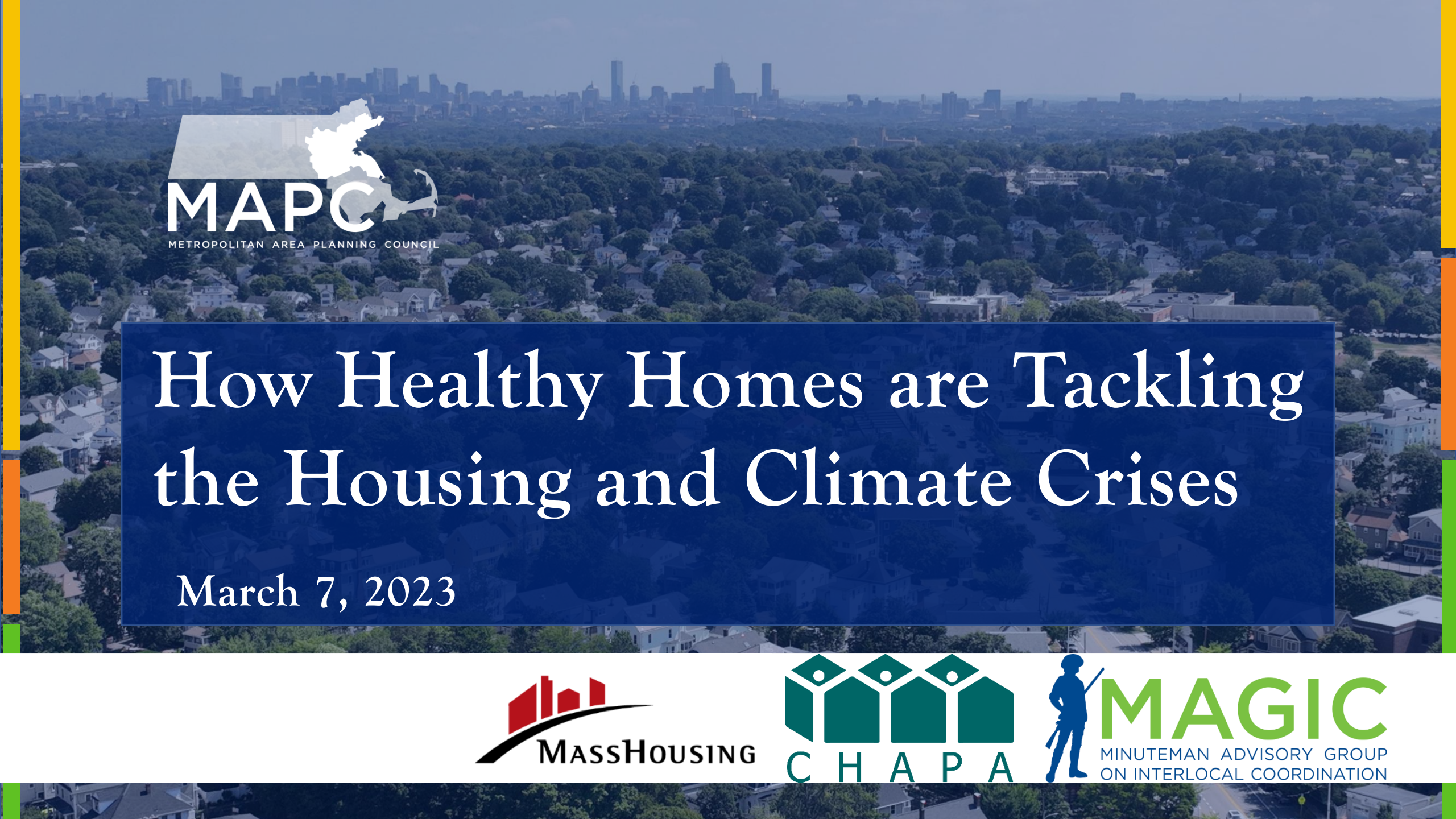


MAPC
METROPOLITAN AREA PLANNING COUNCIL

How Healthy Homes are Tackling the Housing and Climate Crises

March 7, 2023

MassHousing

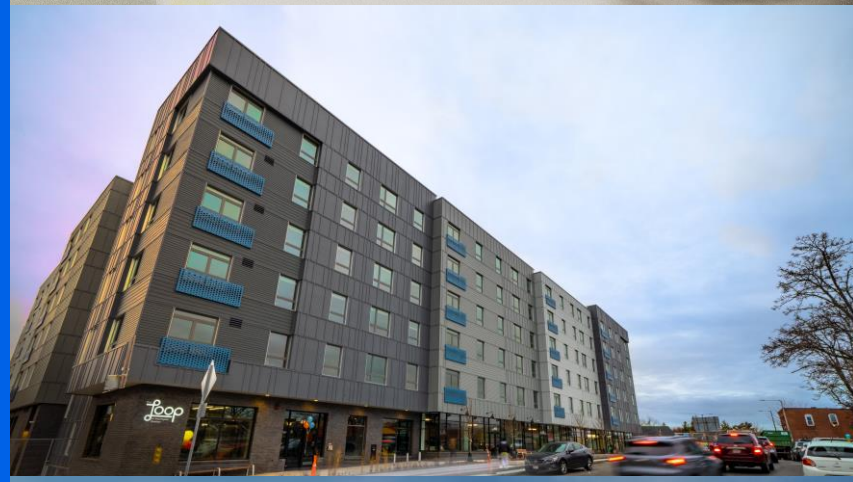
CHAPA

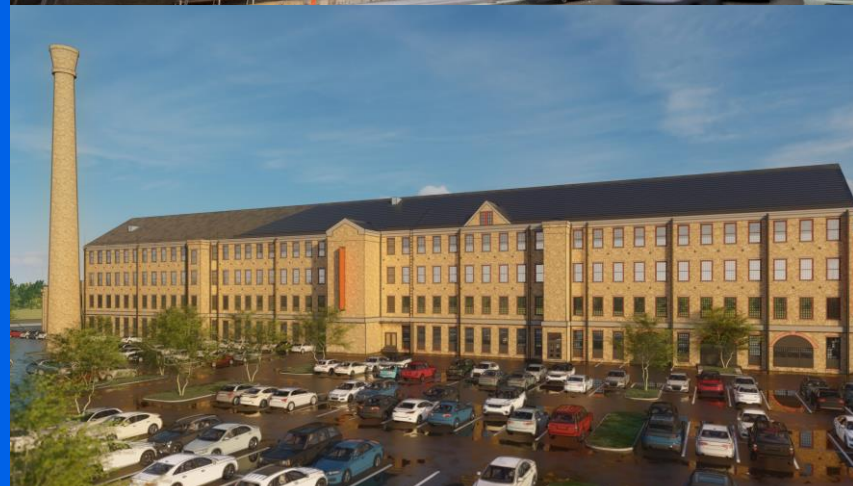
MAGIC
MINUTEMAN ADVISORY GROUP ON INTERLOCAL COORDINATION

MetroCommon × 2050

Today We Will Cover:

- Overview of MAPC research
- Lessons learned from developers
- Questions and answers





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Climate Change Adaptation & Mitigation: The Vision

A Healthy Environment

Greater Boston's air, water, land, and other natural resources are clean and protected—for us and for the rest of the ecosystem.

A Net Zero Carbon Region

The Metro Boston region is highly energy efficient and has reduced its greenhouse gas (GHG) emissions to net zero.

A Climate-Resilient Region

Metro Boston is prepared for—and resilient to—the impacts of climate change.

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Homes for Everyone: The Vision

Homes for All

All residents of Metro Boston have places to live that meet their needs, and that they can afford.

All residents will have homes that are...

- Safe and comfortable
- Affordable
- In the community of their choosing
- Meet their needs
- Advance household goals
- Energy efficient

Why this work?

- MAPC values: housing and climate goals are mutually beneficial
- Understanding two changing fields
- Response to current legislation
- Request, funding from MAGIC subregion

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Shared definitions

- **Affordable Housing**: Deed-restricted housing for very low income (at or below 30% or 50% area median income), low- income (at or below 80% AMI) or moderate-income (80% to 100% AMI) households at a cost that does not exceed 30% of monthly gross income.
- **Stretch Code**: An above-code appendix to the "base" building energy code which emphasizes energy performance, as opposed to prescriptive requirements, and is designed to result in cost-effective construction that is more energy efficient than that built to the "base" energy code.
- **Specialized Code**: A code that communities can opt into that includes additional efficiency requirements above the stretch code including Passive House for multi-family buildings.
- **Passive House**: A rigorous, voluntary standard for energy efficiency in a building which reduces the building's ecological footprint and results in ultra-low energy buildings that require little energy for space heating or cooling
- **Net Zero Energy Building**: A building that produces as much renewable energy as it uses over the course of a year.
- **Fossil Fuel Free Building**: A building that uses no fossil fuels like oil or gas for heating, cooking, or other purposes.

