

Data Sources: Massachusetts Department of Elementary and Secondary Education, Census Building Permit Survey

Housing Production and School Enrollment

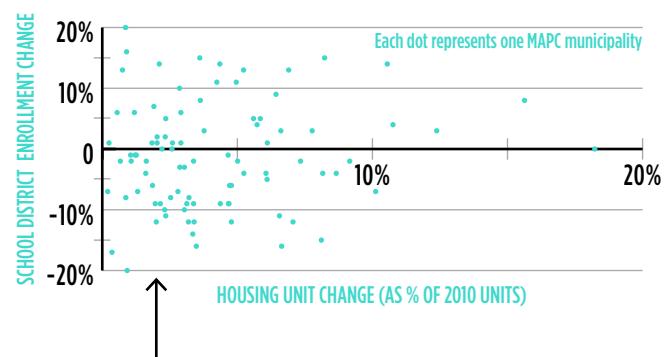
Step into a community meeting about housing production, and you are likely to hear a conversation about its effects on school enrollment. All of us were once children, and most of us went to public schools. So it is discouraging to hear advocates oppose the development of new homes because the school population may grow. But does their central premise even hold water? Does the production of new homes have any demonstrable correlation with school enrollment? The answer, according to a recent MAPC study, is, "No."

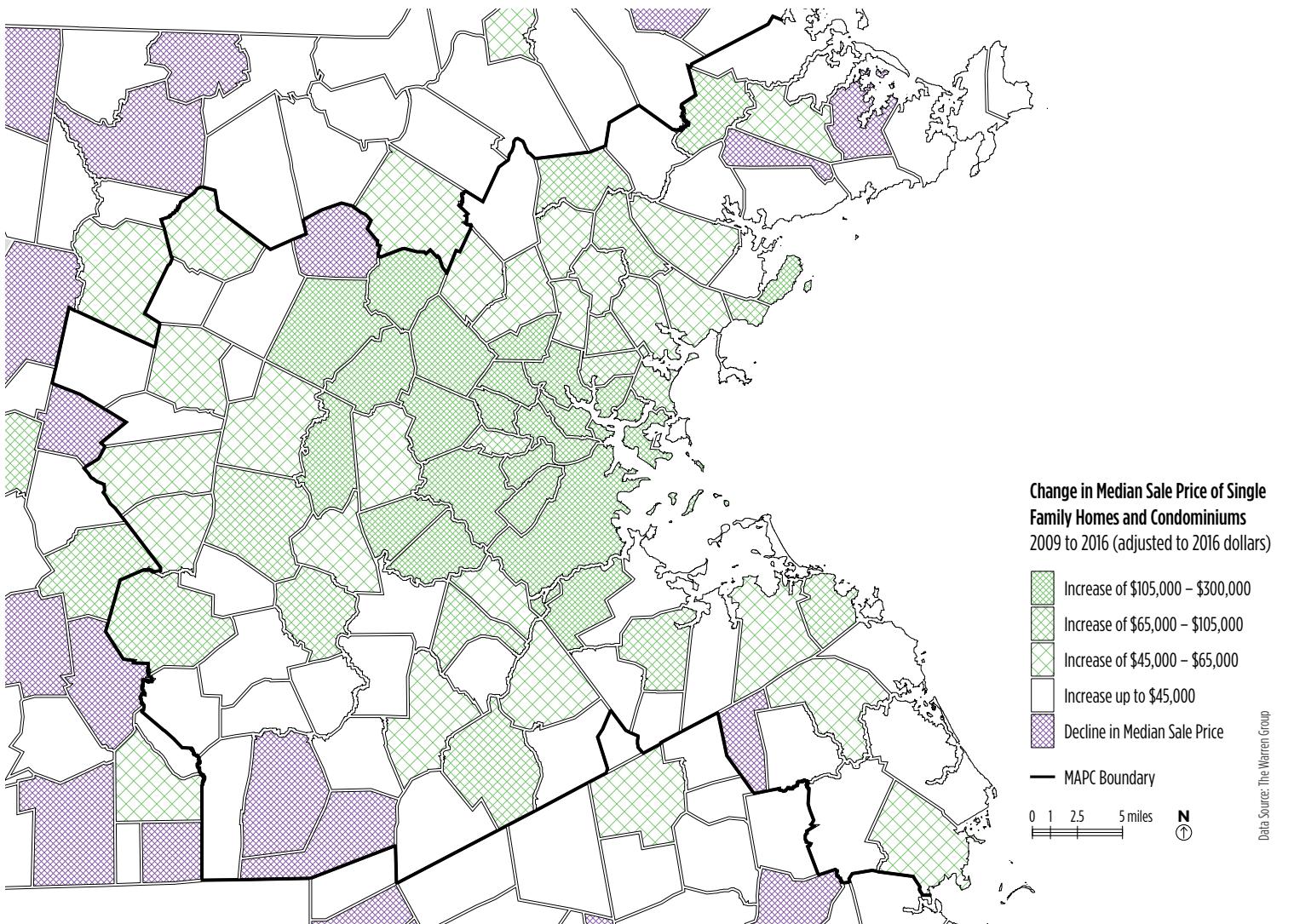
Statewide, public school enrollment is declining. More than two thirds of public school districts saw a decline in enrollment from 2010 to 2016, with an average decline of 8%; most of those declines were in suburban districts. Meanwhile, districts in MAPC's Inner Core communities grew by 7% on average.

To analyze the patterns of enrollment growth, MAPC tracked housing permits and enrollment data for 234 public school districts in Massachusetts. We found that higher rates of housing production were not correlated with enrollment growth.

It appears parental preferences, perceived school quality, and overall housing affordability play a much larger role in enrollment. Even in communities with substantial housing production, the growth in households and children was not sufficient to offset the overall demographic decline in school-age residents.

School Enrollment Change vs. Housing Unit Change, 2010 to 2016





The Changing Cost of Homeownership

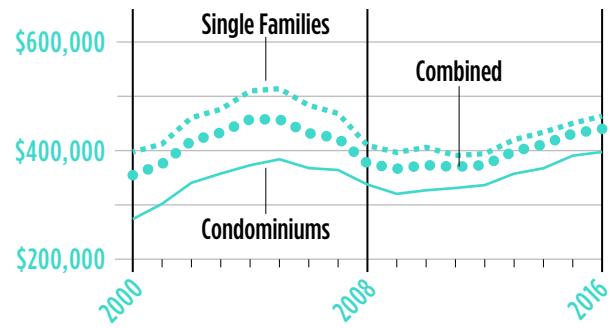
The dream of homeownership feels increasingly out of reach for many would-be homeowners in Metro Boston. Since the 2009 recession, home sale prices have rebounded regionally, but unevenly. There is intense demand for housing in and around the Inner Core, even as many suburbs have seen a sluggish recovery or declining prices.

