

# **BUILDINGENERGY BOSTON**

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## **Decarbonizing Non-Profit Buildings via No-Cost Planning and Financing Resources**

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*Curated by Asher Greenberg and Nancy Meyer*

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**Northeast Sustainable Energy Association (NESEA) | March 24, 2026**

# Outline



Intro to PowerOptions



No-Cost Planning Resources



No-Cost Implementation Resources

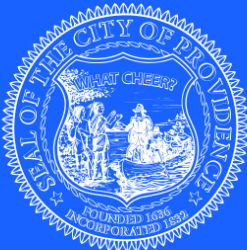




Non-profit Case Studies



Discussion

**NON-PROFIT  
CASE STUDIES**



**MAYOR BRETT P. SMILEY  
CITY OF PROVIDENCE**



# A Nonprofit Empowering Other Nonprofits

## An Affordable, Resilient, Sustainable Energy Future for Non-Profits

A Trusted Advisor to non-profits since 1998, we offer a one-stop-shop for energy and decarbonization solutions, from roadmaps for building decarbonization and fleet electrification, to solar and storage, to electricity and natural gas procurement. With >800 Members of every size and sector across Massachusetts, Maine, Connecticut, and Rhode Island, PowerOptions has the market strength to negotiate very competitive prices and the Member demand to drive innovation. As a member-based mission-driven non-profit, our Members rely on us to reduce their cost, carbon and complexity of energy.



800+ Members



1B kWh Electricity



8M Dth Natural Gas



220 MW+ Solar

# Decarbonization Challenges for Non-profits



Energy data is lost in **paper invoices**, not easily accessible for analysis



Non-profits don't have the staffing expertise for sustainability planning; they are focused on their missions



Non-profits do not have extra capital to spend on decarbonization planning OR implementation

- Engineering planning & studies typically cost **\$30,000 or more per building**
- Decarbonization project implementation can cost **millions of dollars per building**

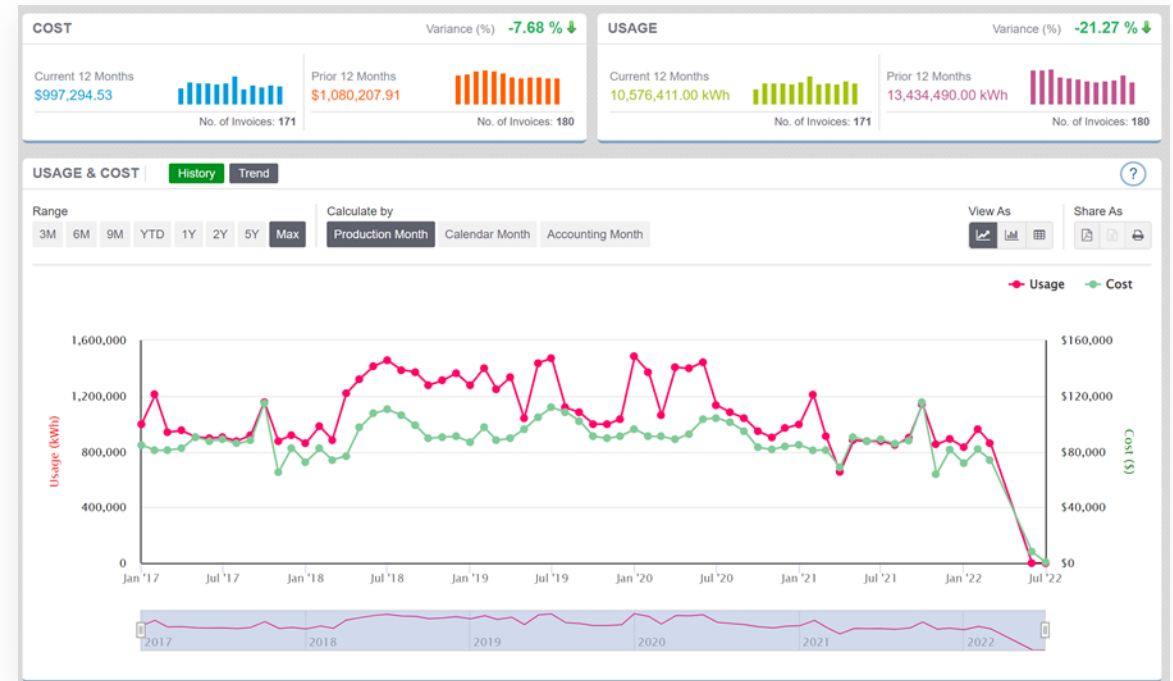


Public entities must follow extensive procurement rules to implement any major project

# Low-Cost Planning Resources

# Utility Bill Management

- Utilize a **utility bill management** software, several options out there
- Features
  - Displays energy usage, cost, and emissions at meter, building, and portfolio level
  - Calculates energy usage intensity and GHG intensity at each facility
  - Automatically pulls in new bills each month
- Examples of no/low-cost options
  - MassEnergyInsight (MEI) for MA municipalities (free)
  - Energy Intelligence Suite through PowerOptions (low-cost)
    - *Free for non-profits with <10 bills*



# Portfolio Decarbonization Roadmap Options

- Mass Save's Portfolio Prioritization Plans (2025-2027+) – **FREE roadmaps for portfolios of 5+ buildings**
- Other options
  - ✓ Municipalities in MA: Climate Leaders Roadmaps (buildings and fleets) – **FREE**
  - ✓ MA Housing Authorities: free roadmaps through EOHLC – **FREE**
  - ✓ Community Health Centers: Roadmaps paid for by Mass Development - **FREE**
  - ✓ Any non-profit: PowerOptions' Building Decarbonization Roadmap – **low-cost, supported by MassCEC since 2022**



