



Lower Roxbury



BOSTON

Community Action Plan

July 2025



R4C
Identify. Understand. Act.

A collaboration between:



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July 2025

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COMMUNITY ACTION PLAN



INTRODUCTION

The Resilience for Communities (R4C) Program

The Resilience for Communities (R4C) program was launched in 2021 as a partnership between The Resilient Cities Network, the Z-Zurich Foundation and Zurich Insurance, to help cities better understand the risks and vulnerabilities of communities in the face of extreme heat and flood events. The program is designed to enhance equitable city, community, and stakeholder engagement by prioritizing community participation; building local capacity through the use of innovative tools and processes; and driving investment into solutions that will increase community-level resilience utilizing the R-Cities' Resilient Community Impact Funds (RCIFunds) Platform.

This focus is timely, as extreme heat and flooding events are among the most deadly and costly climate events that cities are facing today. By 2050, the estimated cost of flooding in cities around the world may total over \$1 trillion USDⁱ, while extreme heat is projected to cost the United States \$500 billion in economic losses aloneⁱⁱ. Understanding climate resilience at the community level is critical for cities as they work to respond to these flood and heat risks. Despite its threats, the climate crisis also represents a significant opportunity for cities to redress long-lasting inequities and to work to improve social and economic conditions for communities while enhancing their ability to withstand and recover from climate-related events.

Partnership with the Z-Zurich Foundation & UCRP Program

In January 2023, the Z-Zurich Foundation launched the Urban Climate Resilience Program (UCRP), a global initiative across cities in 9 countries to build climate resilience at the local level. Along with the Resilient Cities Network R4C program, this initiative encompasses several similar programs being implemented by organizations including Plan International, IFRC, ICLEI and C40 Cities. These partners and implementing cities have contributed to the development and refinement of R4C program implementation, and are helping to build a larger movement towards community level resilient solutions.



FIGURE 1: Map of R4C cities

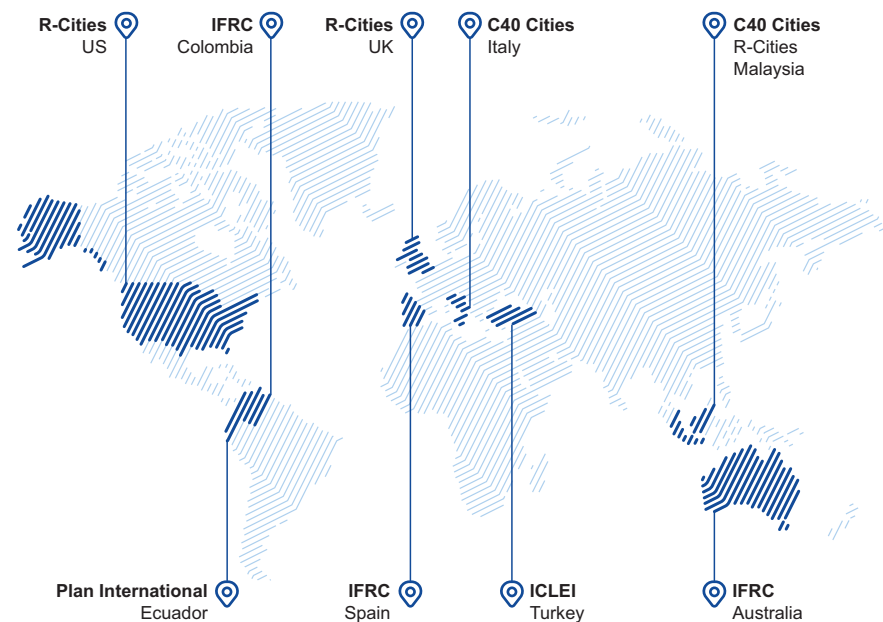


FIGURE 2: Map displaying the five implementing organizations in the UCRP and their respective program cities.

Resilience for Communities – Lower Roxbury

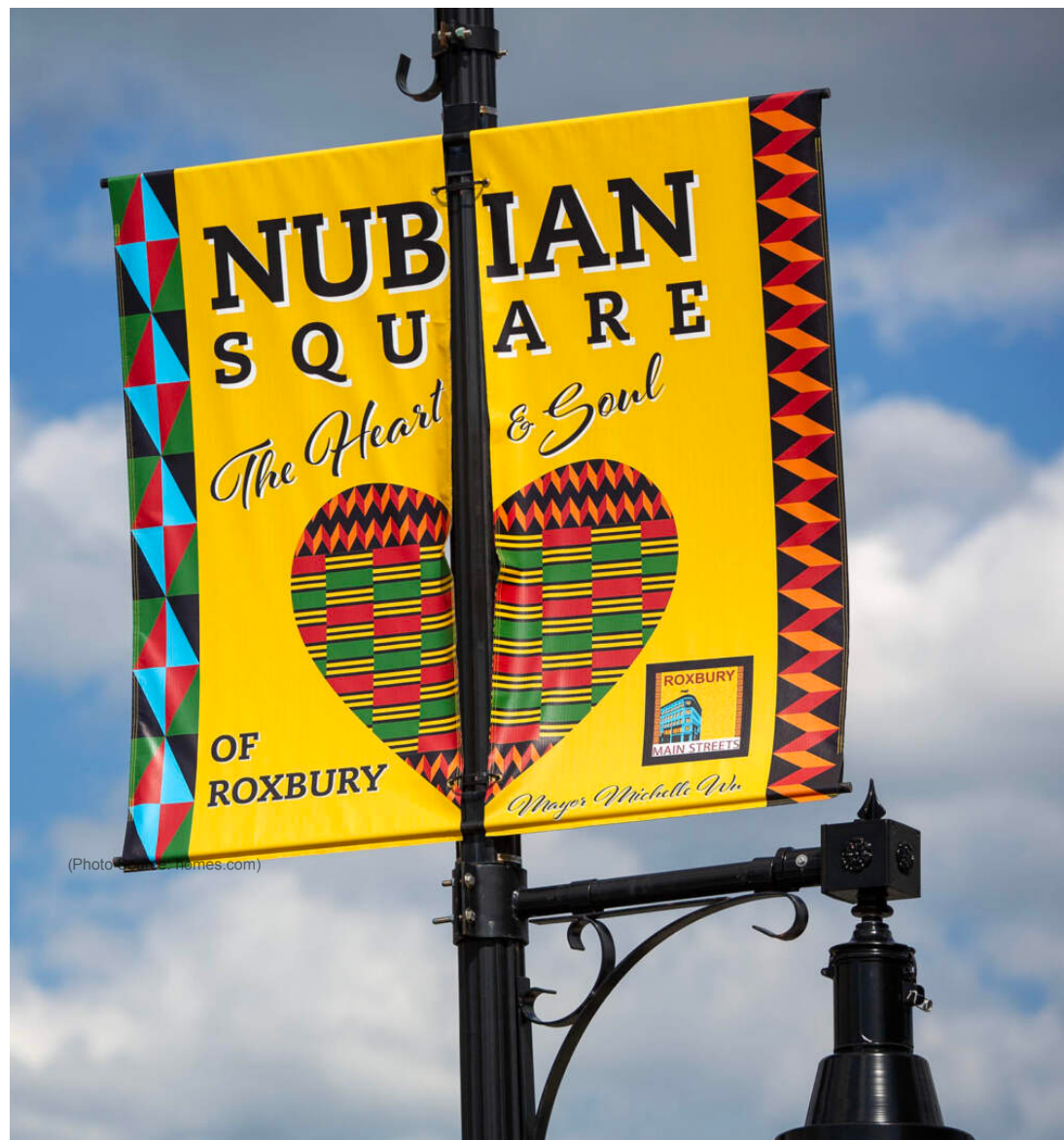
Resilience for Communities (R4C) is a multi-year program designed to strengthen neighborhood level climate resilience and help address social inequities in communities where existing stresses combined with growing climate shocks, make them ever more vulnerable to a changing climate.

The program works with a specific community on a multi-level engagement to examine the effects of cascading shocks and stresses (focused on flooding and extreme heat) and provides solutions that incorporate holistic resilience from the early stages of engagement through to implementation. R4C puts equity at the center of the work and ensures community voices are a central part of the solutions.

In Lower Roxbury, the R4C program has been jointly implemented with the Boston's Climate Ready Team which focuses on enhancing Boston's preparedness for climate impacts. An existing conditions analysis and community assessment was done as part of the multi-phased implementation approach of the program, including an in-depth community engagement process and project design in partnership with the City of Boston and local partners.



CITY of BOSTON



(Photo Source: Robin Lubbock/WBUR)

FIGURE 3: A sign for Nubian Square, the main business district, dubbed “the Heart & Soul of Roxbury” in Boston.

R4C Key Objectives

Through the R4C program, R-Cities funds and empowers local implementation partners to support and increase community resilience to floods, heatwaves and other extreme weather events.

The key objectives of R4C are:

- Better understand risks and vulnerabilities and the status of resilience of cities using the Climate Resilience Measurement for Communities (CRMC) tool which measures community perceptions of local shocks and stresses;
- Enhance equitable City, community and stakeholder engagement through prioritizing community participation, thus fostering the collaborative development of resilience solutions;
- Build local capacity through innovative tools and processes and technical assistance;
- Drive investment and resources towards community resilience solutions developed with, and by, local stakeholders

Phases of Implementation

The R4C program follows a three-step process in the identified communities in each city.

