

MAPC's Municipal Net Zero Playbook

Launch Webinar
November 22, 2021



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Today's Agenda

- 11:00 AM** Introduction - Megan Aki, MAPC
- 11:10 AM** Poll Everywhere - Getting to Know You! - Francelis Morillo Suarez, MAPC
- 11:20 AM** What is the Playbook? - Cammy Peterson & Megan Aki, MAPC
- 11:30 AM** Developing Your Net Zero "Play"

ZERO EMISSIONS MOBILITY

Jesse Way, MAPC

NET ZERO BUILDINGS

Brooks Winner, MAPC

CLEAN ENERGY SUPPLY

Julie Curti, MAPC

CLIMATE-SMART ZONING & PERMITTING

Sasha Shyduroff, MAPC

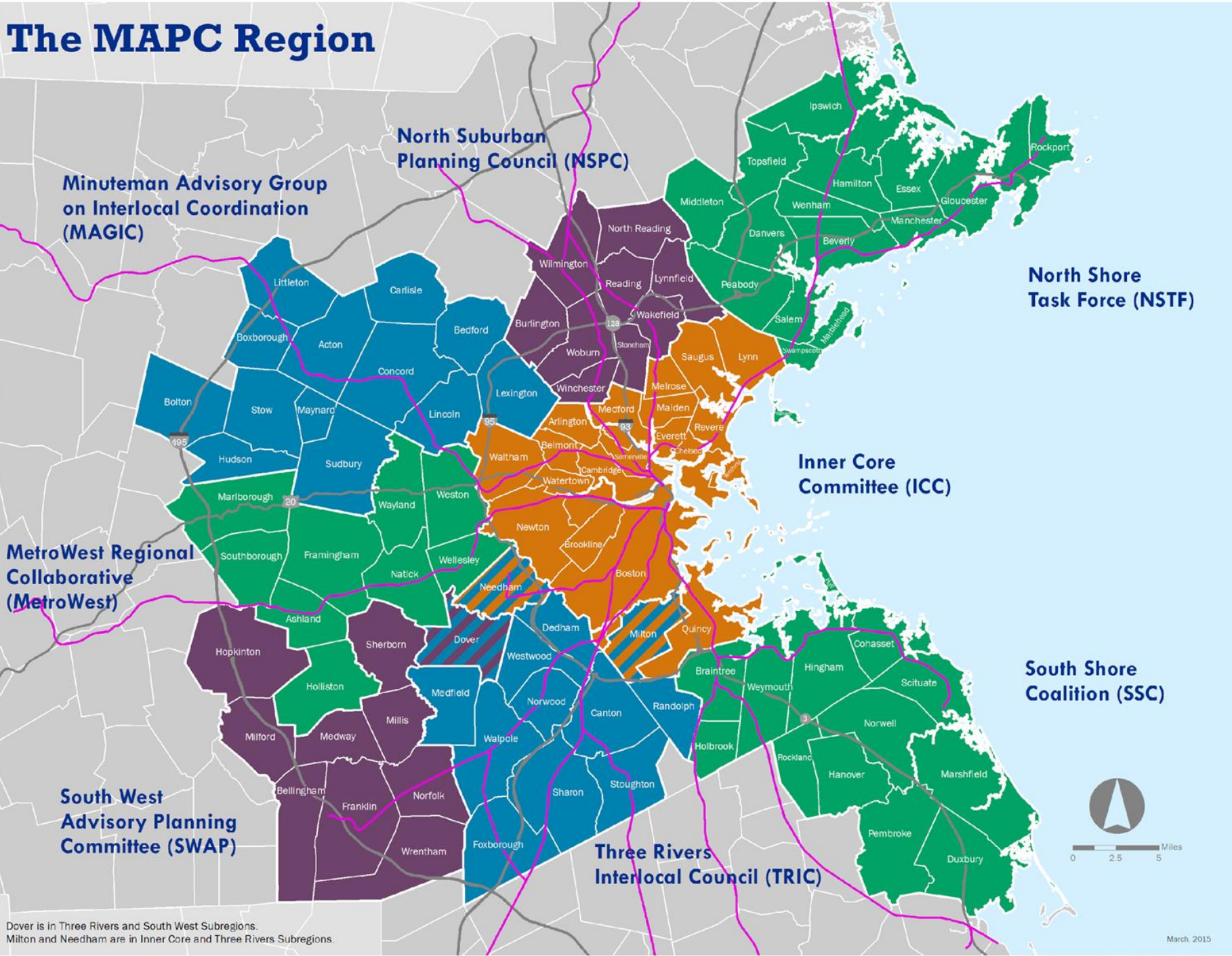
- 11:55 AM** Municipal Panel: The Playbook in Action