**How to get started?** Reach out to PowerOptions and we'll connect you with the right resource!

# Low-Cost Financing Resources

# Building-Decarbonization-as-a-Service (BDaaS)

- **\$0 capital upfront.** The energy savings pay for the project implementation and performance verification over time. No change to operating costs. Engineering studies are included.
- **Turnkey contracts** that include financing, grants, incentives, O&M, performance guarantees.
- Comprehensive decarbonization project types included:
  - **Energy Efficiency & Renewables:** Lighting upgrades, envelope improvements, building controls, automation systems, ENERGYSTAR appliance upgrades, solar, energy storage, EV charging.
  - **Clean Heating & Cooling:** air-source and / or ground-source heat pumps, water heaters
  - **Enabling Upgrades:** electrical service, distribution, other infrastructure needed for electrification or renewables, equipment removal



# BDaaS versus Energy Performance Contracts

Contract Specification	BDaaS	Traditional Performance Contract
<b>Up-front Cost</b>	None or low \$\$	None or low \$\$
<b>Financing</b>	Secured by Provider, Flexible financing methods	Secured by Building Owner
<b>Guarantees</b>	Outcomes, KPIs, project performance	Energy Savings
<b>Cash flow</b>	Varies, but goal is cash flow positive or neutral	Positive (saving money)
<b>Equipment Ownership</b>	Flexible	Building Owner
<b>O&amp;M Service</b>	Included in turnkey contract*	Owner is responsible
<b>M&amp;V Service</b>	Included in turnkey contract*	Secured by Owner

# PowerOptions' Program Benefits

- PowerOptions conducted a **competitive procurement in 2025**
  - **MGL Ch. 164, Sec. 137**
  - **Rhode Island RILCT REAP**
- PowerOptions selected 4 vendors to serve non-profits by segment
- Project pricing is highly competitive, open-book, and includes **profits caps for all vendors**
- **No cost to participate**



**How to get started?** Reach out to PowerOptions and we'll set up a time to connect!



# Building Performance Exchange

*Learn more and subscribe for  
email updates by visiting  
[buildingperformance.exchange](http://buildingperformance.exchange)*

A statewide resource for people and organizations seeking to enhance performance and reduce carbon pollution in larger existing buildings.



*A program of Built Environment Plus and MassCEC*

# YMCA of Greater Boston Case Study

# YMCA OF GREATER BOSTON



# OVERVIEW OF YMCA OF GREATER BOSTON

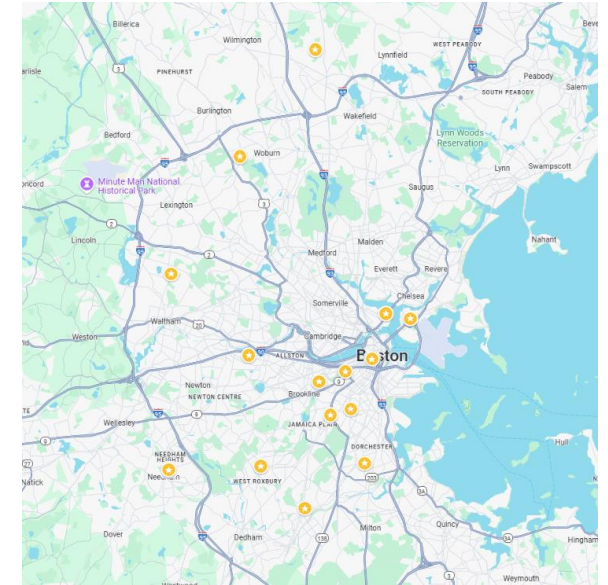


- **America's 1<sup>st</sup> YMCA –  
Established in 1851**

- **13 Centers**

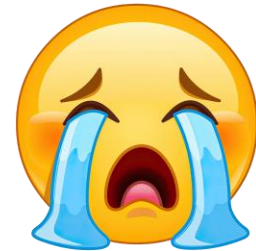
- **600,000 sf**

- **7 'BERDO buildings'**



# REFLECTING IN 2020

- This thing called 'BERDO'
- We're paying what??
- Another HVAC unit failed
- We need a plan

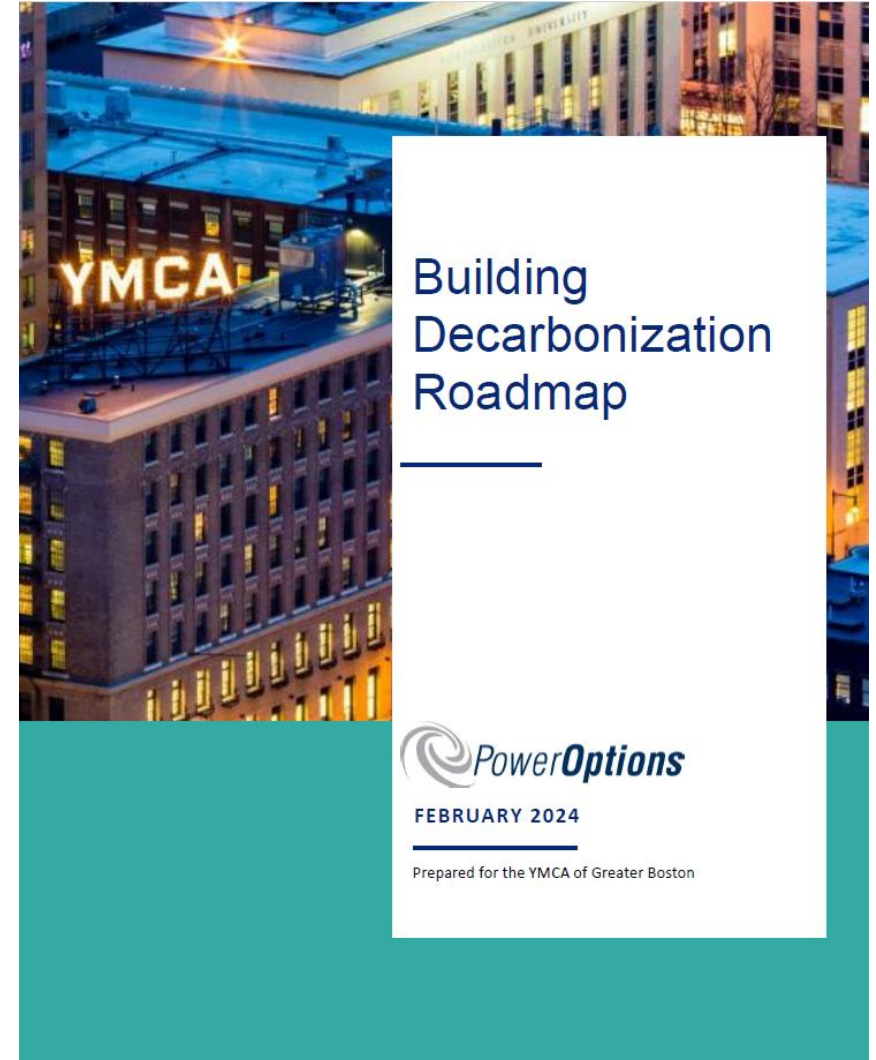


# THE ROADMAP

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## What did we learn?

