BERDO REVIEW BOARD MEETING & PUBLIC HEARING

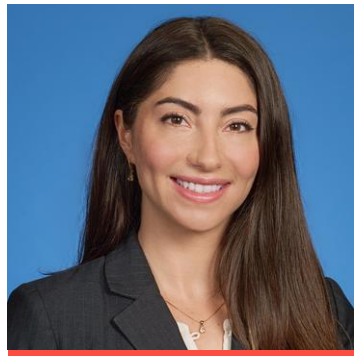
September 9, 2024

Mayor Michelle Wu

BERDO Review Board

Rashida Boyd

Board Member

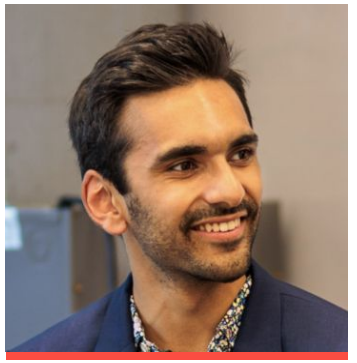


Gabriela Coletta Zapata

City Councilor

Stephen Ellis

Board Member



Hessann Farooqi

Board Member

Lovette Jacobs

Board Member

Gail Latimore

Board Member

Jack Nelson

Board Member

City of Boston Staff

Diana Vasquez

BERDO Review Board Manager

Zengel “Ziggy” Chin

BERDO Review Board Assistant

Agenda

Today's Meeting

Public Meeting

1. *Approval of Meeting Minutes*
2. *Administrative Updates*

Public Hearing

3. *Presentations from Equitable Emissions Investment Fund 2024 Application Cycle Finalists.*
4. *Meeting Adjournment*

Public Meeting

Approval of Meeting Minutes

Board votes on approving previous meeting's minutes

Administrative Updates

Staff presents administrative updates

Review Board Upcoming Timeline

Aug 26 Hearing

Discuss and narrow a group of finalists (up to 5)

Sept 5

RDH Training

Sept 9 Hearing

Presentations from Fund finalists

We are here

Sept 23 Hearing

Vote on the Fund (up to 3 awards) ***and*** *vote on Building Portfolio applications*

Oct 1

Short-term HCP application deadline

Nov 15

Extended Reporting Deadline

Jan 6, 2025

Building Portfolio and ICS application deadline

Upcoming Event: BERDO Compliance for Condo Associations Webinar

September 25, 2024, 6:00 - 8:00 p.m., over Zoom

Hosted with Marcus Errico Emmer & Brooks, P.C.

This event will:

- Provide an overview of BERDO compliance obligations for condo associations; and
- Share best practices to help condo associations, property managers, and unit owners comply with BERDO emissions standards and understand who is responsible for building improvements and costs.

REGISTER HERE

2024 Meeting Schedule

Second and fourth Mondays

MEETING DATES	
January 8	July 8
January 22	July 22
February 12	August 12
February 26	August 26
March 11	September 9
March 25	September 23
April 8	**October 14***
April 22	October 28
May 13	November 11*
May 27*	November 25
June 10	December 9
June 24	December 23*

October 14 meeting:

- We have 3 Building Portfolio applications scheduled for this meeting.
- Propose to move the October 14 meeting to **October 15**.

Public Hearing

Presentations from Equitable Emissions Investment Fund 2024 Application Cycle Finalists.

2024 Application Cycle

Application Review

2024 Application Cycle

Process Review

- We received **19 applications** total this year.
- The BERDO team is did an initial review with the City's Legal and Grants teams for eligibility of the projects.
- The BERDO team shared application deemed eligible with accompanying cover pages with each Review Board member.
  - *Each Board member received an individual project evaluation criteria*
- On August 26 The Review Board voted on 5 finalists to come present today.

Draft Evaluation Form					
Criteria	**Highly Advantageous**	**Advantageous**	**Not Advantageous**	**Not Present**	**Need more information**
Emissions reductions	*Building emissions reductions are clearly defined, expected timeline and scale are clearly outlined, and are realistic.*	*Building Emissions reductions are mentioned, but timeline and scale are unclear or results are moderate emissions reductions.*	*Building emissions reductions are limited.*	*Not eligible for funding.*	*Need more information regarding building emissions reductions.*
Benefits to affordable housing	*Affordable housing benefits are clearly defined, expected timeline and scale are clearly outlined, and are realistic.*	*Affordable housing benefits are mentioned, but timeline and scale are unclear or are not a main focus.*	*Affordable housing benefits are limited.*	*Affordable housing benefits are not mentioned.*	*Need more information regarding benefits to affordable housing.*
Benefits to tenants	*Tenant protections are clearly defined, expected timeline and scale are clearly outlined, and are realistic.*	*Tenant protections are mentioned, but timeline and scale are unclear or are not a main focus.*	*Tenant protections are limited.*	*Tenant protections are not mentioned.*	*Need more information regarding benefits to tenants.*
Benefits to labor and workforce development	*Labor benefits and workforce development benefits are clearly defined, expected timeline and scale are clearly outlined, and are realistic.*	*Labor benefits and workforce development benefits are mentioned, but timeline and scale are unclear or not a main focus.*	*Labor benefits and workforce development are limited.*	*Labor benefits and workforce development are not mentioned.*	*Need more information regarding benefits to labor and workforce development.*
Benefits to outdoor air quality	*Outdoor air quality benefits are clearly defined, expected timeline and scale are clearly outlined, and are realistic.*	*Outdoor air quality benefits are mentioned, but timeline and scale are unclear or not a main focus.*	*Outdoor air quality benefits are limited.*	*Outdoor air quality benefits are not mentioned.*	*Need more information regarding benefits to outdoor quality.*
Benefits to indoor air quality and quality of life	*Benefits to indoor air quality and quality of life are clearly defined, expected timeline and scale are clearly outlined, and are realistic.*	*Benefits to indoor air quality and quality of life are mentioned, but timeline and scale are unclear or not a main focus.*	*Benefits to indoor air quality and quality of life are limited.*	*Benefits to indoor air quality and quality of life are not mentioned.*	*Need more information regarding benefits to indoor air quality and quality of life.*
Climate resilience benefits	*Climate resilience benefits are clearly defined, expected timeline and scale are clearly outlined, and are realistic.*	*Climate resilience benefits are mentioned, but timeline and scale are unclear or not a main focus.*	*Climate resilience benefits are limited.*	*Climate resilience benefits are not mentioned.*	*Need more information regarding climate resilience benefits.*
Energy justice benefits	*Energy justice benefits are clearly defined, expected timeline and scale are clearly outlined, and are realistic.*	*Energy justice benefits are mentioned, but timeline and scale are unclear or not a main focus.*	*Energy justice benefits are limited.*	*Energy justice benefits are not mentioned.*	*Need more information regarding energy justice benefits.*
Other benefits	*Other benefits included in the proposal are clearly defined, expected timeline and scale are clearly outlined, and are realistic.*	*Other benefits are included in the proposal,but timeline and scale are unclear or not a main focus.*	*Other benefits included in the proposal are limited.*	*Other benefits are not mentioned.*	*Need more information regarding other benefits.*

Equitable Emissions Investment Fund Finalists

2024 Application Cycle

Procedure for today:

1. The applicants will present on their project proposals.
2. Review Board members will have the chance to share their thoughts and ask questions about each project.
3. The Chair will open a public comment period.

Next Steps:

4. The Review Board will be sent a Google Form where they will share their questions and/or thoughts.
5. The Review Board will vote during the September 23 hearing.

Presentation Order

2024 Application Cycle

1. **Green Energy Consumers Alliance:** EquiSol: The Blue Line Solar Access Program
2. **Fenway Community Development Corporation:** Burbank Gardens Zero-Over-Time Decarbonization
3. **Dorchester Bay Economic Development Corporation:** Dorchester Bay Solar for Residents
4. **The Community Builders:** New Franklin Park Solar Installation
5. **Codman Square Neighborhood Development Corporation:** Advancing Building Decarbonization at Washington Columbia I and II

Green Energy Consumers Alliance

EquiSol: The Blue Line Solar Access Program

Bringing affordable solar to Massachusetts

PALMER

GREEN ENERGY CONSUMERS ALLIANCE

ONEWAY
build your way

RESONANT ENERGY

Project Overview

EquiSol Vision: Create a self-sustaining solar program that delivers high savings to LMI residents at scale through partnership with grassroots organizations, community land trusts, CDCs, landlords, and homeowners. We are developing projects that others have found difficult to finance.

Blue Line Solar Access Program:

- 92.7 kW-DC of solar PV across 10 sites
- Total Cost Pre Development and Installation: **$427,612**

Role of EEIF Grant Funding:

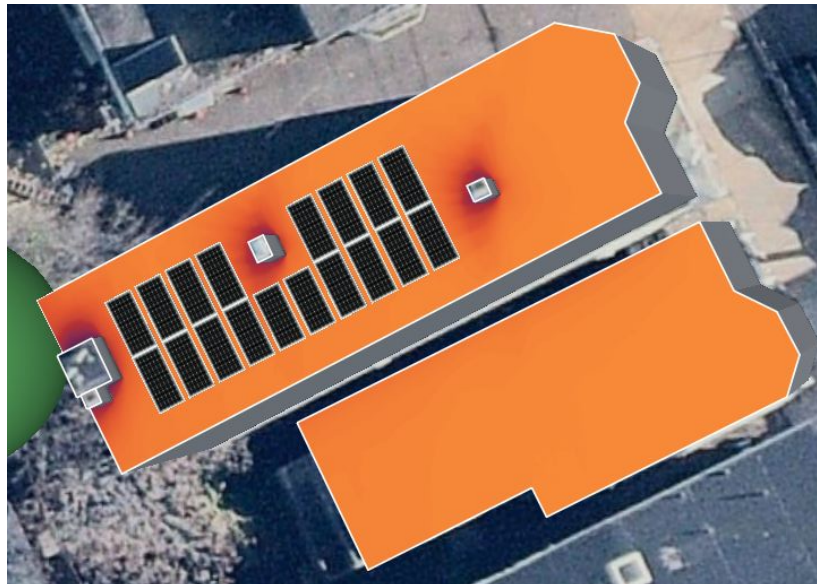
- Support covering installation costs of Blue Line Portfolio
- Significantly increase value to tenants in the Blue Line Portfolio
- Seed funding for revolving LMI Solar fund

Solar Feasibility

- All 10 sites have had site visits and interconnection plan sets have been approved by the utility
- Applications have been submitted to the Department of Energy for the Category 1 Low-Income Bonus Tax Credits

In progress:

- Hosting agreements between financier and hosts
- Funding for GECA to own the systems (either through EEIF, Solar for All, or other sources)
- Structural assessments for each building



