



## Metropolitan Area Planning Council

# Housing & Urban Development (HUD) Grant Application Pathways to Removing Obstacles to Housing (PRO Housing) Grant Program

***Draft – For Public Review***

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### Table of Contents

Introduction.....	2
Taking Action to Address Housing Need.....	3
Acute Need.....	10
Key Barriers to Affordable Housing .....	12
Vision.....	14
Approach .....	15
Overcoming Barriers.....	24
Lessons Learned .....	25
Alignment with Existing Planning Initiatives.....	28
Geographic Scope .....	32
Key Stakeholders and Engagement.....	34
Affirmatively Furthering Fair Housing.....	35
Budget and Timeline .....	39
Capacity.....	40
Organizational Chart .....	43
Leverage .....	44
Long-Term Effects and Outcomes .....	44

## Introduction

The Metropolitan Area Planning Council (MAPC), Greater Boston's regional planning agency, is partnering with municipalities, including the City of Boston, and others in the housing field to advance the following proposal to HUD to address the severe shortage of both market-rate and affordable housing that exists in our region. We are committed to doing so through a mechanism that will create good jobs in the housing construction field, with good wages, benefits, and worker protections. The Commonwealth of Massachusetts, MAPC, and the participating local governments are all actively working to address our region's housing needs, but the problem is too large to solve with one silver-bullet strategy or by one individual entity. Greater Boston desperately needs to pick up the pace of housing production, especially housing that is affordable to low and moderate-income households. New housing also needs to be climate-ready, energy-efficient, and located in areas with good transit access so residents can easily get to jobs, services, schools, and amenities.

This grant proposal addresses Greater Boston's housing needs by seeking to reduce three of the most significant remaining barriers to the production of new housing units in our region: 1) high construction costs; 2) the time it takes to construct new housing; and 3) local opposition to new construction projects. With our partners, we have carefully constructed a regional approach to research and incentivize innovative offsite construction methods on strategically located sites to reduce these barriers to affordable housing production. We recognize that traditional stick-built construction is a vital part of our construction industry and produces quality homes, particularly high-density, high-rise housing developments. We see an opportunity to complement these large-scale construction projects, underway and planned throughout the region, with offsite construction methods for smaller developments, including single-family, duplexes, townhomes, and small multi-family structures. By diversifying our construction methods and exploring offsite methods regionwide, we are confident that we can more quickly meet our housing and climate goals, while also creating a greater diversity of good jobs with good wages and benefits in the construction field.

Research that informed this proposal highlighted that one of the greatest barriers to the widespread use of offsite construction in Greater Boston is the lack of a manufacturing facility near cities and towns where housing is most needed. Through extensive engagement with subject matter experts and stakeholders, it has become apparent that the lack of a manufacturing facility within 50 miles of Boston is the most significant barrier to the use of offsite construction due to the transportation and logistical challenges of transporting modules across state and country boundaries. Those who are developing with modular units are often not reaping the cost benefits associated with offsite construction because of the added transportation costs. To fix this issue and attract a large manufacturing facility, there must be sufficient demand. Based on our research, the optimal pipeline needed to support a large manufacturing facility is approximately 1,000 housing units per year for three years. The acute demand for new housing units, and especially affordable housing units, in our metropolitan region is great enough to achieve this required demand, but it cannot be achieved by one municipality alone, hence the need for a regional

approach. If awarded these funds, our goal is to support construction of a new manufacturing facility and produce the first units of affordable modular housing by the close of 2030.

An important aspect of this proposal addresses the workforce requirements expected of any offsite construction methods. MAPC and its partner municipalities are committed to working with statewide and local labor organizations and their members to understand the nuances of the construction industry and to ensure that offsite construction will create new jobs with good benefits for more residents of Greater Boston. Through the project's Working Group and sub-groups, MAPC will work with labor representatives to understand how offsite construction jobs can complement on-site construction jobs to improve the overall construction industry and result in quicker, but still high-quality and durable, housing development. Research activities will explore how labor agreements and other components of any solicitation<sup>1</sup> for a new facility can ensure the jobs created meet local labor standards and offer new opportunities for women and minority workers. We are excited to continue learning from offsite construction facilities elsewhere in the country, where workers have been unionized or labor agreements have been leveraged to create a highly skilled workforce with good wages, benefits, and protections. We envision this project setting a new precedent for how offsite construction methods can work hand-in-hand with onsite construction methods, rather than the two being opposed. To fully address the region, and nation's, housing shortage, we need to embrace and continue to improve all construction technologies. We are confident we can contribute to this effort, while also staying true to Greater Boston's commitment of creating high quality jobs for our residents.

## **Taking Action to Address Housing Need**

Massachusetts, MAPC, and its 101 cities and towns have strong track records of pioneering the adoption of progressive housing policies and budgetary actions to support the creation and preservation of affordable housing. At all levels of government, a multitude of housing tools and strategies have been employed successfully. As a result, Massachusetts has a significantly larger share of subsidized or affordable housing than other states and continues to increase this segment of the housing stock more rapidly than other states and regions. MAPC works with cities and towns to locate affordable housing in high opportunity areas to advance racial and social equity. A sampling of select state, regional, and local housing actions are described below.

### ***State Housing Actions***

#### **State Adoption of Chapter 40B**

In 1969, Massachusetts adopted [Chapter 40B](#), providing relief from exclusionary zoning practices that prevented the construction of low- and moderate-income housing, particularly in suburban municipalities, by providing developers with an expedited approval process for projects that contain housing units affordable to households earning below 80% of AML, as well as a State

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<sup>1</sup> A solicitation could take the shape of a Notice of Funding Opportunity (NOFO) or Request for Proposals (RFP), two legal documents that often are employed by public agencies to enter into public/private partnerships or agreements.

appeals process that may be used if a local zoning board denies the application. Chapter 40B has been revised and updated numerous times since its passage to increase its efficacy. Since its inception, Chapter 40B has had a significant impact on the production of affordable and market rate housing production.

A 2016 working paper prepared by the Turner Center for Housing Innovation at UC Berkeley reports, “the impact of Chapter 40B on the landscape of affordable housing in Massachusetts has been substantial. Many municipalities in the state do not have any land zoned for multi-family development, focusing instead on zoning for low-density, single family homes. Research has shown that Chapter 40B has resulted in significantly more low- and moderate-income housing being built in the suburbs than would have been created absent the statute. In 1972, shortly after Chapter 40B was enacted, only four of Massachusetts’ 351 cities and towns had more than 10 percent of their affordable housing to low- and moderate-income households; as of 2012, that number had increased tenfold. Among the municipalities that have attained the 10 percent goal are three Boston suburbs - Concord, Lincoln, and Lexington - all of which rank among the 15 most affluent municipalities in the state. While still far short of solving affordability challenges writ large, the data show that municipalities have made steady progress in expanding the stock of affordable housing.”<sup>2</sup>

As of 2023, two-thirds of all Massachusetts cities and towns (234 of 351) had over five percent of their housing stock affordable, including many in affluent suburbs with highly rated public schools. Nearly a quarter of cities and towns (81 of 351) have over 10 percent of their housing stock affordable. Only 45 jurisdictions have no affordable units, but these are mostly smaller, rural towns with overall lower housing costs.

#### Community Preservation Act

In 2000, Massachusetts passed the [Community Preservation Act](#) that allows cities and towns to conduct a referendum to add a small surcharge on local property taxes. The local surcharge is matched by a statewide Community Preservation Trust Fund. The funds gathered can be used to support local affordable housing development, among other things (like parks and recreation, open space protection, and historic preservation). At least 10% of funds must go to affordable housing annually, but many communities allocate more than this. Since the passage of the Community Preservation Act, 195 communities have adopted the local surcharge, and over 10,000 new affordable homes have been created statewide. This is an excellent dedicated source of revenue that cities and towns can leverage to produce new and preserve existing affordable housing.

#### State Commonwealth Builder Program

The State Commonwealth Builder Program, started in 2019, aims to significantly increase the supply of affordable homes for middle-income homes. It initially committed \$60 million to support the construction of 500 new homes in 26 communities across Massachusetts and has since been

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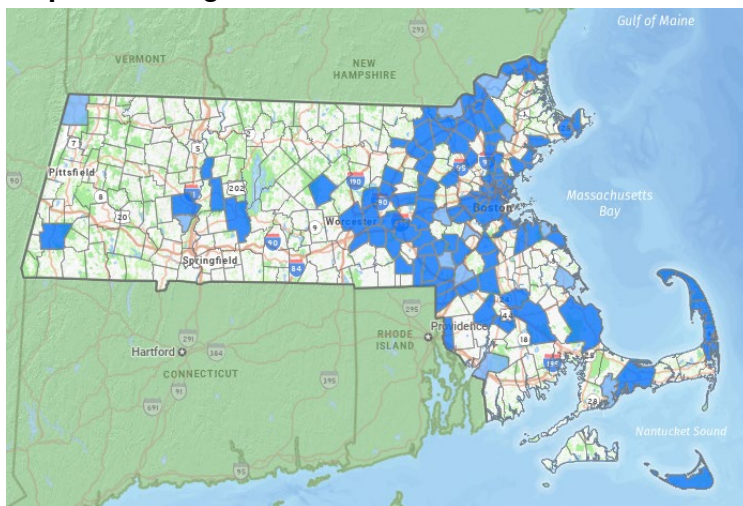
<sup>2</sup> [https://turnercenter.berkeley.edu/wp-content/uploads/pdfs/California\\_40B\\_Working\\_Paper.pdf](https://turnercenter.berkeley.edu/wp-content/uploads/pdfs/California_40B_Working_Paper.pdf)

increased via Massachusetts ARPA funding of \$115M, as well as city funding.<sup>3</sup> The program subsidizes the production and purchase of homes restricted to moderate-income first-time homebuyers with income restrictions set anywhere between 70 percent to 120 percent of their Area Median Income.<sup>4</sup>

### Housing Choice Initiative and Legislation

In 2019, Massachusetts established the [Housing Choice Initiative](#) designation program, which rewards cities and towns for producing new housing and adopting best practices to promote sustainable housing development. Housing choice designation provides exclusive access to Housing Choice capital grants to fund capital projects, often needed to support infrastructure needs related to growth. Housing Choice communities also receive bonus points or other considerations for a number of other Commonwealth funding programs. Municipalities are eligible for designation if they have had greater than 5% housing growth or 500 units over the last five years, or if they have had 3% housing growth or over 300 units in the last five years plus have adopted five out of the 11 housing best practices. Currently, 95 cities and towns in Massachusetts have achieved this designation, exhibiting the state's commitment across varying communities to addressing housing need.

### **Map of Housing Choice Communities, as of 2023**



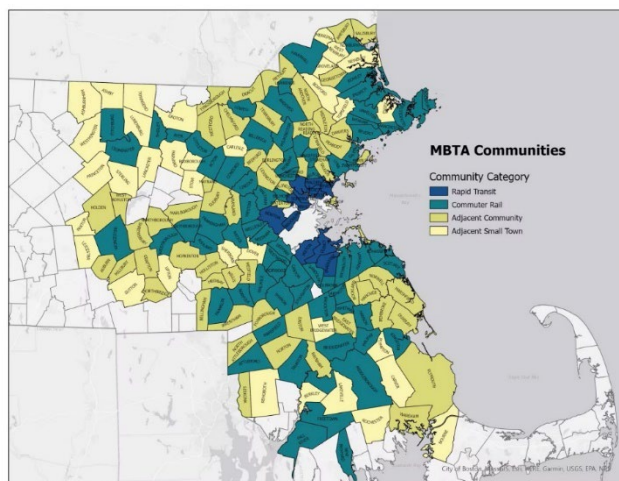
In 2021, through an Economic Development Bond Bill (H. 5250), Massachusetts amended the state's zoning act to institute three major changes: 1) eliminate the 2/3 majority vote for certain zoning changes related to housing production; 2) multi-family zoning requirement for MBTA municipalities (detailed further in the next section); and 3) changes to streamline permitting and discourage meritless legal challenges including the voting majority for certain special permits. The change to majority voting is critical to removing the barrier of local opposition to affordable housing in communities. Other provisions continue to remove barriers that add to housing costs.

<sup>3</sup> [https://www.housingfinance.com/developments/massachusetts-development-to-bring-a-mix-of-housing-opportunities\\_o](https://www.housingfinance.com/developments/massachusetts-development-to-bring-a-mix-of-housing-opportunities_o)

<sup>4</sup> [https://masshousing.com/press/2021-01-04\\_commonwealth-builder](https://masshousing.com/press/2021-01-04_commonwealth-builder)

Amendment to State Zoning Act to add Section 3A, Multi-Family Zoning Mandate

Multi-family zoning requirements were enacted in 2021 as part of the aforementioned Housing Choice legislation, and this new section of state law mandates that all 177 communities within the MBTA transit service area (see the below map) must have at least one zoning district near transit or other smart growth location where multi-family (defined as a building with three or more units) is allowed by-right. This new state law is intended promote higher-density housing development in transit-accessible locations.<sup>5</sup> The state has



provided more than \$2 million in technical assistance to more than 50 communities that are working to comply with these new requirements.<sup>6</sup> The state went even further to require the zoning be in place by December 2023 for communities served by fixed-rail/subway, December 2024 for communities served by regional/commuter rail, and December 2025 for the remaining communities. All but one community within the MAPC region must comply with Section 3A and remove zoning barriers to housing production. MAPC is providing technical assistance to many of these communities, by helping review existing zoning and identifying alternatives for zoning amendments. Section 3A is a critical tool to unlocking the development potential near transit, where exclusionary or restrictive zoning has outlawed multi-family housing.

**Regional and Local Housing Actions**

MAPC supports housing production, preservation, and stability through state-level legislative advocacy and local technical assistance to advancing housing strategies. MAPC provides over \$1.25M in technical assistance grants each year to cities and towns located within Greater Boston. Often, up to \$400,000 or more of these grants go to land use and housing planning projects, where MAPC planning staff work with cities and towns on a variety of projects, such as housing production plans, mixed-use/smart growth zoning, inclusionary zoning ordinances, fair housing plans, land disposition for affordable housing, housing needs assessments, and more. MAPC has helped cities and towns establish Affordable Housing Trusts, Housing Partnership Committees, and other groups to advance implementation of housing plans and strategies. MAPC’s technical assistance program is crucial to ensuring cities and towns have the capacity to tackle challenging housing issues and projects.