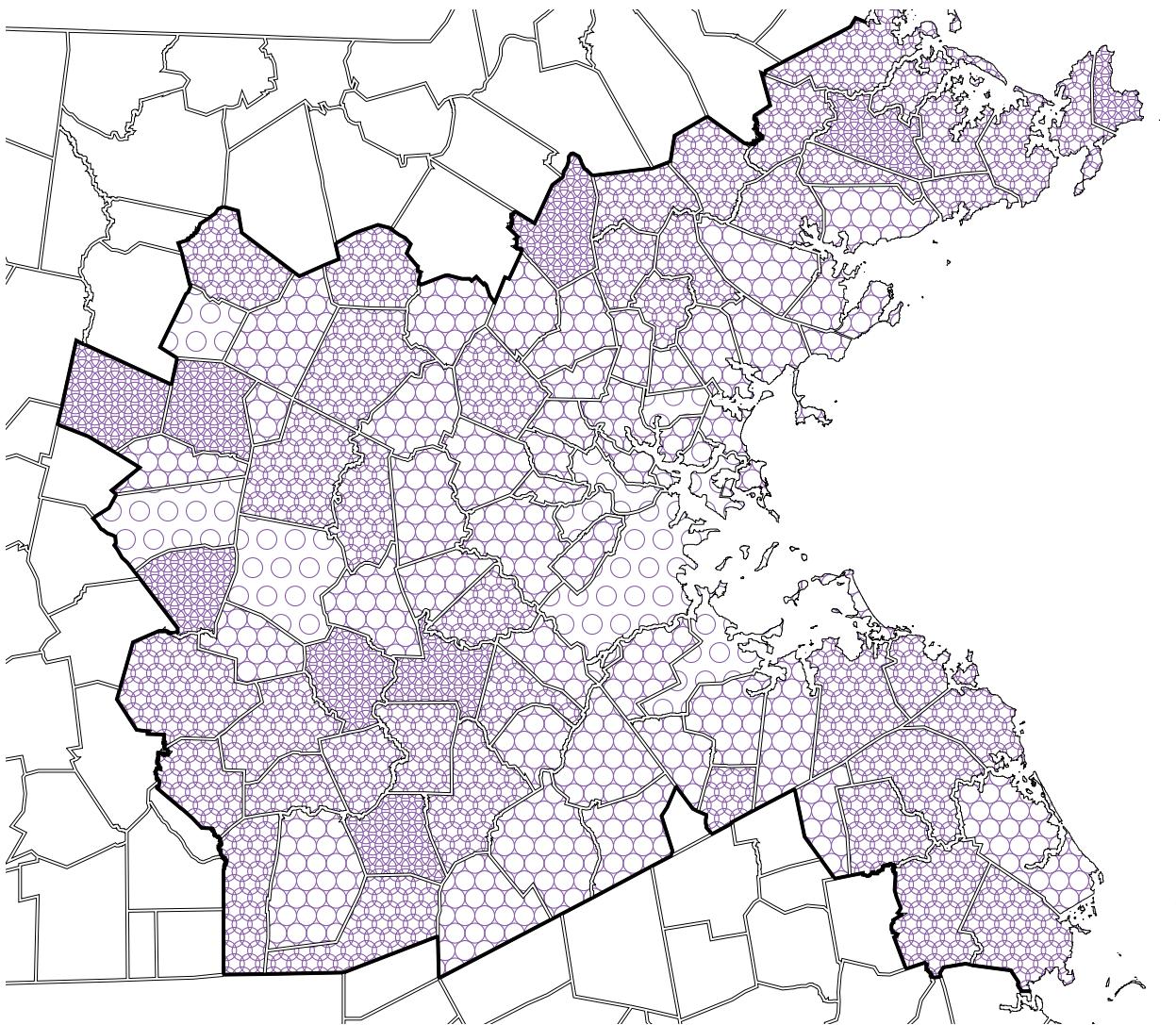
In 2016, the regional median sales price was \$463,500 for a single family home and \$397,500 for a condominium. Prices for both types of homes have rebounded since 2009, though condo prices rose more quickly than single family homes (24% versus 17%, after accounting for inflation). Notably, condos have now exceeded the prior price peak set in 2005, while single family homes are still 10% lower than they were 13 years ago.

Price escalation is largely concentrated within Route 128. Nearly every municipality in the region's Inner Core saw prices rise by more than \$100,000, driving up the pressure for condo conversion and making it harder for low- and moderate-income families, whose incomes have not grown as quickly as higher-income households, to purchase a home near Boston. Meanwhile, six MAPC

municipalities have seen median sale prices decline since 2009. These trends demonstrate the profound need for a more sufficient and stable housing supply, as well as more programs to help low- and moderate-income families become homeowners.

**Median Home Sale Price by Type, MAPC Region
ADJUSTED FOR INFLATION TO 2016 DOLLARS**





Data Sources: MAPC, 2015 ISO New England Electric Generator Air Emissions Report; American Community Survey, U.S. Energy Information Administration Residential Energy Consumption Survey

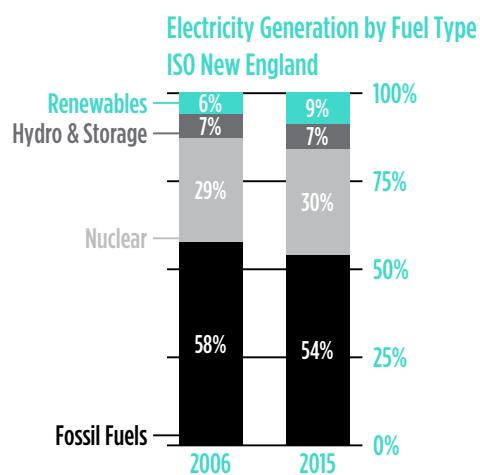
Electricity Generation and Greenhouse Gas Emissions

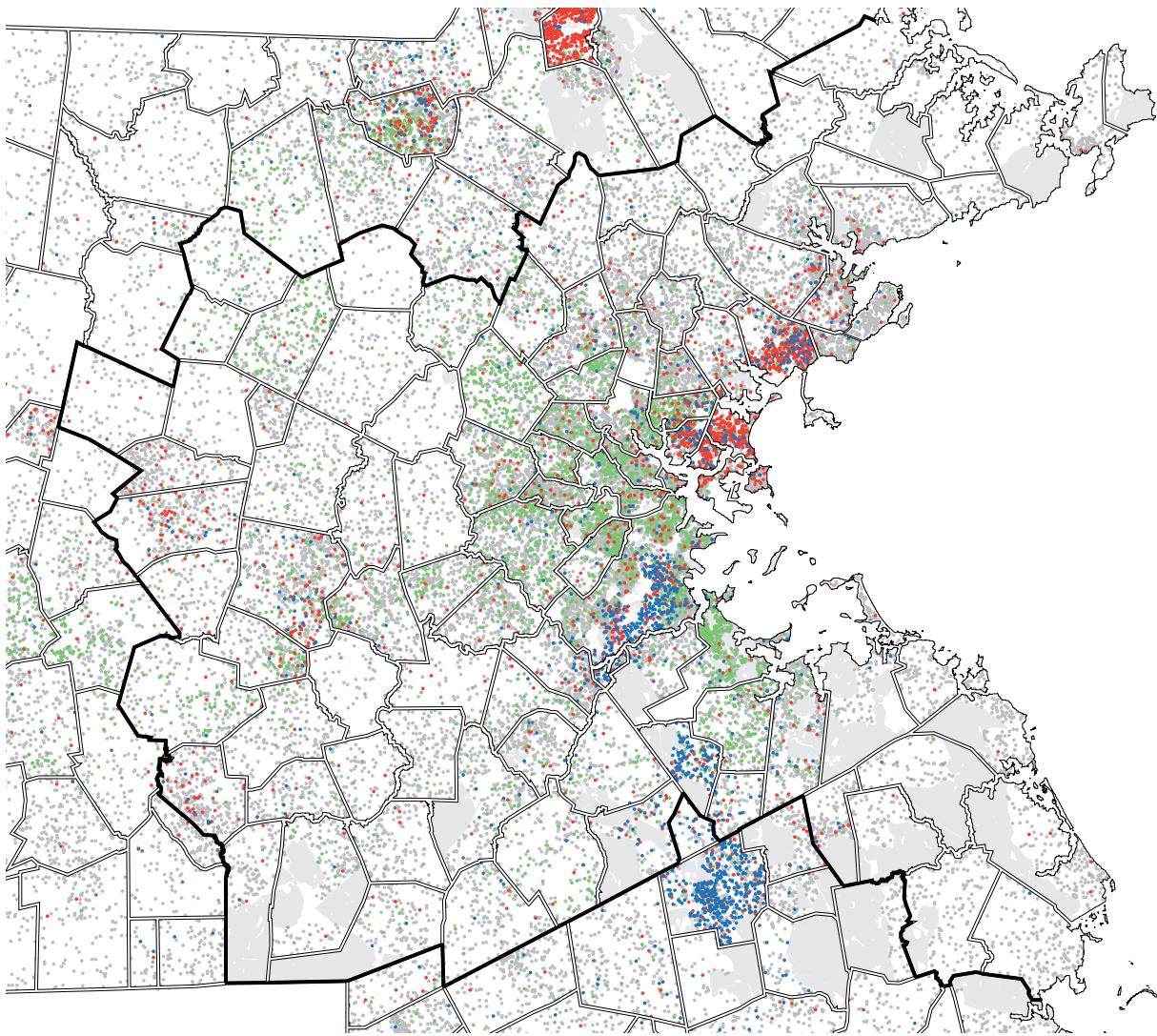
Using MAPC's Local Energy Action Dashboard (LEAD) communities can get a snapshot of the carbon footprint of their residential, commercial, and industrial buildings to make strategic decisions about reducing their climate impact.

