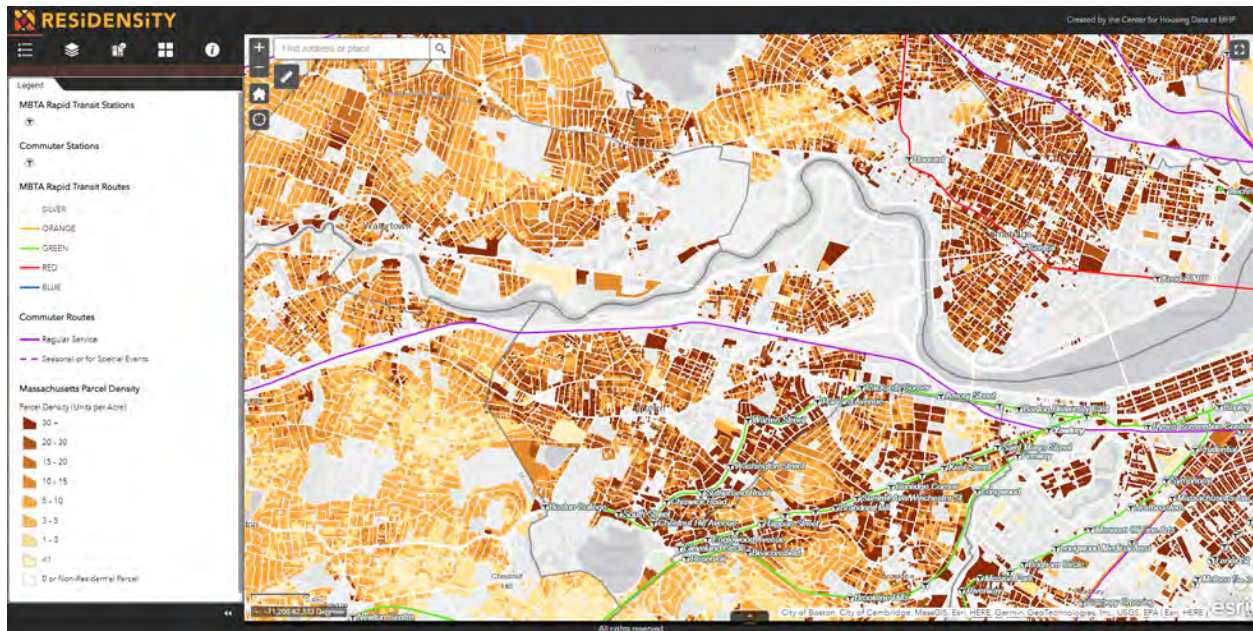# RESiDENSiTY

MHP's Center for Housing Data releases Residensity, an interactive web tool that recalibrates how we view housing density in Massachusetts.

What is Residensity?

Launched in 2023, Residensity features a user-friendly map platform that allows users to explore and analyze housing unit counts and residential density for any location in Massachusetts. Residensity is built using a unique methodology developed by MHP's Center for Housing Data to estimate the number of homes at the parcel and lot level. This method employs multiple data sets to create a consistent, accurate, and comparable metric that can be used to compare housing patterns across municipal borders.

The site is available at **https://residensity.mhp.net/**

Why should you use Residensity?

Residensity is comprehensive. We have analyzed over 2.25 million property records to create a unique, searchable database of housing counts and density in Massachusetts. Leveraging our unique methodology, our platform allows users to explore the housing density and land-use patterns of any community in Massachusetts with density calculations at the parcel level (note: parcels are the divisions of land on which a piece of real estate sits). By using point-level data it allows us to deliver a highly customizable and detailed tool to our users.

Residensity is interactive. With our platform, users can explore an interactive map of density and land use patterns of the whole state of Massachusetts. Our platform includes interactive data tools that allow users to calculate density statistics and land-use breakdowns of user-defined areas.

Residensity gives you immediate insights. Users can draw unique districts and receive stats and breakdowns on the fly, explore density patterns around transit station areas, export PDF density maps with land-use breakdowns, and export data tables of parcels with density statistics for individual analysis.

Residensity is for everyone. Residensity can be a helpful reference tool for any member of the public. Anyone who wants to learn more about their neighborhood or any neighborhood, or wants to compare one neighborhood to another, will be able to get quick and easy insights. We've had a ton of fun just panning around the map and getting a better sense of housing development patterns, and we think you will too.

There is also a professional use case for planners, developers, and others working in the housing and development fields. Residensity can provide a benchmark for existing housing conditions that can be compared to what's allowed in zoning, for example, or to just take stock of what kinds of development a town already has.

We also hope that researchers and academics use our data set as an input to answer big policy questions, such as the relationship between residential density and socioeconomic diversity, or to conduct a proximity analysis, such as how many homes are within half a mile of a particular train station, or a proposed farmer's market or grocery store.

Residensity is kept up to date through a custom methodology that harnesses public data sets. The platform is based on our methodology that estimates the number of residential units on each tax parcel in Massachusetts and calculates density (residential units per acre) for each parcel in the state. We refresh our data set several times a year to ensure we are using the most recent source information.