Funding Sources: Programmatic and Project-level

- **Initial Program Design and Client Engagement**. Resonant Energy and the broader Equisol team received funding from the Massachusetts Clean Energy Center's EmPower Program for early phase program design.
- Originally pursued more traditional solar financiers but were unable to deliver rates that could cover the installation costs of these projects
    - **IRA Additional Selection Criteria-** Projects funded by a nonprofit organization receive preference for bonus tax credits and are eligible for Direct Pay
    - **Category 1 LI Incentives-** Ownership of the system will allow Green Energy Consumers Alliance to take advantage of incentives and tax credits to reinvest profits in future LMI projects
- East Boston CDC is making repairs to these buildings to make them code compliant
    - Once repairs are complete, EB CDC will engage MassSave/LEAN

Workforce Development

- **Project installations by One Way Development, a minority-owned installer based in Boston**
  - *Completed many Boston Residents Jobs Policy (BRJP) projects*
  - *Registered With Mass Hire*
  - *Member of North Atlantic States Regional Council of Carpenters, Boston, MA. If carpenters are needed on projects, we specifically request Boston Residents, People of Color and Women*
  - *Conduct weekly meetings with both our in house staff and subcontractors where we constantly reinforce our mission to hire Boston Residents, People of Color and Women*
  - *Employee referral program that offers compensation to our highly concentrated minority staff*

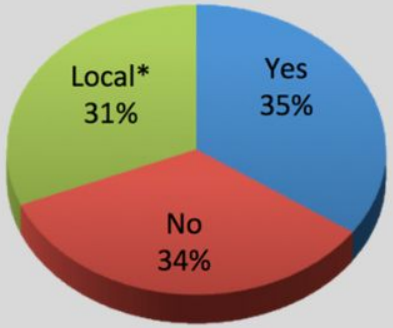
ONEWAY
build your way

EQUISOL

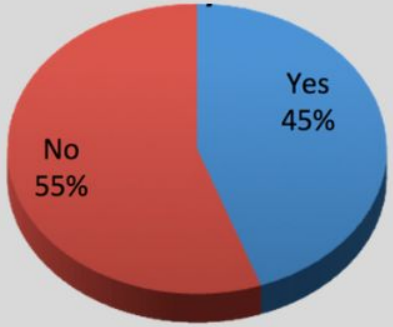
Strong Track Record of Workforce Development

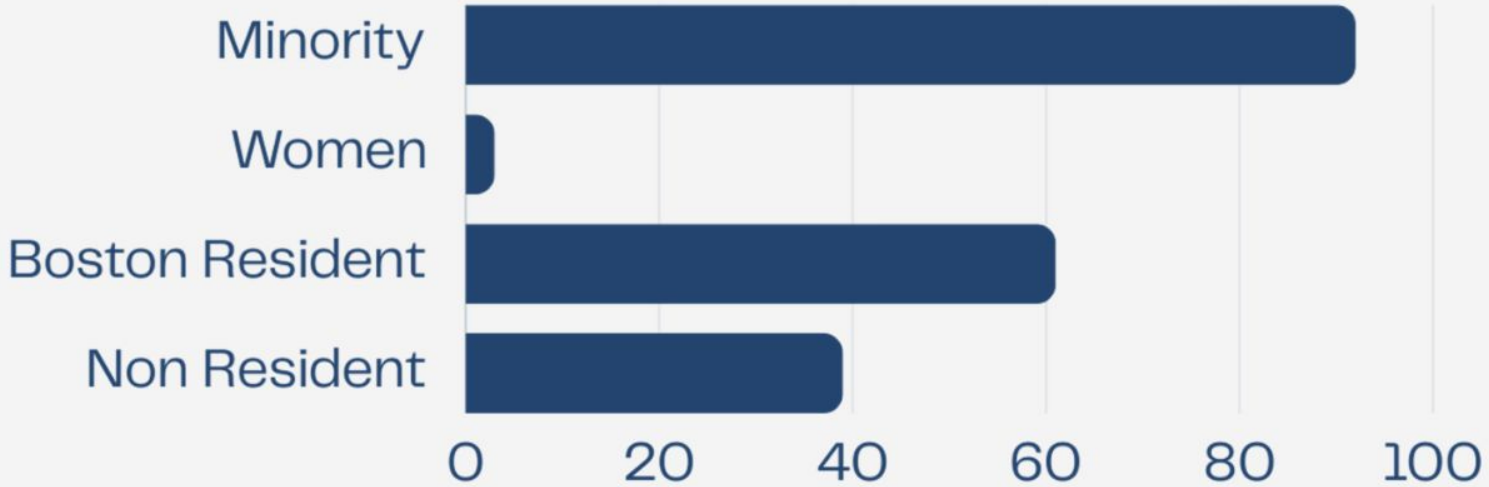
- One Way has an incredible track record with minority participation on its projects.
- One Way has won community awards for DEI (MHIC)
- We mentor many small minority contractors and prioritize hiring Boston Residents
- Our Project Workforce Track Record:

Local Vendors



Minority Vendors





Tenant Communication

- **EquiSol will work with East Boston CDC and Boston Neighborhood Community land trust to provide materials explaining the program and credit donation model.**
- **EquiSol will attend community meetings and land trust stewardship committee meetings, as requested, to help answer any questions about the solar project timeline and benefits.**
- **EquiSol will communicate with tenants about expected disruptions during installation; such disruptions are expected to be minimal.**

EquiSol Marketing Materials will:

- **Emphasize that participating tenants will not have any costs**
- **Highlight that credits will appear directly on their bill**
- **Be available in Spanish**

Emissions Reduction

Expected scale of reductions in total emissions: 25,212.7 kgCO2e/year

1. **Projected emission factor of 548 lb/MWh from BERDO's table**
2. **548 lb/MWh = 249 kg/MWh**
3. **Using estimated total output of 101,256 kWh/ year (101.3 MWh/ year) and multiplying it by the emissions factor, the total kgCO2e/ year was estimated**

⇒ 101.3 MWh x 249 kg/MWh = 25,212,7 kgCO2e

Expected cost for emissions reduction in kilograms of carbon dioxide equivalents per dollar spent from the Fund: 0.1 kgCO2e/$

1. **Total amount of funds requested = $250,000**
2. **Total amount of emissions reduced = 25,212.7 kgCO2e**

⇒ 25,212.7 kgCO2e ÷ $250,000 = 0.1 kgCO2e/ $ *

This calculation is based on the $250,000 grant amount, which is 58% of the total development costs ($427,612)

Impact

Funding from EEIF will allow EquiSol to offer significantly higher savings to residents.

Primary Accounts/Common area meters – Coverage of common meters of host sites, represents 10-20% of total solar production: **$78,338 - $156,675**

Direct Bill Credits to LI Residents and Community Land Trust – 20-50% of output **$195,844 - $489,610**

Total Lifetime Savings: $274,182 - $646,285

Savings from this project will put Equisol in a solid position to take advantage of *Solar for All* Funding and IRA tax credits to replicate these projects at scale.

THANK YOU FOR LISTENING

Any questions or comments?

Fenway CDC

Burbank Gardens Zero-Over-Time Decarbonization

Burbank Gardens Zero Over Time Decarbonization Project

BERDO Review Board

09/09/2024

Introduction to Fenway CDC

BACKGROUND & MISSION

Founded in 1973

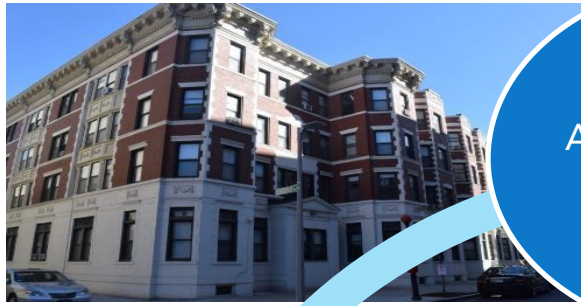
Works to preserve the Fenway as a vibrant and diverse neighborhood

Committed to

- expanding affordable housing opportunities
- community engagement leading to neighborhood improvement
- strengthening economic & social well-being for families and individuals

Introduction to Fenway CDC

555 Affordable + Fair-Market Homes



Affordable Housing Development

11 Properties Owned & Managed; ~143 Units Under Construction/Development

Education & Workforce Development

Serving Over 800 Residents

Civic Engagement & Community Events

Community Organizing & Engagement

Resident Services & Community Programs

Fenway Community Development Corporation
Improving Lives and Building Community

Protecting Residents from Displacement

Access to Food & Health Programs

Fenway CDC – Recent Climate Related Work

- Boston Green Ribbon Commission's Climate Action Planning Cohort graduate
- Received *LISC Massachusetts* and *City of Boston* funding for Decarbonization Studies (incl. Burbank Gardens)
- LOI with *Resonant Energy* to install a ~153 kW DC PV system at a property
- Partnering with *Climable* to explore a virtual microgrid
- Received BERDO Portfolio flexibility measure approval
- Exploring partnership with *itselectric* to deploy curbside EV chargers