The average single-family detached house consumes more than twice the energy as an average apartment in a large multifamily building. As such, cities with more high-density housing boast a lower per-household carbon footprint.

Of the three main fuel sources powering Massachusetts homes—oil, natural gas, and electricity—oil releases the most greenhouse gases (GHGs). Burning natural gas in furnaces and boilers is relatively clean, but the leaky delivery system releases methane gas—a very destructive GHG—directly into the atmosphere. And, as the mix of fuel sources at power plants supplying electricity to New England shift away from fossil fuels toward renewable sources like solar and wind, electricity will become an even greener option. Efforts to help homeowners and

landlords shift away from oil heat, reduce natural gas leaks at the municipal level, and eliminate barriers to home solar are all ways our region can work to reduce the collective carbon footprint. Visit lead.mapc.org for more information.





Home Purchase Loans in 2015
1 dot = 1 loan, locations approximate

- Asian
- Black
- Latino
- Native American
- White
- Data not available
- MAPC Boundary

0 1 2.5 5 miles



Data Sources: Home Mortgage Disclosure Act

Home Purchases by Race and Ethnicity

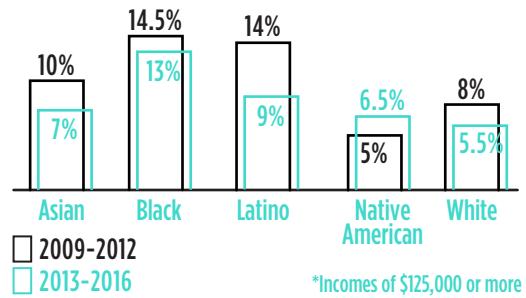
Every decade the MAPC region becomes more racially and ethnically diverse, yet discrimination and segregation continue to impact residents of color in negative ways. Buying a home is a cornerstone of building wealth in America, yet mortgage data show Black and Latino home loan applicants in the MAPC region—even those with higher incomes—are denied at rates double that of White applicants.

The data also show successful residential mortgage applications for Black and Latino applicants are concentrated in limited areas. In the MAPC region, Boston, Randolph, and Lynn account for 50% of total home-purchase loans to Black borrowers, while Lynn, Boston, Revere, Chelsea, Everett, and Framingham account for 53% of home-purchase loans to Latino borrowers.

The data reveal discrimination during the mortgage process, but this alone does not explain these patterns. Historical de jure segregation and the relative affordability of different locations may explain some of it. However, discrimination prior to the mortgage process—by agents, neighbors, and sellers—may unfairly steer prospective

homeowners of color to or away from specific locations. Planners, real estate professionals, lenders, advocates and municipal officials have a legal and moral responsibility to ensure residents of color have the opportunity to purchase a home in any part of the region they choose.

Home Purchase Loan Denial Rate by Race and Ethnicity MAPC Region, Higher Income Applicants*



Metro Boston has grown—

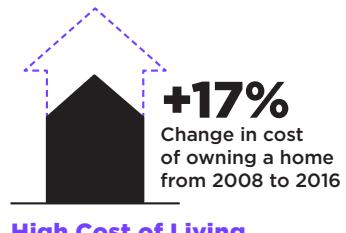
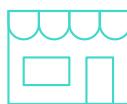


+ 254,000 residents

+ 253,000 jobs



+ 26,000 businesses



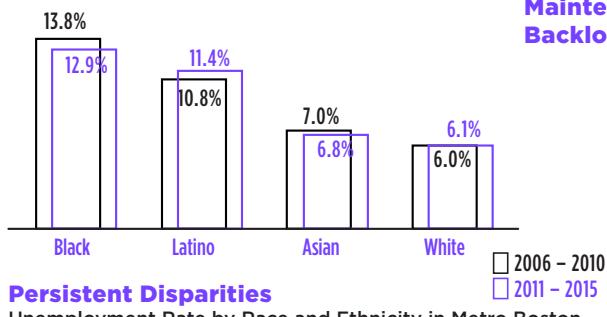
But challenges still face the region—



Transit Maintenance Backlog

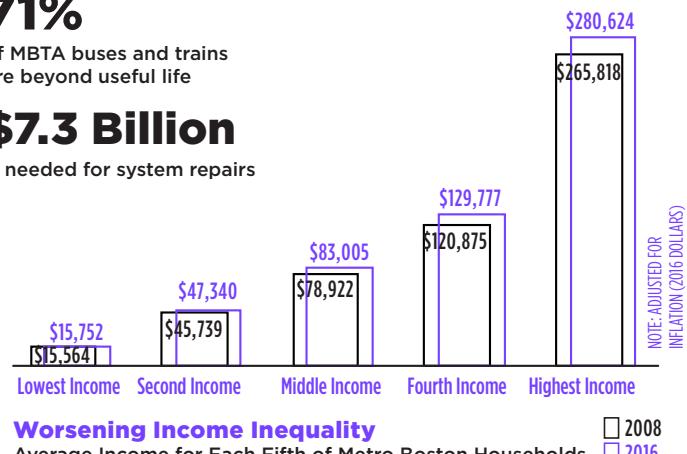
71%
of MBTA buses and trains are beyond useful life

\$7.3 Billion
is needed for system repairs



Persistent Disparities

Unemployment Rate by Race and Ethnicity in Metro Boston



Data Sources: American Community Survey, Massachusetts Bay Transportation Authority, Massachusetts Executive Office of Labor and Workforce Development ES-202, Warren Group