MAPC also provides support to municipalities and state partners through housing-related research products. Notably, MAPC’s Zoning Atlas highlighted the need for massive zoning reform to

<sup>5</sup> <https://www.mass.gov/info-details/multi-family-zoning-requirement-for-mbta-communities>

<sup>6</sup> <https://www.masslive.com/politics/2023/08/mass-adds-new-penalties-for-towns-not-following-mbta-communities-zoning-law.html#:~:text=The%20law%20was%20adopted%20in,or%20ferry%20terminal%2C%20if%20applicable.>

remove regulatory barriers to housing development. The [Housing Submarket Analysis](#) gave local planners and policymakers greater insights into local housing conditions and offered a suite of policy interventions to combat rising housing prices and displacement risk. A 2017 study on the [impacts of housing production on school enrollment](#) dispelled myths that new homes automatically lead to more students in local districts. In 2021, MAPC's [Rethinking the Retail Strip](#) research highlighted specific parcels that would be great for redeveloping with more dense housing options and a mixture of uses with improved connectivity, to transition the region from auto-dependent separated land use patterns to more walkable, "complete neighborhoods". The report found that if just 10% of the identified parcels were redeveloped, as many as 124,000 new homes could be created.

Beyond the work done in partnership with MAPC through the technical assistance program, cities and towns in Greater Boston continue to take steps to produce more affordable housing.

#### Inclusionary Zoning

Inclusionary zoning links development of market-rate housing with production of affordable units through the use of development incentives. Inclusionary zoning, which can apply city/town-wide or be limited to select geographic areas, requires a minimum percentage of low- and moderate-income housing in new residential development of a certain type, such as new construction of multifamily housing or substantial rehabilitation. MAPC has helped many cities and towns adopt or update inclusionary zoning to produce more affordable homes. Over 50 communities in Greater Boston have some form of inclusionary zoning.

#### Municipal Affordable Housing Trust Fund

In 2005, the Massachusetts State Legislature passed the Municipal Affordable Housing Trust Fund Law, simplifying the process for cities to establish a local housing trust fund and allowing all communities to create a local housing trust through their local legislative body. Since passage of the law, approximately 98 communities have established municipal affordable housing trust funds.<sup>7</sup>

#### City of Boston Housing Actions

According to the 2022 Income Restricted Housing Report prepared by the City of Boston Mayor's Office of Housing, Boston has the highest percentage of income-restricted housing of any major city in the country, with 19.2 percent of its total housing stock designated as income-restricted. In the past 10 years, Boston has permitted 8,975 income-restricted housing units, which is 21.4 percent of all permits during that time. In 2022 alone, 30 percent of all units permitted were income-restricted (1,299 units). A number of different strategies, outlined in more detail below, have contributed to consistently developing affordable housing.

#### Executive Order to Accelerate Approval of Affordable Housing Development

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<sup>7</sup> [https://www.mhp.net/assets/resources/documents/MAHTGuidebook\\_2018.pdf](https://www.mhp.net/assets/resources/documents/MAHTGuidebook_2018.pdf)

In 2022, Mayor Michelle Wu signed an executive order aimed at accelerating the approval process for affordable housing development in Boston.<sup>8</sup> The initiative is designed to cut through bureaucratic red tape and speed up the process by which affordable housing projects are reviewed and approved (Article 80) by 50%, down from an average of 337 days. The changes to Article 80 began coming into effect in FY2023 (July).

#### Overhauling Boston's Antiquated Zoning Code

In September 2023, the City of Boston released a [report](#) commissioned by the Boston Planning & Development Agency (BPDA) to assess the Boston Zoning Code. The report, authored by Cornell University professor and Director of the National Zoning Atlas Sara Bronin, details issues such as extreme length and inconsistencies that make the code inaccessible to most Bostonians. As explained in a September 13, 2023 press release, *"having an antiquated Zoning Code limits the City's ability to address the current housing crisis by creating steps and costs to the creation of new housing. The report released today shows that Boston's code is abnormally long compared to cities of comparable size by geography and population. At nearly 4,000 pages, Boston's code is nearly 40 percent longer than that of New York City, which has 13 times Boston's population and six times its land area. By every form of comparison to comparable size cities, Boston's code is significantly longer."*<sup>9</sup>

To address this, The City and BPDA announced a significant restructuring of the Planning Department, creating Zoning Reform and Zoning Compliance teams and replacing the previous neighborhood planning team with a new Comprehensive Planning team. These new teams will support the City's ability to modernize and enforce the Code, which has not been comprehensively updated since 1964.

#### Affordable Housing Linkage Fee

In 1983, the City of Boston instituted an Affordable Housing Linkage Fee that requires developers of large commercial projects to make a financial contribution to fund affordable housing and workforce development initiatives in Boston. The Neighborhood Housing Trust was formed in 1986 to manage these funds and disburse them to increase Boston's supply of income restricted housing, and preserve what already exists. Between 1983 and 2020, the Neighborhood Housing Trust has committed more than \$222 million in linkage funds. These funds have supported the creation or preservation of 14,116 income restricted housing units, spread throughout the City of Boston.

#### Inclusionary Housing Ordinance

The Inclusionary Housing Policy requires developers of large residential or commercial projects to contribute to Boston's affordable housing either by creating affordable units or making a financial contribution.<sup>10</sup> Since its inception, the program has generated approximately 7,000 affordable housing units, according to data compiled by the Mayor's Office of Housing. In October 2022,

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<sup>8</sup> <https://www.boston.gov/news/executive-order-streamline-approval-affordable-housing>

<sup>9</sup> <https://www.bostonplans.org/news-calendar/news-updates/2023/09/13/bpda-releases-analysis-of-zoning-code>

<sup>10</sup> <https://www.bostonplans.org/projects/standards/inclusionary-development-policy>



\$1M in Inclusionary Development funds were used to create the state's first Mixed Income Neighborhood Trust and establish 114 affordable housing units.<sup>11</sup>

#### Eliminated Parking Minimums for Affordable Housing Developments

In December 2021, the Boston Zoning Code was amended to remove the requirement for a minimum number of parking spaces in new affordable housing developments.<sup>12</sup> The policy aims to reduce construction costs and promote the development of more affordable housing units. Removal of parking units is a key enabler of inclusionary zoning policy effectiveness.<sup>13</sup>

#### Acquisition Opportunity Program

In 2016, Boston earmarked \$7.5M for the Acquisition Opportunity Program, which provides funding to developers to purchase and preserve the affordability of multifamily housing properties in Boston and prevent displacement.<sup>14</sup> Acquired properties must restrict 40% of proposed units to tenants earning up to 60% of the Area Median Income.<sup>15</sup> To date, the Acquisition Opportunity Program has supported the acquisition of 632 units.<sup>16</sup>

#### Allocation of American Recovery Plan Act Dollars

In 2021, Boston allocated \$234 million in ARPA funding for housing. ARPA regulations require the Mayor's Office of Housing (MOH) to commit these funds by the end of 2024 and spend them by the end of 2026 to support affordable housing, provide rental relief, and support homeownership, in light of crises exacerbated by the COVID-19 pandemic.<sup>17</sup> Among others, applications of this funding have included "Welcome Home, Boston" (described below), as well as:

- \$46M to support the acquisition of occupied properties and vacant or underutilized land near transit; for example, \$9M to create the state's first Mixed Income Neighborhood Trust and establish affordability of 114 units (Oct 2022)<sup>18</sup>
- Infusion to MassHousing's Commonwealth Builder Program; for example, to provide financing for construction of 142 mixed-income housing units<sup>19</sup>
- \$32M towards investments to improve air quality, increase energy efficiency in federally-assisted housing projects<sup>20</sup>

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<sup>11</sup> <https://www.boston.gov/news/acquisition-and-expansion-affordable-housing-east-boston-announced>

<sup>12</sup> <https://www.bostonplans.org/news-calendar/news-updates/2021/12/22/mayor-wu-eliminates-parking-minimums-for-affordabl>

<sup>13</sup> <https://www.hks.harvard.edu/publications/can-inclusionary-zoning-be-effective-housing-policy-greater-boston-evidence-lynn-and>

<sup>14</sup> <https://www.boston.gov/housing/acquisition-opportunity-program>

<sup>15</sup> <https://www.boston.gov/sites/default/files/file/2023/01/Docket%20%230157.pdf>

<sup>16</sup> [https://home.treasury.gov/system/files/136/Boston\\_2022RecoveryPlan\\_SLT-0542.pdf](https://home.treasury.gov/system/files/136/Boston_2022RecoveryPlan_SLT-0542.pdf)

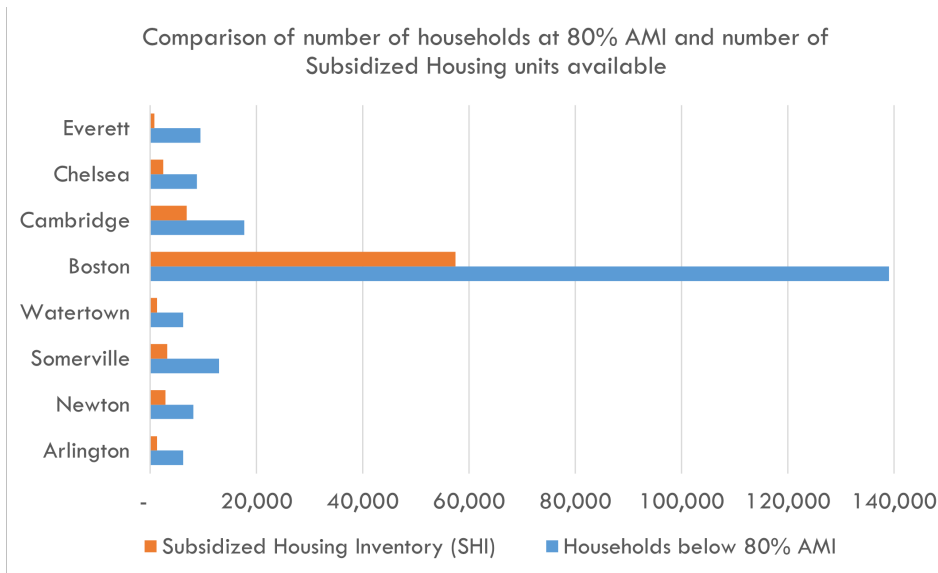
<sup>17</sup> <https://www.boston.gov/city-boston-american-rescue-plan-housing-funding>

<sup>18</sup> <https://www.boston.gov/news/acquisition-and-expansion-affordable-housing-east-boston-announced>

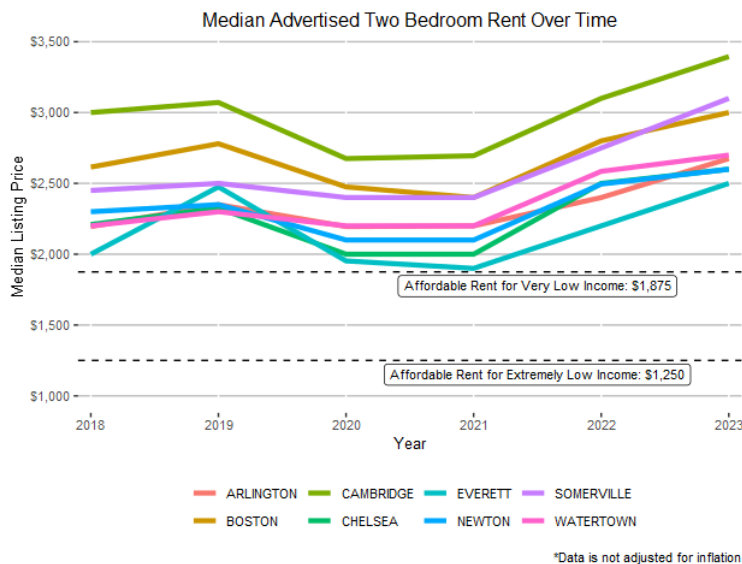
<sup>19</sup> <https://www.jdsupra.com/legalnews/massachusetts-communities-use-arpa-2161498/>

<sup>20</sup> [https://home.treasury.gov/system/files/136/Boston\\_2022RecoveryPlan\\_SLT-0542.pdf](https://home.treasury.gov/system/files/136/Boston_2022RecoveryPlan_SLT-0542.pdf)



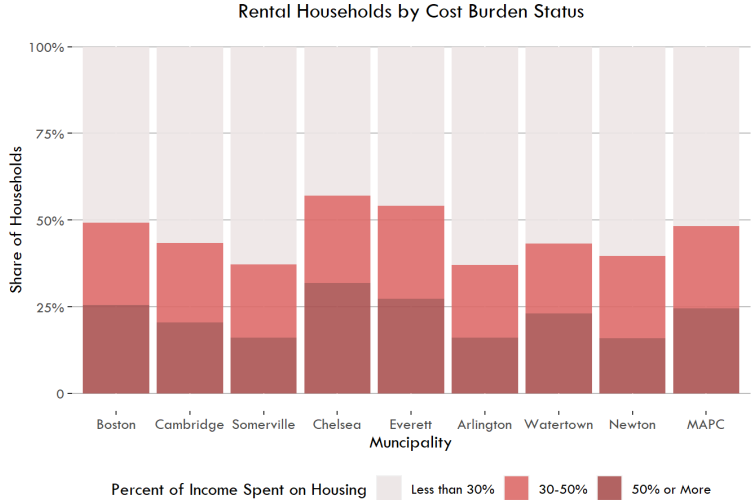


**Rental Affordability:** The chart provided below illustrates the median advertised rent for two-bedroom properties from 2018 to 2023. It's important to highlight that these median listing prices consistently exceed what can be considered affordable for both very low-income (\$1,875) and extremely low-income (\$1,250) households across all communities. This concerning trend has persisted throughout the entire period, with rental prices reaching as high as \$3,300 in Cambridge, and even the lowest rates, such as those in Watertown, remaining significantly high at up to \$2,500. Source: MAPC Rental Housing Listing Database.

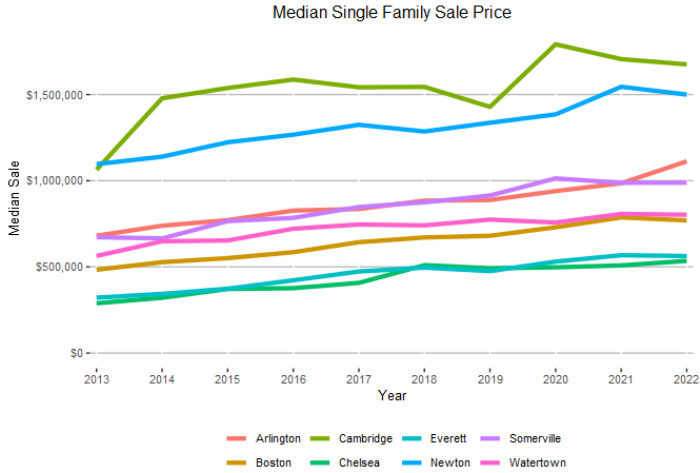


**Rent Burden:** The severity of the housing crisis is further underscored when we examine the data on rent burden. The chart below illustrates the percentage of income that rental households in each of the participating municipalities, as well as the broader MAPC region, spend on housing. Nearly a quarter, or approximately 25%, of rental households face an extreme rent burden,

allocating more than half of their income toward rent. This translates to an approximate total of 134,000 households grappling with this overwhelming financial strain. Source: ACS 2017-202



**Sale Prices:** The urgency for housing becomes even more pronounced when examining the data on sale prices. The chart below illustrates a consistent upward trend in the median sale prices of single-family homes across all the participating municipalities from 2013 to 2022. Communities like Everett and Chelsea have witnessed a doubling of their median house prices over the course of the decade. Watertown has experienced the smallest increment, which is still significant, an increase of more than a third. Source: MAPC, Real Estate Database from the Warren Group.