Martha Grover, City of Melrose
Shawn Luz, City of Framingham
Erina Keefe, City of Beverly

- 12:15 PM** Q & A with Municipal Panel

- 12:25 PM** Wrap Up - Megan Aki, MAPC

The MAPC Region



101 municipalities

1,440 square miles

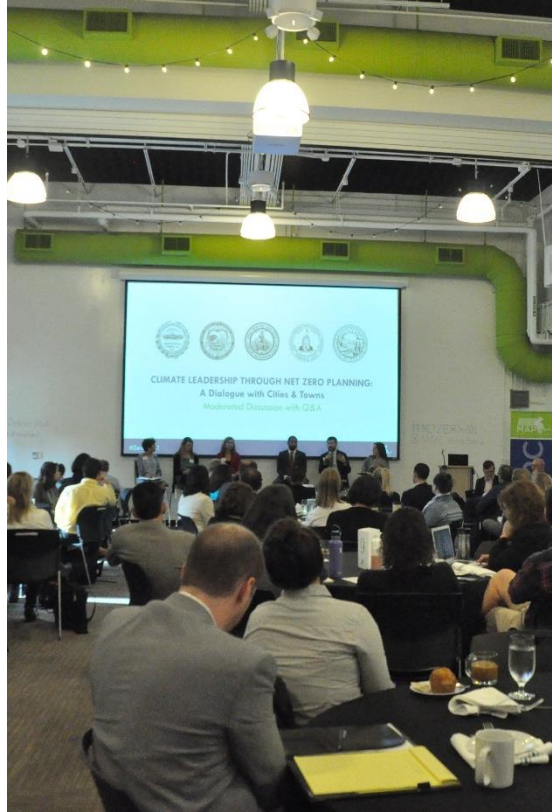
Nearly 3.2 million residents

**1.8 million jobs
(2010 Census)**

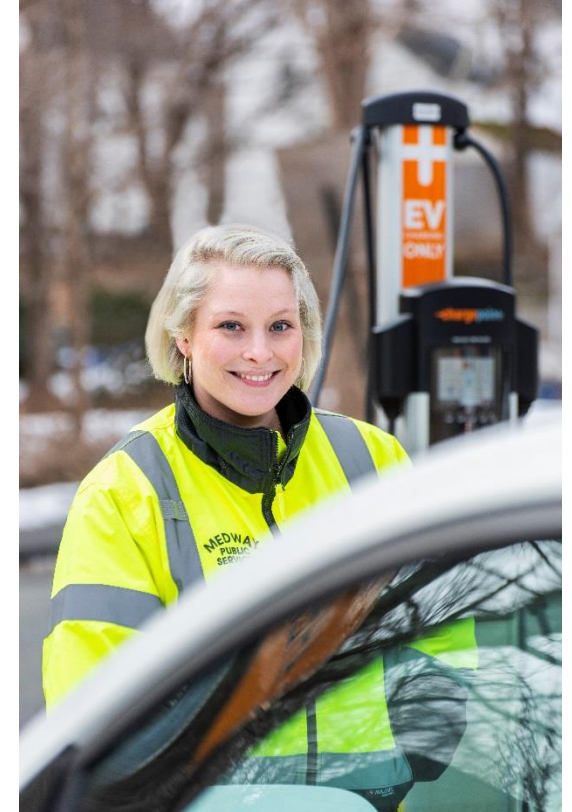
MAPC's Clean Energy & Climate Services



Regional Energy **Projects**



Climate and Energy **Planning
& Policy**



Energy **Technical Assistance**

MAPC's Net Zero Services



DATA

Data collection and GHG inventory development

Inventory analysis and summary report development

Training and/or coaching on MAPC's new Tool

Communications materials with GHG inventory data



PLANS

Assessment and mapping of vulnerable populations

Development of community engagement strategy

Creation of net zero action roadmaps

Creation of climate action plans



GOALS

Development of ordinances / goal setting language

Support on adoption process

Getting to Know You!