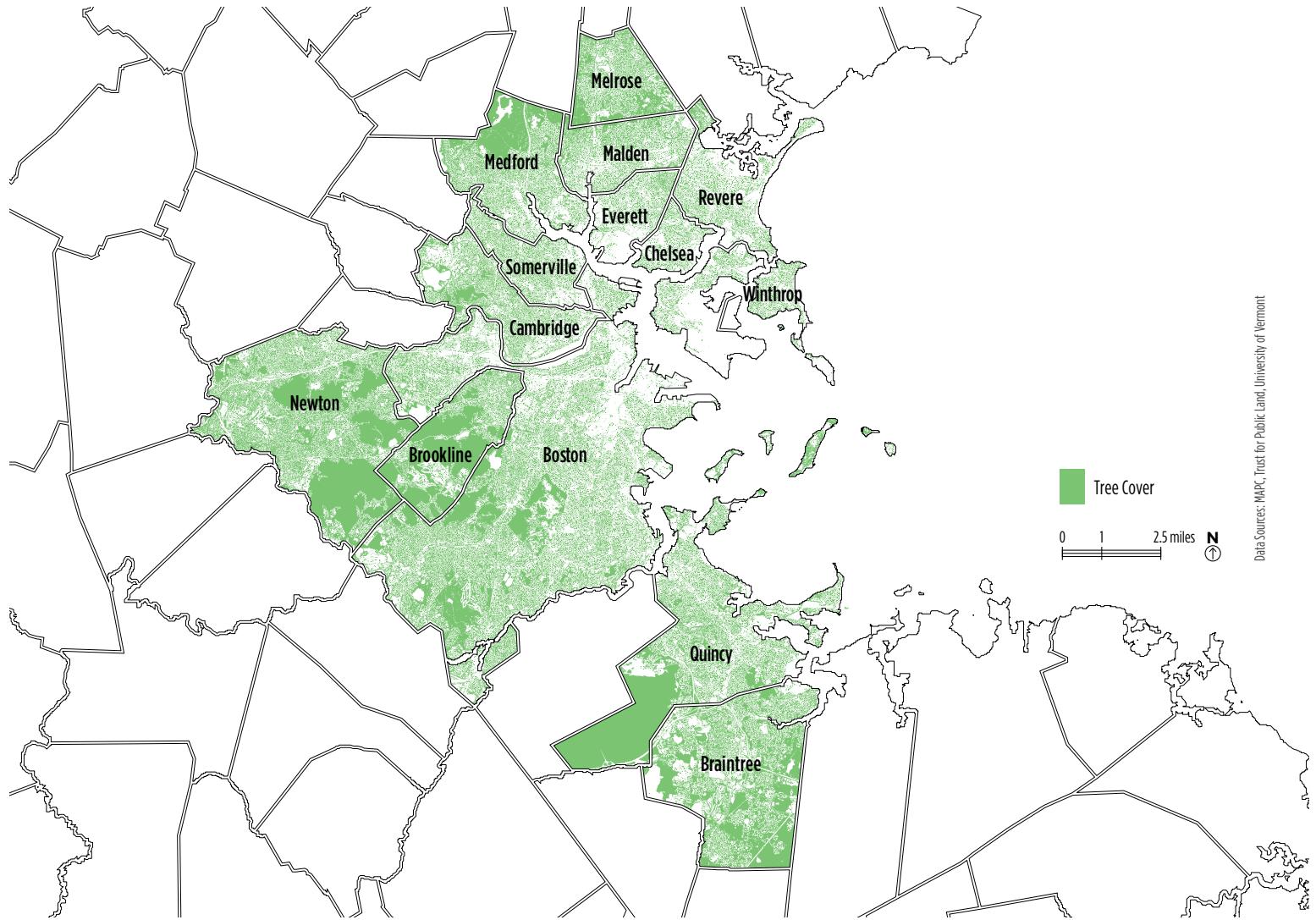
Since adoption of MetroFuture in 2008...

Ten years ago, MAPC adopted *MetroFuture: Making a Greater Boston Region*, our regional plan for a more sustainable and equitable future. Thousands of stakeholders and constituents shared their perspectives on the future of the region and responded to data-driven alternatives for how the region might look and feel in 2030, ultimately selecting one alternative to serve as the *MetroFuture* vision.

A lot has changed since 2008. *MetroFuture* has shaped the work MAPC has done over the past decade. We at MAPC have five new disciplines: Clean Energy, Public Health, Community Engagement, Digital Services, and Arts and Culture. We also place a much greater focus on equity across programs and projects. Outside our office, the region has grown in residents, jobs, and

businesses, though this growth has not come without challenges. Worsening income inequality, a high cost of living, transit maintenance backlogs, and persistent disparities by race and ethnicity are continued threats to the long-term wellbeing of the region and its residents.

With all of this in mind, MAPC begins a journey to update our regional plan, picking up where *MetroFuture* left off. In 2017, staff started laying the groundwork for this update, and we hope you will join us as we continue to craft an updated vision for a “Greater Boston Region.” Find out more on our website, mapc.org.



Data Sources: MAPC, Trust for Public Land, University of Vermont

Trees in the City

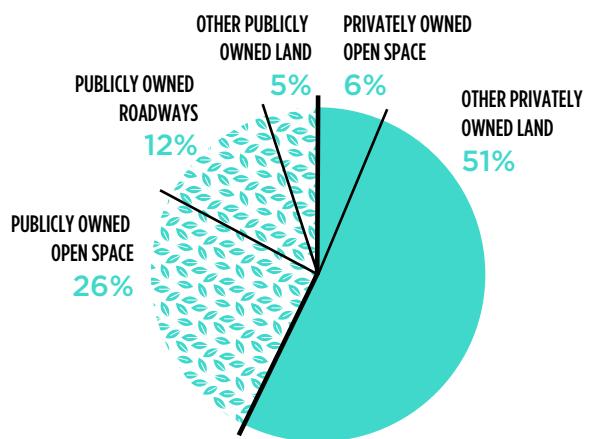
Trees are vital to the health and quality of life in our region's urban communities. Their shade and roots help keep cities cool during the summer, while their leaves also remove carbon dioxide from the air. Tree root systems reduce flooding and keep our waterways cleaner by absorbing rain water and reducing runoff. Plus, trees contribute important aesthetic value to cityscapes. It's in our best interest to expand tree canopy in urban areas so all neighborhoods experience these benefits.