- PHASE 1**
Onboarding and Engagement: Establishing partnerships with local governments and fostering community involvement.
- PHASE 2**
City Diagnostics: Conducting a comprehensive baseline assessment to identify and analyze the community's specific challenges and opportunities for building community resilience.
- PHASE 3**
Project Identification and Preparation: Selecting local implementation partners and interventions based on the diagnostic findings of resilience assessment and co-design process conducted in earlier stages of the program.

The Community Action Plan represents Phase 3 of the project and beyond, **anticipated impact between September 2024 to July 2025.**



Boston's Climate Ready Plan include the 2016 Climate Ready Boston report as well as reports which specifically tackle coastal and heat resilience issues in different neighborhoods across the city, in addition to plans for green infrastructure, emergency response, zoning and conservation.

Boston's Climate Action Plan, originally launched in 2016 and updated in 2025, outlines specific strategies and approaches to mitigate coastal flooding challenges and heat resilience issues in different neighborhoods across the city. It promotes strategies and plans for green infrastructure, emergency response, zoning modifications, and conservation strategies.



Resilient Boston: An Equitable and Connected City is the city's current resilience strategy and was published in 2017 in collaboration with the 100 Resilient Cities. The plan is framed across four visions:

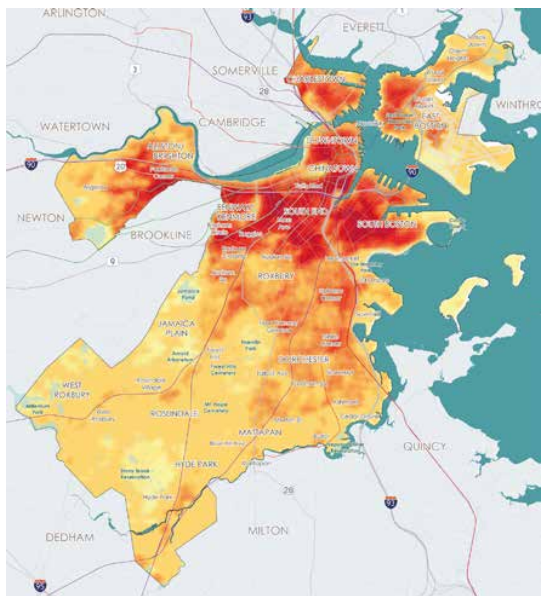
Vision 1: Reflective City, Stronger People focused on tackling racism and equitably facing emergencies;

Vision 2: Collaborative, Proactive Governance focused on community engagement for better governance and improving diversity in city hiring and promotion;

Vision 3: Equitable Economic Opportunity focused on closing the wealth gap in Boston and ensuring equitable access to economic opportunities for residents and;

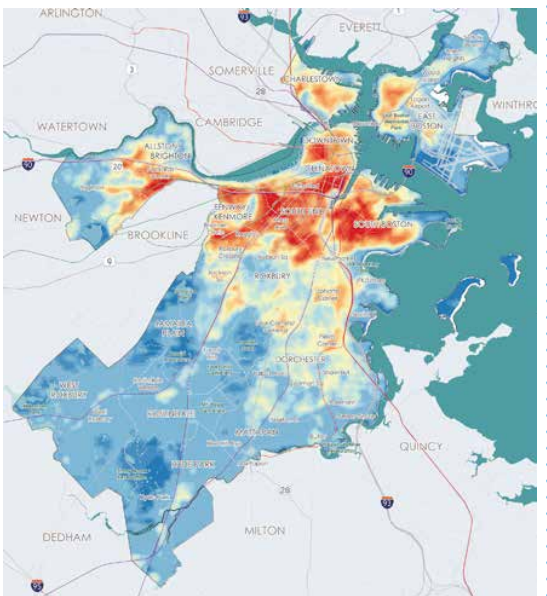
Vision 4: Connected, Adapted City focused on increasing connectivity for communities of color, while preparing for crises such as climate change (including resilient infrastructure).

Extreme heat already affects all of Boston.



HEAT EVENT HOURS:
Less than 25 hrs More than 37 hrs

Some places are hot for longer.



HEAT EVENT HOURS:
Less than 25 hrs More than 37 hrs

FIGURE 4: Analysis from the Heat Adaptation Solutions for Boston final report (shown here in Figure 1) utilized a variety of analytic frameworks to determine neighborhoods most impacted by extreme heat. Lower Roxbury and several neighborhoods to the north were shown to be most impacted and are most likely to experience extreme heat events in the future.

Some places are hot for longer.

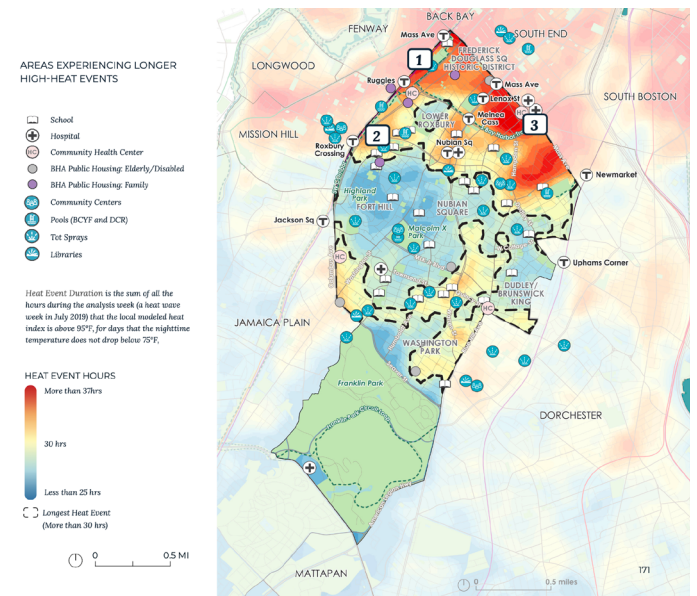


FIGURE 5: Map taken from the Heat Adaptations Solutions Report showing the larger Roxbury neighborhood. Extreme heat events and higher temperatures are concentrated in the northern section of the neighborhood, where Lower Roxbury is located.



Heat Adaptation Solutions for Boston – Final Report

In addition to the Boston Climate Action Plan and Resilience Plan, the city has also spent considerable time and resources to specifically understand community-level heat risk and propose innovative solutions.

Launched in 2022, the Heat Adaption Solutions for Boston Final Report identifies neighborhoods and groups likely to be most impacted by extreme heat.



COMMUNITY ASSESSMENT

"Eternal Presence" by John Woodrow Wilson at the National Center of Afro-American Artists on Walnut Avenue in Roxbury. (Robin Lubbock/WBUR)

Boston - Lower Roxbury

City Context

Boston is located in the Northeast of the United States and is notable for the historic role the city played in the American revolution and the founding of the country. The city is also well known for its world-class universities and health-care institutions, which are the main drivers of its urban economy today.

With a population of about 669,158 as of the 2022 American Community Survey (ACS) census, the city is one of the most densely populated in the country and has a metro population of 4.37 million. According to 2022 American Community Survey data, Boston, MA had a population with a median age of 32.9 years and a median household income of \$89,212. The largest ethnic groups in Boston are White (Non-Hispanic) at 44.2%, Black or African American (Non-Hispanic) at 21%, Asian (Non-Hispanic) at 9.56%, and Hispanic population at 19.6%.

Neighborhood Context

Lower Roxbury is a vibrant and diverse neighborhood within Boston, making up the southern section of the larger neighborhood of Roxbury that separates Downtown and South Boston. With a population of approximately 7,500 residents, the neighborhood is delineated by Melnea Cass Boulevard to the north, Malcolm X Boulevard to the south and Tremont Street to the east, stretching across 269 square acres.