**Key Barriers to Affordable Housing**

In addition to increasing funds for affordable housing and continuing to address outdated regulatory barriers (such as antiquated zoning codes and lengthy development approvals processes), the key remaining barriers to the production of affordable housing in the Greater

Boston area are: 1) the time it takes to build new units, 2) the high cost of producing those units, and 3) local opposition to the production of new housing units in neighborhoods.

According to data compiled by the City of Boston Mayor's Office of Housing, over the past five years, the median time between permit application with the City's Inspectional Services Department, through project completion, for all new residential construction projects, is just shy of 3 years (1,089 days). In addition to the financial impacts of a lengthy entitlement and construction process, the economic effects of the COVID-19 pandemic intensified already escalating costs of new construction. According to Ali Touran, a professor of civil and environmental engineering at Northeastern University, in the decade before COVID-19, costs of new construction typically increased at a rate of three to four percent a year; however, between 2020 to 2021 costs rose 14 percent, and were up 11 percent in 2022.<sup>23</sup> Statewide, analysis from RS Means, a national construction data tracking service, highlighted that multifamily housing construction costs are 20 percent higher than the national average, dampening the potential for private housing developers to produce both market-rate and affordable units.<sup>24</sup> Climbing construction costs mean that more public dollars must be contributed to produce affordable housing. Among 552 MOH-tracked affordable housing units funded in 2022 and 2023, total public subsidy per unit of affordable housing is approximately \$350,000 per unit.

Related to construction costs, construction financing for full modular construction has historically been more difficult in Massachusetts. Local construction lenders need to adapt to the practice of offsite construction and incorporate best practices that have been developed in other states.<sup>25</sup>

Local opposition to the construction of new housing remains a barrier to increasing housing supply. In 2018, Boston University researchers Katherine Levine Einstein, Maxwell Palmer, and David Glick published an article titled, "*Who participates in local government? Evidence from meeting minutes,*" sharing findings following the compilation and analysis of a novel data set that coded thousands of instances of citizens speaking at planning and zoning board meetings in Massachusetts concerning housing development. They found that individuals who are older, male, longtime residents, voters in local elections, and homeowners are significantly more likely to participate in these meetings and overwhelmingly (and to a much greater degree than the general public) oppose new housing construction. The researchers ultimately conclude that these participatory inequalities have important policy implications and may be contributing to rising housing costs.

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<sup>23</sup> As cited in a November 2022 article in the Boston Globe:

<https://www.bostonglobe.com/2022/11/01/business/cost-building-boston-keeps-going-up-that-makes-everything-else-more-expensive-too/>

<sup>24</sup> *Building Momentum: New Housing Policies to Unlock the Commonwealth's Potential*, Massachusetts Housing Partnership, August 2023.

<sup>25</sup> Ibid.

## Vision

Collectively, the Greater Boston region imagines a future where all residents have safe and comfortable homes that they can afford in the communities that they prefer. A future where housing is available that meets residents' needs, regardless of their stage of life, family size, income, or mobility barriers. A future where homelessness no longer exists. Some dream of becoming homeowners and others are happy to rent because their rental prices are stable and predictable. If we succeed in reaching these goals, those that want to buy a home will be able to and no renter or owner will have to pay more than 30% of their income on housing expenses. We also imagine a region that is less segregated, where our communities more closely reflect the demographics of the region as a whole. Homes in the future will be deeply energy efficient, even producing electricity that can feed back into the grid.<sup>26</sup>

Furthermore, the housing demand and associated good jobs will be sustained, and new job opportunities will result to ensure workers earn wages that support healthy lifestyles, access to opportunities and stable homes, and allow for education, emergency savings, and retirement. Communities who have historically lacked or been denied wealth and access to good jobs will, in the future, have new opportunities through innovations in the home construction industry to meet our housing demand. Emerging technologies will offer new avenues for adults to expand their skills through convenient and accessible workforce development and job training programs.<sup>27</sup>

Beyond this regional goal for more and diverse homes built by workers with good benefits throughout Greater Boston, the [Metropolitan Mayors Coalition](#) (MMC) – a group facilitated by MAPC and comprising the chief executives of 15 cities and towns in the urban core of Metro Boston, where more than 1.4 million people reside – created a [Housing Task Force](#) in 2017 to address collectively their serious housing needs. The MMC Housing Task Force set a landmark housing production goal: 185,000 new units between 2015 and 2030 in their 15 communities. To achieve this goal, the region needs to continue to remove barriers to conventional housing production, while also researching and promoting alternative and innovative construction technologies that can complement but not replace our thriving construction industry.

This grant proposal advances our vision by seeking to address three of the most significant remaining barriers to the production of new affordable housing units in the Greater Boston region: 1) high construction costs; 2) time to construct new housing; and 3) local opposition to new construction projects. By developing a regional strategy to research and incentivize the use of innovative offsite construction methods (as opposed to traditional, stick-built), we will reduce these barriers to affordable housing production. Offsite manufacturing methods are often organized into three categories or degrees of enhancement (or prefabrication) or level of completion/finish: (1) kit-of-parts (1D systems), panelized (2D), and modular (3D) systems.<sup>28</sup> All of these systems

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<sup>26</sup> Housing Vision, [MetroCommon2050](#) Regional Plan, Metropolitan Area Planning Council, 2021.

<sup>27</sup> Equity of Wealth and Health Vision, [MetroCommon2050](#) Regional Plan, Metropolitan Area Planning Council, 2021.

<sup>28</sup> [https://drive.google.com/file/d/1AnG\\_FMus-gfCDC8HyOS186yzH0JLcsVz/view](https://drive.google.com/file/d/1AnG_FMus-gfCDC8HyOS186yzH0JLcsVz/view)

have been used to build housing in the Greater Boston area, though stick-built construction remains the predominant method of construction.

With a regional approach, we will effectively tackle one of the largest barriers to the widespread use of offsite construction in the Greater Boston area: the lack of a manufacturing facility in close proximity to cities and towns in the State where housing is most needed. Through extensive engagement with subject matter experts and stakeholders, it has become apparent that the lack of a manufacturing facility within 50 miles of Boston is the most significant barrier to its use due to both the transportation and logistical challenges of transporting modules across state and country boundaries, and the pressure to employ local residents throughout all phases of construction projects. To attract a large manufacturing facility, there must be sufficient demand. Based on our research, the optimal pipeline needed to support a large manufacturing facility is approximately 1,000 housing units per year for three years. The acute demand for new housing units, and especially affordable housing units, in the Greater Boston area is great enough to achieve this required demand, but it cannot be achieved by one municipality alone, hence the need for a regional approach. If awarded these funds, our goal is to support construction of a new manufacturing facility and produce the first 500 units of affordable modular housing by the close of 2030.

## Approach

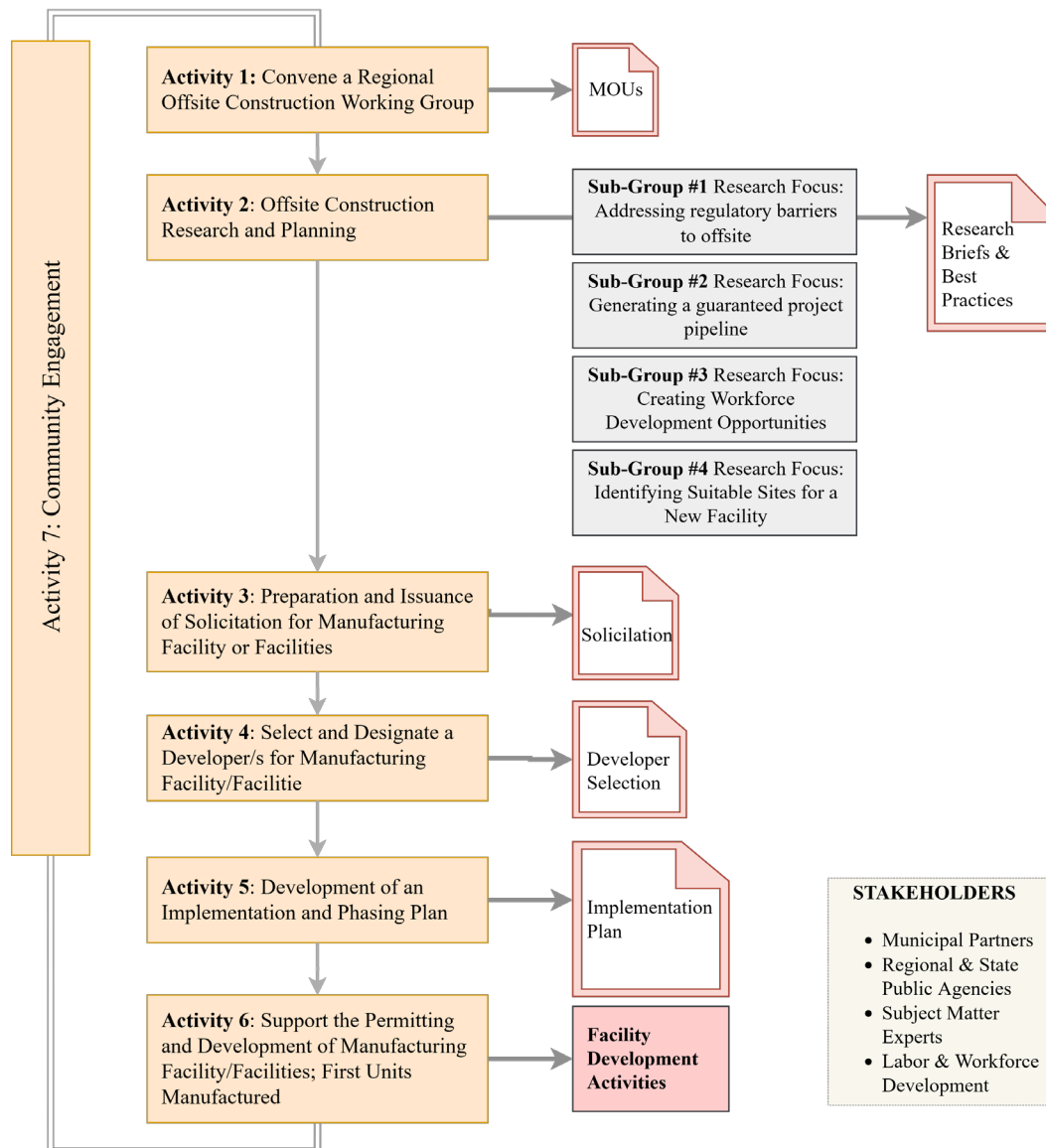
The siting of a manufacturing facility or facilities to advance housing production in the Boston metropolitan area will benefit low- and moderate-income persons, helping to achieve a national objective of the CDBG program, pursuant to section 101(c) of the Housing and Community Development Act of 1974, by increasing the region's capacity to efficiently construct housing units affordable to these households. While offsite construction methods are certainly not limited to affordable projects and have been more widely used to produce market-rate units in the region, the primary objective of this initiative will be to accelerate the production of housing units affordable to low- and moderate-income households by incentivizing the use of offsite construction methods. In our research, we found that the key to efficient, cost-effective production of affordable housing is replicability. We are proposing to work with a manufacturer or manufacturers to design basic modules that can be situated in a variety of contexts, including accessory dwelling units (ADUs), duplexes, small multi-family buildings (e.g., triple deckers or triplexes, townhomes, etc.) and other infill, "missing middle" housing typologies that allow for the addition of "gentle density" in neighborhoods across Greater Boston.

Our proposed plan includes completion of the following eligible activities as outlined in the grant NOFO:

- Planning and policy activities supporting affordable housing, including 1) developing new incentive programs for affordable housing development; 2) developing proposals to eliminate restrictions on lower-cost housing types such as prefabricated or manufactured homes; and 3) creating affordable housing planning resources for member jurisdictions.

- Development activities, specifically providing large-scale technical assistance to entities that lead to the development of affordable housing.

Figure X visualizes the grant activities to demonstrate the variety of tactics that will be employed to better understand and address the barriers and opportunities for increasing offsite construction in Greater Boston, in partnership with stakeholders, including municipalities, manufacturers, labor groups, and community-based organizations. More detail on each of the proposed activities is explained below.



**Activity 1: Convene a Regional Offsite Construction Working Group and Sub-Groups**

*Timeframe: January – June 2024*

*Major milestone/deliverable: Signed Memorandums of Understanding by June 2024*



MAPC will form a working group to guide implementation of the grant. Stakeholders will include state and municipal leaders and regulators, affordable housing developers (including non-profit), manufacturers, architects, researchers, housing planners, regional and state labor partners, and general contractors. Many of these partners were engaged during the grant application writing process, and those who have supplied letters of support or commitment for this project are assumed to be part of the working group in some capacity. MAPC will do additional outreach with member municipalities to see who may want to join in this effort, beyond those engaged during the grant application submission period.

Participating cities and towns will sign Memorandums of Understanding (MOU) with MAPC to formalize each municipality's commitment to studying and eventually committing resources to create a pipeline of affordable housing units (the mechanics of which will be developed as part of the planning process, see Activity 2). Supplementary partner agreements with other stakeholders (researchers, subject matter experts, other stakeholders) will be developed in this phase to specify roles and responsibilities.

In addition to forming the overall Working Group, MAPC will work with partners to assemble sub-groups to conduct research and planning activities outlined in Activity 2.

This task is a grant-eligible activity as it is a critical step in the development of a plan and proposal for an offsite manufacturing facility to support the production of affordable housing. As the regional planning agency for the 101 cities and towns of Greater Boston and expert convener of a variety of coalitions, MAPC is uniquely positioned, and has substantial capacity, to lead this effort in partnership with participating municipalities and other stakeholders.