Work to date

- **Codes for Climate (2019-2023)**
  - Advocating for strong building energy codes that align with local housing & climate goals
  - Helping communities advocate for and adopt codes
- **Housing team research: fossil fuel free (2020)**
  - Importance of building envelope efficiency prior to electrification
  - Challenge of domestic hot water in multifamily housing
  - Suggested that developers, municipalities, and utility companies collaborate to mitigate any potential additional costs of service delivery
- **Health, Housing, Energy, Equity training series (2021)**
- **Summary of draft Stretch Code and Specialized Code (spring 2022)**
  - Highlighted the need for more research on key topics, including upfront costs, specific technologies, and the role/value of incentives
- **Developer engagement (spring 2022)**
  - Interviewed developers about experiences with green buildings
  - Key findings on following slides

Key findings:

- **Can’t meet climate goals without building decarbonization**
  - And it’s possible without making housing cost-prohibitive!
- **Affordable Housing is leading on efficiency.**
  - Competitive funding programs are encouraging Passive House, LEED
- **Communities can leverage the opportunity presented by new building codes to align requirements for Affordable Housing and market-rate housing.**
    - Higher efficiency standards for all buildings will help increase awareness and acceptance of efficient design, spur technological advances, and expand subcontractor capacity.
- **Focus on building envelope performance and Passive House certification.**
  - Available incentives, flexible requirements, and a focus on envelope performance makes Passive House an appealing and appropriate standard that is being used across a wide range of project types and site conditions.

Key findings:

- **High efficiency standards like Passive House provide multiple benefits for owners and residents**
  - Healthier living space
  - Lower utility costs, energy burdens
  - Climate resilience – e.g., habitability during power outages, extreme weather
- **The price premium associated with Passive House construction impacts Affordable and market-rate housing differently.**
  - Studies and conversations indicate that the upfront costs of Passive House range from 2% to 10% higher than conventional construction.
  - For Affordable Housing, higher costs result in extended timelines, additional subsidies to make projects pencil (which take time to assemble), and sometimes fewer Affordable units built to stay under QAP cost limits.
- **Concerns remain about the availability, reliability, and costs of certain technologies.**
  - For example, electric hot water solutions for large multi-family buildings
  - In turn, lenders may be reluctant to underwrite the anticipated operational savings.
- **Regulatory shifts toward clean energy must coincide with broader shifts in resources and expectations by all parties.**

Recommendations for State actions:

Align and scale funding resources to support broader Passive House use.

- Increase available incentives and subsidies
- Incentive amounts should be available at the start of a project
- Consider a comprehensive effort across state agencies

Continue to work on improving coordination with electricity providers and grid capacity, to address perceived and real barriers to all-electric construction.

Implement equity measures to ensure that benefits are distributed to communities in need.

- Contractor training program for MBE, WBE
- Focus on building efficiency first - lower energy burdens
- Technical assistance for communities considering Specialized Code

Recommendations for municipal actions:

Adopt building standards that require greater energy efficiency.

- Specialized building code
- Sustainable design standards or guidelines

Invest in housing planning and production tools that respond to local housing needs and address climate goals

- HPP, Master Plans, 3A zoning, etc.

Adopt/strengthen Inclusionary Zoning policies

Consider local resources

- Use local funding, such as CPA
- Federal funding sources:
  - IRA
  - ARPA
  - EPA
- Apply for state funding when possible (DOER, EEA)

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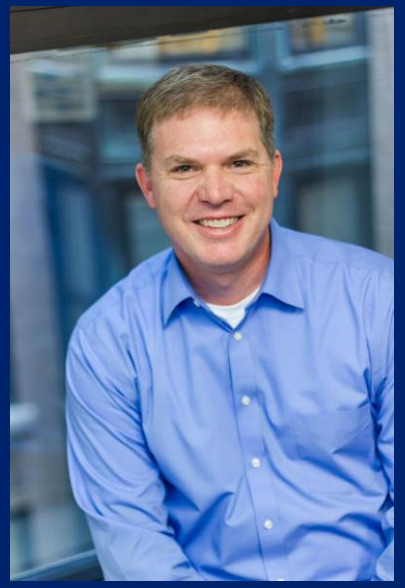
Shared resources:

- MAPC Codes for Climate Resources
  - Webinar: Specialized Stretch Code and Municipal Adoption
- Health, Housing, Energy, Equity Training Series
- DOER: Stretch Code analysis and resources
- DHCD: 2022 – 2023 QAP
- Mass CEC
  - Home | MassCEC
  - Passive House Design Challenge
- ACEEE: Pathways to Healthy, Affordable, Decarbonized Housing: A State Scorecard
- Built Environment Plus: Making ‘Cents’ of Incentives webinar
  - Slides
  - Recording
  - (builtenvironmentplus.org)
- LISC Boston Green Homes Initiative