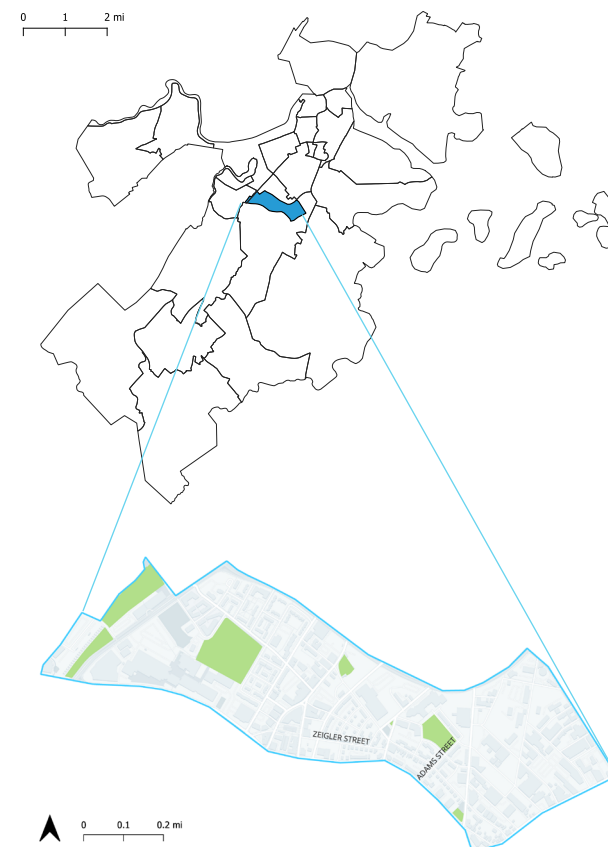


FIGURE 6: Neighborhood Map of Lower Roxbury, Boston (Source: City of Boston)

LOWER ROXBURY

269 ACRES

Area

7,548

Population

BOSTON

30,976 ACRES

Area

669,158

Population

About Lower Roxbury

A Historic Center of Black Culture in Boston

Lower Roxbury boast a vibrant and important designated historic district, which was created to preserve the many buildings in the neighborhood that date back to the late nineteenth and early twentieth century. However, the neighborhood's roots stretch back significantly further, to when the town was first established as part of the Massachusetts Bay colony in the seventeenth century.ⁱⁱⁱ

As Roxbury evolved, and was eventually incorporated into the city of Boston, the area became a destination for African Americans migrating from the American South due to its proximity to industrial jobs and the many Black businesses and institutions it eventually came to house.^{iv} Many of these structures still stand today, and the neighborhood remains home to several establishments that celebrate both Black American culture and the West African roots of more recent immigrants.



(Photo Source: homes.com)

FIGURE 7: Lower Roxbury includes several historic buildings that have survived since the neighborhood's early development in the nineteenth century.



FIGURE 8: Lower Roxbury's walls tell stories of the fight against displacement. Art intersects with history, race, policy and climate justice shedding light on the inequities of urban renewal and the environmental impacts of gentrification.

HOUSEHOLD ECONOMICS

Median Household Income (2020)

\$34,132 Lower Roxbury^v

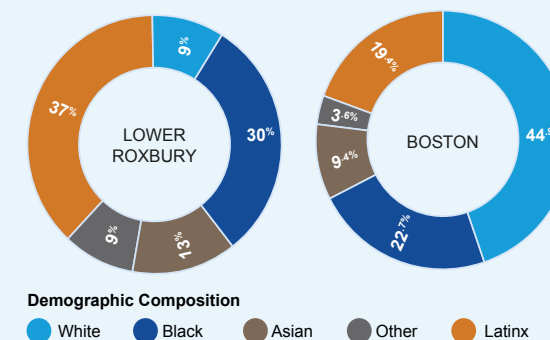
\$62,021 Boston

TOTAL POPULATION

7,548 Lower Roxbury

669,158 Boston

ETHNIC DIVERSITY

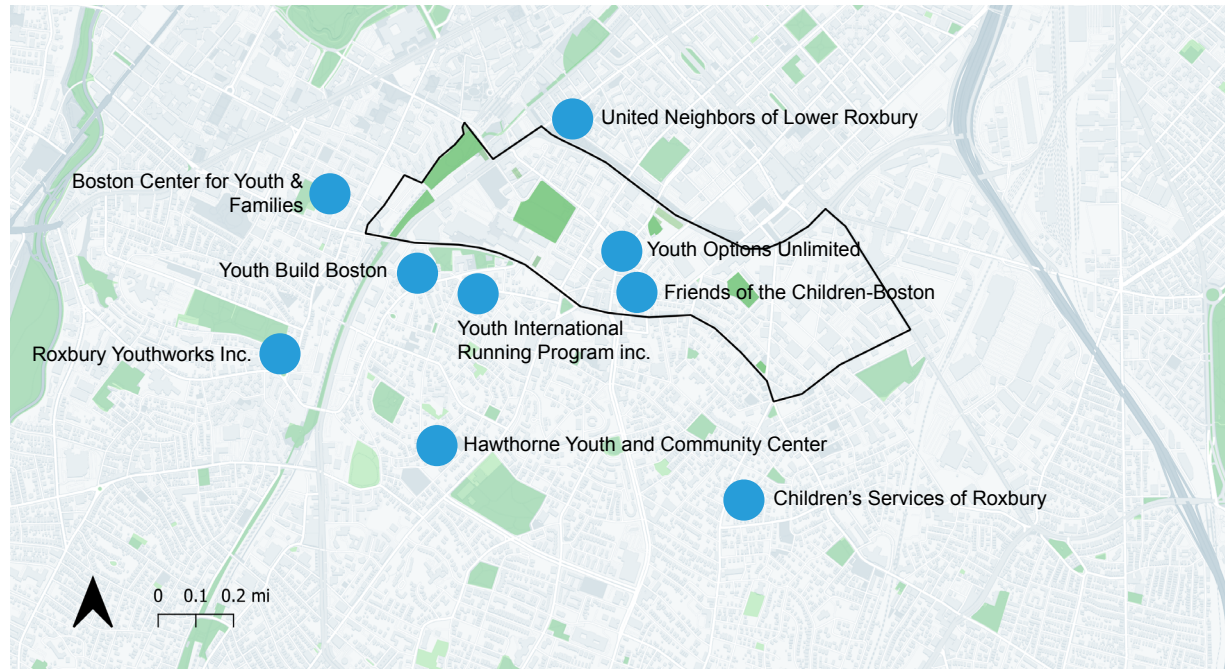


About Lower Roxbury

Youth Empowerment

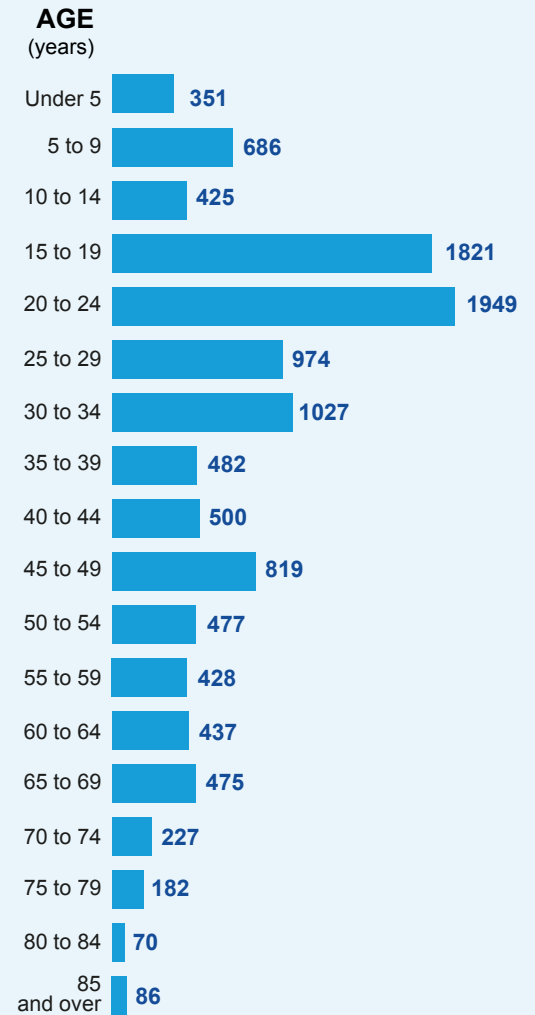
Youth make up a larger percentage of Lower Roxbury's population. Across the four census tracts that make up the neighborhood, an estimated 16% of the population fall into the 15–19-year-old age bracket, while a further 17% fall into the 20–24-year-old bracket.^{vi}

Several organizations in the neighborhood and in the broader Roxbury area are focused on engaging this population, including institutions like the Boston Urban Youth Foundation, Boston Centers for Youth and Families (BCYF), Youth Options Unlimited, the Youth Advocacy Project and Roxbury Community College (RCC).



● Youth Institutions

FIGURE 9: Youth-focused institutions in and around Lower Roxbury, Boston



TOTAL POPULATION: 11,416

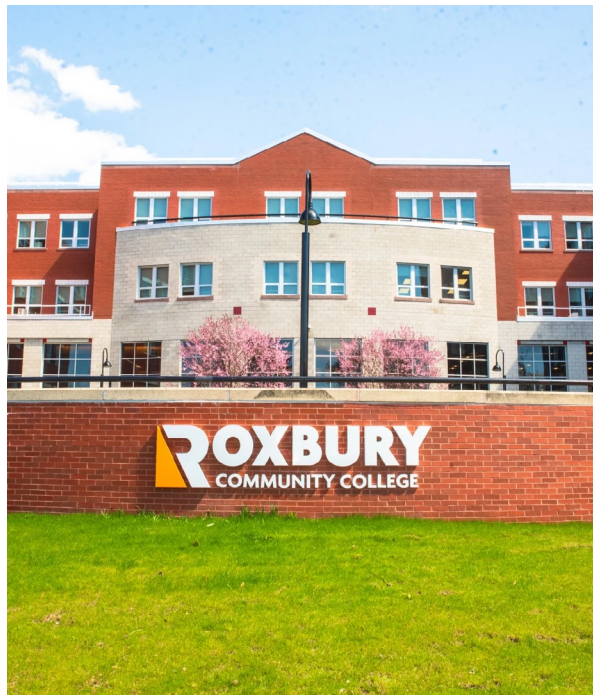
FIGURE 10: Graph depicting total population by age group in Lower Roxbury, highlighting the predominantly young population in the community.