Respond to the webinar polls at:
PollEv.com/mapcpoll

OR

Text **"MAPCPOLL"** to **22333**

What is the Playbook?

The bigger picture and our goals and frameworks



2021 IPCC Report

The background image shows three tall industrial smokestacks with black and white horizontal stripes. They are emitting thick, billowing white clouds of smoke that rise into a dark, overcast sky. In the background, dark silhouettes of mountains are visible. The overall tone is somber and industrial.

Aggressive near-term action and transformative change is required to limit global warming to 1.5 degrees Celsius.

Massachusetts' Climate Commitments



August 2008

Global Warming Solutions Act set emissions limits of **25% by 2020**, and **80% by 2050**.



January 2020

Governor Baker announces Net Zero target in State of the Commonwealth Address.



0

April 2020

The Secretary of Energy and Environmental Affairs signs the Letter of Determination to set the **2050 Net Zero emissions limit**.

MetroCommon 2050 Goals

A Climate-Resilient Region

- Metro Boston is prepared for – and resilient to – the impacts of climate change

A Net Zero Carbon Region

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

A Healthy Environment

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

“By 2050, we commit that the region will achieve Net Zero/Carbon Neutral status.”

- METRO MAYORS COALITION 2016 CLIMATE MITIGATION COMMITMENT



ARLINGTON

CHELSEA

NEWTON

BOSTON

EVERETT

QUINCY



BRAINTREE

MALDEN

REVERE

BROOKLINE

MELROSE

SOMERVILLE

CAMBRIDGE

MEDFORD

WINTHROP

Across the 101 cities and towns in our Greater Boston region...

21 municipalities have, or are developing, **climate action plans**

33 municipalities have adopted **goals to reduce greenhouse gas emissions community-wide**

66 municipalities have **volunteer committees** dedicated to climate, sustainability, or energy issues

* Based on a preliminary review completed by MAPC in December 2019 of municipal websites and publicly available information.

MAPC's Municipal Net Zero Playbook

THE GOALS

Develop accessible and engaging resources, so that cities and towns of all sizes and capacities can accelerate near-term action to reduce the primary sources of carbon emissions.

Foster net zero planning that connects the dots between existing resources, lessons learned, and opportunities for leadership.



THE AUDIENCE

Municipal planners, energy/sustainability staff, and community members/volunteers.

Local implementers and decision-makers.



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How to Use MAPC's Net Zero Playbook START HERE

Guiding Frameworks

Framework for Action

Learn how to navigate the Net Zero planning process and evaluate priority actions for a local net zero plan.

Framework for Equity

Learn how to develop Net Zero Plans that assess and acknowledge existing inequities and work to uplift and provide direct benefits to underserved communities.

Zero Emissions Mobility

Tackle GHG emissions reductions from how people get around a community.



Net Zero Buildings

Make buildings highly efficient and optimize clean energy for electricity, heating, and cooling.



Clean Energy Supply

Transition to 100 percent renewable sources of energy across a community.



CHOOSE YOUR OWN ADVENTURE

Climate-Smart Zoning and Permitting

Take a strategic approach to local zoning and permitting updates.



WHAT'S NEXT?

As our work with communities expands, we plan to continue to add and update chapters to the Playbook that touch on emerging best practices.