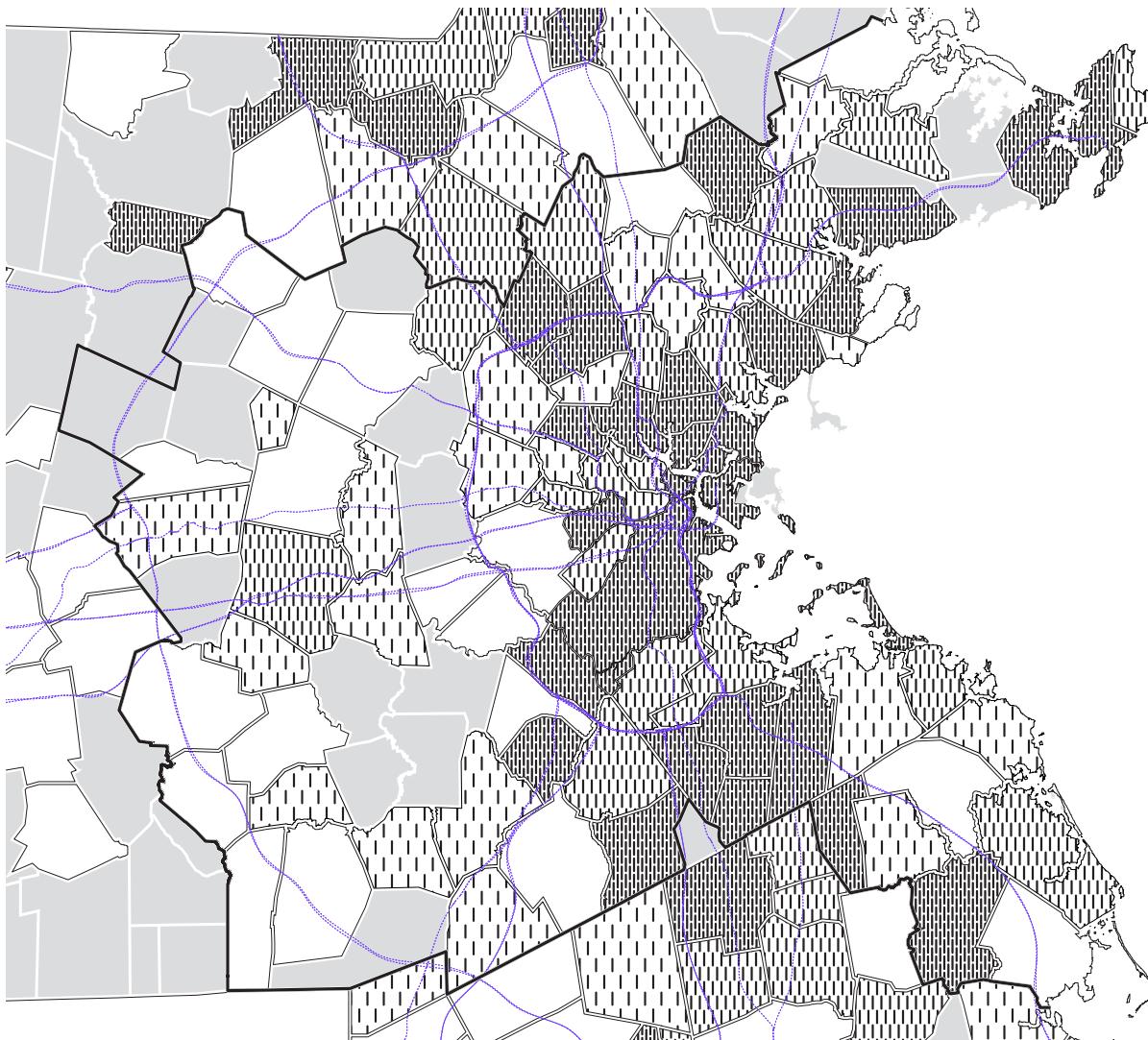
The map above shows tree canopy coverage in the Metro Mayors Coalition municipalities. It shows that while some cities, towns, and neighborhoods have extensive canopy, others have very little.

Planning for a healthy urban forest is more than just planning for parks. The urban tree canopy spans a patchwork of jurisdictions, including land owned by public entities such as municipalities and state agencies, and privately owned properties such as colleges, hospitals, religious institutions, office parks, and

individual residential properties. In fact, the majority of the tree canopy in the Metro Mayors region falls on privately-owned land. Strategies to protect and expand the urban tree canopy must therefore include efforts to promote more tree planting on private land.

Tree Canopy by Ownership and Land Use





Data Sources: MassDOT, MassGIS, Massachusetts Department of Public Health, MassCHIP

Youth Asthma Hospitalizations

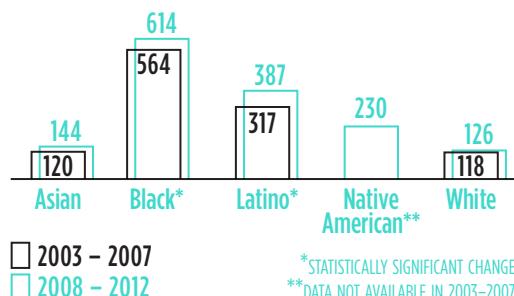
Asthma highlights how the compounding effects of place and access can create disproportionate impacts on health outcomes. Asthma is both very sensitive to environmental factors such as air pollution, tobacco smoke, and mold, and can also be controlled with regular preventative care.

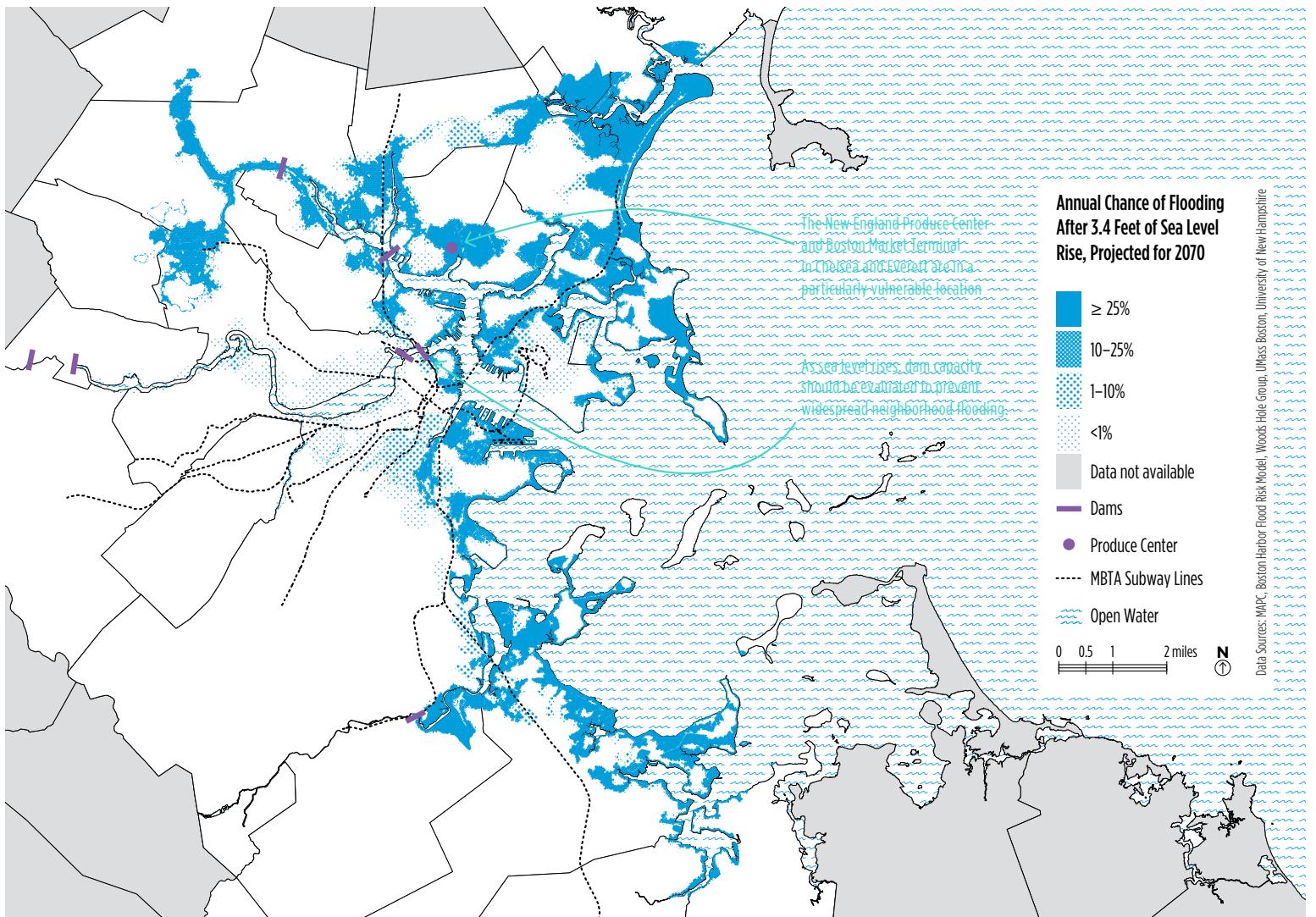
In the MAPC region, emergency hospitalizations due to asthma happened at a rate of 230 per 100,000 youth from 2008 through 2012. This marked an increase of 22 hospitalizations per 100,000 youth compared to 2003 through 2007, an uptick driven by significant increases in Black and Latino youth rates. In the earlier time period, Black and Latino youth already experienced significantly higher rates than the regional average, so the increase over time only deepened these disparities.