About Lower Roxbury



(Photo Source: BU Today)

FIGURE 11: Coventry Street in Lower Roxbury houses many of the neighborhood's older buildings, which date back to the nineteenth and early 20th century.



(Photo Source: Boston Herald)

FIGURE 12: Roxbury Community College is among the larger educational institutions in Roxbury. The public college primarily caters to low-income Boston residents and helps train the many youth that live in the neighborhood.^{vii}



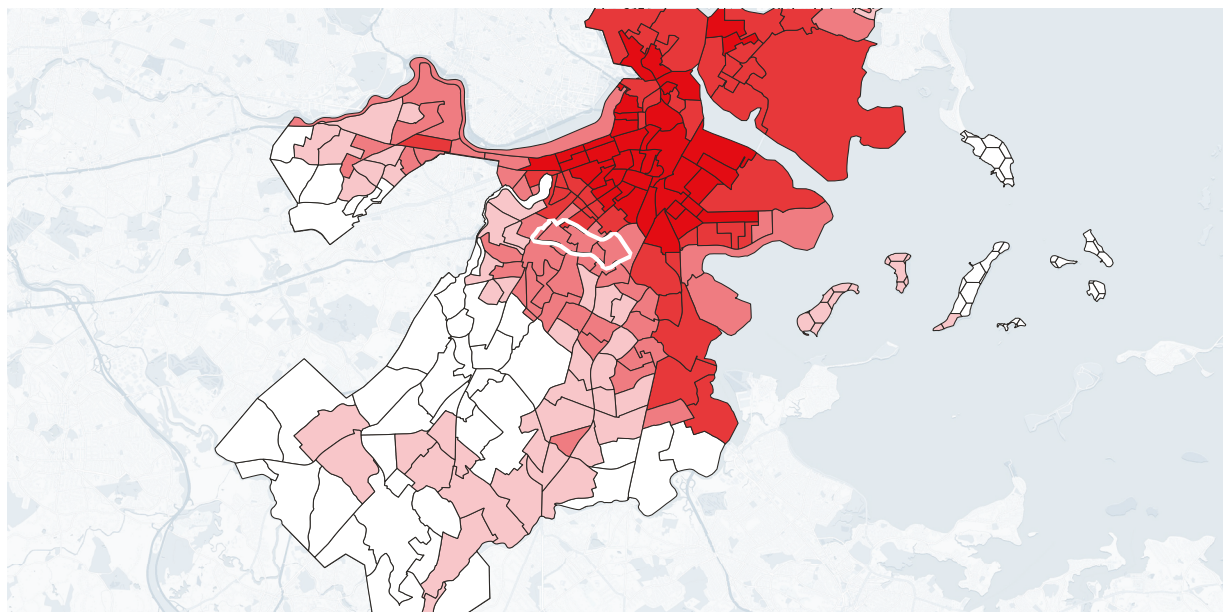
(Photo Source:)

FIGURE 13: Frugal Bookstore is one of the many black-owned businesses in Lower Roxbury celebrating the neighborhood's rich history and culture.

Heat Risk

According to Boston's Heat Solutions Plan, Lower Roxbury experiences significantly higher temperatures than other neighborhoods in Boston as a result of the historic development patterns, dark and paved land or roof cover and limited tree canopy. In the larger neighborhood of Roxbury summer daytime and nighttime median temperatures reach 101F and 82.8F respectively, higher than the city's median. The plan also found that sections of the neighborhood experienced longer high heat events than the rest of the city, with the local heat index modelling above 95F for over thirty hours.

Due to its demographics, many residents of Lower Roxbury are at high risk for heat vulnerability and for disproportionately feeling the impacts of other climate hazard. In Roxbury overall, young children make up a higher percentage of the population than the city-wide average, older adults make up 8% of the population and 77% of residential units are renter-occupied (higher than the city average). These populations all face additional challenges when it comes to dealing with heat, or being prepared during a storm event, either due to higher sensitivity or lower adaptive capacity.



Average Evening Heat Index by Census Tracts in Boston



FIGURE 14: Average Evening Heat Index in Boston by Census Tracts with Lower Roxbury Highlighted (Source: CT Mean Heat Index, Boston Maps)

LAND USE

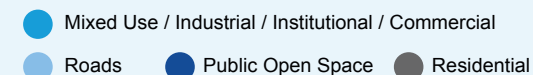
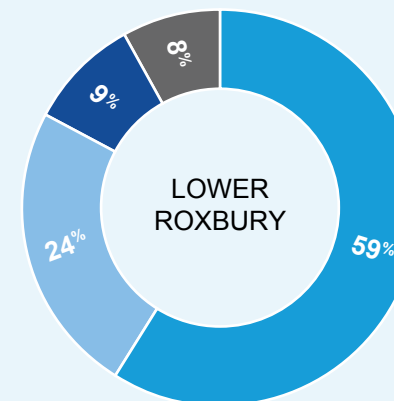
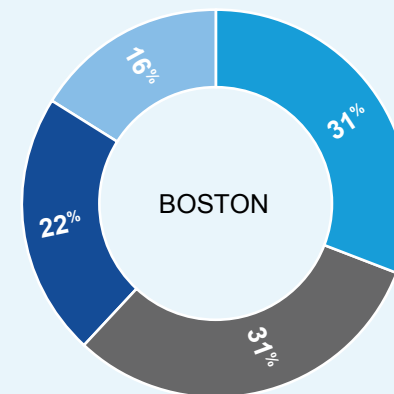


FIGURE 15: Land use in Lower Roxbury in Comparison to Boston (Source: Boston Maps)

Heat Risk

In 2022, the University of Massachusetts Boston's Summer Immersion Program in Community Resilience Planning published *'Cool Roxbury' Lower Roxbury's Extreme Heat Challenges and Solutions*.^{viii} This student-led publication integrated a temperature survey across Lower Roxbury which compared localized peak summer temperatures to city weather reports.

The survey found that at areas which had been considered heat relief points, including playgrounds and parks, ambient temperatures ranged from between 5-10 °F above the highs recorded by city reports. Students also interviewed over 90 neighborhood participants and more than 70% reported being increasingly concerned with regard to increasing temperatures in the neighborhood, and over half cited that their homes got too hot during summer periods to stay inside.^{ix}



FIGURE 16: An attendee takes a photo of student presentation materials from the 2023 UMass Boston Summer Program in Urban Planning at Roxbury Community College. (Source: Emily Piper-Vallillo/WBUR)