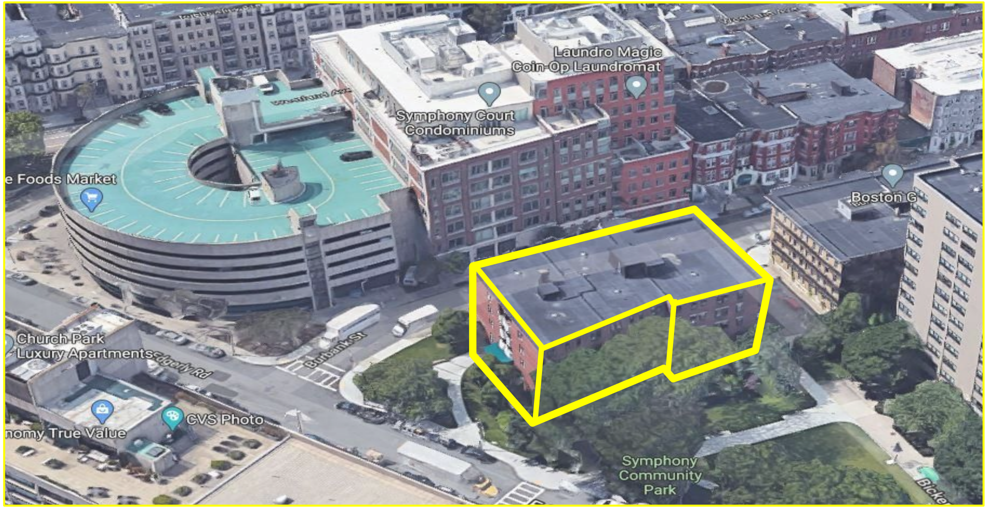
Boston Green Ribbon Commission

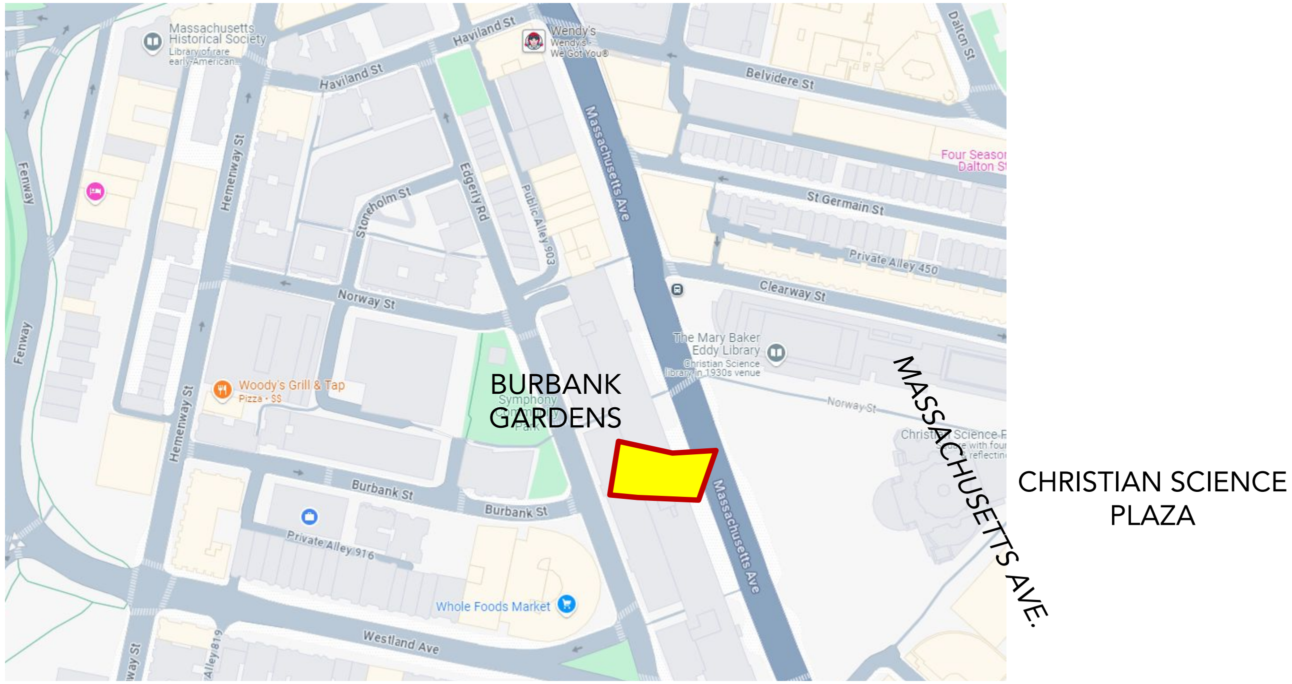
RESONANT ENERGY

climate. science. action.
CLIMABLE .ORG

it's electric

Burbank Gardens – Site History





52 Units

Built 1910
Fenway CDC Acquisition Apr. 2017
Moderate Rehab Start Jan. 2018
Rehab Completion Oct. 2019

Affordability Mix	
Workforce units; 90% AMI or lower	13
Low-income unit; 60% AMI or lower	21
Very low-income units; 50% AMI or lower	7
Exteremely low-income units; 30% AMI or lower	11

Scope of Work

- Upgrading electrical service capacity to accommodate future full electrification

- Installation of:
  - -Heat pump water heaters
  - -Energy Star rooftop exhaust fans
  - -Low flow shower heads
  - -Temperature averaging controls for DHW and hydronic heating
  - -Occupancy sensors in common area lighting
  - - LED fixtures

Sources & Uses

Sources	Amount
Equitable Emissions Investment Fund	$ 245,231
LISC Climate Ready Housing (CRH) Zero Over Time Decarbonization Funding	$ 1,748,236
Total	**$ 1,993,467**

Uses	Amount
Electrification enabling costs	$ 1,250,000
Heat pump water heaters*	$ 160,160
Energy Star rooftop exhaust fans*	$ 19,348
R&D temperature averaging controls*	$ 10,926
Low-flow shower fixtures*	$ 2,813
Occupancy sensors and LED fixtures*	$ 28,329
Personnel Costs	$ 23,655
Consultant costs (architects, engineers)	$ 323,750
Contingency	$ 174,486
Total	**$ 1,993,467**

- Based on pre-application for LISC CRH funding, we were invited to submit a full application.
- CRH funding decision expected by 9/15

*Indicates that the measure is funded from the EEIF

Project Partners

HAYCON

D/R/E/A/M COLLABORATIVE
ARCHITECTURE | REAL ESTATE DEVELOPMENT

NEW ECOLOGY
Community-Based Sustainable Development

BRUNER / COTT ARCHITECTS

General Contractor

HAYCON

- Helped us generate cost estimates for this project
- Design/build firm specializing in high-performance and Passive House building
- Multiple DER projects in the City of Boston & surrounding communities
- Extensive track record of hiring/contracting residents of Boston
- Have successfully met WBE and MBE requirements, as well as BRJP goals
- On our current project with Haycon (Burbank Terrace), approximately 60% of hours worked have been by Boston residents, 80% by people of color

Resident Engagement

Prior Engagement

- Portfolio-wide energy literacy campaign hosted by Climable (5 events in 2024, more scheduled)
- Organizational-level Climate Action Plan development
- Presented scope of work to resident/building captain and received letter of support

Future Engagement

- Once awarded funding, will host meeting with building residents to engage them on project plan and impacts
- Will communicate work schedule and any disruption to normal operation of the building as a result of the project

Emissions Reductions

Current Building Performance

Water Usage (Gallons)	Gas Usage (Therms)	Electricity Usage (kWh)	Site Energy (MMBTU)	EUI (kbtu/sf²)	EUI (kbtu/person)	Carbon Emission (kg CO2e/ft2)
1,370,830	29,667	226,674	3,740	92.5	61,316	5.40

Proposed Building Performance

Water Usage (Gallons)	Gas Usage (Therms)	Electricity Usage (kWh)	Site Energy (MMBTU)	EUI (kbtu/sf²)	EUI (kbtu/person)	Carbon Emission (kg CO2e/ft2)
1,274,032	19,980	272,995	2,930	72.5	48,028	4.43

Proposed Energy Savings

Description of Upgrade	Est. Annual Water Savings (gallons)	Property Water Savings (%)	Est. Annual Electricity Savings (kWh)	Est. Annual Natural Gas Savings (therms)	Property Energy Savings (%)	Emission Reduction (kg CO2e/ft2)	Emission Reduction (%)
Occupancy Sensors and LED Lighting	-	-	5,371	(253)	0%	0.00	0%
Low Flow Showerheads	96,798	7%	-	679	2%	0.10	2%
Improve Distribution Efficiency with R&D Controls	-	-	-	563	1%	0.07	1%
New Energy Star Roof Exhaust Fans and CAR Dampers	-	-	8,073	551	2%	0.10	2%
Heat Pump Water Heaters	-	-	(59,764)	8,148	15%	0.70	13%
Subtotal	***96,798***	***7%***	***(46,321)***	***9,687***	***20%***	***0.97***	***18%***

This project will lead to a reduction in 39,247 kg CO2e per year

Other Benefits

- Lower building operating expenses due to reduced utility expenses and BERDO compliance payments
- Improved in-unit air quality
- Improved resident comfort and quality of life
- Improved outdoor air quality
- Works towards the City's goal that "Benefits from climate mitigation and preparedness" are "shared equitably among all people"*

*Page 6 of the City's FY 2021 Climate Action Report

Burbank Gardens Zero Over Time Decarbonization Project

Questions?

Dorchester Bay Economic Development Corporation

Dorchester Bay Solar for Residents

Dorchester Bay Solar for Residents

Dorchester Bay
Economic Development Corporation

Agenda

- Project Overview & Map
- Residents' Utility Benefit
- Solar Feasibility
- Funding Sources
- Workforce Development
- Tenant Communication
- Emissions Reduction

Dorchester Bay
Economic Development Corporation

Project Overview

Problem:

- Residents and DBEDC spend hundreds of thousands of dollars each year on electricity.
- Rate have increased by roughly 30% over the last five years.
- Upfront cost of solar is significant with a 6-8 year payback period

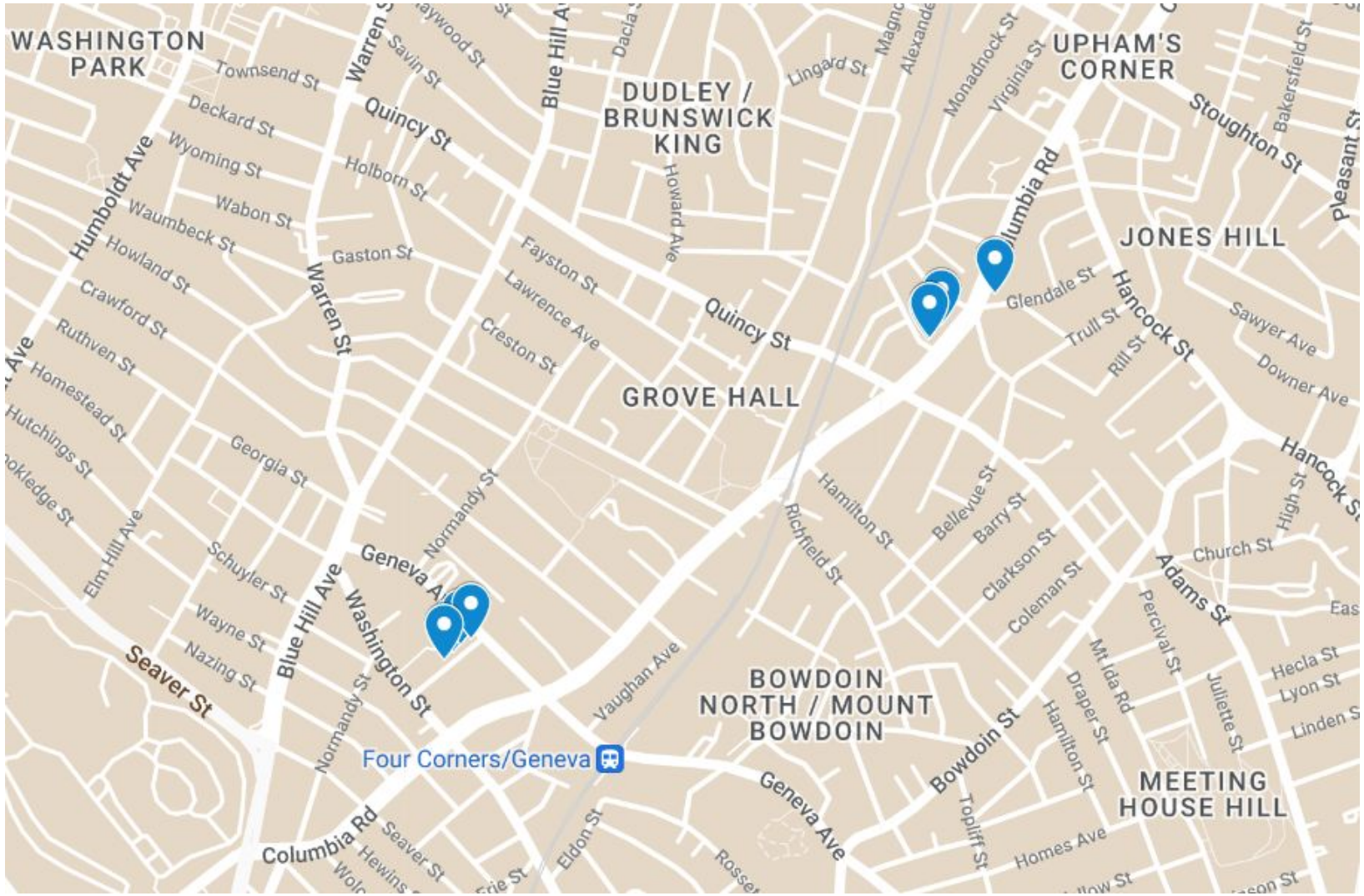
Solution

- DBEDC to install solar on 9 building to reduce emissions and provide electricity savings
- MA SMART incentive provide incentives to give away 15% of the on site electricity to low-income residents
- Savings to be reinvested into the nonprofit owned housing development, allowing DBEDC to provide higher quality housing to residents