Disparities in youth asthma hospitalization rates may reflect differences in neighborhood air quality, housing conditions, or access to consistent clinical care or community health programs that assist with asthma self-management. These disparities can have cascading effects, as asthma-related sleep interruptions and school

absences may make it harder for young people with asthma to thrive in school. Vehicle emission reductions and improvement of indoor air quality, along with access to community health and clinical resources are some things that can improve outcomes.

Asthma Hospitalizations per 100,000 Youth





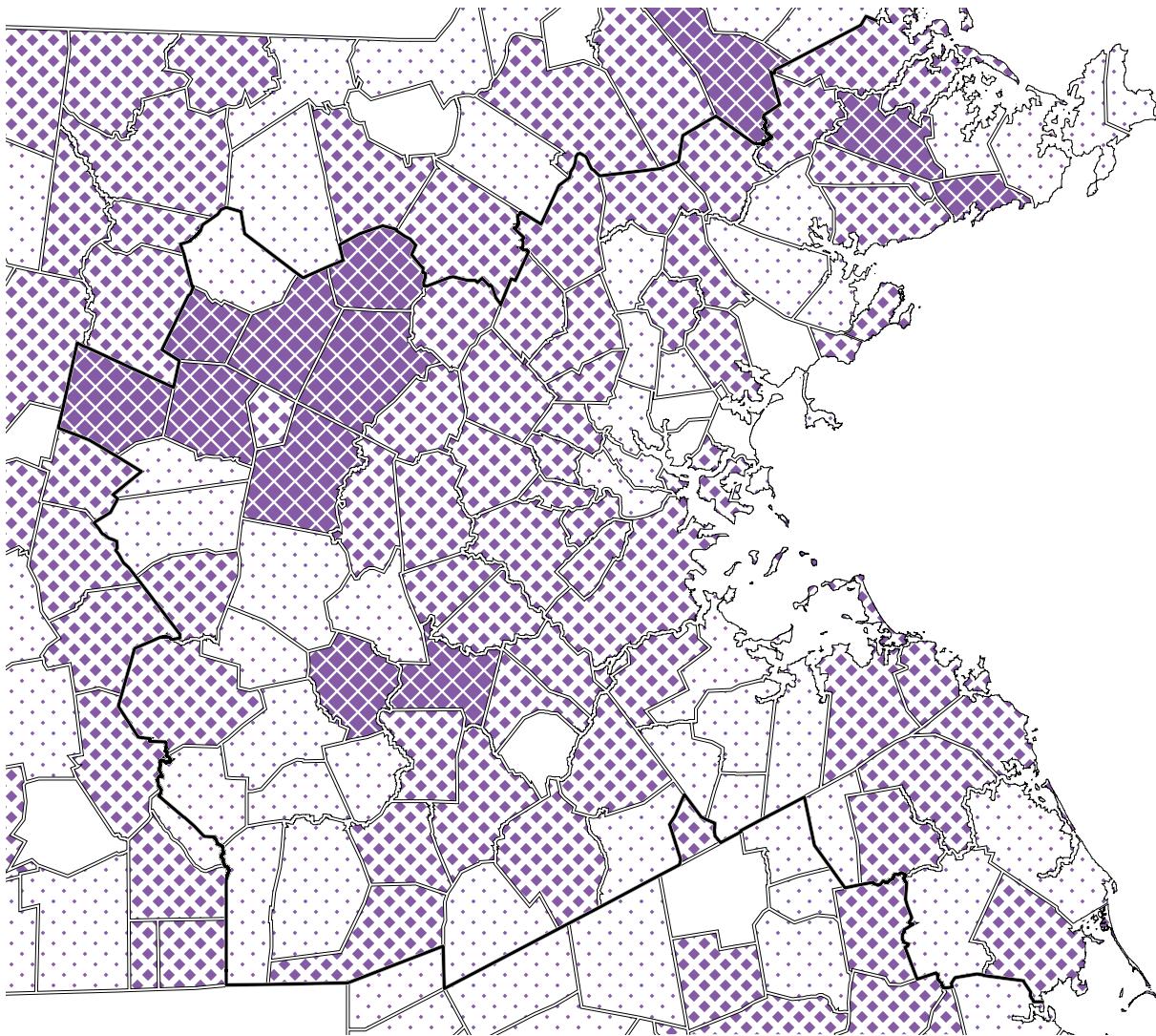
Coastal Flooding, Regional Impacts

With a changing climate and rising seas, coastal flooding will become more severe in Metro Boston. Effects will not only be coastal: storm events could damage inland facilities and effects may be felt across the region.

For example, the New England Produce Center and Boston Market Terminal sit directly in one of the most vulnerable flood zones in the region, an area of Everett and Chelsea that is projected to experience frequent flooding by mid-century. Combined, these facilities are the largest privately held produce market in the country. They supply fruit and vegetables to the region, and anchor a cluster of food wholesalers that support close to 11,000 jobs and generate nearly \$2.3 billion in economic output within Metro Boston.

Another example is the series of dams along the Charles and Mystic rivers, a critical infrastructure network protecting several dense, urban areas from flooding. The potential for future flooding in municipalities along the Mystic and Charles can be greatly reduced by increasing

the capacity of these dams to handle projected sea level rise. Making the necessary improvements and maintaining them in good working condition will require cooperation among public agencies such as the Department of Conservation and Recreation, the Division of Capital Asset Management and Maintenance, and affected municipalities.



Data Sources: MAPC, MassGIS, Massachusetts Department of Revenue Division of Local Services Municipal Databank

Municipal Reliance on the Property Tax

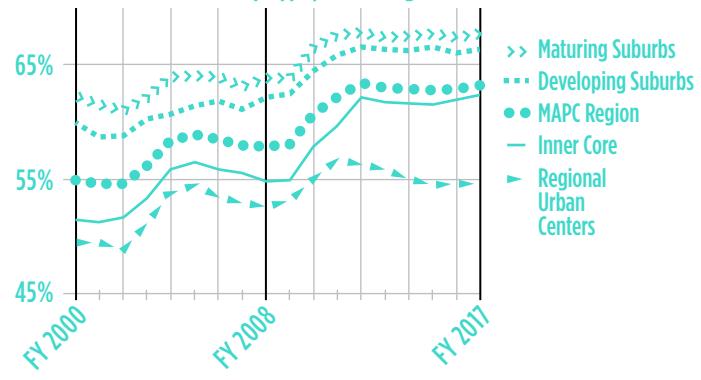
Massachusetts cities and towns provide many services to residents, from schools and parks to public safety, trash collection, and clean streets. Municipalities pay for these services by levying taxes on homes, businesses and personal property, which together provided nearly two-thirds of local revenue in the MAPC region in 2017. Other revenue comes from state aid, excise taxes, and optional hotel and meal taxes.