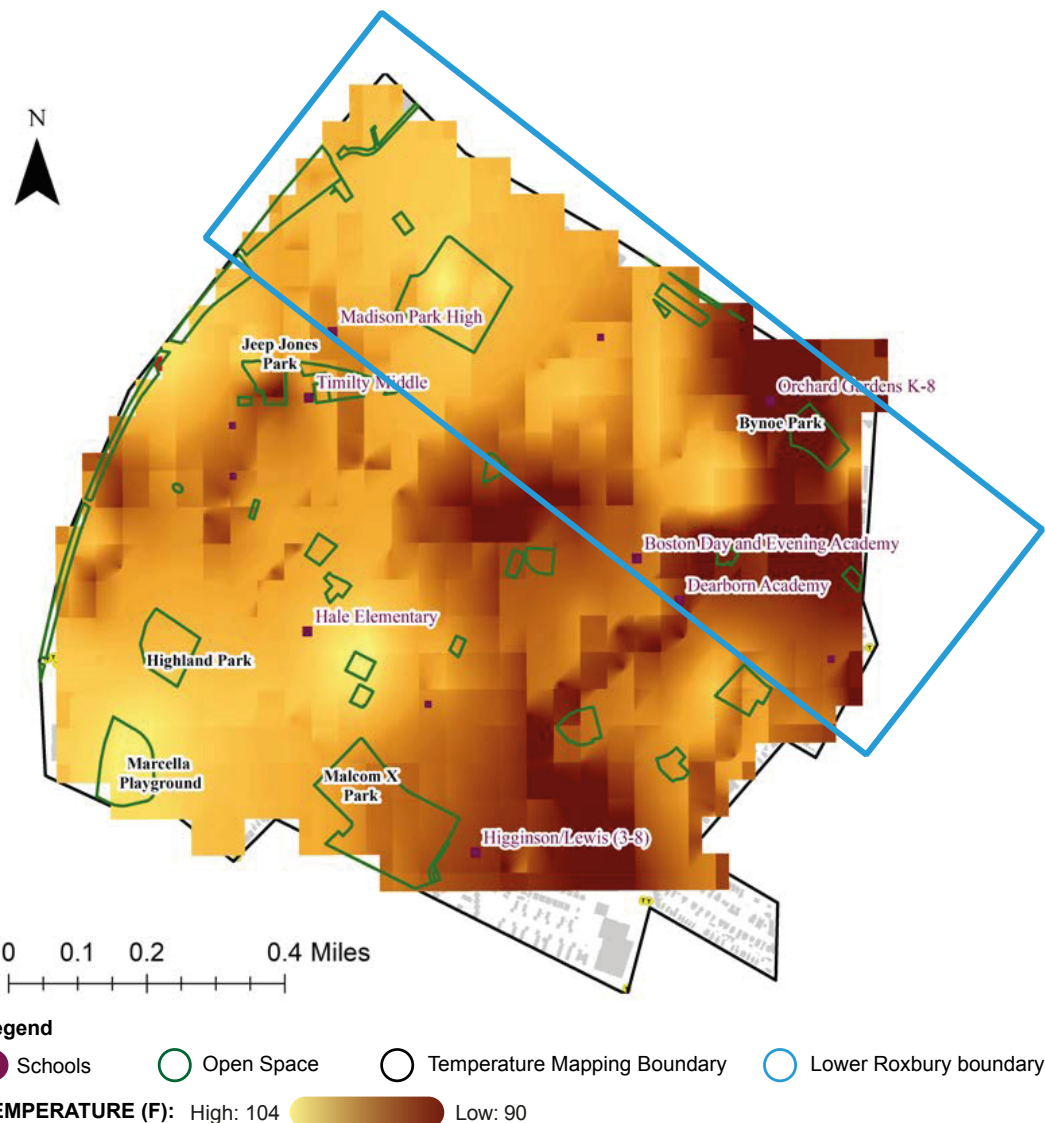


FIGURE 17: Map of local temperature based on 23 locations in Roxbury on July 20 2022 with the neighborhood of Lower Roxbury highlighted (Source: University of Massachusetts Boston, Department of Urban Planning and Community Development)

CRMC Tool and Public Outreach

From 2021-2023, Lower Roxbury residents were engaged through the Climate Resilience Measurement for Communities tool (CRMC), which measures community vulnerability to flood and heat through Household Surveys, Focus Groups and Key Informant Interviews.

Survey participants were asked specific questions regarding the impact of both flooding and heat on their lives and livelihoods, including ability to work, property damage and recovery time.

Participants also evaluated their climate hazard related knowledge, including knowledge of necessary actions during extreme heat.

60 PARTICIPANTS

60% female

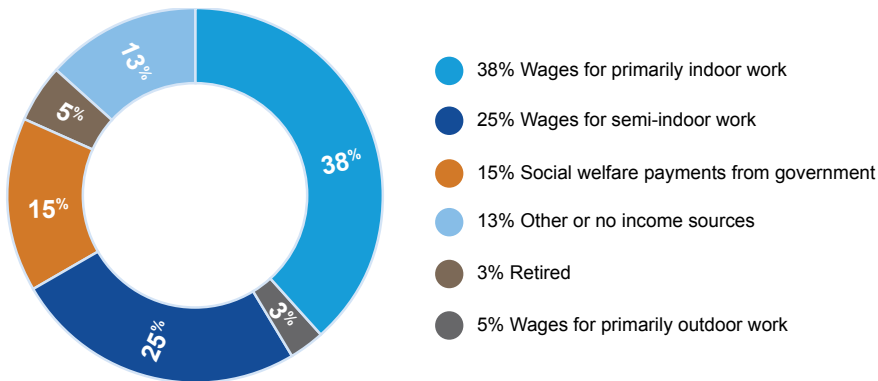
male **40%**

52% between 31 and 65 years of age

40% of respondents in the community from multiple generations

68% of respondents represented a female-headed household

Participants' major sources of income



CRMC Tool and Public Outreach

The CRMC Study revealed strengths and weaknesses in Lower Roxbury across the 5 capitals of community resilience: natural, human, social, physical, and financial resilience.



Human Capital

Refers to the skills, knowledge, health, and education of the community's residents.

+ Strengths:

Respondents reported high levels of awareness of climate change and its associated risks as well as of first aid training.

— Weaknesses:

Research indicated that not all members of the community have access to three meals a day due to financial constraints or issues accessing healthy food options.



Social Capital

Refers to the networks of relationships, trust, and cooperation within a community.

+ Strengths:

There are strong planning instruments for heat at the city level that include specific recommendations for Roxbury.

— Weaknesses:

There are no systems for data collection on the direct and indirect impacts of heatwaves and there is limited stakeholder inclusion of at risk groups in heat management.



Financial Capital

Refers to the financial resources available to the community, both public and private.

+ Strengths:

The neighborhood has historically had access to state and federal grants for resilience projects in addition to city funding.

— Weaknesses:

Fewer than 50% of respondent households in Lower Roxbury have access to discretionary funds and many households fall below the national poverty line. There is no heat reduction budget at the city level and 20% of respondents indicated that to maintain their income during periods of heatwaves they would have to risk heat exposure.



Natural Capital

Refers to the natural environment and resources available to the community for over-all wellbeing, as well as to buffer against extreme weather events

+ Strengths:

Respondents are aware of the positive impacts of natural resources in reducing the impact of heat, and existing natural resources are managed effectively in the neighborhood.

— Weaknesses:

Tree canopy cover in Lower Roxbury is limited and there is significant impermeable land coverage.



Physical Capital

Refers to the physical infrastructure of the community, including housing transportation systems, communication networks and public buildings.

+ Strengths:

Residents have access to air conditioning and other heat mitigating technology within their homes and businesses.

— Weaknesses:

Though early warning systems exist for heatwaves, specific steps and actions are not effectively communicated to prepare the community.



Key Findings:

HEAT

88%

agree or strongly agree that their community should be taking greater action to reduce the risks of climate change.

84%

of respondents think that the frequency and severity of heatwaves is and will continue to increase.

92%

of respondents agree that a healthy environment would decrease the risk of heatwaves.

67%

of respondents agree with the statement that "People in this community generally try to help each other and can rely on each other to help them in a time of need."

- ☐ No known budget for heat resilience for Lower Roxbury.
- ☐ Limited Representatives of at-risk groups or intermediaries of at risk groups included in heat risk management.
- ☐ No established system in place for collected data on direct and indirect impacts of heatwaves

What's Important to Lower Roxbury?

Prioritized Resilience Indicators



WORKER PROTECTION FOR HEATWAVES:

Heat poses significant risks to outdoor workers. In Lower Roxbury, both those workers in hot indoor environments without access to cooling and those working outdoors can be impacted by high temperatures with risk to their health and resulting in diminished productivity or workers having to skip work due to health concerns. This can also affect individuals that may work near industrial heat sources in Lower Roxbury, who already have higher exposure to heat.



COMMUNITY FINANCIAL HEALTH:

A significant portion of households in Lower Roxbury fall below the national poverty line and are earning below the median national income. In addition to the difficulties these residents face in accessing basic necessities, lack of resources also means residents have less capacity for engaging in heat preparedness and for purchasing supplies that can help with heat mitigation like air conditioners or fans.



ENERGY AFFORDABILITY:

Many residents in Lower Roxbury struggle to afford basic energy expenses, with some unable to run air conditioners in the summer due to their financial constraints. As temperatures rise, residents have seen soaring energy prices, resulting in their spending a larger portion of their income on energy expenses.

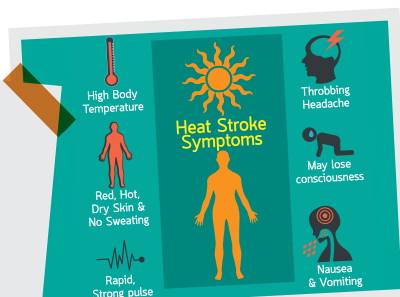
What's Important to Lower Roxbury?

Community Design Sprints

Residents were invited to produce actions and desired outcomes that could enhance overall community resilience in Lower Roxbury and specifically respond to the indicators they prioritized. The results are a wide range of potential program and project ideas which were used to influence and refine the projects chosen for implementation:

Programs for
AC Installation
in Commercial &
Residential Spaces

Heat Awareness
Campaigns



More education on
financial instruments
for residents

Mental Health
Support of Younger
Community Members

Better insulation
and housing
improvements



Increasing Water
resources and
fountains to offset
heat impacts

Food Distribution
Programs



Increasing greenery to
offset heat

Eviction Support

Multi-lingual
campaigns for
residential energy
solutions to increase
affordability

Maximum
temperature codes
for public housing

Education on
Hydroponic Food
Solutions

Youth education
opportunities and
vocational training



Training in workers'
rights



LOCAL PROJECT PROFILE

Youth-Led Empowerment in Lower Roxbury

Extreme heat is one of the most pressing stresses faced by the Lower Roxbury community.

To foster resilience to the effects of extreme heat, the Resilient Cities Network has partnered with YouthBuild Boston to build four (4) cooling/shading stations that will engage the Lower Roxbury and Dorchester communities. Two cohorts of students will work with designers and a newly developed curriculum to design and build adaptive infrastructure at key civic and public spaces.

This project harnesses the collaborative efforts of YouthBuild Boston, Resilient Cities Network, Architecture for Public Benefit, Boston's Office for New Urban Mechanics and other city agencies to build a more resilient Boston. It is further strengthened by the active engagement of community partners, including United Neighbors of Lower Roxbury, Paige Academy, Haley House, Dorchester Weather Friends and Colleagues, Woodrow Ave Neighborhood Association, Talbot Norfolk Triangle Neighborhood Association, Codman Square Neighborhood Association, Neighborhood Church of Dorchester, Antioch Church of Roxbury, Emmanuel Gospel Center and Apostolic Church LAWNA.