### **Activity 2: Offsite Construction Research and Planning**

*Timeframe: January 2024 – July 2025*

*Major Milestones/Deliverables: Meetings of sub-groups; engagement activities with stakeholders; briefing papers that outline research findings and recommendations; amended Memoranda of Understanding to address unit commitments, resident employment guarantees, and other provisions that may result from this research phase.*

The second major activity constitutes the largest body of work associated with this initiative. The working group will convene the four sub-groups formed in Activity 1 to focus on different aspects of offsite construction technologies, including barriers to offsite construction and opportunities to generate good jobs producing affordable homes.

#### **Sub-Group #1 Research Focus: Addressing regulatory barriers to offsite construction**

*Members: municipal and state regulators, developers, manufacturers, lenders, etc.*

*Deliverable: briefing paper summarizing the sub-group's work and findings*

MAPC will convene a sub-group of regulators, developers, manufacturers, lenders, and others who often navigate the permitting process to site and install modular housing. The sub-group will

be focused on understanding the regulatory barriers – both regionwide and specifically in participating municipalities. Regulatory barriers may be found in local zoning codes, local and state building codes, permitting processes and requirements, or other controls. A focus group with construction lenders will increase understanding of financial regulations that may hinder the use of offsite construction methods. The sub-group will likely convene additional focus groups and conduct interviews to better understand regulatory conditions and opportunities for policy/regulatory interventions. Peer regions such as Chicago, Philadelphia, and San Francisco will be studied to understand where Greater Boston may be unique or similar and what case studies or best practices employed elsewhere may be applicable in Greater Boston. Findings from this research will be presented to the sub-group to inform recommendations for policy and regulatory change.

**Sub-Group #2 Research Focus: Generating a project pipeline**

*Members: municipal leaders and staff; state housing partners; community-based developers*

*Deliverable: Potential amendments to Memoranda of Understanding to reflect sub-group recommendations; memo summarizing the sub-group's work and findings*

MAPC will work with participating cities and towns to understand their unique housing needs and housing toolkits to support housing production. Cities and towns have a variety of different ways to influence housing production – through municipal housing authorities and affordable housing trusts; investments from Community Preservation Act funds; disposition of publicly-owned land, etc. MAPC will draw from existing municipal housing plans like housing production plans, neighborhood plans, or comprehensive plans – many of which have been drafted by MAPC – to understand the local context and generate a list of likely sites and projects that could proceed once a manufacturing facility is up and running.

State entities also have resources to encourage and influence housing production. MAPC will convene the sub-group to work with state and municipal leaders and staff to explore different options for creating a pipeline of likely or permitted projects that could serve as an incentive for a new manufacturing facility to locate in Greater Boston. The sub-group will explore smaller scale projects that allow for more on-the project learning, aiming to not negatively impact the existing employment systems. MAPC will work with individual municipalities to develop their pipeline and provide confidence of future construction. Potentially, state partners may identify opportunities to incentivize the facility or help cities and towns to meet build out their pipeline of units.

This sub-group will also discuss and recommend how to pace unit creation/installation to ensure housing production is increasing across all participating communities and how to track and evaluate unit placement. Tracking will be important to measure how this project advances fair housing and racial equity goals. Lastly, the sub-group will prepare guidance on how modular housing can be coupled with traditional construction methods to combat the overall housing shortage. This guidance could include identifying the types of development better suited for offsite construction components in the future, where prefabricated components could improve or enhance older housing stock, or what sites might be better suited for modular or prefabricated homes.

**Sub-Group #3 Research Focus: Generating Good Jobs for Boston Area Workers**

*Members: Representatives from Greater Boston Labor Council, Massachusetts Building Trades Council, Carpenters Union (North Atlantic States Regional Council), and/or other labor organizations; regional economic development planners and researchers; municipal leaders and staff; and other stakeholders, to be determined from subsequent outreach and engagement during Activity 1*

*Deliverable: Memo summarizing the sub-group's work, findings, and recommendations for minimum qualifications to be required of any manufacturing facility regarding jobs, wages, and benefits.*

MAPC and the participating municipalities are committed to securing good jobs, benefits, and worker protections for local residents. Modern advancements in alternative construction technologies and modern offsite construction techniques mean that today, this segment of the construction industry can provide good-paying jobs with workforce development and training. We have been actively researching workforce development models associated with manufacturing housing types to support the creation of jobs and job training for local residents. Examples of unionized facilities and fair labor agreements have been employed in other parts of the United States, and as close as New Hampshire, as well as abroad. MAPC will convene this sub-group to research all of these issues and emerging best practices, alongside a variety of labor and workforce partners and economic development professionals to understand challenges and opportunities to securing good jobs, wages, benefits, and protections for local workers manufacturing and installing modular housing in Greater Boston. We also hope to better understand how onsite construction has already been utilizing offsite or prefabricated components, as we understand this is happening in Greater Boston. Additionally, part of this research will look into the impacts of expanding this type of manufacturing on historically under-resourced groups like women, people of color, and people with less educational attainment. For example, while the traditional construction industry employs fewer women (only 9% of the workforce today), manufacturing jobs offer women more of a chance at economic prosperity (30% of manufacturing jobs are held by women). These nuances will be explored as part of this sub-group's research to more fully understand how these two industries – aimed at the same goal of producing more housing – can both thrive and offer economic opportunity for local residents. The sub-group will also hold focus groups with local workers – in both construction and trade jobs and manufacturing jobs – to better understand workforce challenges, opportunities, and needs.

The sub-group's work will culminate in recommendations for labor requirements to be included in any solicitation or incentives for the manufacturing facility. A briefing paper will also summarize the sub-group's engagement process, findings, and broader recommendations to set a precedent for creating good jobs at offsite construction facilities across Massachusetts. This research will be useful for regions across the country and complement existing research underway at HUD.

**Sub-Group #4 Research Focus: Identifying Suitable Sites for a New Facility**

*Members: Municipal leaders and staff; economic development planners and researchers*

*Deliverable: Memo summarizing the sub-group's work, findings, and recommendations for manufacturing facility solicitation*

MAPC has expertise in industrial/manufacturing sector research and recently completed a baseline study to better understand Greater Boston's industrial sector. The study, "[Land, Economy, Opportunity: Industrial Land Supply and Demand for Greater Boston](#)," assessed industrial space supply, industrial vacancy rates, industrial rents, and projected demand and will serve as a starting point for this sub-group's work to identify suitable sites for a new manufacturing facility. MAPC will review other regional and local economic development and industrial planning documents to guide and inform the group's work. Focus groups and interviews with owners and operators of manufacturing facilities will help the sub-group understand what site characteristics are most desired to best meet their needs and enable a facility to get online and running most quickly and efficiently. The sub-group will explore different options with partnering municipalities, including redevelopment of vacant industrial spaces, consideration of one large site vs. multiple smaller sites, etc. The sub-group will also explore the different incentives to include in the solicitation. The sub-group will make a recommendation to the overall Working Group about facility siting and work with the host municipality(s) and their legal counsel to prepare for Activity 4.

The findings and recommendations from these four sub-groups will be shared with the Working Group and will inform Activity 3.

This task is an eligible activity under this grant as it is a planning activity to develop a proposal for a manufacturing facility to support the production of affordable housing for low- and moderate-income households. MAPC and participating jurisdictions, including the City of Boston Housing Innovation Lab (which has already compiled substantial research in these areas), have the capacity and willingness to accomplish the research tasks associated with this activity.

**Activity 3: Preparation and Issuance of Solicitation for Manufacturing Facility or Facilities**

*Timeframe: July-December 2025; Responses due March 2026*

*Deliverable: Solicitation, may take the form of a Notice of Funding Opportunity (NOFO) and/or Request for Proposals (RFP)*

With the research and recommendations provided in Activity 2, MAPC will work with the Working Group and municipalities to prepare recommendations for solicitation that may include, but is not limited to, any of the following components: seed funding for a manufacturing facility (coming from this grant proposal), land, specialized financing arrangements, details about a development pipeline, and expedited permit pathways. The host municipality(s) will finalize and advertise the solicitation in accordance with their local procurement processes.

This task is an eligible activity under this grant as it seeks to incentivize the production of affordable housing for low- and moderate-income individuals by enhancing regional infrastructure for the creation of affordable housing units. As the regional planning agency for the

101 cities and towns of Greater Boston, MAPC is uniquely positioned, and has substantial capacity, to provide technical assistance to provide recommendations for the solicitation, in partnership with participating municipalities. The host municipality(s) will lead on issuing the solicitation, and all local/state procurement processes required will be followed. All of the partnering municipalities, in addition to MAPC, have access to legal counsel to help in preparation of the solicitation.

**Activity 4: Select and Designate a Developer/s for Manufacturing Facility/Facilities**

*Timeframe: April-May 2026*

*Deliverable: Legal documents to confirm selection of chosen developer*

Upon receipt of responses to the NOFO, RFP, or similar offering document, MAPC will work with the municipality(s) hosting the facility(s) to convene a review committee (formed with input from the Working Group and consisting of at least one designee from each participating municipality and stakeholder representatives) to select and designate a developer for the manufacturing facility or facilities. MAPC and the municipality(s) overseeing the procurement process with consult with legal counsel, as needed, to ensure all procurement and selection processes adhere to necessary federal and state laws and regulations.

This task is an eligible activity under this grant as it will facilitate the production of affordable housing units through the creation of infrastructure necessary for the development of affordable housing.

**Activity 5: Development of an Implementation and Phasing Plan**

*Timeframe: June 2026-December 2026*

*Deliverable: Implementation and Phasing Plan*

Activities 5 & 6 may occur simultaneously. The development of an implementation and phasing plan to permit, construct, and begin manufacturing modules will be created. MAPC and the host municipality(s) will work with the chosen developer, seeking input from the Working Group and sub-groups as necessary. The implementation and phasing plan will be shared with the Working Group and sub-groups for review and comment. The phasing will allow for a coordinated “unit ordering” process once the manufacturing facility is constructed. The Working Group will engage the selected developer/manufacturer to understand the facility’s capacity in terms of output and sequence production of housing units in alignment with projected demand and availability of sites.

As part of this Activity, MAPC, the municipalities, and (if they wish) labor organizations, will work to ensure that a package of wages, benefits, and worker protections are available to all workers to be employed at the facility, as well as workers charged with installing prefabricated modules on-site. MAPC will coordinate with local and regional workforce boards to help generate trainees and employees. MAPC will also coordinate with unions and other labor organizations to ensure that their members have the opportunity to seek employment at the facility, for on-site

installation, and to establish connections, if possible, between labor apprentice and training programs and the search process for workers.

As a testament to our commitment to workforce development and our ability to secure funding for impactful initiatives, it is noteworthy that in the past, MAPC partnered with the City of Boston as the lead applicant to successfully secure funding from the Economic Development Administration. This funding supported the establishment of the Greater Boston Regional Workforce Training System, encompassing three crucial Sectoral Partnerships (SPs): Health Care, Clean Energy, and Child Care. Through this initiative, we have catalyzed job creation within these sectors, forging pathways that lead individuals to attain family-sustaining wages, access employer-sponsored benefits, and pursue educational advancement. Serving as a convener and facilitator, MAPC has harnessed collaboration with diverse stakeholders to design and implement programs that not only address the immediate and evolving needs of employers but also empower participants to secure quality employment opportunities with the potential for upward mobility. Drawing upon the invaluable experience gained from this successful venture, MAPC is well-positioned to leverage our expertise and insights to enrich the workforce development activities outlined in this proposal.

Throughout this endeavor, we are committed to actively engage in outreach, identify training needs, and facilitate employment opportunities for the residents of the participating municipalities. Additionally, we are dedicated to ensuring that individuals from diverse racial backgrounds, women, and other marginalized groups who contend with higher rates of unemployment or underemployment are included in our efforts.

This task is an eligible activity under this grant as it is a planning activity to ensure the manufacturing facility is constructed and enabled to support and produce affordable housing for low- and moderate-income households.

**Activity 6: Support the Permitting and Development of Manufacturing Facility/Facilities; First Units Manufactured**

*Timeframe: June 2026 – December 2029*

MAPC, the host municipality(s), and the Working Group will support the developer through the permitting and development process in the municipality where the facility or facilities is/are proposed to be built. Based on our conversations with stakeholders and subject matter experts, we anticipate that a facility/facilities could be constructed (to the point of receiving a certificate of occupancy) as quickly as two years after gaining site control and appropriate financing.

We hope that the facility will be online and producing modular housing units by the end of 2030. There is a strong potential for 500 modular housing units being in the pipeline or constructed by the end of 2030, with each year after this grant period ends resulting in additional modular homes that can be sited and installed throughout Greater Boston over the following decade(s).

This task is an eligible activity under this grant as it will facilitate the production of affordable housing units through the creation of infrastructure necessary for the development of affordable housing.

### **Activity 7: Community Engagement**

*Timeframe: Throughout, beginning in January 2024*

*Deliverable: Community Engagement Plan; project webpage and newsletter with periodic updates to stakeholders and interested parties*

MAPC will work with the Working Group to undertake stakeholder mapping and create a community engagement plan that centers on inclusive and frequent communication with a variety of stakeholders. While the project is largely technical, MAPC and the Working Group will work to inform the general public about the project and the potential impact to addressing local affordable housing and workforce needs. A project webpage will be created, and a project newsletter will allow anyone to subscribe and follow the project progress. Focus groups, interviews, pop-up events, online forums, and other engagement strategies will be employed to hear from project stakeholders and local residents, particularly those who have been historically underrepresented (renters, people of color, people with lower incomes, veterans, seniors, people with disabilities), at key points in the process. The project budget includes gift card incentives or other forms of compensation for involvement of residents of protected classes in the grant project, including one-off engagement events or participation the Working Group or sub-groups. MAPC will work with partnering municipalities and their existing communication channels to further expand the project reach.

An important goal and outcome of the project's community engagement strategy will be to shift the perception of prefabricated or modular housing across different groups. MAPC and the Working Group will hold focus groups to gain a better understanding of how modular housing is perceived today. Depending on the feedback received during these focus groups, MAPC and the Working Group will design a public campaign to share information about recent innovations in the field and how this type of manufacturing can complement traditional construction methods, address housing challenges, and provide good jobs with benefits for local residents.

This task is an eligible activity under this grant as it is a critical step in the development of a plan and proposal for an incentive package to support the production of affordable housing, including the research products and recommendations to get to the point of issuing a NOFO and/or RFP. MAPC is uniquely equipped, and has substantial capacity, to lead this effort in partnership with participating municipalities and partners as MAPC, as a whole, and particularly the [Community Engagement Department](#), is dedicated to equitable, inclusive, and innovative engagement. The Community Engagement Department will help craft and implement the engagement plan, but they are also well-versed in evaluating and adapting engagement efforts as projects progress and will be prepared to do this for this project. This will ensure that the Working Group and sub-group is not only guided by technical information and research but also the feedback from people who will one day live in modular or prefabricated homes.