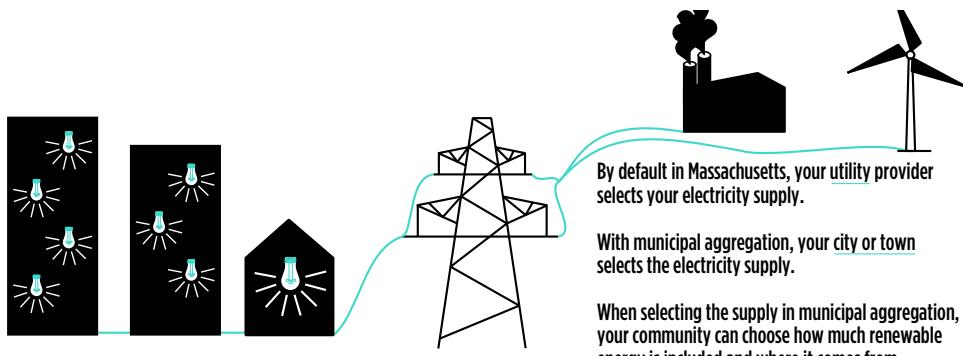
Steep increases in the cost of employee health insurance and rising pension obligations have eaten a greater share of local tax revenue in recent years, however, negatively affecting the ability of cities and towns to provide basic services without raising taxes. And, local tax increases are capped at 2.5% per year, unless voters approve an “override” of that limit.

As a share of local revenue, the property tax increased steadily from 55% in 2000 to 63% in 2017. With such a heavy reliance on property taxes, discussions about new municipal expenditures—schools, public safety facilities, etc.—are often shaped more by concerns around growing tax bills than the long-term benefits to the community.

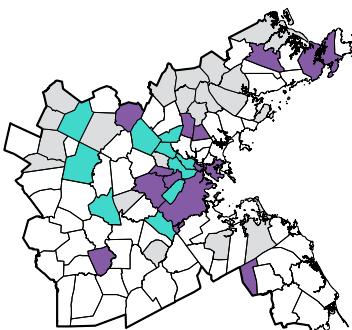
Without diversification of revenue sources, such as increasing state aid, or encouraging more communities to adopt local taxes on meals and hotels, municipalities may find themselves unable to provide stable services in years to come.

Share of Municipal Revenue from Property Taxes by Massachusetts Community Type, MAPC Region



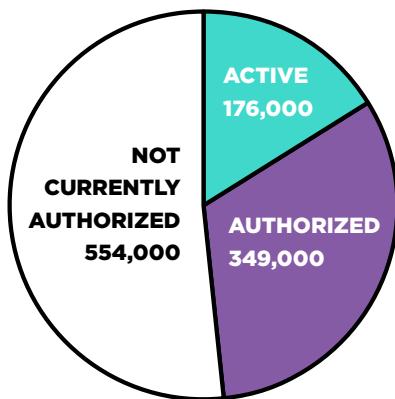


MUNICIPALITIES WITH GREEN AGGREGATION



- Active Green Aggregation Programs
- Authorized Green Aggregation Programs
- Municipal Light Plant City/Town – Not Eligible for Aggregation

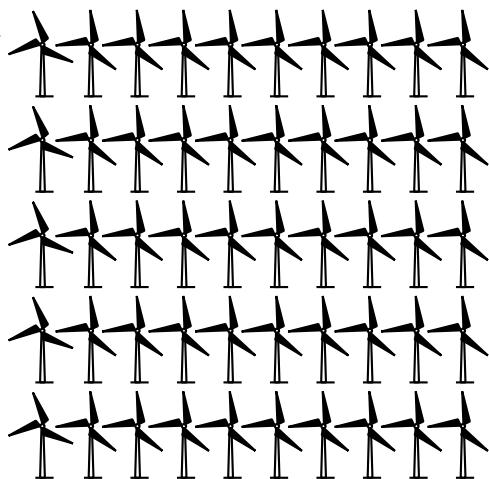
HOUSEHOLDS ELIGIBLE FOR GREEN AGGREGATION



Large scale purchases of new, local renewable energy by these green aggregations are likely to result in the construction of additional renewable energy in the region.

GREEN MUNICIPAL AGGREGATION IS GAINING MOMENTUM IN MASSACHUSETTS

Green municipal aggregation provides competitive prices, price stability, and includes more renewable energy from new sources located on the New England grid.



The impact of the active and authorized aggregations could result in the construction of more than

50 ONE-MEGAWATT WIND TURBINES

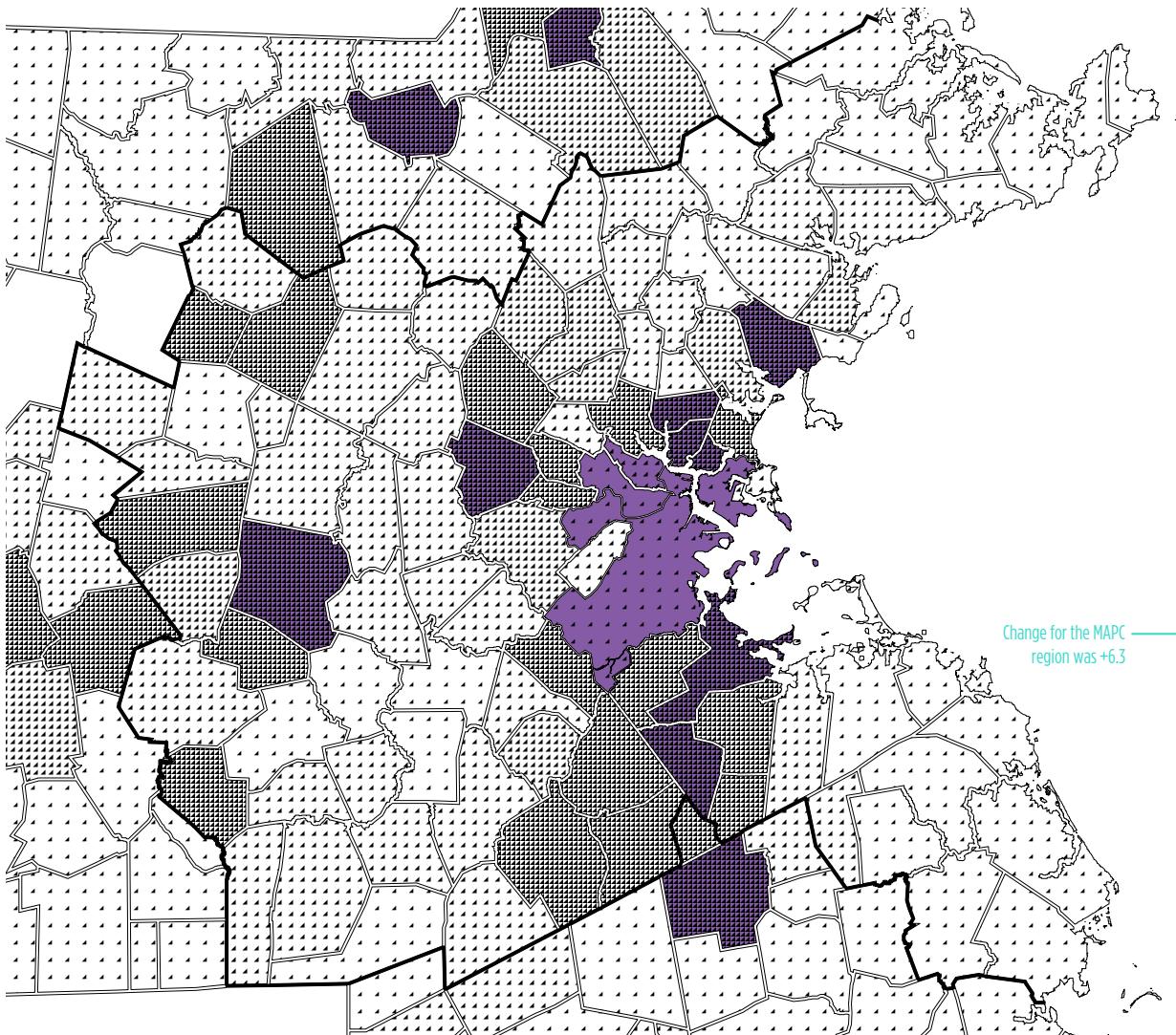
Data Sources: MAPC, municipal websites, U.S. Census

Municipal Aggregation

Massachusetts residents and businesses have a lot of choice when it comes their energy source. One option is for customers to band together to buy their electricity using “municipal aggregation.” With aggregation, a city or town contracts with an electricity supplier on behalf of all residents and businesses who have not already selected one. By entering into long-term contracts and leveraging significant buying power, aggregations can provide cost savings and more price stability than the utility.