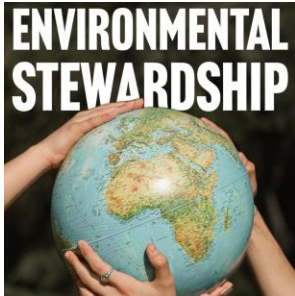
- Why
- How to achieve it
- How to present it



# ENERGY INITIATIVES

## BUILDING DECARBONIZATION ROADMAP

### WHY?



**DO NOTHING:**  
**\$6,000,000 IN**  
**PENALTY FINES**

**DECARBONIZE:**  
**UP TO \$34,000,000**  
**IN SAVINGS**



### HOW?

**ENERGY EFFICIENCY**

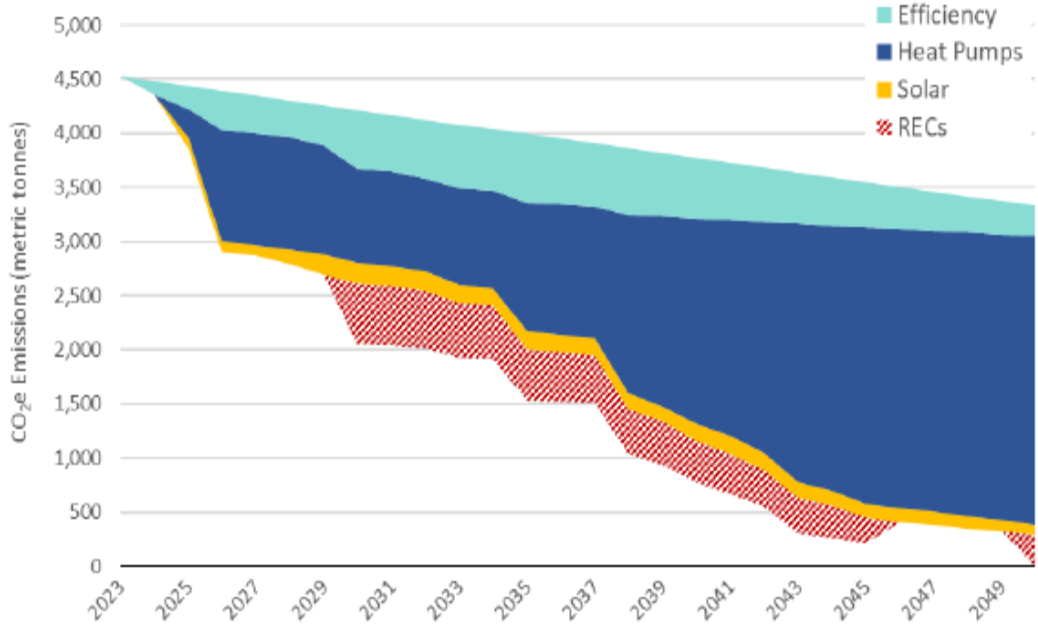
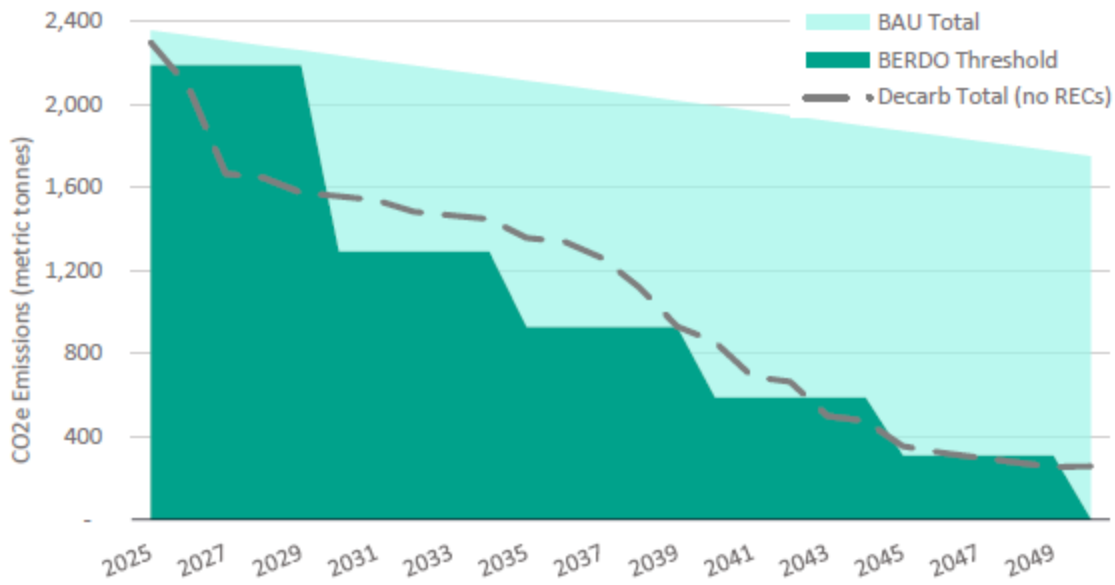
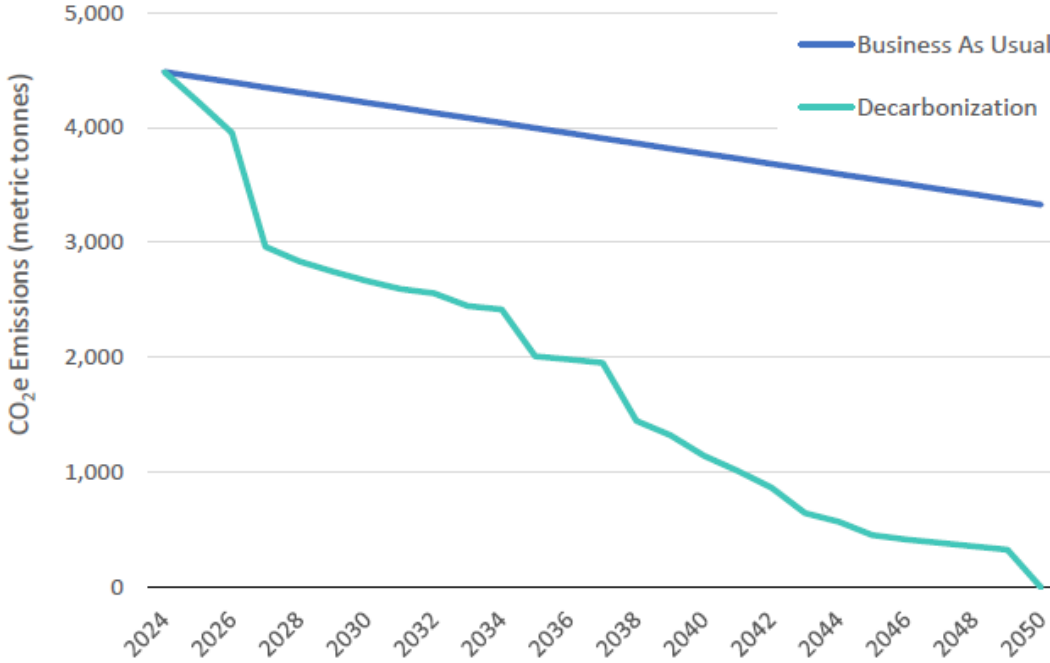
**ELECTRIFICATION**