WWW.MAPC.ORG/NET-ZERO

MAPC's Framework for Action



Recruit
Support
from
Community



Pursue
Commitment



Prioritize
Holistic
Planning



Gather
Necessary
Information

MAPC's Framework for Action



Recruit
Support
from
Community



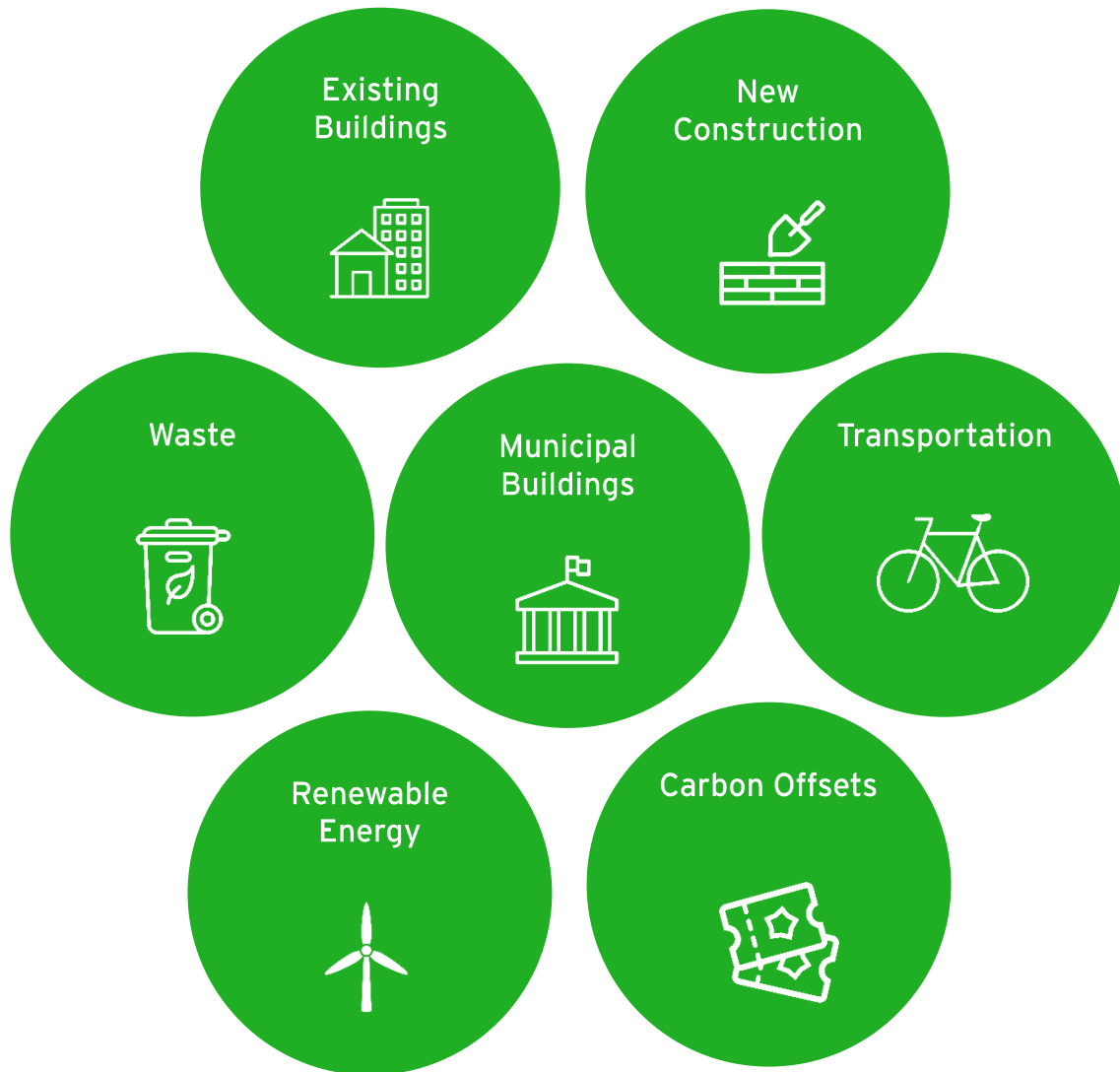
Pursue
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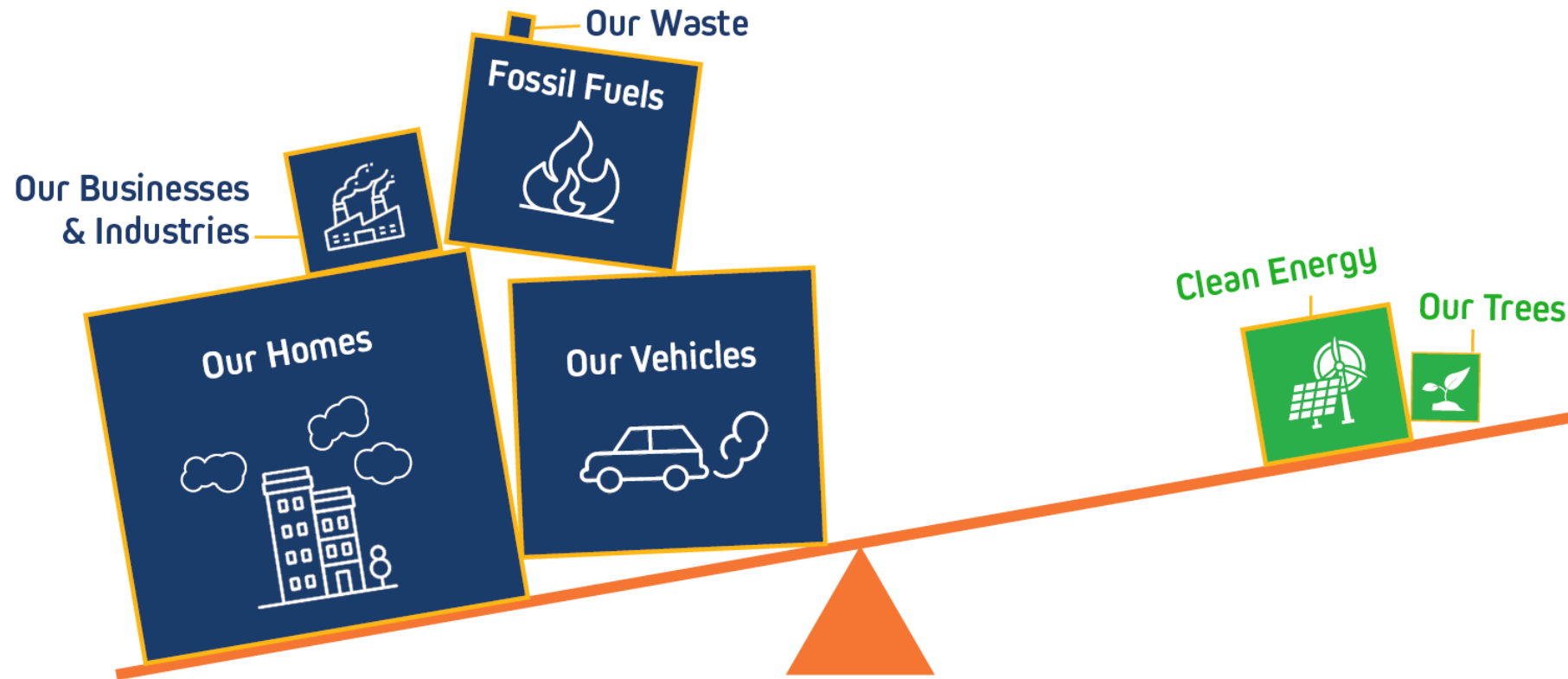