Support from EEIF Fund

- Significantly reduce the upfront financial burden of investing in solar and reduce the payback period by 2-3 years
- DBEDC expects to receive a 40% Direct Pay credit from the federal government but this will not be reimbursed for ~1 year after the project is complete
- The funding will help offset future BERDO compliance needs for these buildings

Project Map: 9 Sites within 2 Developments



Dorchester Bay
Economic Development Corporation

All Projects in Environmental Justice Census Tracts (source Mass.gov)

Residents' Utility Benefit

- The Glendale projects are oversized by **15% compared to their common area** electricity usage and the **excess 15% will be donated to tenants**
- We intend to select the **lowest-income tenants** to participate and they will receive electricity credits directly on their bill:
  - The sign up process is very simple – we just need their electricity account number
  - If a tenant moves away, their credits can be reassigned to another tenant
  - 1 tenant per building, for a total of 9, or until the total estimated value of electricity to be given away is allotted (**$3,600 per year** for a minimum of 10 years)
    - We can continue the 15% giveaway beyond 10 years, especially if the common area usage remains low
- The Wilder projects will not have this tenant benefit because tenant electricity bills are paid by DBEDC and are included in rent. **The excess savings will help with long term improvements to the building & DBEDC programming.**

Solar Feasibility

- All designs are based upon site visits and approved interconnection (utility) permits.
- Resonant has secured bids for labor & materials.
- DBEDC has received HUD approval (consent)
- Applications have been submitted to the Department of Energy for the Low-Income Bonus Tax Credits:
  - Submitted in June,
  - Final allocation of +10% Bonus Credits anticipated September

Dorchester Bay
Economic Development Corporation

Funding Sources

Total Development Cost: $700,953

Investment Tax Credits: $210,286 to $280,381

- **30% guaranteed of total cost**, comes back to DBEDC via "Elective Pay" since both entities are under conversion to nonprofit status (fully owned by DBEDC)
- **+10% pending allocation** (by September) also monetized via Elective Pay

The Glendale (Columbia Road) projects will be using the property's **replacement reserves** to cover the cost of solar.

- Glendale already installed new, "cool roofs" with funding from LISC Massachusetts.

The Wilder projects will be paid for by **DBEDC's budget**.

- DBEDC is forgoeing distributions from the property and reinvesting them in solar.

EEIF Would Cover: 35% of the total cost. This would reduce Glendale and DBEDC's contribution to $170,572 to $240,667 of the total cost (pending tax credit adders)

Workforce Development

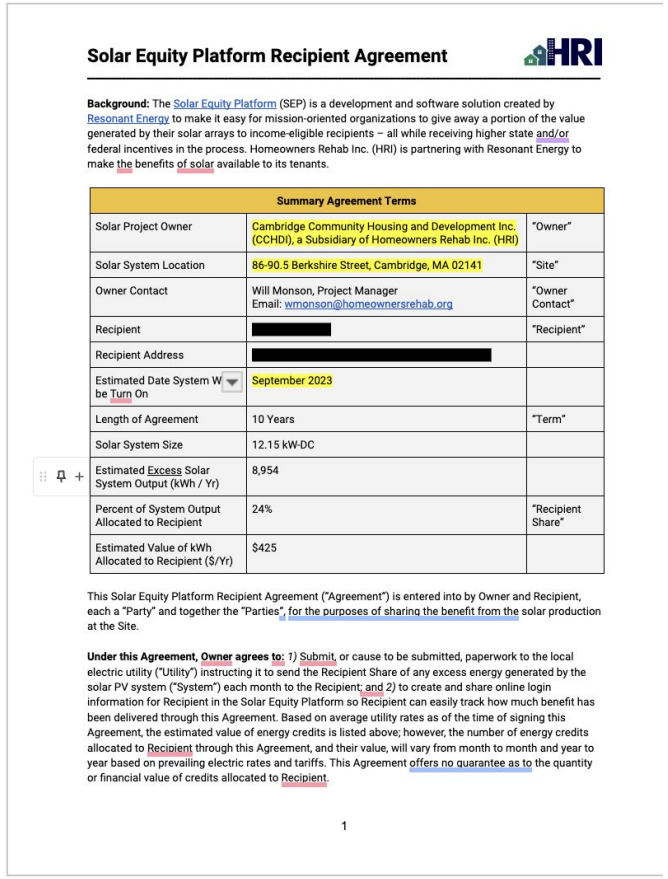
This project does not include a workforce development component.

In the past year, our team has served 118 Boston residents through our reentry and workforce development programs. We're focusing on getting people higher wages and sustainable careers —and we're now able to place people starting at $27 per hour. We also launched our new Customer Service in Manufacturing Course for formerly incarcerated citizens, with 18 participants.

Reducing the financial burden on DBEDC in paying for solar could help the nonprofit, including with programs like this.

Tenant Communication

- Resident Services and Maloney Management will hold a **resident meeting to discuss construction, benefits to the building and address any tenant questions and concerns**
- Impact to tenants during construction is expected to be minimal.
- Resident Services will review rent rolls to determine most low-income residents and offer credit donations to them first:
    - *Priority will be given to the lowest income residents with multi-bedroom units to ensure all excess electricity is used on their bill.*



Solar Equity Platform Recipient Agreement HRI

Background: The Solar Equity Platform (SEP) is a development and software solution created by Resonant Energy to make it easy for mission-oriented organizations to give away a portion of the value generated by their solar arrays to income-eligible recipients – all while receiving higher state and/or federal incentives in the process. Homeowners Rehab Inc. (HRI) is partnering with Resonant Energy to make the benefits of solar available to its tenants.

Summary Agreement Terms		
Solar Project Owner	Cambridge Community Housing and Development Inc. (CCHDI), a Subsidiary of Homeowners Rehab Inc. (HRI)	"Owner"
Solar System Location	86-90.5 Berkshire Street, Cambridge, MA 02141	"Site"
Owner Contact	Will Monson, Project Manager Email: wmonson@homeownersrehab.org	"Owner Contact"
Recipient	[redacted]	"Recipient"
Recipient Address	[redacted]	
Estimated Date System W be Turn On	September 2023	
Length of Agreement	10 Years	"Term"
Solar System Size	12.15 kW-DC	
Estimated Excess Solar System Output (kWh / Yr)	8,954	
Percent of System Output Allocated to Recipient	24%	"Recipient Share"
Estimated Value of kWh Allocated to Recipient ($/Yr)	$425	

This Solar Equity Platform Recipient Agreement ("Agreement") is entered into by Owner and Recipient, each a "Party" and together the "Parties", for the purposes of sharing the benefit from the solar production at the Site.

Under this Agreement, Owner agrees to: *1)* Submit, or cause to be submitted, paperwork to the local electric utility ("Utility") instructing it to send the Recipient Share of any excess energy generated by the solar PV system ("System") each month to the Recipient; and *2)* to create and share online login information for Recipient in the Solar Equity Platform so Recipient can easily track how much benefit has been delivered through this Agreement. Based on average utility rates as of the time of signing this Agreement, the estimated value of energy credits is listed above; however, the number of energy credits allocated to Recipient through this Agreement, and their value, will vary from month to month and year to year based on prevailing electric rates and tariffs. This Agreement offers no guarantee as to the quantity or financial value of credits allocated to Recipient.

1

Sample credit donation agreement

Dorchester Bay
Economic Development Corporation

Emissions Reduction

Methodology:

- Resonant uses Scanifly's software to estimate the annual kWh production of the solar systems for the utility-permitted designs that will be constructed. We find that Scanify is more conservative (lower estimates) than PV Watts.
  - Glendale's Solar Systems are Estimated to Produce **79,390 kWh per year**
  - Wilder's Solar Systems are Estimated to Produce **140,765 kWh per year**

- We used the EPA's "Greenhouse Gas Equivalencies Calculator", which allows us to select the number of Kilowatt-hours avoided by solar annually. The calculator uses national average emissions factors for electricity carbon emissions. Their estimate for carbon dioxide emissions is 0.6985 $kgCO_2e$ per kWh
  - Glendale's solar systems are estimated to Offset 79,390 kWh per year x 0.6985 kgCO2e per kWh = **55,461 KgCO2e per year**
  - Wilder's solar systems are estimated to offset 140,765 kWh per year x 0.6985 kgCO2e per kWh = **98,337 KgCO2e per year**

- We multiplied the estimated annual offset by 25 years, which is an estimate for the systems' replacements, based on roof age, although they may be productive for years longer
  - Glendale's solar systems are estimated to offset 55,461 KgCO2e per year x 25 years = **1,386,525 KgCO2e over 25 years**
  - Wilder's solar systems are estimated to offset 98,337 KgCO2e per year x 25 years = **2,458,425 KgCO2e over 25 years**

A Note on BERDO Compliance:

- Just 1 of the 9 addresses in this proposal is not subject to BERDO (<15 units).
- This funding will be extremely helpful in avoiding future BERDO penalties.

Questions?

Dorchester Bay
Economic Development Corporation

Pictured above: Kim Lyle (CEO of DBEDC), Senator Markey, and Isaac Baker (Co-CEO of Resonant) on the Indigo Block this August

The Community Builders

New Franklin Park Solar Installation

New Franklin Park Solar Installation

Equitable Emissions Investment Fund

Leah Whiteside, Director of Acquisitions & Preservation

September 2024

THE COMMUNITY BUILDERS

Project Location

- New Franklin Park Apartments is a scattered-site consisting of 219 units in 15 buildings on sites throughout the Roxbury and North Dorchester neighborhoods of Boston built in 1930

- **100% Deed restricted affordable housing**

- **Justice 40 Community**

Target Sites:

- 132-140 Seaver Street

- 280-296 Seaver Street

THE COMMUNITY BUILDERS

Project Deliverable

- A **solar canopy** on a racking frame after upgrading the roof membrane of both the buildings.