By the Numbers

Up to **40**

Youth community residents trained on the Green Construction Training Curriculum

4

Cooling stations installed by Summer 2025

More than **25**

Community residents and partners engaged in the design toolkit launch, cooling intervention visioning and site co-design

7500+

residents of Lower Roxbury and adjacent neighborhoods have increased access to cooling stations from Summer 2025



2. Local Partner Profile

Timeline of Project Deliverables

To foster resilience to the effects of extreme heat, Resilient Cities Network has partnered with YouthBuild Boston to build four (4) cooling/shading stations accessible by residents of the Lower Roxbury Community. The project will also include the creation and publication of a Design Toolkit for designing, constructing, and implementing urban cooling architecture. The Toolkit aims to create an inclusive guide that allows anyone, not just designers and architects, to take action against extreme heat in their communities.



GREEN CURRICULUM DEVELOPMENT & CONSTRUCTION TRAINING

Green construction training equips underserved youth with the skills needed for careers in sustainable building practices, focusing on environmentally responsible construction techniques and the development of resilient infrastructure.



DESIGN TOOLKIT FOR URBAN COOLING INFRASTRUCTURE

The Tactical Guide for Urban Cooling Infrastructure – a design toolkit – provides practical strategies and solutions for community leaders, nonprofits and city governments to implement equitable cooling interventions in urban areas, focused on underserved communities most affected by the impacts of climate change.



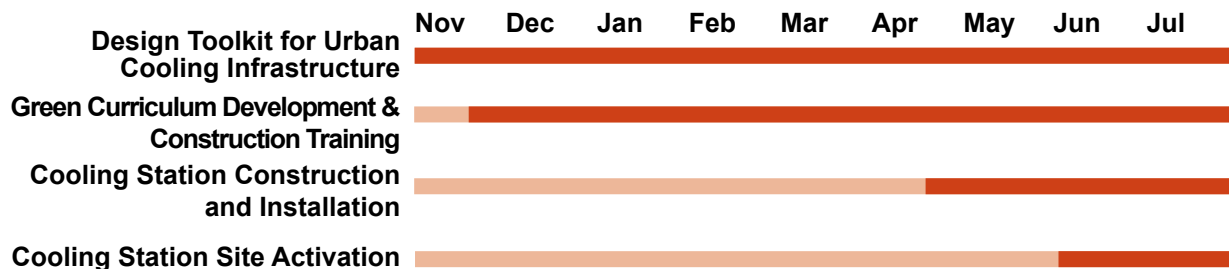
COOLING STATION CONSTRUCTION AND INSTALLATION

The cooling station construction and installation involves building four community cooling stations in partnership with local stakeholders to provide relief from extreme heat and enhance public infrastructure, accessible to residents from Lower Roxbury.



COOLING STATION SITE ACTIVATION

The cooling station sites are activated through intensive community engagement efforts and community-oriented programming, including a climate and environmental justice play organized by a local artist-in-residence. Ongoing efforts attract community members to the site and encourage the use of the cooling stations throughout the summer.



About Youth Build Boston

YouthBuild Boston (YBB) is a local organization that provides workforce development for at-risk youth in the Lower Roxbury neighborhood by engaging young people in educational workshops, job readiness programs, vocational training, and in the design/development of tactical urbanism projects with community partners. YBB is the Boston local chapter of the international YouthBuild organization, that 'champions today's opportunity youth who aspire to improve their lives and communities by building the skills and resources to reach their full potential'. Through the YouthBuild program, young people are empowered to become leaders within their communities and contribute to a more resilient future.

Website:

<https://www.youthbuildboston.org/>

Status:

501 (c)(3) US-Based

Non-profit Year Incorporated:

1990

Board of Directors:

Jeanine Armitstead, Chuck Borstel, Amenyonah Bossman, Leroy Browne, Frank Burt, Troy Depeiza, Amanda Forde, Melinda Giovengo, Tom Goemaat, Al Gogolin, Matt Grosshandler, Scott Harrington, David C. Harris, Jill Lacey Griffin, Ellen O'Connor, Edward (Tony) Ransom, Liem Tran, Melvin A. Vieira Jr., Shelley Webster, Kenneth Willis, Brooke Woodson

Executive Director:

Peter Hunt

Community Impact

Co-benefits refer to the additional beneficial impacts that a resilient project can deliver to the community and/or greater system beyond its basic functions. Addressing resilience challenges in an integrated and holistic way will help the initiative, project, surrounding community and greater system realize multiple benefits across sectors and stakeholders.

One of the core pillars of this project is empowering members of the community to engage and respond to extreme heat. YouthBuild Boston employs young people in the community who are un- or under-employed to build the cooling stations and other interventions. Through this engagement, trainees are prepared for entry-level carpentry jobs, gaining field experience through real world projects. Wraparound support includes on-site mental health counseling and life skills development to help trainees overcome challenges, such as anxiety and depression, that may keep them from retaining employment and achieving economic self-sufficiency. This supports the next generation to contribute to their community's resilience with practical skills.

Co-Benefits

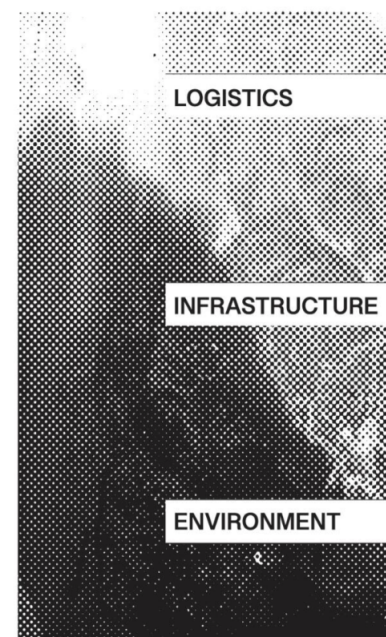
Co-benefits refer to the additional beneficial impacts that a resilient project can deliver to the community and/or a greater system beyond its basic functions. Addressing resilience challenges in an integrated and holistic way will help the initiative, project, surrounding community and greater system realize multiple benefits across sectors and stakeholders.

Through a combination of a holistic community engagement process and physical interventions, this project thinks about change at the individual, inter-personal, organization/community and systems levels. The approach aims to not only improve well-being in the face of extreme heat but improves community preparedness to respond to shocks and stresses overall. Co-benefits of this project include:

- Increased Job Readiness and Career Opportunities
- Empowerment of Local Youth
- Improved Resilience Infrastructure
- Social Equity and Inclusion
- Stronger Community Cohesion
- Public Health Improvements
- Economic Growth and Stability

A TACTICAL GUIDE TO URBAN COOLING INFRASTRUCTURE

SITE WORK



Operating Hours: Determine when the site will be in use to align design with peak demand and accessibility.

Maintenance: Plan for upkeep, including cleaning and repairs, to ensure the space remains functional over time.

Permitting: Identify and secure any necessary permits to comply with local regulations and avoid project delays.

Water and Drainage: Assess the availability of water supply and the capacity for proper drainage to support features like cooling systems or vegetation.

Electricity: Verify access to electrical connections for lighting, cooling equipment, or other power needs.

Nearby Buildings: Evaluate the impact of adjacent structures, including shading, wind patterns, and visual integration.

Solar Orientation: Analyze the sun's path to design for optimal shading and cooling throughout the day.

Topography: Understand the site's elevation and slopes to manage drainage and accessibility.

Seasons: Consider how the space will perform across different weather conditions and adapt to seasonal variations.

PRE-DESIGN

Problem definition: Clearly articulate the program goals and design challenge, identifying the specific issue the project aims to address.

Identify Users: Engage with all stakeholders, including clients, funders, end-users, neighbors, and custodians, to understand their needs and perspectives.

DESIGN

Community Workshops: Facilitate participatory sessions to gather input, build consensus, and ensure the design reflects the priorities of the community.

Develop Solution: Synthesize insights from workshops and stakeholder feedback to create an inclusive, functional, and context-sensitive design solution.

FIGURE 18: Created as an inclusive guide, the Toolkit empowers community members, not just designers and architects, to take action against extreme heat in their neighborhoods.



COMMUNITY ACTION PLAN

Community Action Plan

Introduction

The Lower Roxbury Community Action Plan outlines a host of specific projects, initiatives and strategies identified and developed with local partners during the R4C engagement and co-design process. Informed by public outreach, data-driven analysis and the alignment of city strategies with identified community needs, the projects presented in the Lower Roxbury Community Action Plan are real-time community resilience projects developed with, and by, key stakeholders actively tackling resilience challenges in the neighborhood.

How to Use This Section

Use this section to learn more about active projects and initiatives in the Lower Roxbury community, including projects partners behind this important work and different ways you or your organization can get involved. The Lower Roxbury Community Action Plan is the culmination of extensive public outreach and community engagement and is where interested partners and funders can get involved in implementing projects contributing to a holistic neighborhood response to resilience challenges. Projects presented in the Lower Roxbury Community Action Plan have been developed by project partners engaged during the R4C assessment and co-design process.