Panelists

Eliza Datta
E3 Development



Cory Fellows
Preservation of Affordable Housing

Christina McPike
WinnCcompanies

31 Tufts

E3 Development

31 Tufts

E3 Development

PROJECT COMPONENTS	PROJECT DETAILS
Total Housing Units	16
Number of Affordable Housing Units	16
Level of Affordability (Area Median Income)	4 at 50% AMI 4 at 80% AMI 8 at 100% AMI
Bedrooms Break Down (Studio, 1-bd, 2-bd, 3-bd or more)	8 studio; 4 1-bd; 3 2-bd; 1 3-bd
Public funding sources?	DHCD Community Scale Housing Initiative; MassHousing permanent and Workforce Housing financing; project-based MRVP; Somerville Affordable Housing Trust; Mass Save incentives
All-electric?	Yes
Passive House Standard?	Yes

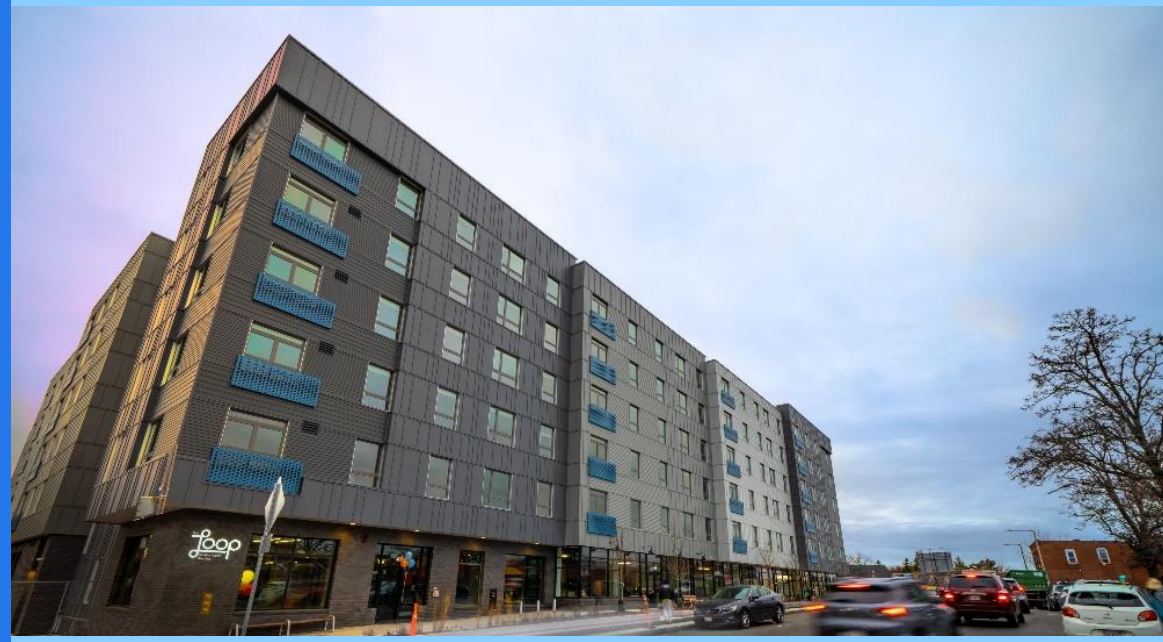
The Loop at Mattapan Station

Preservation of Affordable Housing (POAH)

The Loop at Mattapan Station

Preservation of Affordable Housing (POAH)

PROJECT COMPONENTS	PROJECT DETAILS
Total Housing Units	135
Number of Affordable Housing Units	135
Level of Affordability (Area Median Income)	18 at 30% AMI 49 at 50% AMI 26 at 60% 42 at 80% AMI
Bedrooms Break Down (Studio, 1-bd, 2-bd, 3-bd or more)	6 studio; 38 1-bd; 81 2-bd; 10 3-bd
Public funding sources?	DHCD Low-Income Housing Tax Credits and direct subsidy; MassHousing permanent, bridge and Workforce Housing financing; Mayor's Office of Housing funds; Mass. Clean Energy Center Passive House incentives
All-electric?	All-electric HVAC, gas hot water
Passive House Standard?	Yes



Stone Mill

WinnCompanies

Stone Mill

WinnCompanies

PROJECT COMPONENTS	PROJECT DETAILS
Total Housing Units	86
Number of Affordable Housing Units	69
Level of Affordability (Area Median Income)	11 at 30% AMI 58 at 60% 17 market-rate
Bedrooms Break Down (Studio, 1-bd, 2-bd, 3-bd or more)	50 1-bd 28 2-bd 8 3-bd
Public funding sources?	DHCD Low-Income Housing Tax Credits and direct subsidy; MassHousing permanent and bridge financing; Capital Magnet Fund; historic tax credits; HOME funds; Merrimack Valley Relief Fund
Energy Modeling Results	42% < Energy Code Baseline
All-electric?	Yes
Passive House Standard?	Designed to, testing whole building infiltration