## Overcoming Barriers

The City of Boston's Housing Innovation Lab has spent the last few years researching alternative construction technologies to understand barriers and opportunities. Here, we outline findings from this research that we hope to address through this grant project, if awarded.

### ***Barrier #1: Construction Timelines. Modular Construction Has Potential to Reduce Construction Timelines and Waste, Both of Which Translate into Cost Savings***

A preliminary analysis completed by the Boston Housing Innovation Lab of construction budgets and timelines for mid-sized housing development projects in Boston, New York City, and Los Angeles concluded that modular construction has the potential to reduce construction timelines by 20-30%, since modules can be manufactured while foundations, masonry, and slab work happens simultaneously on-site. Shorter timelines translate to reduced carrying costs of construction financing.

Offsite construction methods also yield considerable reductions in construction waste. Fabricating modules in a controlled factory setting enables manufacturers to pass unused materials from one project to the next without the risk of physical degradation or added transportation costs. Because modular units are not exposed to the elements during construction, they also tend to be more durable than materials stored and assembled on an exposed project site. Offsite construction techniques are similarly efficient at the point of demolition. When a modular building needs to be moved or demolished, volumetric units can be disassembled and even reused on a different project site, potentially extending the lifespan of a building.<sup>29</sup>

### ***Barrier #2: Lack of Local Manufacturing Facilities. Siting a new facility within Greater Boston will decrease transportation and logistics costs.***

Transportation and logistical challenges increase as the distance between the manufacturing facility and module-placement site increase. Given the limited number of manufacturing facilities in Massachusetts, most modules that end up in Greater Boston are trucked across state lines. This presents challenges, as states enact unique requirements for trucking operations, meaning that rules for lead times and costs, allowable times of day for transport, escort car rules, etc. may differ. State requirements on dimensions, weight, and carrier connections of offsite construction product freight that can also impact the design and associated cost of offsite construction for housing.<sup>30</sup> Locating a facility in Massachusetts minimizes costs and coordination needs for transportation and logistics, leading to lower housing costs overall.

### ***Barrier #3: Local Opposition. Modular Construction Techniques Can Result in Less Disruption to the Local Neighborhood***

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<https://learn.aiacontracts.com/articles/modular-construction-is-a-sustainable-way-to-build/>

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Traditional construction methods typically result in significant disruptions to residents and businesses surrounding a given project site, ranging from air and noise pollution to scaffolding, sidewalk closures, and increased traffic congestion. Disturbances often continue for months, if not years on end, and can deepen community opposition to new housing development. Modular construction techniques lead to a substantial reduction in the amount of work to be completed on site, which in turn compresses project timelines and diminishes interruptions to neighborhood life. In some modular multifamily projects, ‘setting,’ or the assembly of prefabricated modules on site, can be completed within a matter of days or weeks.

## Lessons Learned

Modular and prefabricated housing is already being produced and sited in Greater Boston; however, it has been difficult to site a facility here to make it a more cost-effective, attractive option for developers to explore. Understanding these local limitations and experiences, this proposal is also informed by the successes and challenges of similar efforts undertaken in Minneapolis, Minnesota (Minneapolis Public Housing Authority), Boulder, Colorado (the City of Boulder), New York City (Capsys), and the San Francisco Bay Area (Katerra), as well as Boston’s study of local barriers to scaling offsite construction methods, as described below.

### *Minneapolis Public Housing Authority (Minneapolis, Minnesota)*

The Minneapolis Public Housing Authority has demonstrated the success of using modular construction for affordable housing through a scattered-site, multi-unit Family Housing Expansion initiative. The project will create 84 housing units across 16 small scale apartment buildings. Key ingredients to the success of this project include innovative financing and procurement strategies to make funds available earlier in the development process, features we intend to incorporate into our strategy. We will continue to engage with our colleagues in Minneapolis to learn from the challenges and successes of project implementation.

### *The City of Boulder, Colorado*

In Boulder, Colorado, the City spearheaded the construction of a modular manufacturing facility to support affordable housing production. Scheduled to be completed in early 2024, the factory is slated to produce 12 to 15 modular homes per year in the first few years. The homes will be high-quality all-electric structures powered by solar energy, and will be permanently affordable to low-, moderate-, and middle-income households. While the project continues to move forward, it has faced significant delays due to abutter opposition. Informed by Boulder’s experience, we’ve included substantive, meaningful community engagement as part of the research and planning process to designate potential sites for a facility or facilities. The passing of the state-mandated Section 3A MBTA Communities, which requires that nearly all the municipalities in the Greater Boston region have at least one zoning district that allows multi-family zoning by right also minimizes the impact of local opposition putting a halt to much needed affordable housing production located near transit and other dense, walkable neighborhoods.

*Capsys (New York City)*

In New York City, Capsys, a private modular manufacturer, opened a facility on leased land in Brooklyn to support construction of modular projects on nearby sites. The factory’s close proximity to project sites allowed modules to be produced and staged with significantly lower transportation costs (as compared to projects sourcing modules produced in nearby factories in Pennsylvania). While initially successful, Capsys was ultimately unable to continue its operations when the property lease ended, and the owner decided to pursue a different use for the site. Our strategy is informed by Capsys’ experience and the importance of having site control to support a manufacturing facility’s long-term sustainability. Our proposal will leverage publicly-owned land or public-private partnerships to limit challenges with term-limited lease agreements.

*Katerra (San Francisco Bay Area)*

The downfall of modular manufacturer Katerra illustrates the importance of selecting manufacturers familiar with the construction industry. Founded in 2015, startup manufacturer Katerra opened a facility in Tracy, California, with over \$2 billion in investments. The company ultimately went bankrupt before scaling up production, and the facility was acquired by Volumetric Building Companies in 2021. Industry experts posit that Katerra’s demise was caused by the fact that Katerra was first and foremost a technology company that was attempting to change construction, as opposed to a construction company that embraces the use of technology to accelerate production.<sup>31</sup> We will take this case study into consideration when preparing the RFP or NOFO and in ultimately selecting a manufacturer to develop a facility. By partnering with construction professionals throughout this process, we will also hopefully foster new opportunities for the two industries to learn and benefit from one another.

*Other Barriers and Strategies to Overcome*

The City of Boston has partnered with MOD X and Ivan Rupnik of Northeastern University, authors of HUD’s Offsite Construction Research Roadmap, to develop a pilot program to experiment with modular construction and test approaches to overcoming barriers to its success in Boston. As part of this effort, Boston has identified barriers as well as strategies to overcome them, summarized in the table below. The table is provided verbatim, with notes added that connect the barriers to this grant proposal.

<b>Barrier</b>	<b>How We Are or Propose to Address It</b>
Cost and logistics of transporting modules from the factory to the site	<i>Bring the factory closer to sites.</i> We are working with the Metropolitan Area Planning Council to identify surrounding jurisdictions who are interested in collaborating to address this issue. We are asking partners to commit to supporting a development pipeline of new housing modules to support a manufacturing facility in the

<sup>31</sup> <https://www.constructiondive.com/news/volumetric-building-companies-modular-builder-CEO-katerra-failure-spectacular/610565/>

	<p>Greater Boston area. <b>[Note: this is the PRO Housing Grant Proposal]</b> We are also issuing an RFP that supports the use of advanced construction methods for small scale developments (6-12 units). Through this RFP, we are encouraging respondents to propose approaches to address the cost and logistics questions.</p>
<p>Logistics of delivering and placing modules on the site</p>	<p><i>Identify staging sites and support coordination between police and transportation on the days when modules are being transported.</i></p> <p>Through our role as a land steward and our relationships with business associations and brokers, we have completed a preliminary analysis of temporarily available sites, including open air parking lots and sports fields throughout Boston, that could be used for this purpose. <b>[Note: this inventory will inform sub-group #4's work outlined under Activity 2.]</b></p>
<p>Concerns about the loss of local onsite jobs</p>	<p><i>Bring the factory closer to residents to support local jobs.</i> We are actively researching workforce development models associated with manufactured housing types to support the creation of jobs and job training for Boston residents. We also plan to start with smaller scale projects to allow us for more on-the-project learning not negatively impacting the existing employment systems. <b>[Note: this will inform sub-group #2 and #3's work outlined under Activity 2.]</b></p>
<p>Lack of experience/exposure to offsite construction methods among local developers, contractors, and architects</p>	<p><i>Encourage experimentation with offsite construction methods through designing RFPs with enticing incentive packages.</i> We are in the process of drafting an RFP for two infill sites where we are proposing the development of "missing middle" housing (6-12 units) affordable to households earning 80-120% of AMI. Through experimentation, we will learn what the challenges are in Boston for developing using offsite methods, and more of our developer community will gain experience using these methods. We have also had research fellows engaging with local developers, contractors and architects who have used offsite construction methods in other municipalities to garner best practices and invite them to help inform our programs. <b>[Note: lessons learned from this RFP will inform all grant activities.]</b></p>
<p>Lender unfamiliarity/hesitancy with offsite construction methods</p>	<p><i>Identify forward-thinking lenders and engage the lending community at large to provide education about financing schedules for modular projects.</i></p> <p>Engage the lending community to increase awareness and comfort with supporting modular construction projects. <b>[Note: lenders will be a noted stakeholder to engage under the grant project's community engagement plan, Activity 7. Sub-group #1's research will also highlight financial regulatory barriers and opportunities for reform.]</b></p>

Regulatory	<p><i>Engage all staff who process land use permits and approvals to increase awareness and familiarity with offsite building methods.</i> During the research phase, we have engaged with staff involved with approving land use permits, conducting design review, and permitting building plans and issuing certificates of occupancy to understand perceived barriers to the use of offsite construction methods. The use of offsite construction methods for our affordable projects will require changes to our standard construction monitoring and design review processes, and staff engagement will be critical to avoid costly mistakes/hiccups (since modular designs must be approved early in the process, and are not easily changed). <b>[Note: this will inform sub-group #1's work on removing regulatory barriers.]</b></p>
Perception	<p><i>Support the construction of high-quality modular projects.</i> Affordable projects supported by the Mayor's Office of Housing (either through monetary or land subsidy) will be held to the same high standards as projects using traditional construction methods. Our design team will work closely with architects and developers to ensure MOH design standards are met and that projects supported through our pilot projects are of high aesthetic and design quality. Construction monitoring staff will also monitor onsite construction, and may participate in offsite inspections. <b>[Note: this will be included as a potential goal/outcome under Activity 7, community engagement plan, to shift the perception across different audiences.]</b></p>

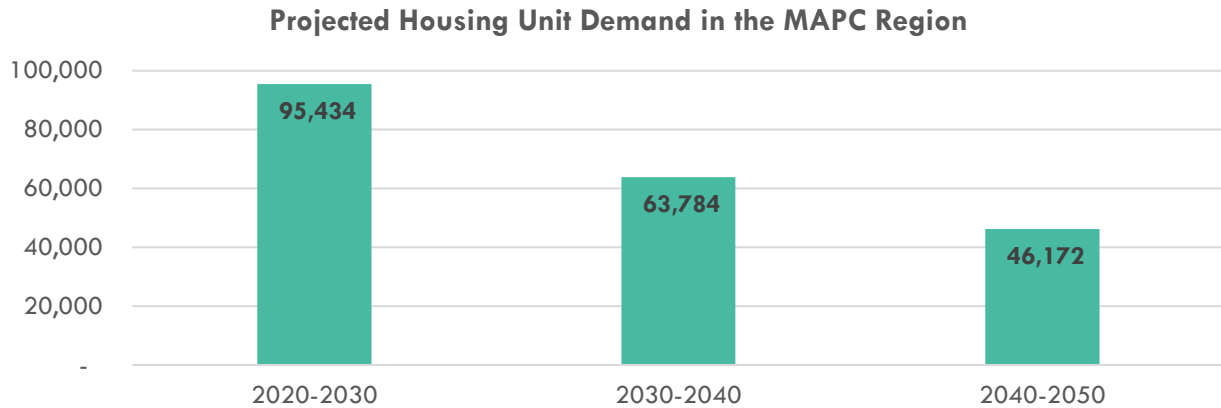
**Alignment with Existing Planning Initiatives**

Incentivizing the use of offsite construction methods through the siting of a nearby manufacturing facility aligns with a variety of existing planning efforts, helps the region plan for expected population and household change, and is consistent with our State and local land use, sustainability, economic development, and equity and inclusion initiatives.

***Planning for expected household change***

To inform state, regional, and local planning, MAPC prepares forecasts of population, households, and employment by sector out to the year 2050. Regional household projections include details on households by age, number of children, workers, and income. The projections require assumptions about many different factors, ranging from local land use regulations to federal immigration policy. The projections are intended to represent a “business as usual” future that assumes recent demographic, economic, and development activity continues a similar track over the next few decades. Under these assumptions, by the year 2050, the MAPC region will need 200,000 new homes to accommodate population growth. Nearly half of that demand will occur by 2030. Because of the “business as usual” assumptions, this is a bare minimum number. It is

expected to grow with more welcoming national immigration policies and removal of zoning barriers under Section 3A MBTA Communities (multi-family zoning). As production increases and housing prices lower, more people may also choose to move to the Greater Boston region due to high quality of life and access to good jobs. Given this housing unit demand, it is imperative that municipalities in the Greater Boston region explore all avenues to efficiently produce quality and affordable new housing. This proposal, by exploring offsite construction as a complement to traditional construction methods, can help us meet our housing need.



***Consistency with Land Use and Transportation Initiatives***

By increasing our region’s capacity to construct new housing units more efficiently, our approach is in alignment with local and regional planning initiatives, including the aforementioned State adoption of Multi-Family Zoning Requirements for Communities near Transit Stations (MBTA Communities), which mandates that communities with MBTA transit stations or nearby transit access must establish multi-family zoning districts in areas near these stations to promote higher-density housing development in transit-accessible locations. Removing zoning barriers like this is one significant step towards meeting housing production goals, but we also must think creatively about how to fast-track production of quality and safe housing in these smart growth locations. This grant proposal offers a solution to work alongside our traditional construction methods for producing new homes.

Under Activity 2, when assessing and determining a project pipeline for a new manufacturing facility, MAPC and the participating municipalities will be focused on identifying sites that have access to transportation options and other neighborhood amenities like parks, public services, and jobs. The project pipeline will also consider a community’s current housing stock, documented housing need, and municipal population and household projections. Housing options that are in short-supply in a community – such as smaller, more affordable units for aging residents or family-sized subsidized apartments for families earning lower incomes – can be targeted for the project pipeline.