Guiding Principles of the R4C Lower Roxbury Community Action Plan:

1 Community Generated Projects and Programs

2 Data-Driven and Responsive to Local Needs

3 A Living Document to be used by community stakeholders, neighborhoods groups, funders and others, to pool resources, understand needs, and implement community level projects.

The projects included in this Community Action Plan address heat risks and provide tangible co-benefits to **7500+** residents of Lower Roxbury.

Community Resilience Projects

Mapped below are the currently active Lower Roxbury Resilience for Communities (R4C) projects, as well as ongoing community resilience projects being implemented by existing community partners. These projects are addressing identified heat and flooding risks in the community, as well as providing tangible co-benefits, particularly around neighborhood equity and climate justice. Each project identified is actively seeking various forms of support and align with ongoing efforts to build holistic community resilience in Lower Roxbury.

Review the project partners and project descriptions here and on the previous pages to learn more about specific initiatives. Icons below indicate if projects are looking for either funding, technical assistance, skilled/group volunteers, or some combination of support.



1. Design Toolkit for Urban Cooling Infrastructure



The Tactical Guide for Urban Cooling Infrastructure – a design toolkit – provides practical strategies and solutions for community leaders, nonprofits, and city governments to implement equitable cooling interventions in urban areas, focused on underserved communities most affected by the impacts of climate change.

2. Green Curriculum Development & Construction Training



Green construction training equips underserved youth with the skills needed for careers in sustainable building practices, focusing on environmentally responsible construction techniques and the development of resilient infrastructure.

3. Cooling Station Construction and Installation



The cooling station construction and installation involves building four community cooling stations in partnership with local stakeholders to provide relief from extreme heat and enhance public infrastructure, accessible to residents from Lower Roxbury.

4. Cooling Station Site Activation



The cooling station sites are activated through intensive community engagement efforts and community-oriented programming, including a climate and environmental justice play organized by a local artist-in-residence. Ongoing efforts attract community members to the site and encourage the use of the cooling stations throughout the summer.



Funding



In-Kind



Volunteers

Design Toolkit for Urban Cooling Infrastructure

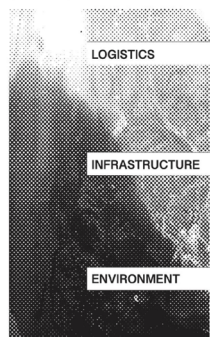
The Design Toolkit for Urban Cooling Infrastructure is a publicly accessible guide that equips community leaders, nonprofits, and city governments with practical strategies to implement equitable cooling interventions in underserved urban areas most impacted by climate change. Co-created through community engagement, this toolkit provides actionable guidance for developing cooling stations and serves as a vital resource for community stakeholders working to enhance urban resilience.

IMMEDIATE NEXT STEPS

- ✓ Strengthen partnerships between participating organizations and community members through interactive community engagement activities.
- ✓ Finalize and release the design toolkit as a resource for community stakeholders.
- ✓ Disseminate design concepts from the toolkit for accessibility and ease of replicability.

A TACTICAL GUIDE TO URBAN COOLING INFRASTRUCTURE

SITE WORK



Operating Hours: Determine when the site will be in use to align design with peak demand and accessibility.

Maintenance: Plan for upkeep, including cleaning and repairs, to ensure the space remains functional over time.

Permitting: Identify and secure any necessary permits to comply with local regulations and avoid project delays.

Water and Drainage: Assess the availability of water supply and the capacity for proper drainage to support features like cooling systems or vegetation.

Electricity: Verify access to electrical connections for lighting, cooling equipment, or other power needs.

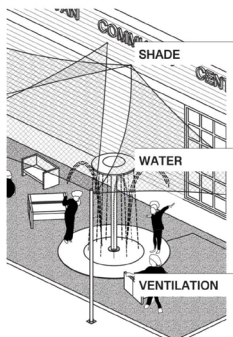
Nearby Buildings: Evaluate the impact of adjacent structures, including shading, wind patterns, and visual integration.

Solar Orientation: Analyze the sun's path to design for optimal shading and cooling throughout the day.

Topography: Understand the site's elevation and slope to manage drainage and accessibility.

Seasons: Consider how the space will perform across different weather conditions and adapt to seasonal variations.

COOLING STRATEGIES



• **Configuration:** Shade structure can be either a wall or a canopy.

• **Materiality:** Select water-resistant and UV-stabilized materials.

• **Anchoring:** Ensure stability and select between retractable or fixed installations.

• **Density:** Balance coverage with ventilation to maintain airflow.

• **Reflectivity/Albedo:** Choose materials that reflect heat to reduce surface temperatures.

• **Misting:** Fine droplets of water. Misting systems use less water - allowing them to run longer without waste and providing easy drying and sites with low drainage capacity a swift return to everyday activities.

• **Sprinkler/Spray:** Offers effective and playful cooling with even distribution.

• **Bodies of Water:** Passive cooling that does not require a continuous water source. Water tables, trays, and fountains offer a fun and interactive way to cool down.

• **Mechanical Ventilation:** energy-efficient systems with minimal noise and a small environmental footprint such as solar-powered, or misting fans.

• **Passive Ventilation:** Perforated walls or screens that channel breezes. Use natural materials with high permeability or strategically placed openings to optimize airflow.

PRE-DESIGN

Problem definition: Clearly articulate the program goals and design challenge, identifying the specific issue the project aims to address.

Identify Users: Engage with all stakeholders, including clients, funders, end-users, neighbors, and caretakers, to understand their needs and perspectives.

DESIGN

Community Workshops: Facilitate participatory sessions to gather input, build consensus, and ensure the design reflects the priorities of the community.

Develop Solution: Synthesize insights from workshops and stakeholder feedback to create an inclusive, functional, and context-sensitive design solution.

CONSTRUCTION

Purchasing and Fabrication: Source high-quality, sustainable materials and fabricate components to meet project specifications.

Installation: Coordinate a seamless on-site installation process, ensuring safety, efficiency, and minimal disruption to the community.

MAINTENANCE

Post-Occupancy Evaluation: Conduct assessments to measure the project's impact on users and the environment, identifying areas for improvement.

Stewardship: Establish a long-term care plan, empowering stakeholders to maintain and sustain the project's functionality and value over time.

PROJECT LEAD:

Architecture for Public Benefit (APB)

PROJECT PARTNERS:

YouthBuild

MITIGATION



HEAT RISK

Reduction through disseminating practical strategies for implementing and building cooling interventions, with application to underserved urban areas most impacted by extreme heat.

FINANCING SCALE



TIMEFRAME

Quick Win



CAPITAL



Natural



Social



FOR MORE INFORMATION:
[YOUTHBUILD BOSTON.ORG](https://youthbuildboston.org)
[APBDESIGN.ORG](https://apbdesign.org)

Green Construction Training Curriculum

The Green Construction Training Program equips underserved youth with the skills needed for careers in sustainable building practices, emphasizing environmentally responsible construction techniques and resilient infrastructure. Through a structured curriculum centered on sustainable design and community-based projects, participants gain hands-on experience in the green economy and construction trades. This training culminates in the development and construction of four cooling stations, fostering both workforce development and climate resilience in their communities.

IMMEDIATE NEXT STEPS

- ✓ Introduction to the design and construction process through exploration and research.
- ✓ Develop initial design concepts through ideation and iterative problem-solving.
- ✓ Gain hands-on experience in fabrication based on design and community feedback.
- ✓ Finalize projects and present completed work to peers, mentors and community partners.



PROJECT LEAD:

YouthBuild

PROJECT PARTNERS:

APB Architecture

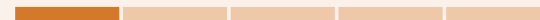
MITIGATION



HEAT RISK

Reducing urban heat exposure by equipping underserved youth with the skills to build climate-resilient infrastructure, including cooling stations with water-based solutions and shading structures.

FINANCING SCALE



TIMEFRAME

Mid-term



CAPITAL



Financial



Human



FOR MORE INFORMATION:
[YOUTHBUILDBOSTON.ORG](https://youthbuildboston.org)

Cooling Station Construction and Installation

Four cooling stations will be installed providing relief from extreme heat while integrating climate resilience with cultural programming. YouthBuild students are actively involved in the design process, gaining hands-on experience that improves their readiness for careers in construction trades and the green economy. Beyond infrastructure, it fosters community engagement, storytelling and long-term advocacy for climate resilience and public space investment.

IMMEDIATE NEXT STEPS

- ✓ Develop schematic design drawings integrating research and community insights.
- ✓ Review concepts and gather feedback from stakeholders.
- ✓ Create design development drawings, refining details for feasibility and implementation.
- ✓ Begin fabrication, assembly and installation the cooling station on-site.
- ✓ Organize and host an opening event to introduce the cooling stations to the community.



PROJECT LEAD:

YouthBuild

PROJECT PARTNERS:

APB Architecture

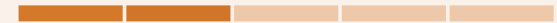
MITIGATION



HEAT RISK

Reducing extreme heat exposure by creating shading infrastructure that provides immediate relief.