**SOLAR**

**RENEWABLE ENERGY CREDITS (REC'S)**

# ENERGY INITIATIVES

## BUILDING DECARBONIZATION ROADMAP



# CASE STUDIES

## IS IT WORTH IT?



### Oak Square YMCA 20-ton ASHP

**Cost:** \$80k  
**Incentive:** \$47k

**Simple Payback: 12 years**

**BERDO fines avoided: \$150k**

**Payback after BERDO: 5 years**

### East Boston YMCA Solar

**Cost:** \$177k  
**Incentive:** \$53k

**Simple Payback: 6.8 years**

**BERDO fines avoided: \$26k**

**Cumulative Cash  
Flow at 20 yrs: \$254k**

## PROGRESS 12 MONTHS IN...

### □ 12 UNITS REPLACED

- 5 CENTERS
- RANGE FROM 5-ton to 20-ton

□ TOTAL COST: \$636,000

□ INCENTIVES: \$329,000 (52%)

\$307,000



# ENERGY INITIATIVES

## WHAT'S NEXT?

### ❑ RETROCOMMISSIONING

**PARKWAY COMMUNITY YMCA  
CURRENT ESTIMATED EXPENSE:**

**\$250,000**

**POTENTIAL SAVINGS:**

**\$42,500-\$125,000 (%)**



### ❑ ADDITIONAL ELECTRIFICATION

### ❑ SOLAR – EAST BOSTON & WOBURN



# **ENERGY INITIATIVES**

## **WHAT'S NEXT?**

**One Y – Portfolio  
Application**

**East Boston Solar  
Woburn Solar**

**Additional  
Electrification**

**2026 and beyond...**

**What have we learned and are still learning?**

- **There is a path forward**
- **Let's review**
- **We have to move fast...yet measured**
- **Can BDaaS be an option?**

# Trustees of Reservations Case Study



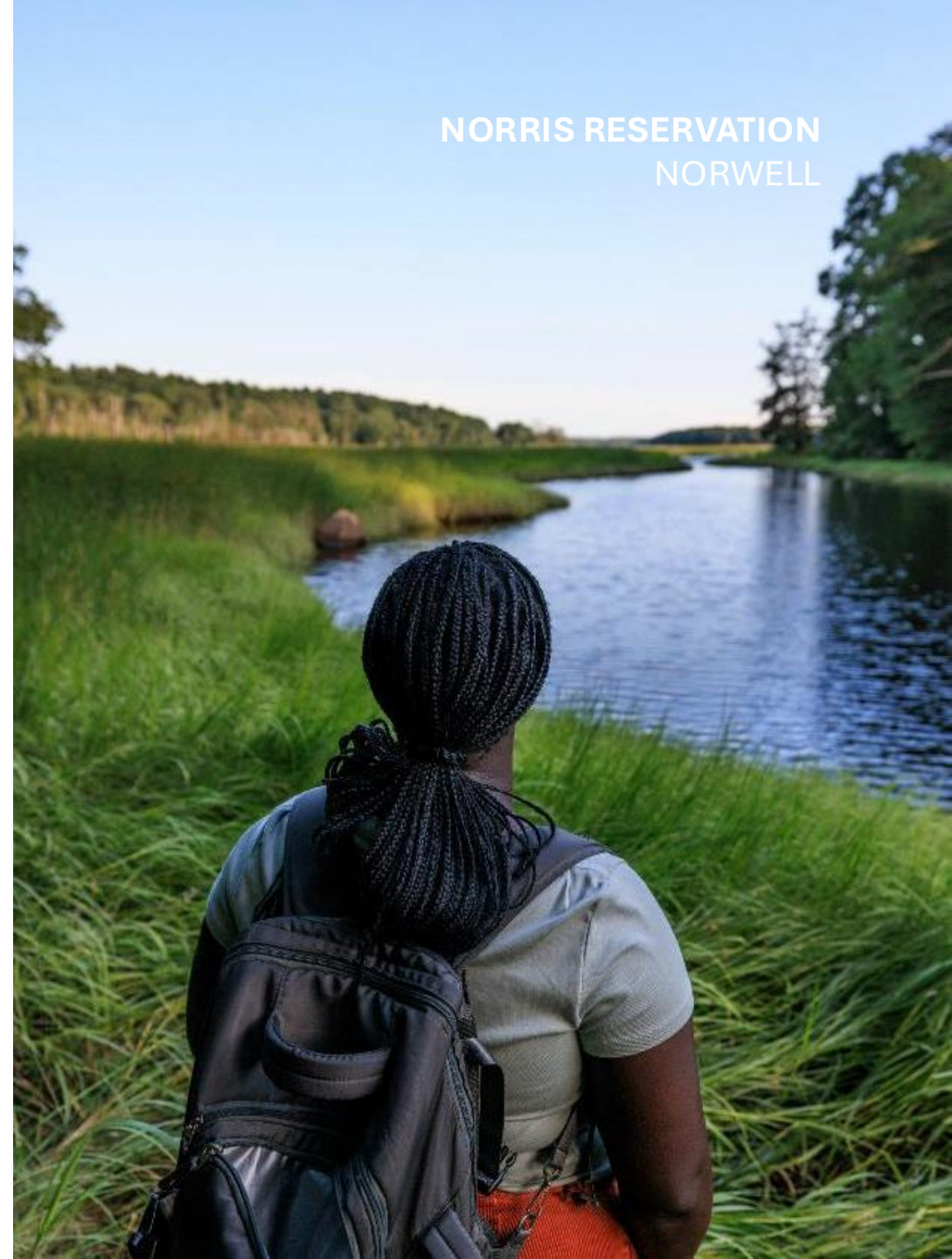
# Case Study: The Trustees of Reservations