Residensity is responsive to users. You know your neighborhood, and we know our data sources and methodology occasionally miss something. We have integrated a process for collecting and verifying user-reported corrections to our housing counts, property uses, and residential density estimates. With your help in reporting any inaccuracies, we can refine our methodology and build an even better resource over time.

Residensity is free to use and we're happy to share our data. We built Residensity as a resource for anyone curious about housing density in Massachusetts. We are committed to collaborating with other researchers, and making our comprehensive data set available to others working on improving housing outcomes. Reach out to us if you'd like to make use of our data set or if there is a project or use case for Residensity you'd like to explore.

Read on for more information about why we created Residensity, our love for great, walkable, dense neighborhoods, and the impact we hope Residensity will have on how we plan for housing development in Massachusetts.

Rebuilding our relationship with density

Density can be a polarizing term. For some, the phrase "housing density" conjures visions of blocks of skyscrapers with people crowded into small apartments. The word "density" is even weaponized to drum up fear that multifamily housing is damaging to a community and its residents.

Yet density is just a measurement. Each piece of land has a density we can measure, and there are variations in the shape and form of development that can achieve the exact same residential density on the exact same piece of land in very different ways. In this way, density can be looked at as an important tool for crafting the places we enjoy. Therefore, it's important to defang the word and attempt to build a better understanding of the role that density plays in shaping the world around us.

That is particularly true for residential density. You can have more variation in size and function within a neighborhood when you build more densely. Having more homes and more multifamily units aids in affordability, especially when paired with subsidies or income-restrictions. Diverse housing options at a range of prices creates a more socioeconomically diverse community.

Plus, other neighborhood features and amenities become easier to support with greater housing density. To have a successful village center, main street, or bustling urban downtown, we need a commensurate level of housing density to complement commercial and others uses. So, underutilized space — especially in places that are served by transit — represents a missed opportunity to establish more great neighborhoods that have high levels of mobility, reduced climate impacts, and the mix and intensity of uses that cultivate a vibrant public realm.

We don't have a good collective understanding of how different levels of density look and feel.

Another reason we think we need to rebuild our relationship with density is that most of us have a poor visual understanding of what different levels of density look like. There are some great websites that are trying to build literacy around visualizing density. These two examples come from The Urbanist. On the left we have a single-family neighborhood with some pretty large homes, but on pretty modest lots that get this neighborhood to a density of 6 units per acre. Here on the right is an example of a compact set of buildings, only two stories, that contain live-work spaces and is achieving a density of 44 homes per acre.

Visual examples and data can help us build understanding of how density shapes the form and function of a neighborhood

6 dwelling units per acre

44 dwelling units per acre

RELATIVELY NEW SINGLE-FAMILY SUBDIVISION WITHIN THE MASTER-PLANNED SNOQUALMIE RIDGE DEVELOPMENT IN SNOQUALMIE.

LIVE-WORK AND REGULAR TOWNHOUSE UNITS IN SEATTLE'S LOWER QUEEN ANNE NEIGHBORHOOD. (LANDSCAPE PLAN COURTESY OF DAVID VANDERVORT ARCHITECTS)

Image source: *The Urbanist:* https://www.theurbanist.org/2017/05/04/visualizing-compatible-density/

These examples are helpful, but we think there are reasons why we should have a more user-friendly, comprehensive way to measure and evaluate density anywhere we want.
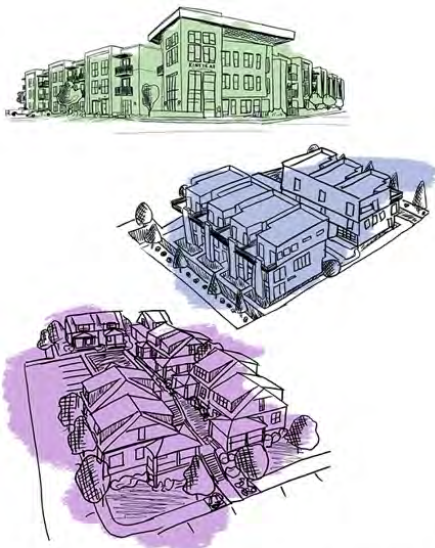

Image source: JHP Architecture*:* https://jhparch.com/density

- If we want to understand density and how it shapes different neighborhoods across the state, we need to be able to measure and evaluate density not just at individual locations, but on the neighborhood level, and using consistent metrics.
- There are also planning needs. If we want to be able to take stock of existing conditions and explore how we can target a certain level of density, such as the levels required for MBTA communities under Section 3A, we need a tool to do that.
- If people have a visceral reaction to the word density, or a certain level of density, we need a tool to show them that we already have residential density in every community in the state in some form, and in many cases we love our denser neighborhoods – places like village centers, main street corridors and other great neighborhoods.
- Finally, where are there missed opportunities? Where can we, as folks working on housing issues, highlight potential for development that works in concert with our planning goals and our neighborhoods, especially relative to transit, climate, and racial equity? Which places could be even better if we used density as a tool to drive those outcomes?

