

Budget Narrative: Greater Boston Affordable Housing Decarbonization Accelerator

a) Budget Detail

Summary budget information including personnel costs, fringe benefits, travel, equipment, supplies, contractual, other, and indirect costs can be found in the accompanying budget spreadsheet (Budgetcalcs_MAPC.xlsx). Further details about all itemized costs within the context of this application are provided in Section C.

b) Expenditure of Awarded Funds

Oversight of grant funding will be provided by the MAPC Project Director and Deputy Project Manager (as outlined in the budget spreadsheet). As discussed further in Section 6 of the workplan, MAPC has substantial experience managing complex grants with multiple contractors, subawardees, and recipients of participant support costs. We successfully implement and administer grants in a timely and efficient manner through an effective internal support structure. As part of project setup, the core project management team (including the Project Director, Project Manager, Deputy Project Manager, and Reporting & Admin Staff) will work with MAPC's internal administrative and finance staff to establish a quality assurance and quality control (QA/QC) plan for managing the overall grant. This QA/QC plan will include establishing a cadence of internal quality assurance audits (e.g., on a quarterly or semi-annual basis), internal management meetings, and regular meetings with subawardees and contractors, as well as establishing reporting requirements between subawardees/contractors and MAPC. MAPC also undergoes an annual third-party financial audit and has in-house legal counsel to provide support on executing the grant and subawards and ensuring timely compliance with all EPA regulations.

Through this structure, MAPC will be able to efficiently identify potential issues in achieving grant objectives and milestones before they arise. In all cases, we will report potential for delays in achieving milestones and budget risks to EPA through semi-annual reports and on an ad hoc basis as needed to discuss opportunities to mitigate delays and risks and meet the requirements of the grant. Additionally, as discussed in the workplan, MAPC will hire an additional staff person charged with management and administration of the grant as needed to ensure timely and thorough completion of all grant requirements.

Coalition members and partners have significant experience managing administrative requirements and implementing construction and professional service projects funded by federal grants.

- The PHAs regularly receive federal funding through the Department of Housing and Urban Development (HUD) and other federal sources to implement construction projects, ranging from new construction to major renovations. The PHAs have sufficient staff capacity, expertise, and oversight and existing controls in place to ensure that capital funding received for Measure 1 will be implemented in a timely and efficient manner. Procurement offices will ensure that procurements for construction and architecture/engineering services are completed in accordance with Federal and State procurement laws and enable the PHAs to select bidders who can offer cost-competitive services that also comply with labor standards. As the PHAs become aware of potential delays in achieving the milestones in accordance with the schedule outlined in Section 3c of the workplan, they will work with MAPC staff to mitigate risk of delays and to communicate these potential delays to EPA in a timely manner.

- Other subawardees in this application have significant experience managing federal grants and meeting grant deliverables in a timely and efficient manner. For example, New Ecology has received and administered federal grants as a lead entity from the DOE and HUD. LB, as a community development financial institution, supports extensive federally-supported community development initiatives and regularly provides TA and administers grant programs to dozens of affordable housing owners and non-profit organizations.
- MAPC regularly designs and administers TA and other grant programs for municipal and community-based organizations, including our TA Program and the Barr Foundation-funded Accelerating Climate Resilience grant programs. We also currently administer a DOT Safe Streets for All (SS4A) Action grant and are a subrecipient for an EDA Good Greater Boston Region (GBR) Regional Workforce Training System grant. Our internal experience and structures will ensure that we can issue subawards, program opportunity notices, evaluate applicants, and execute awards in a timely fashion through Measure 2. MAPC additionally has prior experience developing and managing procurements on behalf of municipal entities for clean and energy efficient technologies. This includes issuing procurement vehicles for technologies like LED streetlights, solar, and electric vehicles and services like energy brokerage services for municipal aggregation programs. Our prior experience and expertise will ensure that we can develop and execute procurement vehicles on behalf of municipal entities in a timely fashion.

c) Reasonableness of Costs

Measure 1

As indicated in the budget spreadsheet, over 99% of Measure 1 funding will be passed-through MAPC to subawardees and through participant support costs. The table below summarizes the funding requested for each of the retrofit projects and provides a description of each project and the planned decarbonization improvements. Project costs were estimated from an analysis of the buildings targeted, previous similar decarbonization projects and bids issued by BHA, and a decarbonization study completed by the engineering firm Arup on behalf of BHA. This study estimated average project costs of approximately \$110,000-170,000 per housing unit (depending on the style of building) before incentives to conduct deep energy retrofits using the improvements specified in this grant application. While we expect costs to vary by site, based on our analyses, we expect for project costs (excluding soft costs) to be roughly as follows:

- Space and water heating electrification: 30-40%
- Weatherization and building envelope improvements: 45-55%
- Appliance electrification and ventilation: 5-10%
- Electrical upgrades: 10-20%

While these costs are high relative to market-rate, privately-owned housing, they reflect many of the challenges faced by public housing (including older building stock and the need to address other deferred maintenance necessary to pursue decarbonization retrofits), as well as the costs to meet Good Job and prevailing wage requirements. Greater Boston in general is among the most expensive housing markets in the country. Recent studies have shown that building a new unit of affordable housing in the

Greater Boston region costs over \$630,000 to finance and build; affordable housing construction costs in Greater Boston have increased by 50% since 2017 at more than double the pace of inflation.¹

Project Site	CPRG Funding	Description of Project
Boston – Franklin Field <i>Justice 40 Tract:</i> <i>25025100100</i>	\$15,000,000	Decarbonization retrofits of 129 units across 7 buildings. Includes building envelope upgrades (including roof replacement, external insulation/cladding, and window replacement); energy recovery ventilators; electrification of space and water heating using geothermal heat pumps; electric cooking appliances; electrical upgrades; and solar PV on suitable roof space. Total project cost is expected to be approximately \$21,000,000, with approximately \$5,400,000 coming from utility incentives and tax credits. BHA funding will cover the remaining costs.
Boston – Pond Street <i>EPA IRA DAC Tract:</i> <i>250251204005</i>	\$6,500,000	Decarbonization retrofits of 44 units across 5 buildings. Includes building envelope improvements (roof replacement, external insulation/cladding, and window replacement); energy recovery ventilators; electrification of space and water heating using air source heat pumps; electric cooking appliances; electrical upgrades; and solar PV on suitable roof space. Total project cost is expected to be approximately \$9,500,000, with approximately \$2,000,000 coming from utility incentives and tax credits. BHA funding will cover the remaining costs.
Boston – Mildred C. Hailey Phase 2 <i>Justice40 Tract:</i> <i>25025081200</i>	\$7,500,000	Decarbonization retrofits of 72 units across 5 buildings. Includes building envelope improvements (roof replacement, external insulation/cladding, and window replacement); energy recovery ventilators; electrification of space and water heating using air source heat pumps; electric cooking appliances; electrical upgrades; and solar PV on suitable roof space. Total project cost is expected to be approximately \$10,500,000, with approximately \$2,200,000 coming from utility incentives and tax credits. BHA funding will cover remaining costs.
Chelsea – Mace Apartments <i>Justice40 Tract:</i> <i>25025160502</i>	\$8,000,000	Decarbonization retrofits of 96 units across 4 buildings. Includes building envelope improvements (roof replacement, external insulation/cladding, and window replacement); energy recovery ventilators; electrification of space and water heating using air source heat pumps; electric cooking appliances; electrical upgrades; and solar PV on suitable roof space. Total project cost is expected to be approximately \$11,000,000, with approximately \$3,000,000 coming from utility incentives and tax credits.
Lowell – North Common Village	\$8,000,000	Decarbonization retrofits of 92 units across 10 buildings. Includes building envelope improvements (roof replacement, external

¹ Carlock, C. and Logan, T. "The \$600,000 problem: Why does it cost so much to build in Greater Boston, and what can be done?" Boston Globe, 22 December 2023, <https://apps.bostonglobe.com/2023/10/special-projects/spotlight-boston-housing/construction-costs>. Accessed 29 March 2024.

Justice40 Tract: 25017388300		<p>insulation/cladding, and window replacement); energy recovery ventilators; electrification of space and water heating using air source heat pumps; electric cooking appliances; electrical upgrades; and solar PV on suitable roof space.</p> <p>Total project cost is expected to be approximately \$11,000,000, with approximately \$3,000,000 coming from utility incentives and tax credits.</p>
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The table below describes the total amount of funding going to MAPC, other subawardees, and participant support costs and provides additional detail on the tasks to be performed using CPRG funding.