***Consistency with Environmental Initiatives***

Scaling up the use of offsite construction technologies for housing construction will advance regional and local environmental initiatives. MetroCommon2050, the regional plan, calls for more energy-efficient buildings and climate-smart growth. Aligned with state goals, the region aims to make deep cuts in greenhouse gas emissions by 2030 and reach net zero emissions by 2050. Furthermore, the Metropolitan Mayors Coalition has formed a Climate Task Force to coordinate regional and cross-governmental work to prepare for climate change. Participating municipalities recognize that housing and climate goals overlap and see the opportunity for this project to advance both goals. An example of how cities are connecting climate and housing planning is Boston's Climate Action Plan, released in 2019, which charts a clear course for reaching the City's 2030 and 2050 carbon reduction goals. Boston's buildings account for approximately 71 percent of our community carbon emissions and represent the greatest opportunity for emissions reductions. Decarbonizing Boston's building sector depends on shifting to zero net carbon (ZNC) new construction by 2030 and retrofitting and electrifying at least 80 percent of our existing buildings over the next 30 years. Advances in building materials and offsite construction technologies hold great promise in helping the City, region, and state reach its climate goals.

#### **Consistency with Economic Development Objectives**

Siting an offsite manufacturing facility in Greater Boston will generate economic development opportunities through the creation of quality jobs and locally produced building components. Jobs in manufacturing facilities have the potential to offer better working conditions than those on traditional stick-built construction projects due to their climate-controlled nature. Modular construction is generally regarded as a safer method than traditional construction methods; a 2021 peer-reviewed academic journal article by Gilsu Jeong et al., reports, "*there is also an opportunity to reduce safety accidents [in manufacturing facilities] because [they are] not profoundly affected by external environmental factors, such as rainfall and wind. Workers can become familiar with the workspace and work because they perform repetitive tasks in manufacturing factories.*"<sup>32</sup>

The sub-group focused on identifying appropriate site(s) for a new facility will rely on state, regional, and local economic development policies and plans. Many of the cities and towns throughout Greater Boston have vacant industrial sites that are ripe for redevelopment. MAPC will work with its member municipalities to identify and study industrial redevelopment opportunities that are located in areas with good transportation access, keeping in mind that freight access is important for transporting modules, while transit access is also important for workers. If necessary, MAPC will facilitate conversations with the facility developer and participating municipalities to include transportation demand management strategies within the NOFO and/or RFP to ensure traffic to and from the site is managed effectively and does not negatively impact the community.

#### **Consistency with Equity and Inclusion Initiatives**

Our proposal most directly advances equity and inclusion initiatives by:

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<sup>32</sup> <https://www.tandfonline.com/doi/full/10.1080/13467581.2021.1877141>

- Creating new jobs with rich benefits for local residents, especially those who have historically not had access to such opportunities. With labor partners, we hope to partner and continue to diversify local workers to ensure the local workforce reflects the diversity of the community in which they work.
- Expanding the share of affordable housing, particularly in high opportunity neighborhoods to make strides towards decreasing the racial and social wealth gap.
- Recognizing transportation equity as a key consideration for siting new facilities and jobs.

To further provide an example of how this project and its associated workforce development and labor components are consistent with equity and inclusion initiatives, we provide some local context from the City of Boston. The proposal's goal to create jobs will allow local construction projects to satisfy, or exceed, the requirement for job hours completed by Boston residents, women, and people of color as established by the [Boston Resident Jobs Policy](#). Under Activity 2, MAPC will research municipal equity and inclusion policies around economic opportunity to ensure labor agreements and employment considerations align with regional and local commitments to racial and social equity.

Research indicates that the construction industry continues to grapple with workforce availability challenges, which have resulted in rising costs in housing design and construction (Nguyen et al., 2020). Off-site construction has emerged as a recognized approach to tackle the diminishing labor force issue by optimizing labor efficiency and productivity (Smith, 2016). Research also indicates that presently nationally, nine percent of the construction labor force comprises women, in contrast to the manufacturing sector, where a 30-percent female workforce is more typical. Offsite manufacturing holds promise for drawing in a workforce that has been less inclined to enter the construction industry as a whole. Further investigation is necessary to ascertain effective strategies for recruiting female and minority demographics into offsite manufacturing employment, thereby enhancing diversity within the labor force. Our strategy includes engagement methods to bring key stakeholders together to identify challenges and opportunities, adding to the local and national body of research around off-site construction.

Furthermore, our proposal will allow our region to accelerate the pace of affordable housing production, allowing for a greater number of low- and moderate- income households to secure safe, stable housing in the region. Through Activity 1, MAPC will reach out to a variety of cities and towns to share information about this project and encourage participation to expand affordable housing across the region. Outreach efforts will hone in on the importance of expanding production of affordable housing in areas with high opportunity.

Lastly, when carrying out Activity 2 and assessing potential sites for a new facility(s), transportation equity will be considered. Sites that are accessible by public transportation will be prioritized to expand access to those who may not be able to afford a personal vehicle or expensive transportation costs. Offsite construction jobs may be viewed as more reliable for

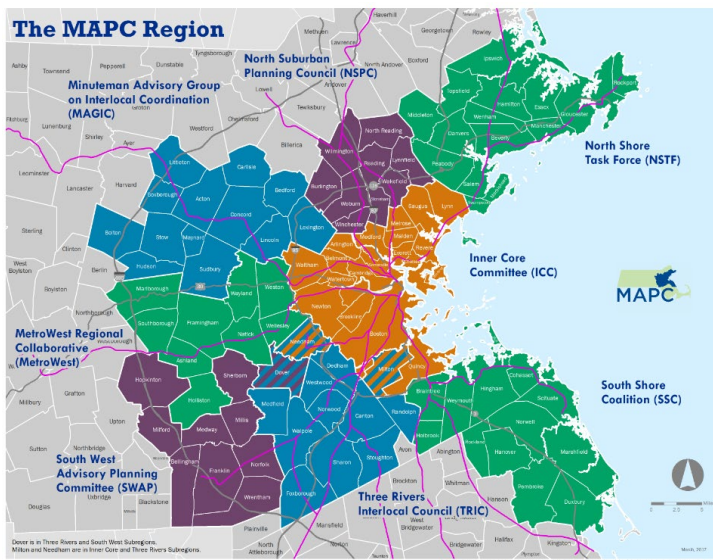
workers in this regard, since onsite construction sites may or may not be easily accessible and may require workers to pay higher transportation and parking costs to commute to and from work.

***Simplification and harmonization of land-use regulations across multiple municipalities***

Research into regulatory barriers under Activity 2 will highlight opportunities for regulations to be amended to support modular or prefabricated construction. Particularly, the recommendations will encourage municipalities to adopt similar regulations when possible. Engaging state officials in this conversation can also influence statewide regulations such as building codes.

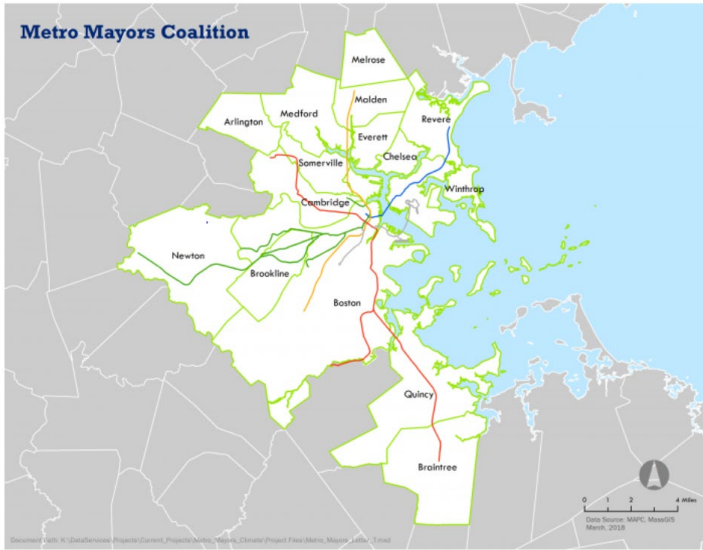
**Geographic Scope**

The geographic scope spans multiple geographies. Research and planning activities will focus on the MAPC region, comprised of 101 cities and towns. When possible, MAPC will conduct outreach and engagement through the different geographic subregions, shown in the below map. There will likely be opportunities to apply recommendations and findings across the State of Massachusetts, and state partners involved in the project will help advance these, when possible.

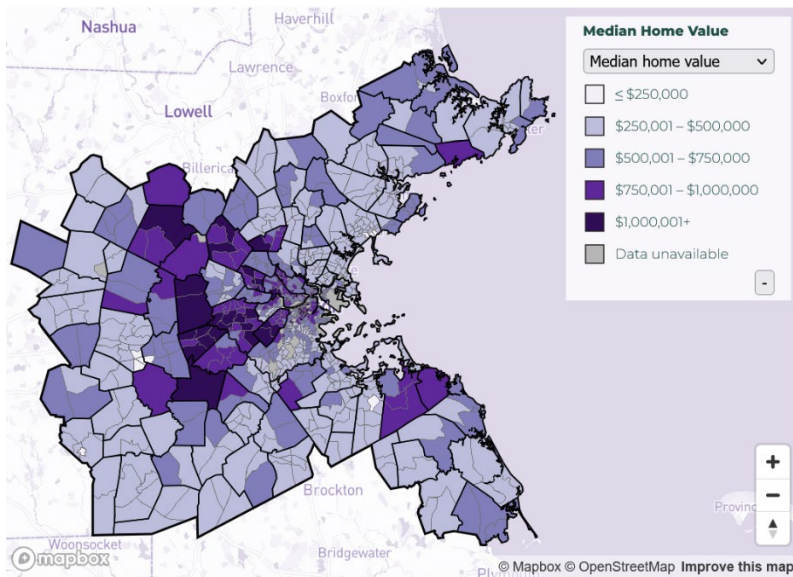


Siting of the new manufacturing facility(s) is likely to occur in one of the cities or towns participating in the Metro Mayors Coalition Housing Task Force (see below map). Housing production is most likely to occur in one of the Housing Task Force communities, but cities and towns interested in participating in this project will not be limited to this group of communities. Outreach under Activity 1 will refine the geographic scope for subsequent grant activities.

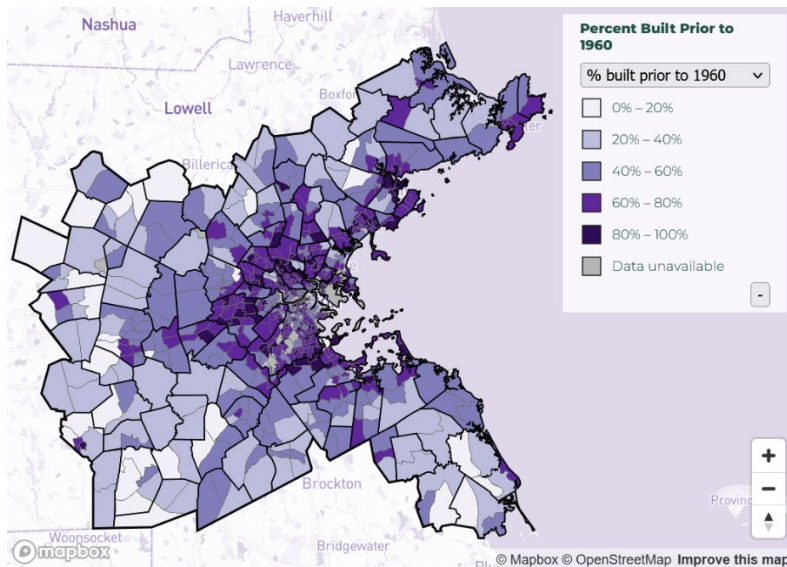




Producing more housing and finding ways to lower costs and deliver new homes more quickly benefits all of the communities in Greater Boston. As a region, housing is gravely unaffordable (see map below showing median home prices in the MAPC region) and options are severely limited due to exclusionary zoning policies and local opposition to new growth. This project seeks to change public perception of modular and prefabricated housing and show how it can benefit communities and provide much needed affordable housing to low- and moderate-income households.



Research activities embedded in this project will focus on how modular construction can help address the region’s aging housing stock (shown in map below). and create new housing choices as preservation and infill development/redevelopment takes place.



## Key Stakeholders and Engagement

As this grant application was prepared, MAPC conducted outreach with cities and towns, partners in labor and workforce development, state housing partners, and subject matter experts in modular and prefabricated construction methods. The full list of partners engaged as this proposal was developed is listed below [to be completed following public comment period]. Letters of support have also been submitted [to be completed following public comment period].

If awarded, one of the first grant activities will be doing an in-depth stakeholder mapping exercise with partners to form a Working Group. Once an initial Working Group is formed, MAPC will facilitate another round of stakeholder mapping to potentially expand the Working Group, if necessary, but more importantly, the stakeholder mapping activity will inform a detailed community engagement plan that will be adjusted throughout the project to ensure grant activities are carried out transparently and inclusively. The following list denotes potential stakeholders who are likely to be engaged through this grant project.

- Persons with unmet housing needs
- Residents of public or other affordable housing units
- Persons from all protected class groups under the Fair Housing Act
- Regional and State public agencies that provide funding or technical assistance for housing, transportation, and social services (e.g., Massachusetts Housing Partnership, MassHousing, MassDevelopment, Executive Office of Housing and Livable Communities, CHAPA, etc.)
- Community organization such as community development organizations and other community-based groups
- Private and non-profit housing developers
- Architects

- Community Land Trusts
- Housing Authorities
- Advocacy organizations
- Owners of modular and prefabricated manufacturing facilities
- Labor organizations
- Construction industry workers
- Economic development organizations
- Workforce development organizations
- Subject matter experts and researchers focused on offsite construction technologies

To solicit input from and collaborate with stakeholders in developing this application, MAPC shared the application via a public notice on its website, published a blog post, and held a public hearing. The public hearing was held via Zoom on Monday, May 23 at 3pm. MAPC also shared the application with members of the Metro Mayors Coalition Housing Task Force, labor partners, state housing partners, and other allied organizations. The proposal was also shared with subject matter experts focused on offsite construction research. MAPC met individually with several of these different stakeholders to help shape this proposal, and MAPC looks forward to continuing to refine the proposal via the PRO Housing Action Plan process, if awarded. Particularly, early engagement with residents of affordable housing will need to be conducted as part of the Action Plan process.