- Estimated Annual Output of **163,770 kWh** at both buildings

    - **132-140 Seaver St: 85,519 kWh**

    - **280-296 Seaver St: 78,251 kWh**

For Representation Purpose only

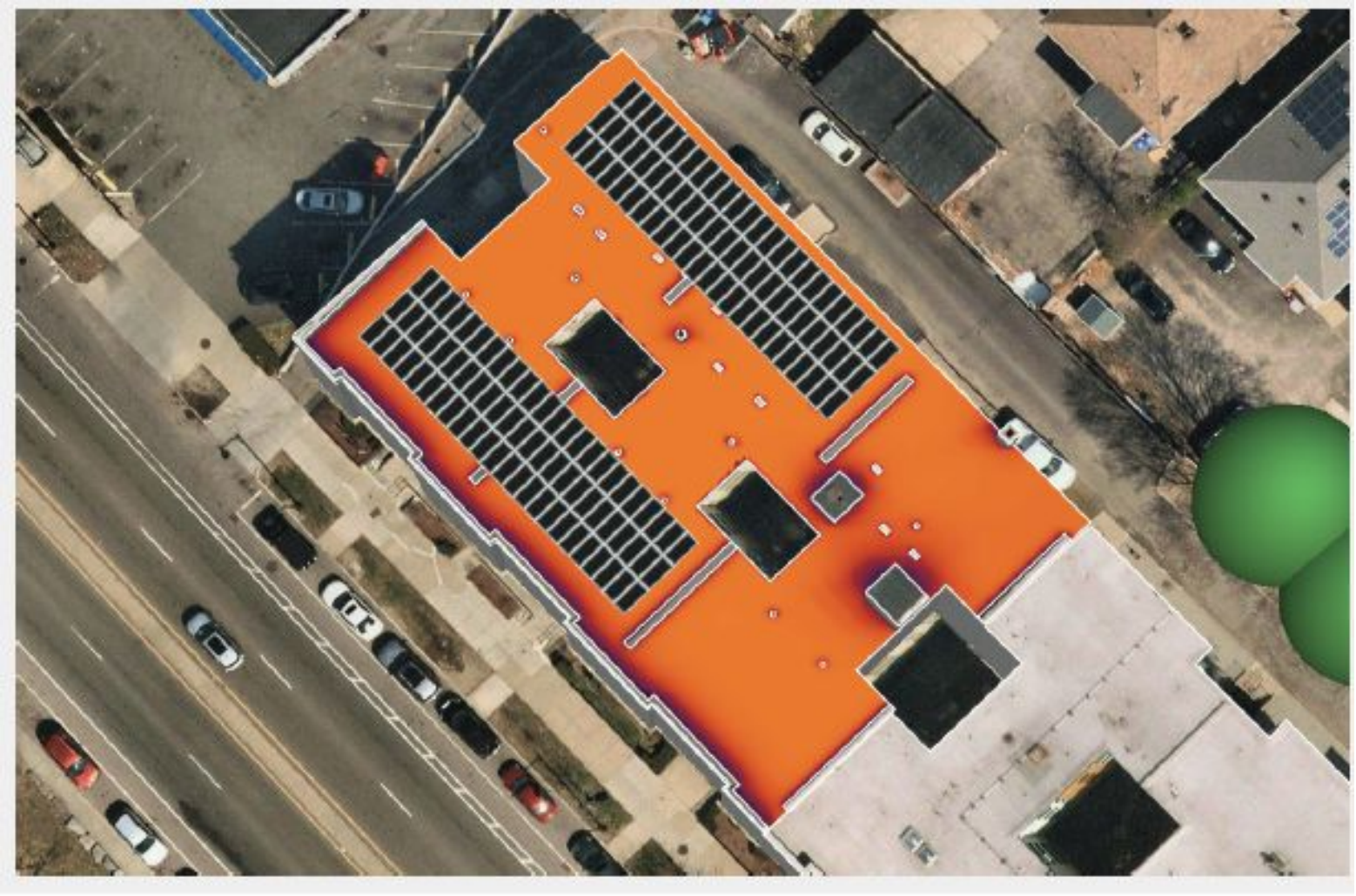
THE COMMUNITY BUILDERS

Project Readiness

- Project Team is assembled
- Initial feasibility is completed
- Structural repairs accounted

THE COMMUNITY BUILDERS

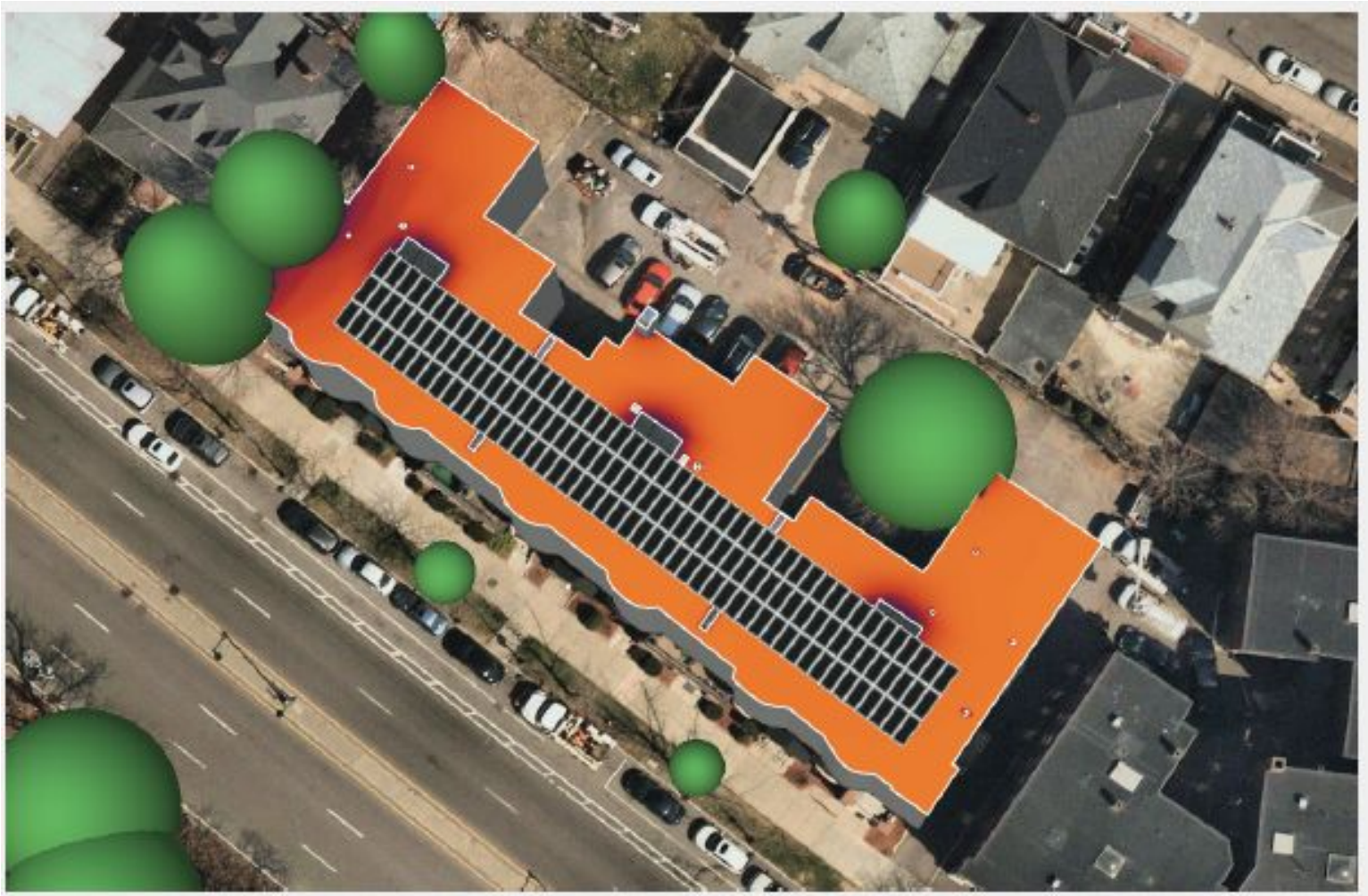
Array Design at 132-140 Seaver St



Solar Layout (70.6 kW, Tier 1, 490 Watt Panels)

THE COMMUNITY BUILDERS

Array Design at 280-296 Seaver St



Solar Layout (70.6 kW, Tier 1, 490 Watt Panels)

THE COMMUNITY BUILDERS

Project Impact

- **30% in Energy Savings**
- Expected Emissions Reductions:

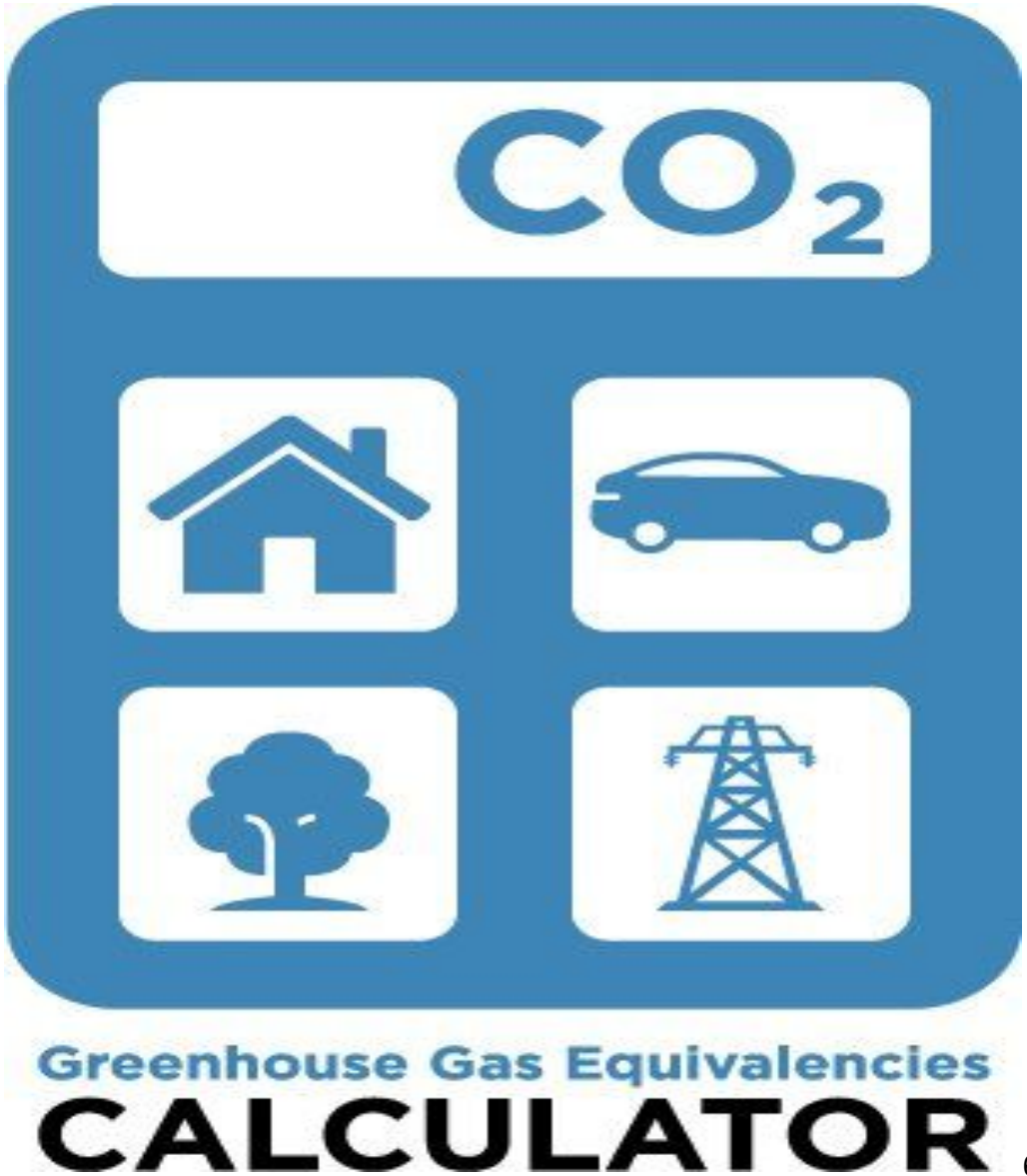
  <u>132-140 Seaver St</u>

  78,251 kWh per year x 0.6985 kgCO2e per kWh = **54,665 KgCO2e per year**

  <u>280-296 Seaver St</u>

  85,519 kWh kWh per year x 0.6985 kgCO2e per kWh = **59,743 KgCO2e per year**

- Total of 114,408 kgCO2e per year
- **2,694,988 KgCO2e** over 25 years



THE COMMUNITY BUILDERS

Project Budget

Total Cost: $ 936,000

Uses:

- Roof Upgrades (235K)
- Solar Installation (651K)
- Consultant Fees (50K)

Sources:

- **Investment Tax Credit (35%)**
- **Solar For All Grant & Loan - TBD**
- **EEIF Grant – 250K (25%)**
- **TCB Equity- 50K (5%)**

THE COMMUNITY BUILDERS

New Franklin Park Green Retrofit Scope

Total Cost: $8 MM

Uses:

- Energy Efficiency Measures
- Envelope Improvements
- Electrification & Upgrades

Sources:

- **MOH Large Buildings Retrofit Grant**
- **LISC Climate Ready Housing Grant**
- **HUD GRRP Grant**
- **DOER Grant**

THE COMMUNITY BUILDERS

Tenant Benefit & Engagement

Target Audience:

- 66% Section 8 Units serving families earning <30% AMI
- 25% Homeless Household Units
- Black (33%) and Hispanic (63%) population

Tenant Benefits:

- $6,061 to be deposited annually in a Community Life Reserve to support community solar sign-up and food pantry
- Offset electricity load of all common areas including a Daycare onsite

Tenant Engagement:

- Community Life led stakeholder engagement

THE COMMUNITY BUILDERS

Workforce Development

- Resonant Energy - Local Boston contractor
- **Preference for local and/or MBE subcontractors**
- Jobs to be created: **10 FTES**
- Prevailing Wage applicable

THE COMMUNITY BUILDERS

Project Team

Project Sponsor

THE COMMUNITY BUILDERS

Solar Consultant

RESONANT ENERGY

Architect

BWA ARCHITECTURE

Energy Consultant

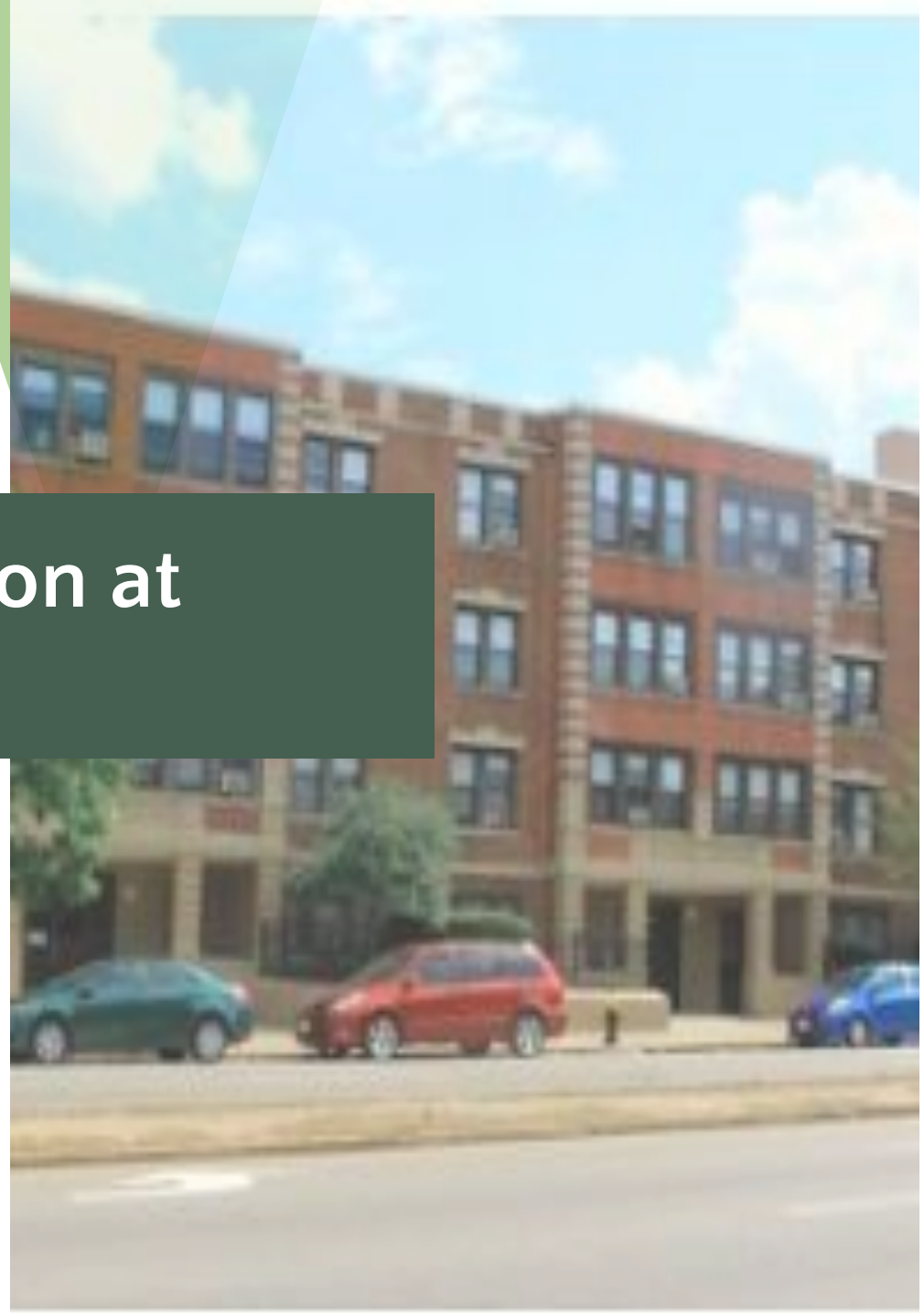
NEW ECOLOGY
Community-Based Sustainable Development