Organization	CPRG Funding	Description of Tasks
MAPC	\$635,694	<ul style="list-style-type: none"> • Overall project management and reporting, including completion of semi-annual, year one, and final reports. • Conduct analysis of energy bills and GHG reduction impacts. • Overall grant management, administration, and oversight of subawardees. • Develop detailed case studies of decarbonization retrofits, to be shared with stakeholders through the Energy Cohort. • Provide as-needed technical assistance to PHAs.
New Ecology, Inc.	\$300,000	<ul style="list-style-type: none"> • Provide direct technical services to the three PHAs to enable completion of decarbonization retrofits and refinement of overall portfolio decarbonization strategy, to be determined upon award of grant. Services may include building analysis, portfolio decarbonization review and strategies, project scope development and implementation services, and testing and verification.
Massachusetts Union of Public Housing Tenants	\$45,000	<ul style="list-style-type: none"> • Support PHA staff and tenant organizations with designing and implementing tenant engagement activities to solicit feedback and identify areas of concern to be addressed in retrofit design process. • Conduct post-retrofit engagement to determine satisfaction with retrofit process and amenities. • Identify lessons learned for future public housing retrofits and tenant engagement processes.
Environmental Monitoring Partners (in collaboration with Tufts University)	\$100,000	<ul style="list-style-type: none"> • Design and implement experiments for measuring PM_{2.5}, NO₂, CO, and CO₂ before and after decarbonization retrofits in a sample of units. • Provide research grade instruments for CAP measurements. • Gather information on appliance usage patterns and estimate annual CAP reduction from measured data across all retrofitted properties. • Provide reporting information on CAP reductions and health benefits to tenants. • Develop factsheets and educational materials for residents on <p><i>Note: Prof. John Durant from Tufts University will provide pro-bono support to Environmental Monitoring Partners and the Coalition to support air pollutant monitoring activities.</i></p>
Participant Support	\$3,125	<ul style="list-style-type: none"> • Provided to tenants as an incentive to participate in CAP

Costs – Tenant Stipends		monitoring. Assumes 25 tenants in sample, with \$50 incentive for pre-retrofit monitoring and \$75 incentive for post-retrofit monitoring
Participant Support Costs – Tenant Engagement Events	\$3,000	<ul style="list-style-type: none"> • Provided to tenant coordinators at affected PHA properties to cover expenses to host tenant engagement events

Measure 2

As indicated in the budget spreadsheet, approximately 85% of Measure 2 funding will be contracted or passed through as subawards. In particular, \$1,900,000 of the requested funding will be provided to service providers to deliver TA to grant awardees. As discussed in Section 1a and 3c of the workplan, MAPC will issue a procurement to competitively select and establish contractual relationships with TA service providers, who will support development of template scopes of work and provide TA to grant awardees. The requested funding will be provided to these service providers to deliver TA to grant awardees based on scopes of work negotiated by the awardee and service provider and approved by MAPC.

The amount of funding was established based on the goal of supporting approximately 40 affordable housing building owners and organizations with TA grants to jumpstart decarbonization retrofits in their portfolios. Through engagement with other prior and ongoing TA program administrators (including the Massachusetts Clean Energy Center and Department of Energy Resources) and review of prior TA programs administered by MAPC, a grant award size of approximately \$45,000-50,000 was determined to be an ideal award size to ensure that significant enabling TA can be provided to recipients that will enable them to proceed with pursuing future decarbonization retrofits.

While we anticipate that most of the \$1,900,000 will be provided to service providers, as noted in Section 1a of the workplan, we expect to provide flexibility to some grant awardees (especially applicants from smaller organizations and those representing Justice40 communities) to enable a portion of their technical assistance grant to be provided as a stipend for staff time. In this case, we would expect to recharacterize this portion of awards as participant support costs. We will coordinate with the EPA program officer to ensure that all costs are appropriately characterized and accounted for.

The table below describes the total amount of funding going to MAPC and other subawardees and provides additional detail on the tasks to be performed using CPRG funding. Grant program management costs were budgeted based on MAPC's prior experience designing and administering grant programs.

Organization	CPRG Funding	Description of Tasks
MAPC	\$422,052	<ul style="list-style-type: none"> • Overall project management and reporting, including completion of semi-annual, year one, and final reports. • Overall grant management, administration, and oversight of subawardees. • Issue competitive procurement for service providers. • Design, implementation, and administration of the TA program (through two rounds of funding); oversee TA awards to successful applications.
LISC Boston	\$5,000	<ul style="list-style-type: none"> • Provide expertise to support design of TA program. • Support outreach activities to stakeholders to promote TA

		program.
New Ecology	\$5,000	<ul style="list-style-type: none"> • Provide expertise to support design of TA program. • Support outreach activities to stakeholders to promote TA program.
CHAPA	\$15,000	<ul style="list-style-type: none"> • Provide expertise to support design of TA program. • Support outreach activities to stakeholders to promote TA program.