The following section outlines the feedback received during the public comment period and how MAPC adjusted the project proposal to address this feedback. **[to be completed following public comment period]**

### **Affirmatively Furthering Fair Housing**

As has been demonstrated earlier in this application, Massachusetts is a leader in adopting policies to advance the production of affordable housing and in allocating funds to affordable housing production and preservation. Massachusetts, MAPC, and participating municipalities are committed to affirmatively furthering fair housing. MAPC has worked with many of the participating municipalities to advance local fair housing initiatives. Our proposal seeks to overcome remaining barriers to the production of affordable housing for low- and moderate-income households by tackling both the time it takes to produce new housing units, the cost of building new units, and the disruptive nature of traditional construction methods and impacts to neighboring residents and property owners. By accelerating the pace at which new affordable housing units can be constructed and placed in service, our proposal will increase the supply of affordable housing units in Greater Boston. New units will be marketed and leased in accordance with Fair Housing and AFFH policies in place under each of the participating municipalities (e.g., through the lottery process), which is designed to ensure opportunities are available for underserved communities.

### ***Promoting desegregation***

Sadly, because of decades of under-production and loss of rent control policies, the majority of cities and towns across Greater Boston have become “high-cost” communities where it is hard for households earning moderate or low income families to find affordable housing. Affordable housing opportunities in all neighborhoods across Greater Boston are desperately needed. Due to the wide disparity in income and net wealth between white and BIPOC households, neighborhoods lacking housing units affordable to low- and moderate-income households are widely inaccessible to many BIPOC households, fueling segregation. Our proposal promotes desegregation by planning to accelerate the pace with which new affordable housing units can be produced and reducing the cost to construct them. Furthermore, by producing new housing in a manner that is less disruptive, new affordable units can be placed on infill sites across the region, providing affordable housing opportunities in well-resourced areas that would otherwise be unaffordable and inaccessible to low- and moderate-income households.

### ***Expanding housing choice in new parts of the region***

Our proposal is designed to ensure that affordable housing units are not concentrated in low-opportunity areas by accelerating the pace at which affordable housing units can be produced and distributed throughout Greater Boston. By producing new housing in a manner that is less disruptive, new affordable units can be placed on infill sites across the region, providing affordable housing opportunities in well-resourced areas that would otherwise be unaffordable to low-and moderate-income households and where neighboring property owners are more likely to oppose new development based on the aforementioned research on neighborhood participation at public meetings. As previously mentioned, this proposal is complemented by the significant zoning reform that is happening concurrently across Greater Boston, where all cities and towns must remove zoning barriers to multi-family housing. These zoning changes will be adopted by 2025 and will make infill development and associated permitting processes much more efficient, due to the removal of zoning barriers.

### ***Addressing unique housing needs***

Offsite construction methods are effective at developing housing units to accommodate the unique housing needs of members of protected class groups because while the greatest benefits of offsite methods are realized through standardization of unit specifications, individual customization is part of the design process. As such, units can be designed and built to accommodate the needs of protected classes.

### ***Implementation of fair housing plans***

As a regional planning agency, MAPC does not prepare a fair housing plan. MAPC is committed to fair housing, as evidenced in other sections of this proposal. As part of this project, the participating municipalities will supply their fair housing plans under Activity 2 and the Working Group and sub-groups will work to incorporate fair housing recommendations into overall project recommendations to continue commitment to affirmatively furthering fair housing.

### ***Mitigating Risk of Displacement***

The use of offsite construction methods would allow us to densify our supply of affordable housing in the region, reducing displacement risk. Our proposal does not directly call for the demolition or rehabilitation of housing units, and we are committed to ensuring that our proposal does not result in the displacement of residents. MAPC will work with the participating municipalities to engage residents of neighborhoods where units may be constructed, to understand displacement concerns and offer solutions to minimize impacts of neighborhood change. The use of modular construction reduces displacement by decreasing the disruptive nature of new construction projects on sites with existing residential units, removing the need for existing residents to move during construction.

### ***Meeting housing needs for residents with disabilities***

Offsite construction methods are effective at developing housing units to accommodate the unique housing needs of people with disabilities because while the greatest benefits of offsite methods are realized through standardization of unit specifications, individual customization is part of the design process. As such, units can be designed and built to accommodate the needs of people with disabilities to ensure compliance with the Americans with Disabilities Act (ADA) and accessibility requirements under the Fair Housing Act. Units with design features to accommodate people with disabilities can be manufactured separately from units with standard specifications, the details of which can be arranged with the selected manufacturer. By accelerating the pace at which we can produce new housing units in the region and reach the density of housing units on infill and transit-oriented development sites in close proximity to transportation and supportive services needed to support diverse populations, our proposal will support independent living. Since we anticipate that affordable units produced by the manufacturing facility will be subsidized using City, State, and Federal funds, units will be designed and marketed in accordance with City, State, and Federal regulations.

### ***Implementation of Project***

In terms of siting a manufacturing facility or facilities in the region, community and stakeholder engagement throughout all phases of project planning and implementation will be critical to minimize delays and barriers posed by litigation, environmental review, and regulatory/permitting processes, including design review. To minimize hurdles imposed by local permitting requirements, a key activity in our proposal includes studying and streamlining regulatory and permitting pathways for projects developed using offsite construction methods. As a state with an approved third-party inspection infrastructure for plan review and inspection of offsite components, Massachusetts has a favorable regulatory environment for offsite construction methods. If a manufacturer has been approved by the State, so long as the modules have a State stamp in them, additional inspection/approval by the local jurisdiction in which the modules are placed is not required. As such, and as has been confirmed by conversations with stakeholders and subject matter experts, communication between approval agencies and education about offsite construction methods is the most important remaining hurdle to ensuring a smooth process to shepherd projects through the approvals process.

### ***Equity-informed proposal***

MAPC and its partners have committed to advancing racial and social equity. Greater Boston is rich with research, resources, and other educational materials that informed this proposal and our general approach to planning projects overall. Namely, MAPC's State of Equity Policy Agenda is a touchstone for MAPC's work to reduce inequities. Our proposal is also informed by conversations with Boston's Office of Equity and Inclusion, specifically around the development of a strategy to ensure that job opportunities created by the manufacturing facility are equitably distributed to women and people of color.

***Supporting minority-, women-, and veteran-owned businesses during the housing production process***

Each of the participating communities have local goals and strategies in place to support minority-, women-, and veteran-owned businesses. As part of Activity 2 research, MAPC will collect these policies to inform labor recommendations and standards for the future developer of the manufacturing facility(s). To provide one municipal example, the [Boston Resident Jobs Policy](#) and [Women and Minority Business Owned procurement requirements](#) will be used as model requirements for ensuring that minority-, women-, and veteran-owned businesses are engaged and supported. In developing these W/MBE procurement requirements, the City's Equity and Inclusion Unit engaged hundreds of small and local W/MBE businesses to understand the challenges and barriers that confront them in operating and participating in City contract opportunities. The City ultimately contracted with a consultant to prepare an in-depth disparity study, which found substantial disparities between the availability and utilization of minority- and woman-owned business enterprises in City procurement. As a result, the City established overall annual aspirational goal of 25% minority- and woman-owned business enterprise utilization on discretionary contract and procurement spending, and methods of tracking progress towards these goals.

***Other equity considerations for Greater Boston***

Research indicates that off-site construction offers a substantial potential to diversify the construction workforce by including women and individuals with fewer skills or employment challenges. This approach has the potential to yield considerable advantages for both families and the environment, including reduced commuting and enhanced job stability. However, there is a substantial knowledge gap that necessitates further research to ascertain optimal methods for recruiting, retaining, and training in this field that we seek to address and research in this proposal.

***Evaluation***

We will evaluate the effectiveness of our effort by closely monitoring the number of affordable units produced by the facility (by affordability tier) and the location of where these units are placed. With this information, we will be able to ensure that our effort is effectively allowing for the distribution of affordable housing units across the region, increasing access to high opportunity areas for low- and moderate-income households.

Specifically, we will evaluate the effectiveness of our effort to advance racial equity by closely monitoring the number of affordable units produced by the facility (by affordability tier) and the

race and ethnicity of residents of those units. With this information, we will be able to ensure that our effort is effectively expanding the supply of housing in high-opportunity areas affordable to low- and moderate-income households, the majority of which are BIPOC households.<sup>33</sup>

## Budget and Timeline

MAPC requests a total of \$6M over six years. The amount requested by activity is listed below.

Activity		Estimated Timeframe	Requested Amount
1	Convene a Working Group and Sub-Groups	Jan. – June 2024	\$100,000
2	Research and Planning with Four Sub-Groups	Jan. – July 2025	\$500,000
2.1	Development Pipeline – Grant Funds to match municipal investment (\$300,000 per participating municipality, up to 9 municipalities)	Jan. – July 2025	\$2,700,000
3	Preparation and Issuance of Solicitation	July – March 2026	\$150,000
3.1	Financial Incentive for Solicitation	July – March 2026	\$2,000,000
4	Solicitation Review and Selection	April – May 2026	\$50,000
5	Development of Implementation and Phasing Plan	June 2026 – Dec. 2026	\$150,000
6	Support Entitlement/Development of Facility	June 2026 – Dec. 2029	\$100,000
7	Community Engagement	Jan. 2024 – Dec. 2029	\$250,000
<b>Total Requested Grant Funds</b>			<b>\$6,000,000</b>

MAPC, in its role as a regional planning agency that often provides public consulting services to municipal clients, is well-versed in creating realistic and cost-effective budgets to effectively carry out planning and research activities. The bulk of the grant funds will be used as leverage for the incentive package.

If HUD awards a different dollar amount than requested, MAPC is prepared to adjust the scope of work. The minimum funding amount that would allow MAPC and partner communities to carry out this work successfully is \$3M dollars. This would allow for all of the research components to move forward and provide a significant financial incentive for the facility solicitation. If HUD awards the full requested amount, this increases the likelihood of more units being constructed, as it allows for participating municipalities to leverage HUD grant funds against their own local resources to increase the project pipeline aspect of the incentive package.

<sup>33</sup> 67% of households in Boston earning 80% of AMI or below are BIPOC households. Source: 2017-2021 American Community Survey 5-Year Estimates, PUMS; HUD 2021 income limits.

## Capacity

MAPC is experienced at managing large federal scopes comparable in size and scope to this project. MAPC received and successfully managed a \$4M HUD grant under the FY2010 Sustainable Communities Regional Planning Grant program. Since that time, MAPC has been awarded large federal grants related to public health, emergency preparedness, economic development, and transportation. MAPC also is the designated Economic Development District for Greater Boston under the Federal Economic Development Administration and regularly coordinates to share and track federal grant opportunities through this program. MAPC's Finance, Legal, and Administrative teams are prepared to administer and track all necessary reporting requirements of this grant program. MAPC is also currently in the process of creating a new position solely to manage administration of federal grants.

Beyond the financial and administrative management of the grant reporting requirements, MAPC's housing team, and specifically the Manager of Housing and Neighborhood Development, has expertise in project management and will lead implementation of the proposed activities, managing the day-to-day work and partner communications. The Manager of Housing and Neighborhood Development will work closely with the entire MAPC housing team, which collectively, has experience in federal grant project management, housing planning and policy development, land use regulations, long-range or comprehensive planning, public land disposition for affordable housing, architecture, urban design, development financing (both for-profit and non-profit), and community engagement. Several other MAPC departments will be part of the overall project team:

- Members of MAPC's Land Use team – particularly the Economic Development Division – will be part of the MAPC project team and will work closely with the project manager on grant activities related to workforce development and facility siting. MAPC's legal counsel has extensive public procurement expertise and will be consulted throughout the grant project to ensure all activities comply with applicable state, regional, and local policies and practices.
- Members of MAPC's Data Services team will coordinate data collection and analytical services to support research and planning activities.
- MAPC's Communications team will build a project webpage, project newsletter, and communication materials to share information with stakeholders and interested parties throughout the duration of the project.
- MAPC's Community Engagement team will play a significant role in crafting a community engagement plan, implementing strategies to engage different stakeholders, and evaluating how engagement is going throughout the process. Based on evaluation of engagement, the community engagement plan may evolve to ensure a variety of different perspectives are heard through the project.

MAPC is equipped to carry out this project because MAPC is well-versed in convening a variety of stakeholders to research opportunities and chart paths to implementation. The funding



provided by this grant to act as an incentive for a new facility(s) is an opportunity that many cities and towns individually would not be able to offer.

The success of the project does depend on cities and towns working together to assess and present a pipeline of projects to include in an incentive package for the NOFO and RFP. The proposal builds in significant amount of time for MAPC and partnering communities, along with partners at the state, to explore this idea and find different solutions that both 1) work for the participating cities and towns and 2) provide enough of an incentive to attract responses from developers.

### ***Partner Capacity***

Participating municipalities will be key partners in this work. As part of the Memorandum of Understanding, each participating jurisdiction will be responsible for identifying the relevant staff members with the needed skills and knowledge to advance this effort. This is presumed to include but is not limited to director-level decision makers, land use and development review planners, inspection staff, GIS specialists, and data analysts. Our ability to successfully design an enticing solicitation to attract a manufacturer depends on the willingness of jurisdictions in our area to work with us to identify a pipeline of projects that could be committed to being produced using the selected manufacturer. We expect to execute a preliminary MOU at the outset of the project that may be modified following completion of our research activities (at which point each jurisdiction will have a clear sense of the projected pipeline of projects).

Massachusetts also has a strong network of housing partners at the state level who we plan to engage in this project. The Executive Office of Housing and Livable Communities, Massachusetts Housing Partnership, and MassHousing are just a few examples of allied organizations who bring housing development and economic development expertise. We anticipate their participation throughout the process, in various capacities from serving on the Working Group to participating in sub-group research activities.

### ***Experience Coordinating Partners***

As a regional planning agency, MAPC views regional collaboration and convening at the heart of its mission. MAPC works with municipal partners on local technical assistance projects – more than 100 projects are undertaken by the agency each year. MAPC also convenes subregional groups of municipal staff and officials on a regular basis to share best practices, challenges, and opportunities for collaboration. MAPC also manages several different coalitions of municipal, public, non-profit, and private partners to advocate for policy and legislative positions. An example of one such group is the Metro Mayors Coalition Housing Task Force, which is managed by the MAPC Housing Team (project manager of this grant).

### ***Application Preparation***

This application was prepared by a team of MAPC staff and City of Boston staff. The grant application project team included:

<b>Metropolitan Area Planning Council – Staff</b>
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Marc Draisen, Executive Director
Lizzi Weyand, Deputy Executive Director
Andrea Harris-Long, AICP, Manager of Housing & Neighborhood Development
Sukanya Sharma, Regional Planner II
<b>City of Boston – Staff</b>
Mayor Michelle Wu
Sheila Dillon, Chief of Housing
Jessica Boatwright, Deputy Director of Neighborhood Housing Development Division
Paige Roosa, Director of the Mayor’s Housing Innovation Lab
Karina Oliver-Milchman, Deputy Director of Policy Development and Research

The staff and decision makers from both organizations coordinated closely throughout the development of this grant proposal, and MAPC plans to continue working closely with City of Boston staff and leadership if the grant is awarded. The grant application writing process demonstrated an excellent partnership between these two organizations, as the PRO Housing grant preparation period was short and required much coordination and collaboration. MAPC looks forward to bringing this team together and expanding to more partners to implement the grant activities successfully.