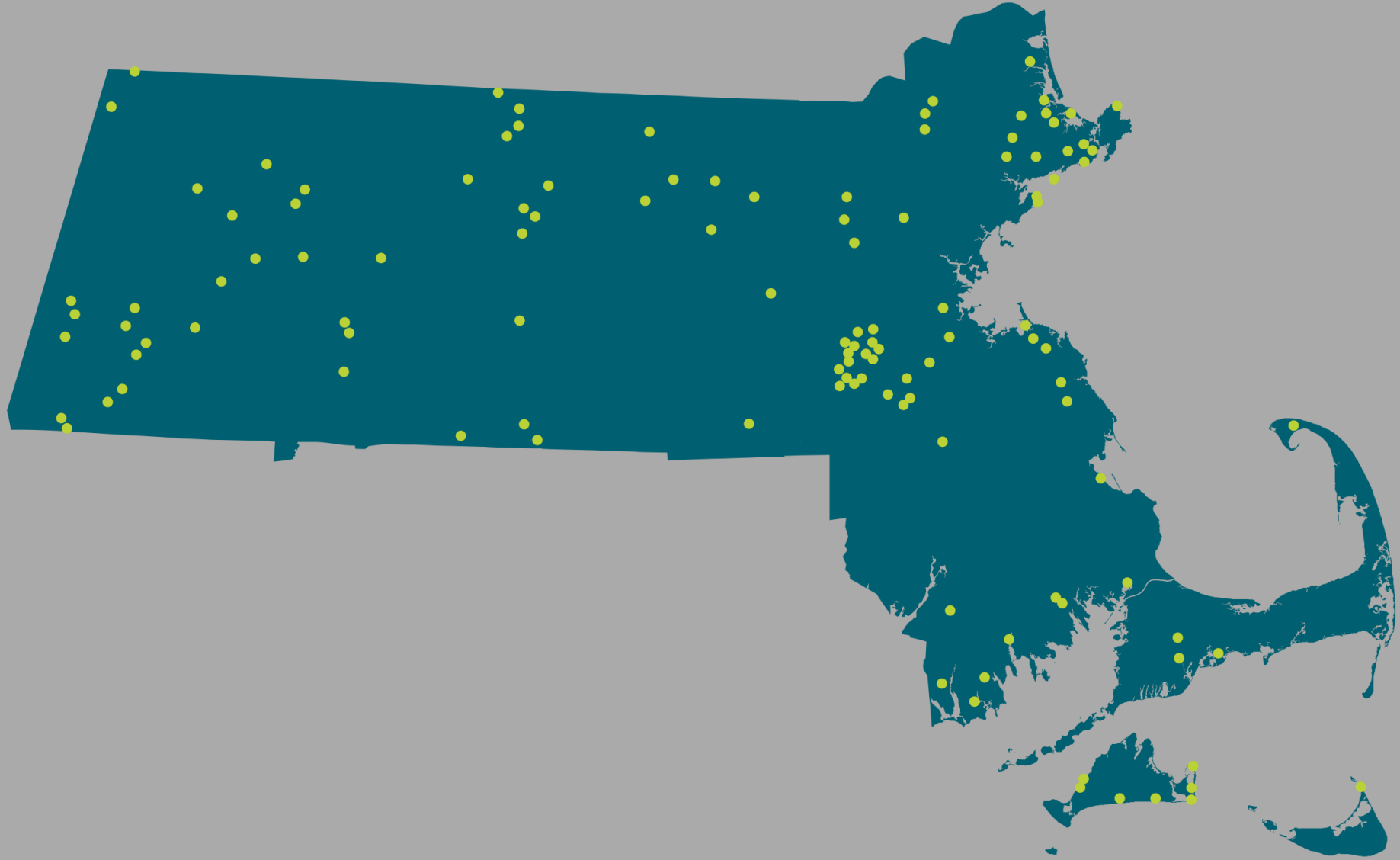
Amy Dorfman | Decarbonization Project Manager

# 123 Properties Across MA

- **1.8 Million Annual Visitors**
- **150 Conditioned Buildings; Commercial & Residential Mix**
- **17 sites on the National Register of Historic Places**
- **11 Historic Homesteads**
- **7 National Historic Landmarks**
- **2 National Natural Landmarks**
- **2 Museums**
- **2 Working Farms**