FINANCING SCALE



TIMEFRAME

Mid-term



CAPITAL



Physical



Human



Natural



FOR MORE INFORMATION:
[YOUTHBUILDBOSTON.ORG](https://youthbuildboston.org)

Cooling Station Site Activation

Jaronzie Harris, an educator, playwright and musician, serves as an artist-in-residence with the City of Boston and the Dorchester Weather Theater Ensemble, focusing on climate justice storytelling and urban resilience. Their project builds on previous efforts, such as performances like Dorchester Weather, which have engaged residents in conversations about urban heat and resilience.

The Boston Artists-in-Residence (AIR) program partners artists with City departments to reimagine a more creative and equitable Boston. Through collaboration, artists bring their creative expertise while City employees contribute government knowledge, co-designing projects that test innovative approaches to City policies and processes. These projects often respond to social and political issues, aiming to enhance the experiences of all Bostonians.

The cooling stations, part of this initiative, will provide physical relief while also serving as community gathering spaces. They will be activated by artistic performances, educational workshops, and community-led events, fostering connection and engagement among neighbors.

IMMEDIATE NEXT STEPS

- ✓ Organize an opening event in collaboration with the ensemble, celebrating the installation with a performance and community gathering.
- ✓ Jaronzie Harris plans to create a video of the play produced during her residency and to explore the opportunity for a tour of the show.

PROJECT LEAD:

YouthBuild

PROJECT PARTNERS:

Architecture for Public Benefit, Jaronzie Harris Artist in Residence City of Boston, Dorchester Weather Theater Ensemble

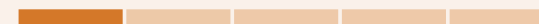
MITIGATION



HEAT RISK

Reducing extreme heat exposure by providing immediate relief from while integrating climate resilience with cultural programming and community-driven advocacy for sustainable public spaces.

FINANCING SCALE



TIMEFRAME

Mid-term



CAPITAL



Physical



Social



FOR MORE INFORMATION:
[BOSTON.GOV](https://www.boston.gov)

Lower Roxbury - Toward a Resilient Future

The projects and partnerships presented in the Lower Roxbury Community Action Plan outline a specific suite of interventions that will help build a more resilient community ready to respond to the impacts of heat, flood and other acute shocks.

By identifying and implementing these projects as a portfolio of community interventions, the essential conditions of holistic community resilience can begin to take root and set the course for coordinated and bottom-up neighborhood action of years to come.



Financial Capital

Investment in Youth Workforce Development focuses on providing training for underserved youth through a green construction curriculum. This program equips them with valuable skills in both construction and the green economy. The construction and installation of cooling stations serve as a practical testing ground for the skills and knowledge acquired. These initiatives directly contribute to generating employment and economic opportunities for youth in the construction trades.

- Green Construction Training Curriculum



Physical Capital

Activating Public Space Cooling Interventions – The Cooling Station Construction and Installation initiative delivers four cooling stations as tangible assets that provide long-term benefits to the community. Additionally, the Cooling Station Site Activation enhances the usability of public spaces through infrastructure that supports performances and community events.

- Cooling Station Construction and Installation



Social Capital

Community engagement for Site Activation – The Cooling Station Site Activation initiative strengthens community connections through artistic performances, educational workshops and cultural programming. The Tactical Guide to Urban Cooling Infrastructure is co-created with community input to ensure it is accessible and relevant for local stakeholders.

- Tactical guide to Urban Cooling Infrastructure
- Cooling Station Site Activation



Natural Capital

The Sustainability Benefits of Cooling Interventions are highlighted in the Tactical Guide to Urban Cooling Infrastructure. This toolkit focuses on water-based solutions and shading infrastructure that enhance climate resilience. It directly supports the construction and installation of cooling stations, contributing to environmental resilience by mitigating urban heat in public spaces.

- Tactical guide to Urban Cooling Infrastructure
- Cooling Station Construction and Installation







Human Capital

Education, skills development, and workforce readiness – The Green Construction Training Curriculum develops technical skills and career readiness for young people entering the construction and sustainability fields. The Cooling Station Construction and Installation project provides YouthBuild students with real-world experience, enhancing their employability in construction trades.

- Green Construction Training Curriculum
- Cooling Station Construction and Installation

Implementation Guide

Projects in the Lower Roxbury Community Action Plan are listed below along with corresponding sections for funding/financing and an estimated timeline of implementation. Additional sections identify key project partners, next steps and calls to action. These projects are part of a living plan of project implementation to prioritize resilient community solutions as funding, partnerships and other opportunities become available.

PROJECT	PROJECT LEAD	PROJECT PARTNERS	FINANCING (\$ TO \$\$\$\$\$)	QUICK WINS (<1 YEAR)	MID TERM (1-3 YEARS)	LONG TERM (3+ YEARS)
Design Toolkit for Urban Cooling Infrastructure	Architecture for Public Benefit (APB)	YouthBuild	\$			
Green Construction Training Curriculum – Cohort #1	YouthBuild	APB	\$			
Cooling Station Construction and Installation	YouthBuild	APB	\$ \$			
Cooling Station Site Activation	YouthBuild	APB, Jaronzie Harris Artist in Residence City of Boston, Dorchester Weather Theater Ensemble	\$			

Project Funding

Initial seed funding for the R4C program has identified, prioritized and implemented a series of catalytic community resilience projects utilizing the Resilience for Communities Impact Funds (RCI Funds). Additional opportunities also exist to get involved with project funding and leverage already committed resources to drive impact. Listed below are different ways funders can get involved at a variety of scales – all with an overarching goal, to finance and implement community identified, prioritized, and owned resilience projects and solutions.

Option A

Contribute to projects through the RCIFunds investment vehicle to allow for pooled resources from small, medium and large dollar funders. Funding includes individual giving, corporate giving, state/local/federal grants, etc.

SMALL

- ☐ Individual Giving
- ☐ Corporate

MEDIUM

- ☐ Local government
- ☐ Foundations
- ☐ Corporate

LARGE

- ☐ State/Fed government
- ☐ Foundations
- ☐ Corporate

RCIFunds

Option B

Direct to project funding facilitated by RCN and partners. Includes technical assistance, corporate giving, individual giving, the Benevity platform, state/local/federal grants, etc.

Community Projects
and Partners

Additional Support



Volunteer Opportunities

Opportunities exist with certain community partners and projects to support via volunteering and donation of in-kind services. Check with individual projects to identify who is currently seeking volunteers. The icon to the left of this box signifies projects seeking volunteers to help drive impact.



In-Kind Donations

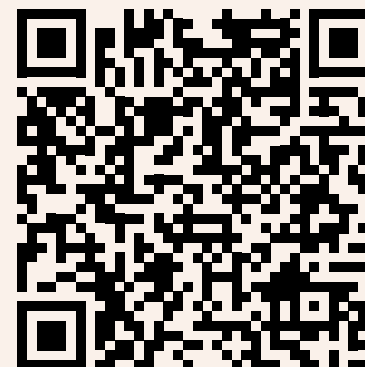
Some community projects are seeking in-kind donations of labor, materials or other valuable services. If you have goods or services you would like to donate to community projects, you review the list to identify potential partners. The icon to the left of this box signifies projects seeking in-kind donations of goods and services to drive impact.



Project Funding

Additional opportunities also exist to get involved with project funding and leverage already committed resources to drive impact. There are different ways funders can get involved at a variety of scales – all with an overarching goal, to finance and implement community identified, prioritized and owned resilience projects and solutions. See the previous slide to identify options to fund projects.

LEARN MORE ABOUT PROJECTS, GET UPDATES, AND LEARN MORE ABOUT HOW YOU CAN TO GET INVOLVED!



Contact Us

Global Resilient Cities Network

Resilience for Communities/RCI Funds

rcifunds@resilientcitiesnetwork.com

r4c@resilientcitiesnetwork.com

Sources

- ⁱ Hallegatte, S., Green, C., Nicholls, R. J., & Corfee-Morlot, J. (2013). Future flood losses in major coastal cities. *Nature Climate Change*, 3(9), 802–806. <https://doi.org/10.1038/nclimate1979>
- ⁱⁱ Adrienne Arsht-Rockefeller Foundation Resilience Center, & Vivid Economics. (2021). Extreme Heat: The economic and social consequences for the United States. Atlantic Council. Retrieved from Atlantic Council website: <https://www.atlanticcouncil.org/wp-content/uploads/2021/08/Extreme-Heat-Report-2021.pdf>
- ⁱⁱⁱ Roxbury Crossing Historical Trust. "The Roxbury Highlands" Access at: [The Roxbury Highlands – Roxbury Crossing Historical Trust](#)
- ^{iv} City of Boston. "Roxbury: At a Glance" Access at: [At a Glance | Bostonplans.org](#)
- ^v Composite Median from 2023 American Community Survey, across 4 Census Tracts that Lower Roxbury falls into.
- ^{vi} Data from 2022 American Community Survey
- ^{vii} https://en.wikipedia.org/wiki/Roxbury_Community_College#cite_note-5
- ^{viii} See [UPCD_2022_CoolRoxburyReport_Final.2.pdf](#) for full report
- ^{ix} University of Massachusetts Boston, Department of Urban Planning and Community Development, 2022



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