Introducing Residensity!
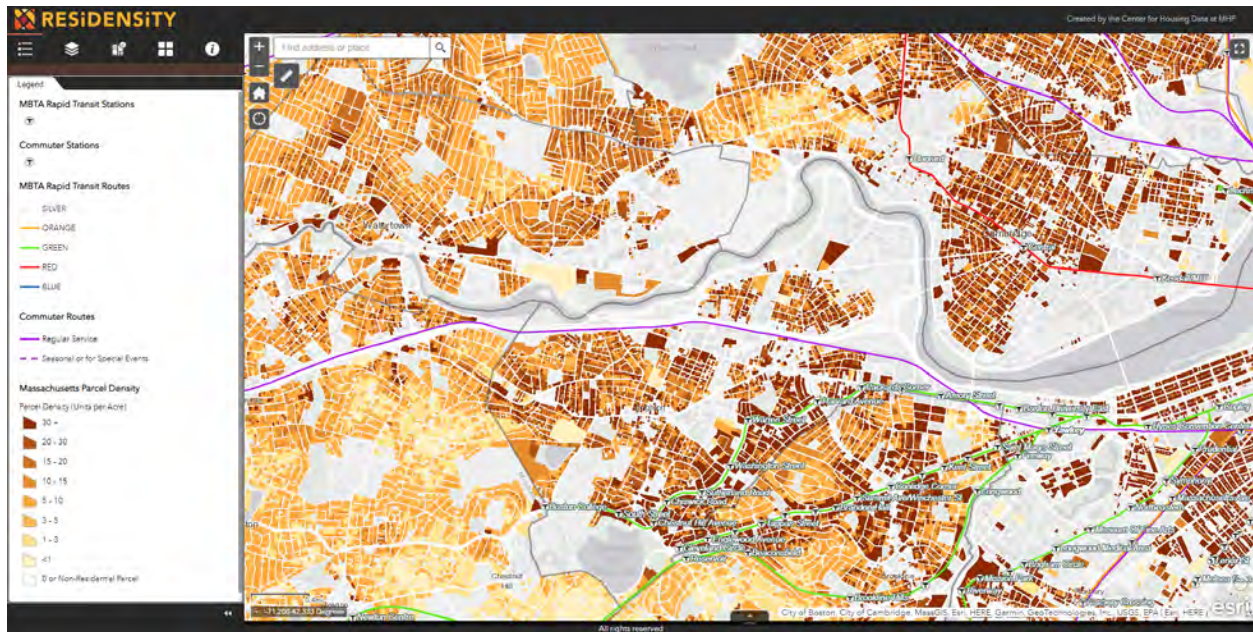
For all these reasons, we built our brand new site, Residensity! In the above screen grab, you're seeing individual residential parcels, color-coded by their housing densities. You can see how density is clustered, how those patterns change, and how they correspond with real world variations in the built form.

Here are a few of the features we've built into Residensity:

Total Residential Units:	2,383 Units
District Area:	137.13 Acres
District Density:	17.38 Units per Acre

- Measure residential density anywhere you want.
- We have estimated number of units and residential density for every single parcel in Massachusetts.
- Draw any district you want on the fly and get aggregate statistics for that district. In the example here on the left I drew a district around my neighborhood in Dorchester.
- Download the parcel and district level data in both tabular form (a csv) or in geospatial form for those who would like to work in GIS.
- Lastly, and this is less of a feature and more of a timing thing, but we wanted to launch something at this particular point in time because there are 175 communities in Massachusetts that are about to figure out their path towards compliance with the new multifamily zoning requirement, and we hope Residensity can play a role in that.

How are others using Residensity?

Research and reporting

- "Equity and Residential Density in Massachusetts."
  Aja Kennedy, Rappaport Public Policy Fellow, Massachusetts Housing Partnership. 2022.
  https://www.mhp.net/news/2022/equity-and-residential-density-in-massachusetts

- Insert twitter feed of all posts using #residensity?

- Our own research brief?

How can I find out more?
Contact Matija Janković at **mjankovic@mhp.net** or Tom Hopper at thopper@mhp.net

Read the Q&A prepared by Janković and listen to MHP's Lisa Braxton's interview with Tom Hopper about how the new tool was built and how he hopes it will help communities plan for complete neighborhoods that are more walkable and closer to transit and our daily needs.

How can I provide site feedback or make a correction to a parcel?

Take our feedback survey:
https://docs.google.com/forms/d/e/1FAIpQLSfBggb2XZdioSynp5yWYGGynZwN5cRoDPBLLP3v1PZZAyLTJA/viewform?usp=sf_link

Report a data correction:
https://docs.google.com/forms/d/e/1FAIpQLSe5XVbHbs-cmdlXZbi3kA4wJQEjWIe3CuN2Ms63PaWTUnGboQ/viewform?usp=sf_link