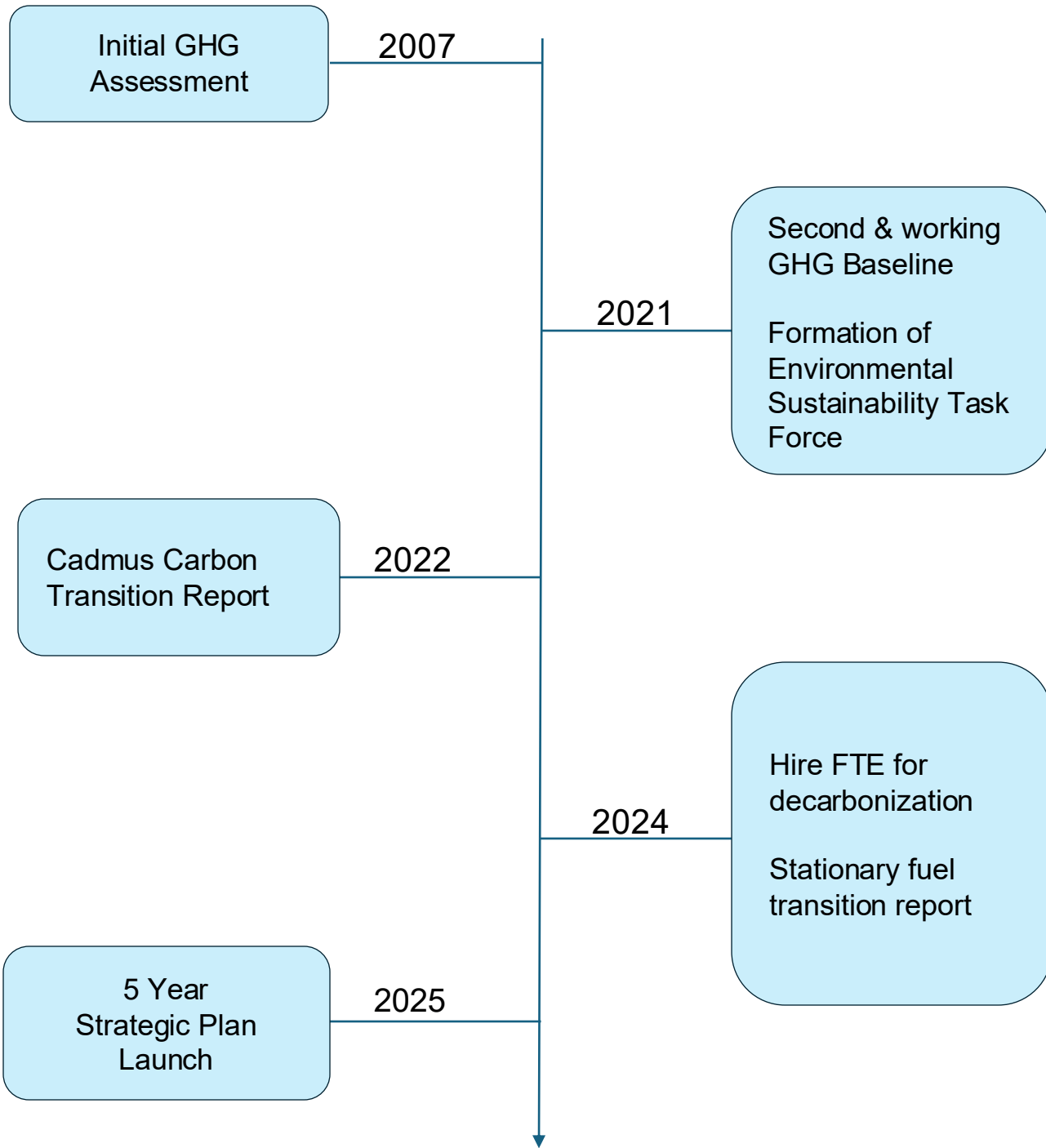
NORRIS RESERVATION  
NORWELL







**MONUMENT MOUNTAIN**  
GREAT BARRINGTON





WARD RESERVATION  
ANDOVER

# Reduce Scope 1 + 2 Emissions by **50% by 2030, 100% by 2050**

<b>3,201</b> MTC02e Annually	
Scope 1	<b>2,309</b>
Scope 2	<b>892</b>

50% = **1,605**

Uncounted: **40,000** MTC02 Annually  
**Sequestered**  
as Public Benefit



# Challenges



**Timeline**



**Cashflow**



**Planning**



**Partnerships**



**Realistic Data**



**Historic Buildings**

# Timeline

*What buildings will have the biggest impact in emissions reduction?*

- 4 years until **2030 target**
- Competing decarbonization goals with **deferred maintenance** needs

## **Solution:**

- Partners with **capacity to scale**
- Energy procurement for **100% scope 2 reduction**
- **Decommission Buildings (~10%)**

GREENWOOD COMMUNITY GARDEN  
DORCHESTER





# Realistic Data

*How much energy are we using?*

- **Dispersed ownership of utility bills**
- **No holistic view of utility use or spend**