Codman Square NDC

Advancing Building Decarbonization at Washington Columbia I and II

CODMAN SQUARE
NEIGHBORHOOD DEVELOPMENT CORP

Advancing Building Decarbonization at Washington Columbia I and II

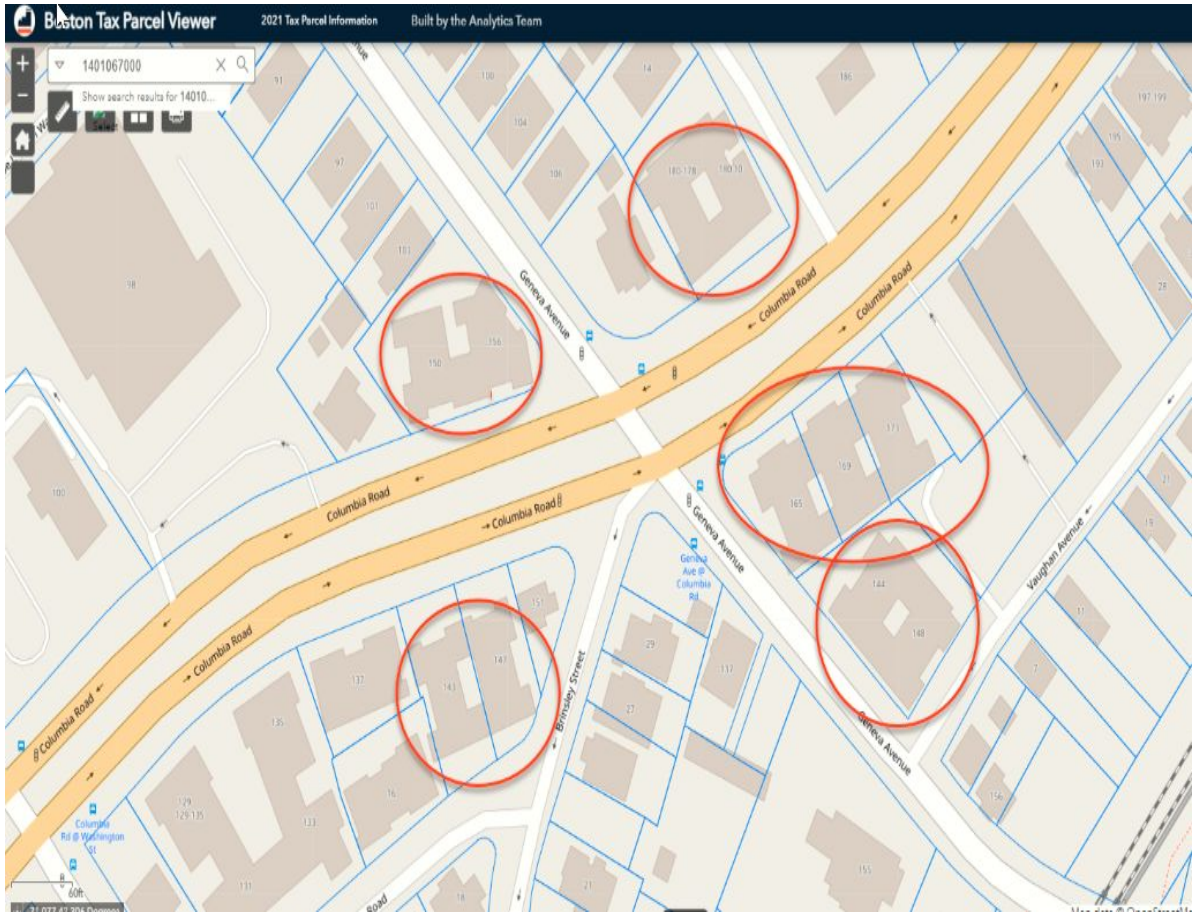


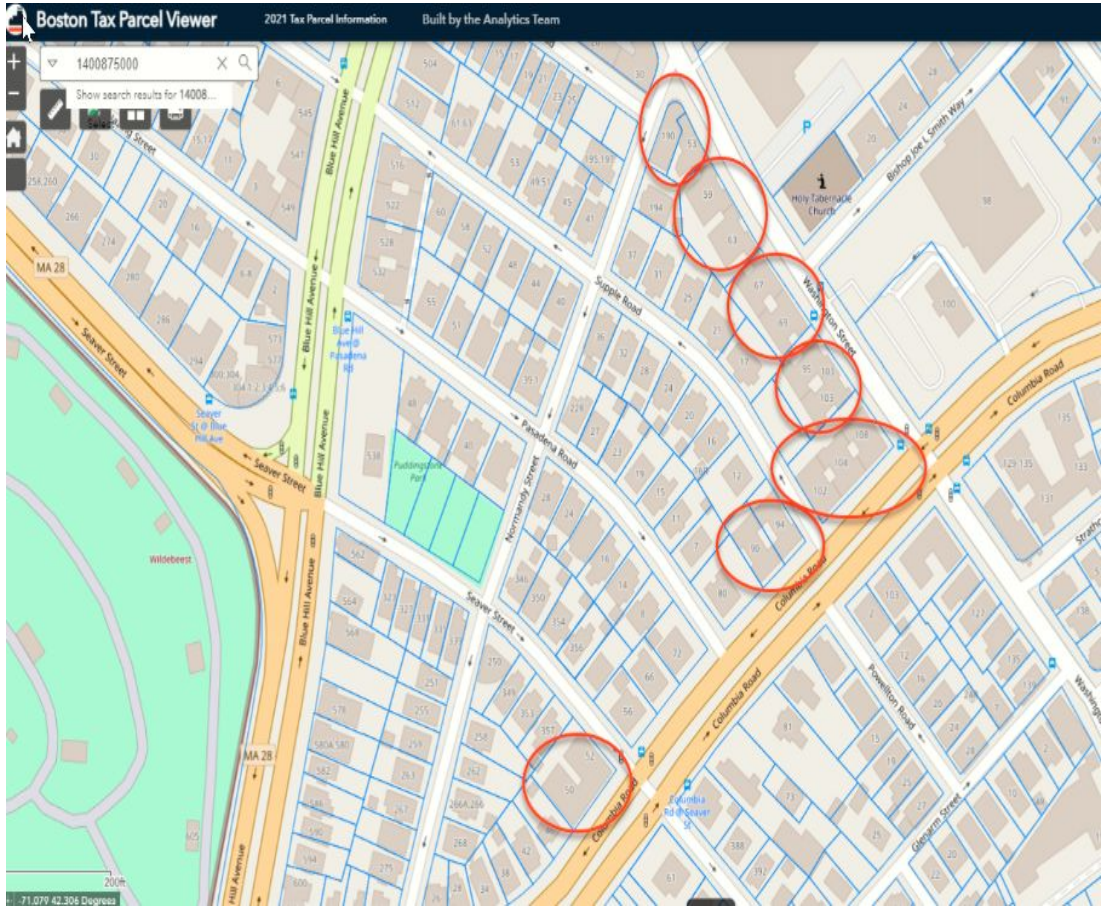
OUR MISSION

Our mission is to build a cohesive and resilient community in Codman Square and South Dorchester, develop affordable housing and commercial spaces that are save and sustainable, and promote economic stability for low-and-moderate income residents of all ages.

CODMAN SQUARE
NEIGHBORHOOD DEVELOPMENT CORP

Project Location
Washington Columbia I and II





CODMAN SQUARE
NEIGHBORHOOD DEVELOPMENT CORP

Project Background
Building Decarbonization

- Seeks to end the on-site combustion of fossil fuels in buildings in affordable housing in Boston

- The overall goal is to equitably electrify buildings and reduce carbon emissions to avert the worst impacts of climate change.

- Additionally, we strive to reduce utility costs, add central cooling and improve air quality for our residents.

BUILDING ELECTRIFICATION

CODMAN SQUARE
NEIGHBORHOOD DEVELOPMENT CORP

Project Background
Three Pillars of Decarbonizing

Energy Efficiency

Electrification

Renewable Electric Supply

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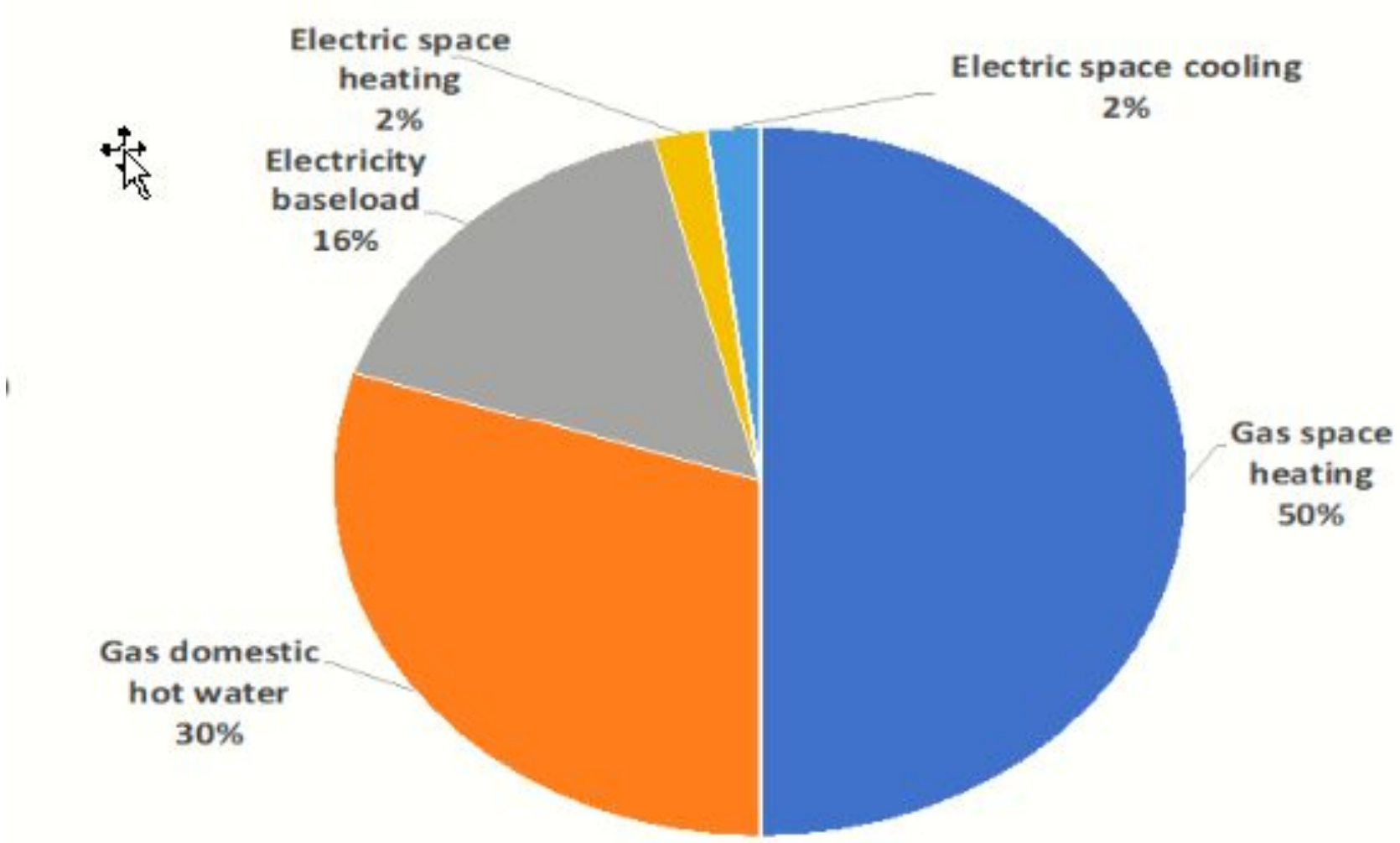
NEIGHBORHOOD DEVELOPMENT CORP

Decarbonization Assessment



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Equitable Emissions Scope
Low Flow Toilet and Fixtures

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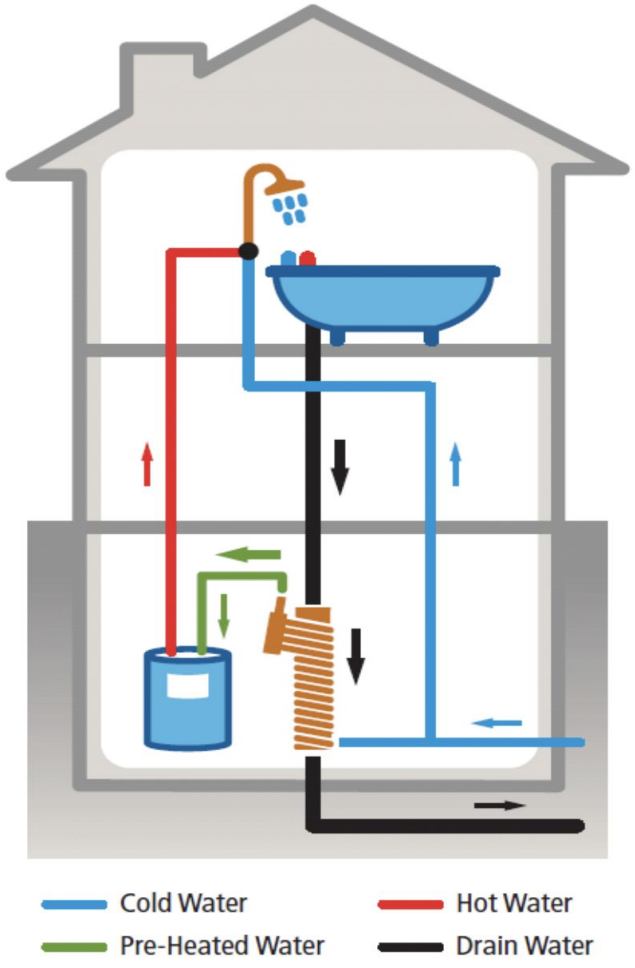
Construction Scope
Drain Water Heat Recovery

Drain Water Heat Recovery (DWHR): Definition

DWHR works by using the outgoing warm drain water to pre-heat the incoming cold fresh water

CODMAN SQUARE NEIGHBORHOOD DEVELOPMENT CORP

Construction Scope
Drain Water Heat Recovery



(2) In-Building, Horizontal, Central

- Over 70 Systems installed in Multi-family and Hotels
- Recover heat from main drain (i.e. black water) or greywater
- Paybacks of 2 to 6 years
- Proven to reduce DHW Energy Load by 23% to 25%
- 3 configurations:
  - Totally Passive will Preheat by 20F° (12C°)
  - Recirc. Loop will Preheat by 22-24F° (13-14C°)
  - Couple with primary water source heat pump water heater
- Can be retrofit into a large percentage of hotels and apartment buildings
- Simple in New Construction

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NEIGHBORHOOD DEVELOPMENT CORP

Emissions Reduction

Drain Water Heat Recovery (DWHR)

The addition of drain water heat recovery is expected to save **almost 10,000 therms of natural gas annually** and **increase property energy savings by 3.2% reducing emissions by 2.7%**

Low Flow Aerators:

This measure will reduce utility cost by **11%, to save 2,158,107 gallons of water annually** and **7,200 therms of natural gas with a reduction in emissions of 2.1%.**

Low Flow Toilets

Existing toilets are on average 1.6 gallons per flush (gpf). Installation of low flow toilets (.8 gpf) **would reduce the utility cost by 8.1% and save 1,527,066 gallons of water annually.**