Measure 3

As indicated in the budget spreadsheet, approximately 13% of Measure 3 costs will be provided to subawardees, with the remaining funding used to support MAPC staff time.

The funding request to achieve the objectives of Measure 3 was developed based on prior experience completing similar activities. This includes MAPC's prior experiences with developing novel procurement vehicles (including establishing collective procurements for LED streetlights, solar thermal, electric vehicles, and municipal aggregation energy brokerage services), as well as the costs to conduct a comprehensive research and engagement process with a wide range of municipal stakeholders and procurement experts to identify opportunities to streamline procurement for decarbonization measures.

The table below describes the total amount of funding going to MAPC and other subawardees and provides additional detail on the tasks to be performed using CPRG funding. As described in the workplan, over the course of conducting initial research, we will identify one or more additional partners who can provide expert support to develop procurement vehicles and recommendations.

Organization	CPRG Funding	Description of Tasks
MAPC	\$223,718	<ul style="list-style-type: none"> • Overall project management and reporting, including completion of semi-annual, year one, and final reports. • Overall grant management, administration, and oversight of subawardees. • Conduct research into opportunities to streamline municipal procurement for decarbonization technologies. • Convene municipal stakeholders and procurement experts to inform development of procurement recommendations and potential decarbonization procurement vehicles. • Develop and issue procurement vehicles for decarbonization technologies or services.
Coalition Public Housing Authorities	\$8,000 each	<ul style="list-style-type: none"> • Provide input to development of procurement recommendations and decarbonization procurement vehicles. • Participate in stakeholder engagement activities.
CHAPA	\$8,000	<ul style="list-style-type: none"> • Support stakeholder engagement activities and gathering input for development of procurement recommendations.
TBD – Procurement Partner(s)	\$40,000	<p><i>Tasks will be determined through initial research and as part of identifying a procurement partner(s). Tasks may include:</i></p> <ul style="list-style-type: none"> • Provide expertise on Massachusetts procurement law. • Provide support to develop procurement recommendations and decarbonization procurement vehicles.

		<ul style="list-style-type: none"> • Expand procurement vehicles from public to non-profit sectors.
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Measure 4

As indicated in the budget spreadsheet, approximately 83% of Measure 4 costs will be passed through to subawardees, with the remaining funding used to support MAPC staff time.

The funding request to achieve the objectives of Measure 4 was developed based on the development of a preliminary expansion concept for the Energy Cohort. As LISC and New Ecology co-convene the Energy Cohort, they have a strong understanding of both the potential for growth in activities and membership and the necessary staff resources needed to execute the expansion plan over the course of five years. In particular, this funding will cover the partial costs for LISC to hire a Green Homes Program Officer, who will focus efforts in part on overseeing the Energy Cohort expansion and in part to more broadly support equitable building decarbonization efforts in the Massachusetts affordable housing community.

The table below describes the total amount of funding going to MAPC and other subawardees and provides additional detail on the tasks to be performed using CPRG funding.

Organization	CPRG Funding	Description of Tasks
MAPC	\$172,316	<ul style="list-style-type: none"> • Overall project management and reporting, including completion of semi-annual, year one, and final reports. • Overall grant management, administration, and oversight of subawardees. • Support development of the Energy Cohort expansion plan • Participate in the Energy Cohort, including supporting Coalition PHAs and Measure 2 technical assistance awardees in developing resources and sharing AHDA experiences with the Cohort
LISC Boston	\$295,000	<ul style="list-style-type: none"> • Oversee development and implementation of the Energy Cohort expansion plan • Lead implementation of Energy Cohort activities • Lead recruitment of additional Energy Cohort members
New Ecology	\$45,000	<ul style="list-style-type: none"> • Support development and implementation of the Energy Cohort expansion plan • Support implementation of new Energy Cohort activities and recruitment of additional Energy Cohort members
CHAPA	\$35,000	<ul style="list-style-type: none"> • Support implementation of new Energy Cohort activities and recruitment of additional Energy Cohort members • Participate in Energy Cohort activities
Mass Union of Public Housing Tenants	\$30,000	<ul style="list-style-type: none"> • Support recruitment of additional Energy Cohort members • Participate in Energy Cohort activities