**Solution: EIS** (Energy Intelligence System)

- **Centralized bill tracking & pay**
- **Dynamic benchmarking & analysis**

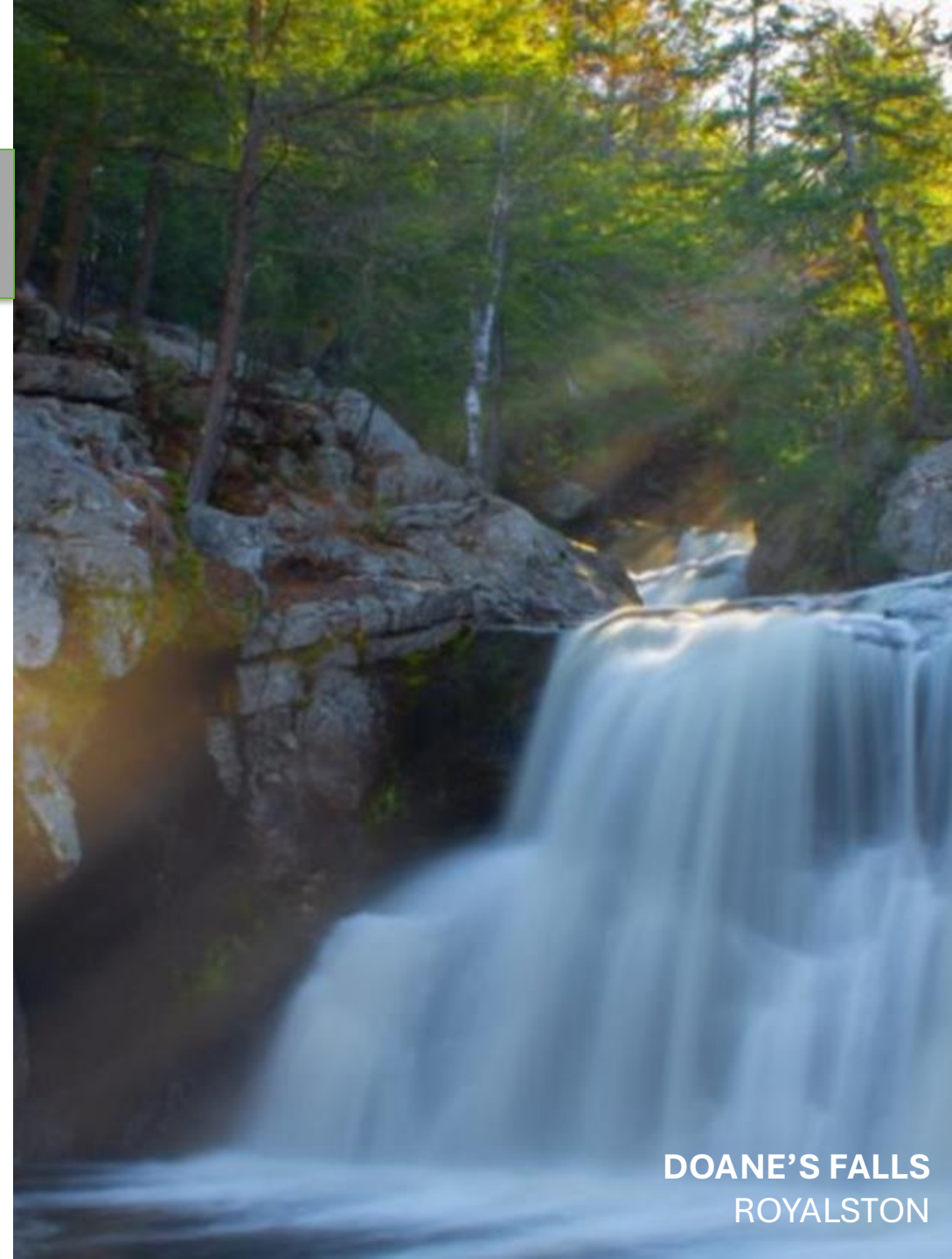
# Planning

*How do we meet & pay for our planning needs for 150+ buildings?*

- Earlier reports **under-scoped** with **estimated** costs & utility data
  - Carbon Transition Report & GHG Baseline
  - Heating Fuels Transition Report
- Need: **building by building analysis**

## **Solution:**

- **Portfolio benchmarking assessment** through BDaaS program
- Utilize **actual data** through **EIS**





# Cashflow

*Prioritize deferred maintenance or climate goals?*

- Misalignment in **timing** of available **capital** & **decarbonization** goal
- Actual cost is **2x estimated costs**

## **Solution:**

- Building Decarbonization as a Service (**BDaaS**)
- Competitive **energy supply procurement** to **reduce operating costs**
- Decarbonization **pillar** in **strategic plan**





# Partnerships

*Who can help plan & complete projects at scale?*

- MA Save program
  - Dictates **commercial OR residential** projects
  - Demands **one-off approach** to multi-building projects
- Trouble finding **trusted partners** with the knowledge & capacity to bring project to **scale**

## **Solution:**

- PowerOptions' **RFP** process & **trusted vendors**





# Historic Buildings

*How do we retrofit while keeping the Spirit of Place?*

- Unique & **historic building fabrics** & use cases
- Historic **preservation restrictions**
- **Humidification & aesthetic requirements**

## Solution

- **Experienced vendors**
- Collaboration with **internal archival team**



FRANCIS WILLIAM BIRD PARK  
WALPOLE

# Project Phases



- EIS Onboarding
- Deferred maintenance buildings retrofit

- First BDaaS project complete
- High-priority buildings complete

- 50% planned retrofits complete
- EIS fully integrated into organization's operations

- 50% emissions reduction
- Clear pathway towards 100% reduction by 2050

# City of Providence Case Study

# CITY OF PROVIDENCE



MAYOR BRETT P. SMILEY  
CITY OF PROVIDENCE

## BUILDING DECARBONIZATION ROADMAP

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David Ruggiero  
Director of Energy Operations

BuildingEnergy Boston 2026  
March 24, 2026

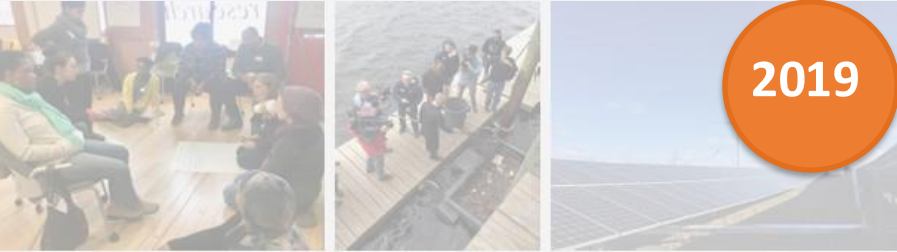


# City of Providence Building Portfolio

City of Providence Building Portfolio						
Administrative Division	Building Count		Building Size		GHG Emissions (CY24)	
	Count	Percentage	Square Feet	Percentage	MTCO <sub>2</sub> e	Percentage
Public Property	34	26%	695,205	13.20%	2,790	14%
Providence Public School District	38	29%	4,210,907	79.97%	14,248	73%
Parks	14	11%	210,419	4.00%	1,086	6%
Roger Williams Park Zoo	44	34%	149,278	2.83%	1,388	7%
	130	100%	5,265,809	100%	19,512	100%