While Massachusetts law mandates that all electricity suppliers include a minimum amount of new renewable energy sources from our region, aggregations may opt to exceed that. MAPC has supported the implementation of “green” municipal aggregation, in which the default electricity supply includes extra New England-sourced renewable energy. A green aggregation is intended to help build new renewable resources within our electric grid, while still delivering savings and stability.

MAPC partnered with Melrose to pioneer this approach in 2016. Since then, many municipalities have adopted the idea. Ten municipalities now have active green municipal aggregations, and another 10 have authorized it. Together, the combined impact of these aggregations in the state could add more than 50 new one-megawatt wind turbines to the New England grid.

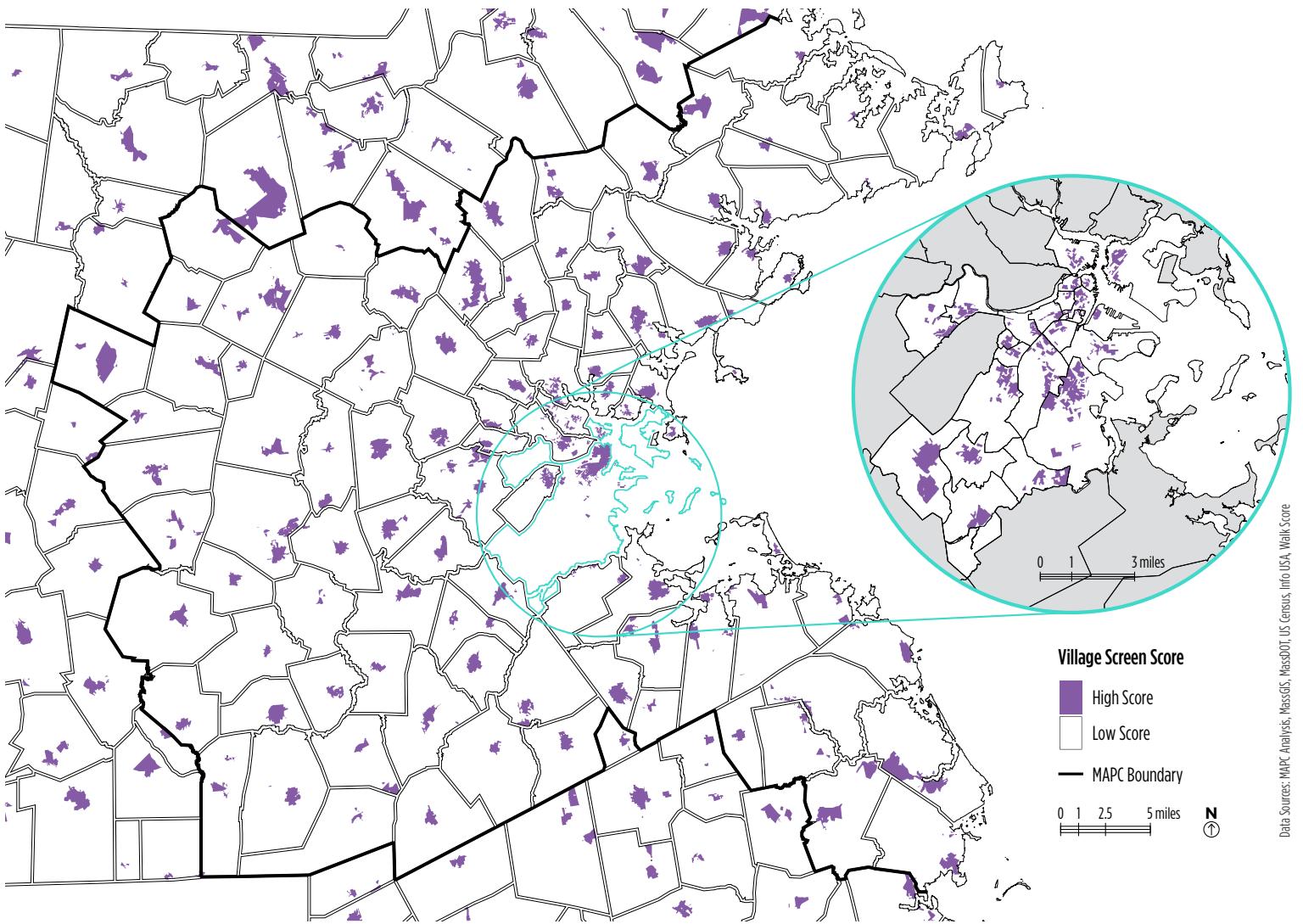


Regional Diversity

The MAPC region has become more racially and ethnically diverse every decade since at least 1970, when only 5% the region's residents were people of color. Between 2000 and 2010, residents of color—those who identify as Asian, Black, Latino, Native American, multiracial, or otherwise non-White—grew from 21% to 28% of the MAPC population, and their share increased in each of the region's 101 municipalities.

Although every municipality became more racially and ethnically diverse, the rate of change varied widely. A third of the region's municipalities became more diverse faster than the average. On the other hand, 58 predominantly-White suburban communities added residents of color more slowly than the region overall. These communities are falling further behind when it comes to representing the region's diversity.

Continuing racial segregation makes it harder for the region to reverse inequities. Children and adults of color often lack access to the privileges that come with life in wealthier suburbs. White children and adults living in mostly-White suburbs are isolated from the experiences of their peers of other races and ethnicities. To succeed as a region, we must address the many inequities that face populations of color, and reverse the enduring legacy of segregation.



Mapping Town and Village Centers

The town and village center has been an essential feature of Massachusetts communities for centuries. Centrally-located colonial town halls served as a nucleus for stores, schools, worship, and civic spaces. Over time, these centers grew and densified while new villages sprouted in city neighborhoods. These centers are less economically significant today, but they can play a vital role in the MAPC region's future. The characteristics that we associate with town and village centers — a mix of uses, walkable streets, higher densities — are also known to reduce driving and increase transit use, making them ideal locations for new growth. For many residents, the vibrancy and viability of their town or village center is a key concern.

The MAPC "Village Screen" ranking measures every Census Block based on key characteristics such as number of businesses, street connectivity, Walk Score, population density, employment, building density, and

distance to that municipality's city or town hall. The highest-ranked census blocks in each city or town are identified on this map.

This screening tool can inform plans for new growth to revitalize sluggish downtowns, expand housing choices, reduce auto dependence, and improve the local economy. Communities can take advantage of these benefits by adopting zoning to encourage well-designed compact development that will help make village and town centers central again.