***Experience with civil rights and fair housing issues***

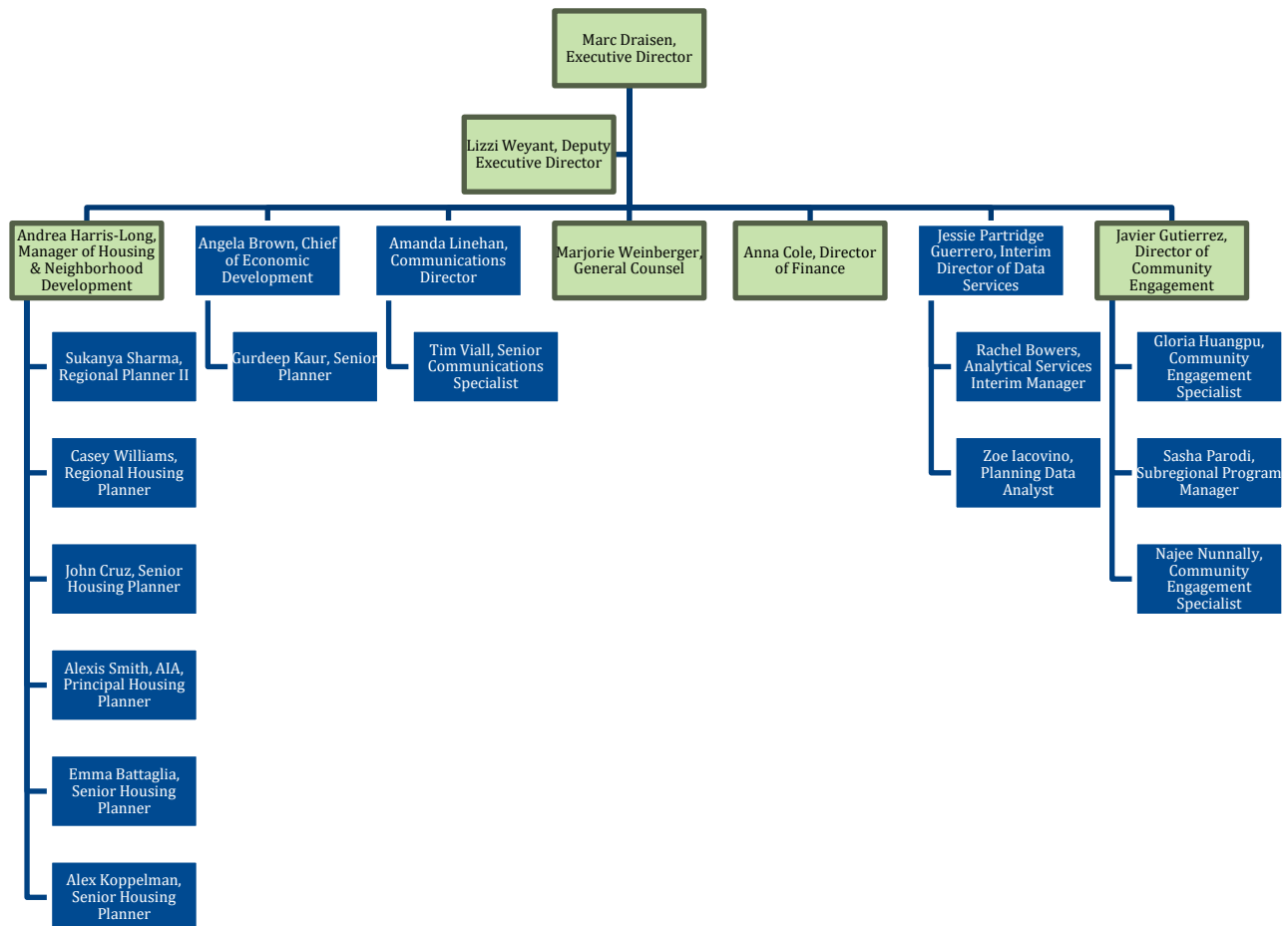
MAPC advocates for fair housing issues and supports these activities in a variety of ways in Greater Boston. MAPC sits on the Fair Housing Committee coordinated by Citizens’ Housing and Planning Association (CHAPA), a leading housing advocate across the state of Massachusetts. CHAPA’s Fair Housing Committee brings together groups like MAPC and other stakeholders from across the state to intentionally advance fair housing and serve as a place to share information, work on legislation, coordinate efforts, and educate ourselves.

MAPC also regularly works with data to analyze racial and economic disparities. MAPC’s Housing Team regularly analyzes housing metrics by race and social categories to understand where disparities might exist. When identified, these are shared with municipal clients of technical assistance projects so MAPC can help them create policy and programmatic recommendations to diminish racial and economic disparities. MAPC published a [State of Equity in Metro Boston report, with related Regional Indicators](#), in 2017 that analyzed racial and economic disparities and highlighted policy interventions needed to make the region more equitable.

Many cities and towns in Greater Boston recognize the vast racial and social disparities that exist in our region, and many have begun taking action to better understand and address these. For example, the City of Boston regularly compiles data to analyze racial and economic disparities to ensure compliance with policies designed to eliminate them, including the [Boston Resident Jobs Policy](#) and [Women and Minority Business Owned procurement requirements](#). The City of Boston’s [Fair Housing Commission](#) enforces the City’s Fair Housing Regulations. The following resources provide a few recent examples of resources produced by the Policy Development and Research team in the Boston Mayor’s Office of Housing:

- Analysis of BIPOC Households by AMI:  
[https://docs.google.com/spreadsheets/d/1nK\\_erOBJCm-LUo7qxjPvwli1ACaPPd45eEmAM9e6pPI/edit?usp=sharing](https://docs.google.com/spreadsheets/d/1nK_erOBJCm-LUo7qxjPvwli1ACaPPd45eEmAM9e6pPI/edit?usp=sharing);
- Boston Housing Conditions Report:  
<https://www.bostonplans.org/getattachment/066b23c5-cab9-4731-a338-f6e57e3ef55f>

## Organizational Chart



The above organizational chart identifies the names and positions of key project team members for administering the grant activities. Positions in green boxes indicate key management roles. At least 21 full-time staff members will be working to implement or report/track grant activities at any given time during the grant period. At this time, there are no vacancies on the project team, nor are there any positions that are contingency on the award.

### ***Experience Promoting Racial Equity***

MAPC and partners have extensive experience working with underserved communities, particularly Black and Brown communities. MAPC’s Equity Team, a core group of individuals from across various departments, works across the agency to operationalize equity in project work. This framework will be applied to the grant activities. MAPC’s Community Engagement team is also nationally recognized for applying innovative techniques to engage hard to reach communities. Their involvement in Activity 7 and throughout the project will ensure that project elements and engagement are designed to advance racial equity and promote inclusive, equitable engagement.

**Leverage**

At this time, no formal commitments have been leveraged for this application. However, the proposal expects that participating municipalities will leverage resources against the grant funds to provide the development pipeline aspect of the solicitation. These leveraged resources may take the form as monetary commitments, publicly-owned land, waived fees, or other benefits. Activity 2 includes an in-depth process to review resources available to cities and towns and tradeoffs for different methods of providing a development pipeline.

**Long-Term Effects and Outcomes**

This project presents an immense opportunity for Greater Boston to expand the local construction industry and embrace alternative construction technologies that can benefit from traditional stick-built methods but also offer complementary options to meet housing and climate goals in a more timely and cost-efficient manner. If awarded, this project will set Greater Boston on a new trajectory, with labor organizations at the table, to collectively find ways to allow onsite construction methods to continue while also making room for different options, particularly in neighborhoods where infill development and smaller-scale housing options are better suited for offsite methods and less appealing for traditional contractors. We see a variety of permanent, long-term effects and outcomes beyond the grant period ending in 2030. If successful, we will have greatly reduced key barriers to producing and preserving affordable housing and have measurable outcomes to show HUD and other regions across the nation.

Upon completion of the grant-funded activities, we hope to be the first metropolitan planning agency to successfully execute on a coordinated strategy working across municipal boundaries to pool production demand for an offsite construction manufacturing facility to serve our region’s desperate need for the rapid production of high-quality affordable housing units.

**Deliverables**

Deliverables associated with each activity anticipated to take place during the grant period are described below:

Activity	Estimated Timeframe	Anticipated Deliverables*
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1	Convene a Working Group and Sub-Groups	Jan. – June 2024	Working Group Objectives, Agendas, and Meeting Schedule; Memorandums of Understanding; Partner Agreements
2	Research and Planning with Four Sub-Groups	Jan. – July 2025	Four research reports on the following topics: <ul style="list-style-type: none"> <li>• Addressing regulatory barriers to offsite construction in participating municipalities</li> <li>• Generating a project pipeline to support a regional manufacturing facility</li> <li>• Creating workforce development opportunities</li> <li>• Identifying suitable sites in the region for a manufacturing facility or facilities</li> </ul> Amended MOUs, if necessary Webinars or other communication materials to share research findings with broader network of housing professionals
3	Preparation and Issuance of Solicitation	July – March 2026	Solicitation for manufacturing facility, including incentive package
4	Solicitation Review and Selection	April – May 2026	Scoring rubric for selection committee; developer selection notification memorandum; developer designation memorandum; letter committing funds for the construction of the facility
5	Development of Implementation and Phasing Plan	June 2026 – Dec. 2026	Plan detailing the order in which development projects will be submitted for manufacturing (informed by Activity 2 deliverables)
6	Support Entitlement/Development of Facility	June 2026 – Dec. 2029	Development progress reports; permits and certification of occupancy for manufacturing facility
7	Community Engagement	Jan. 2024 – Dec. 2029	Focus group/interview protocols; communication materials include project webpage, project newsletter, one-pagers, social media assets; public campaign for educating about alternative construction technologies

\*Additional deliverables will likely result as work gets underway. This outlines bare minimum, and in the case of engagement/communication materials, a sampling of what may result. Throughout the project, we hope to share information about research findings and project milestones, to serve as resources for HUD and others in the housing field across the country.

**Potential roadblocks**

We recognize that, throughout the nation, opposition to modular housing often includes concerns of residents (quality/aesthetic concerns) and the construction trades (job loss/job quality concerns). Of course, these concerns may challenge the success of our proposal, but it is also our responsibility and intent to listen to these concerns carefully and to make sure all legitimate concerns are addressed. In our preliminary research into offsite construction methods as part of the process of preparing this grant proposal, we started engaging members of the construction trades. Our proposal seeks to address their concerns, in part, by focusing on infill housing development projects, which tend to be of a scale that would not compete with projects in which construction trades are typically involved. We also hope to have continued engagement with labor representatives as we see offsite construction methods complementing their work rather than replacing it. MAPC and its partner municipalities would not consider this project a success if local jobs were lost – instead, we are committed to finding ways to increase the diversity of jobs in the construction field to attract more and more diverse workers with good jobs, pay, benefits, and worker protections. We also have a robust community engagement component of the project to combat public perception against modular or prefabricated housing types.

### ***Reducing housing cost burden***

By accelerating the pace at which new affordable housing units can be constructed and placed in service, our proposal will increase the supply of affordable housing units in Greater Boston, reducing the exorbitant number of households that are currently housing cost-burdened. (In Boston alone, 40 percent of households are cost-burdened, and 20 percent of households are severely cost-burdened.<sup>34</sup> Furthermore, by developing a solution for infill development, our strategy will allow us to densify housing in areas that are transit- and resource-rich, further decreasing costs of other necessary household expenses and providing access to jobs, schools, libraries, and other amenities that increase quality of life.

### ***Providing a model for other communities***

We are excited to put forth this proposal as a regional planning agency because the problems caused by a shortage of affordable housing units are not isolated to one city or town but constitute a regional challenge requiring regional solutions. The deference given to local municipalities to adopt their own land use and regulatory frameworks creates challenges to regional coordination and tackling regional problems such as the supply of affordable housing. Local governments are uniquely positioned to be able to project future housing needs to be able to support a pipeline of projects to support the location of a nearby manufacturing facility. We hope that this proposal can serve as a model for regions across the country who face similar challenges to regional coordination and have an acute need for affordable housing.

### ***Environmental Risks***

As a coastal region, Greater Boston is more likely to be impacted by climate change through rising sea levels and severe weather events that cause flooding, extreme heat, and other disastrous conditions. MAPC regularly works with its 101 cities and towns to enact climate

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<sup>34</sup> American Community Survey, 2017-2021, Five-Year Estimates.

resiliency plans, hazard mitigation plans, and climate action plans (which include mitigation and adaptation strategies). Housing planning through Greater Boston takes into account our region's need to locate housing in areas resilient to climate change and build more energy-efficient and resilient homes. These regional and local climate-related policies will be evaluated under Activity 2 and inform recommendations for potential modular developments and where a manufacturing facility should be sited to be resilient and energy efficient.

### ***Immediate Success***

In the immediate term, success of our proposal looks like a high-functioning, sustainable manufacturing facility that produces both high-quality, affordable housing units as well as safe and stable jobs for local residents.

### ***Long-Term Effect on Removing Barriers to Affordable Housing Production***

In the long-term, the success of our proposal looks like a less severe affordable housing shortage and decreased societal ills that result from such a shortage. There will be a more balanced supply of housing units affordable to households at a range of income levels as a result of our increased capacity to produce these units (and revised regulatory frameworks mandating the placement of these units across cities in town due to the passage of progressive policies at the State and local level to mandate a more balanced supply of affordable housing throughout the region, and not in concentrated neighborhoods or cities and towns.) Fewer households will be cost-burdened, and a smaller share of our housing units will be overcrowded. Cities and towns in our region will be less segregated, BIPOC households will have greater access to well-resourced areas to allow for advancement in educational attainment, unlocking better quality and higher-paying jobs, narrowing the racial wealth gap. All of these effects will result in an increased quality of life for residents in our region.

Secondary to accelerating the pace of construction of new affordable housing units to address an immediate need for more affordable housing units in well-resourced areas of our region, our proposal also seeks to further innovate in the building technology space. The Boston metropolitan area has long been a leader in the advancement of technology and research, due in large part to the concentration of the country's top academic institutions and associated research labs. There is tremendous opportunity for innovation in the offsite construction space in collaboration with colleges and universities in the region. This innovation will be complemented by progressive and high expectations for the types of jobs that result from new and emerging technologies.