# Why a Roadmap



Chapter 5. Article X –  
Building Energy Reporting  
Program



Chapter 5. Article XI –Energy  
Efficiency & Carbon Neutral  
Goals for Municipal Buildings



**Building  
Decarbonization  
Roadmap**



# Collecting & Analyzing Data

## Collecting Data

- 4 Administrative Divisions - 8 ways of doing things
- Capital Needs Assessment Reports
- Assessors Report
- Site Visits
- Best Guess Estimates

## Analyzing Data

- One set of inputs
- One set of outputs
- Understand the metrics
- Align your metrics with other reports



# Partnerships

## Internal Partnerships

- Senior Staff
- City Council
- Department Heads

## External Partnerships

- PowerOptions
- State & Federal Energy Offices
  - DOE – Better Buildings & Better Plants
  - RI OER
- RI Energy
  - SEMP - Strategic Energy Management Partnership
- ICLEI & Coalition for Green Capital
  - Planning Communities
  - Sustainable Endowment Institute



# Financing Decarbonization

## CIP Budgets - Capital Improvement Project

- Municipal CIP Budget & Bonds
- School Budget & Bonds
  - Rebuild PVD Schools bonds
  - RIDE 91/9 reimbursement

## Grants

- CPF - Community Project Funding
- ARPA - American Rescue Plan Act
- CDBG - Community Development Block Grant

## Other Finance Options

- ITC - Investment Tax Credits
- GRF - Green Revolving Fund
- OBR – On-bill Repayment
- Performance Contracts



# Decarbonization Efforts

## 17 Active Building Electrification Projects

- 1.1 million square feet or 22% of the city's building portfolio has been built new or updated with heat pump technology.

## Energy efficiency projects and audits

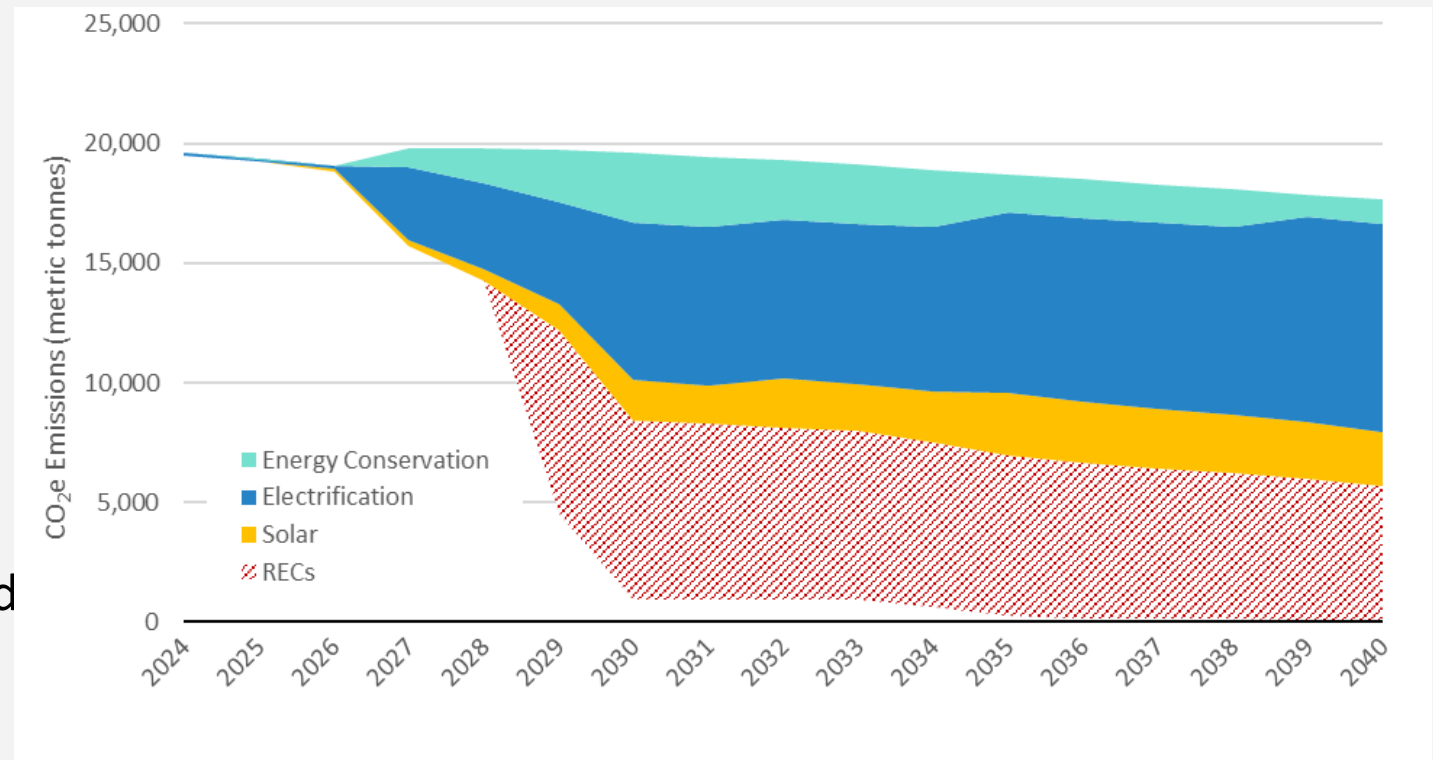
- 80 buildings
- LED, HVAC, & BMS upgrades
- \$3.6 million in utility incentives
- 18 Retro-Commissioning Audits

## On-Site Renewable Energy

- 4 projects @ 1.2 MW planned
- 63 projects @ 10.3 MW identified

## Off-Site Renewable Energy

- 25 year @ 17.4 MW
- 28,000,000 kWh
- REC Ownership in 2029



# Next Steps

**Release the Roadmap**

**Finalize Green Revolving Fund**

**Develop Communications Plan and Materials**

**Develop 5-year Strategic Plan & Goals**

**Explore Performance Contracting**



# BUILDINGENERGY BOSTON

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Please fill out an evaluation for this session



or: [\*nesea.org/eval\*](https://nesea.org/eval)

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Northeast Sustainable Energy Association (NESEA)