In-unit air sealing

Air sealing measures are **predicted to save 889 kWh of electric energy annually, 2,534 therms of natural gas annually, and reduce emissions by .8%.**

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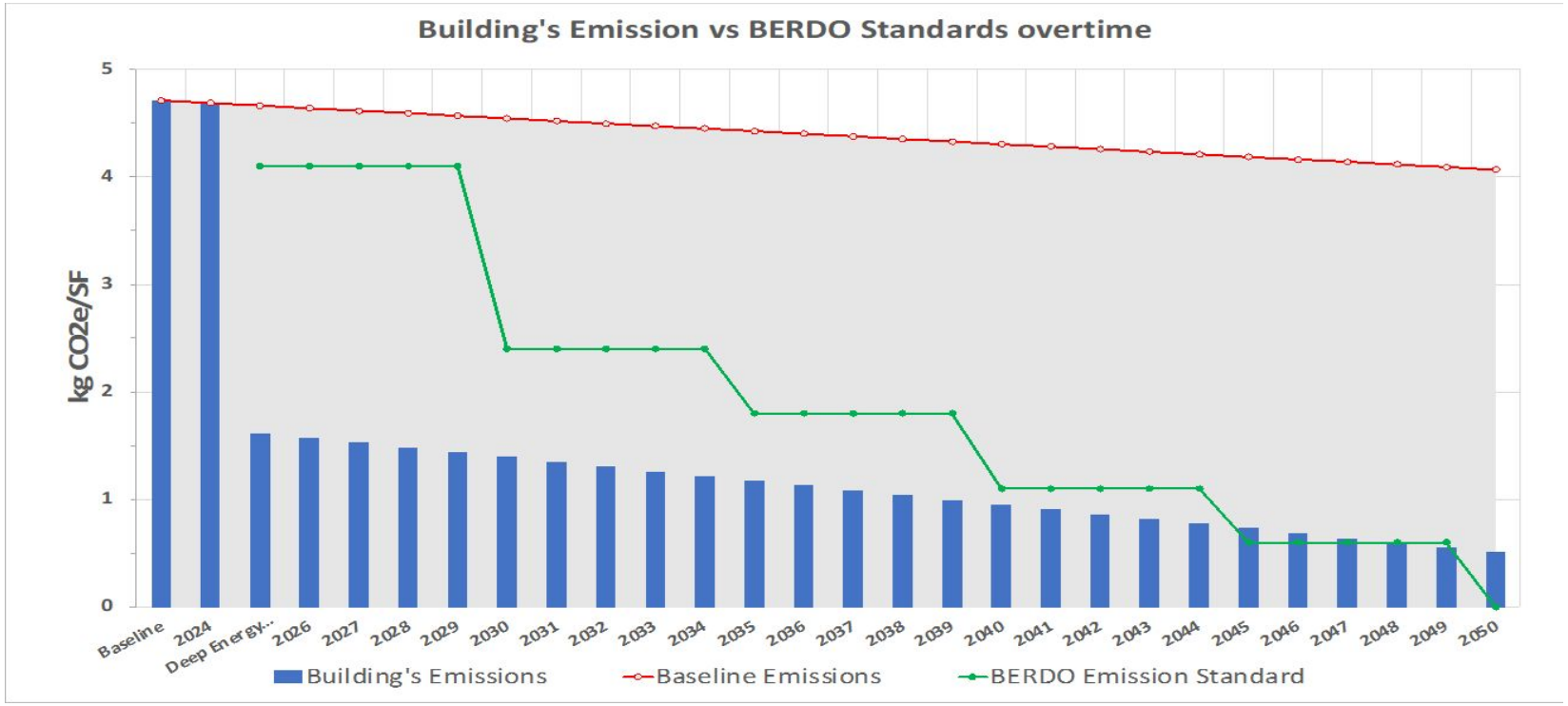
Emissions Reduction



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Funding Sources for Equitable Emission Grant

	BERDO Equitable Emissions Fund	Operating Budget Replacement Reserves
Personnel	$17,423.36	
Resident Engagement	$17,550.00	
Drain Water Heat Recovery	$182,283.80	
Low Flow Fixtures	$71,812.00	$195,808.00
Low Flow Aerators	$20,825.00	$13,313.00
Grand Total	**$309,894.16**	**$209,121.00**

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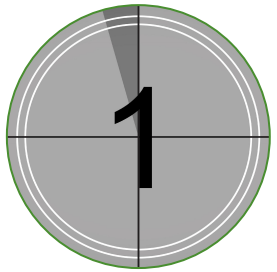
NEIGHBORHOOD DEVELOPMENT CORP

Workforce Development

MBE Policy

We incorporate MBE and WBE workforce mandates into all construction contracts, setting standards that exceed typical benchmarks. We ensure that our selected contractors are committed to hiring M/WBE trades and maintaining a well-represented workforce on job sites.



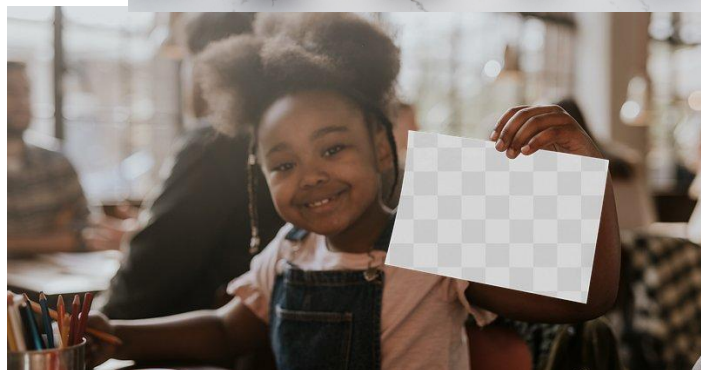
Maintenance Apprentice

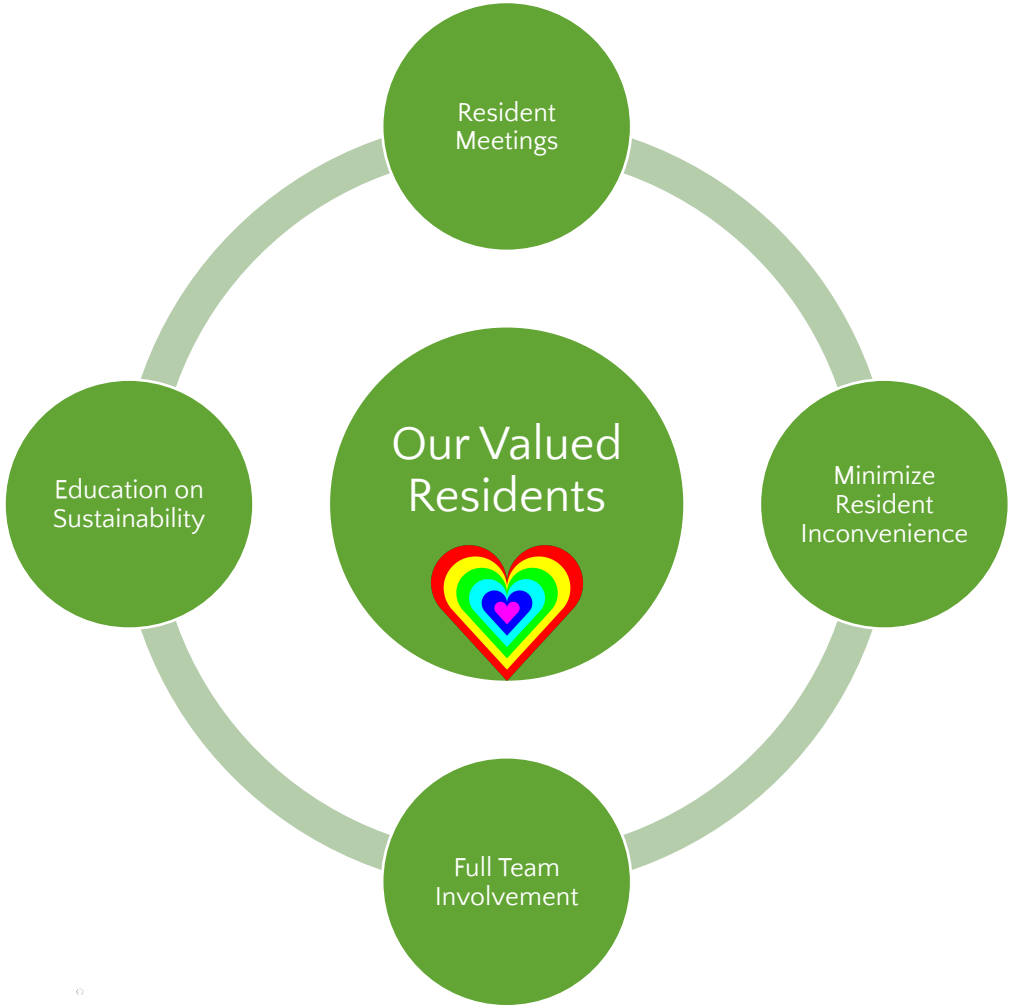
MBE Plumber

MBE Electrician

CODMAN SQUARE NEIGHBORHOOD DEVELOPMENT CORP

Resident Engagement & Communication Plan





CODMAN SQUARE
NEIGHBORHOOD DEVELOPMENT CORP

Resident Engagement & Communication Plan

Our Valued Residents

Resident Meetings:

Hold community-wide engagement meetings to inform residents about the project and educate them on sustainability measures

Provide monthly updates to ensure ongoing communication and transparency

Clear Notifications:

Send advance letters to residents, ensuring they receive detailed information about upcoming work and timelines

Provide ample notice regarding water shut-offs (only a couple hours a day)

On-site Accommodations:

Community room with refreshments during disruptions.

Inconvenience Fee:

Stipend for residents to cover meals or other needs during work.

Collaborative Approach:

Include resident services, property management and maintenance teams.

Bring in electricians and plumbers for technical questions during meetings.

Maintenance Apprenticeship:

Engage maintenance apprentices in the process to enhance communication and hands-on support for residents.

Education on Sustainability:

Inform residents about sustainability efforts, benefits and how the work impacts long-term building efficiency.

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NEIGHBORHOOD DEVELOPMENT CORP

Challenges

- *Lack of funding to implement all energy efficiency opportunities first, primarily building envelope*
- *Addressing utility-owned equipment (e.g. transformer)*
- *Reduced of rooftop space for additional solar panels*

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NEIGHBORHOOD DEVELOPMENT CORP

Next Steps

- *Monitor performance of new systems*
- *Implement additional measures to further reduce operation costs*
- *Leverage IRA and utility incentive to finance additional projects*
- *Identify opportunity for additional solar*
- *Continue to engage residents about managing energy use/costs*
- *Continue decarbonizing the rest of the property and portfolio!*

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NEIGHBORHOOD DEVELOPMENT CORP

Questions?

Public Comment Period

Members of the public may provide public comment

Adjourn

Thank you! A recording and slide deck for this meeting will be available at boston.gov/berdo-review-board.