What is Net Zero?

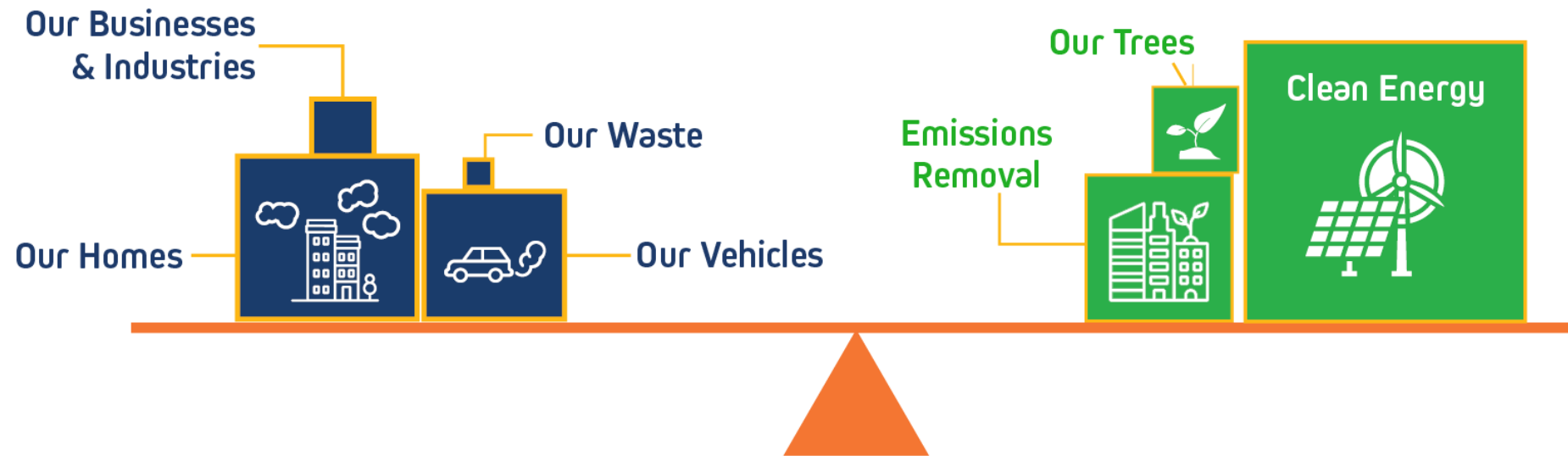
Net Zero Planning means the development of community-wide multi-sectoral goals, strategies, and processes to enable a municipality to achieve net zero carbon emissions.

To achieve **Net Zero**, a community – or other entity – must reduce greenhouse gas (GHG) emissions to the greatest extent possible and balance out any remaining emissions through GHG removal.

From this...



...to this!



MAPC's Framework for Action



Recruit
Support
from
Community



Pursue
Commitment



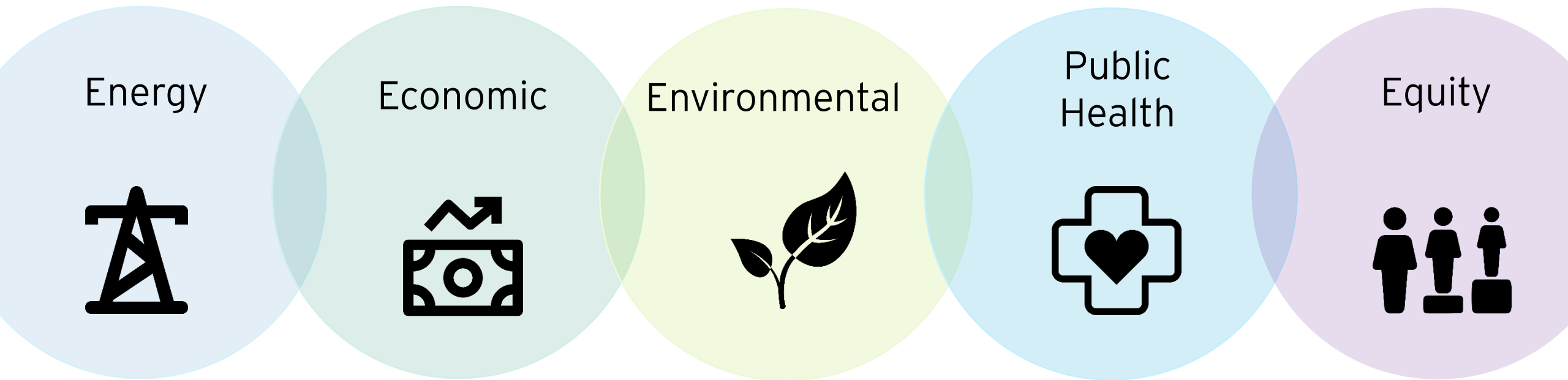
Prioritize
Holistic
Planning



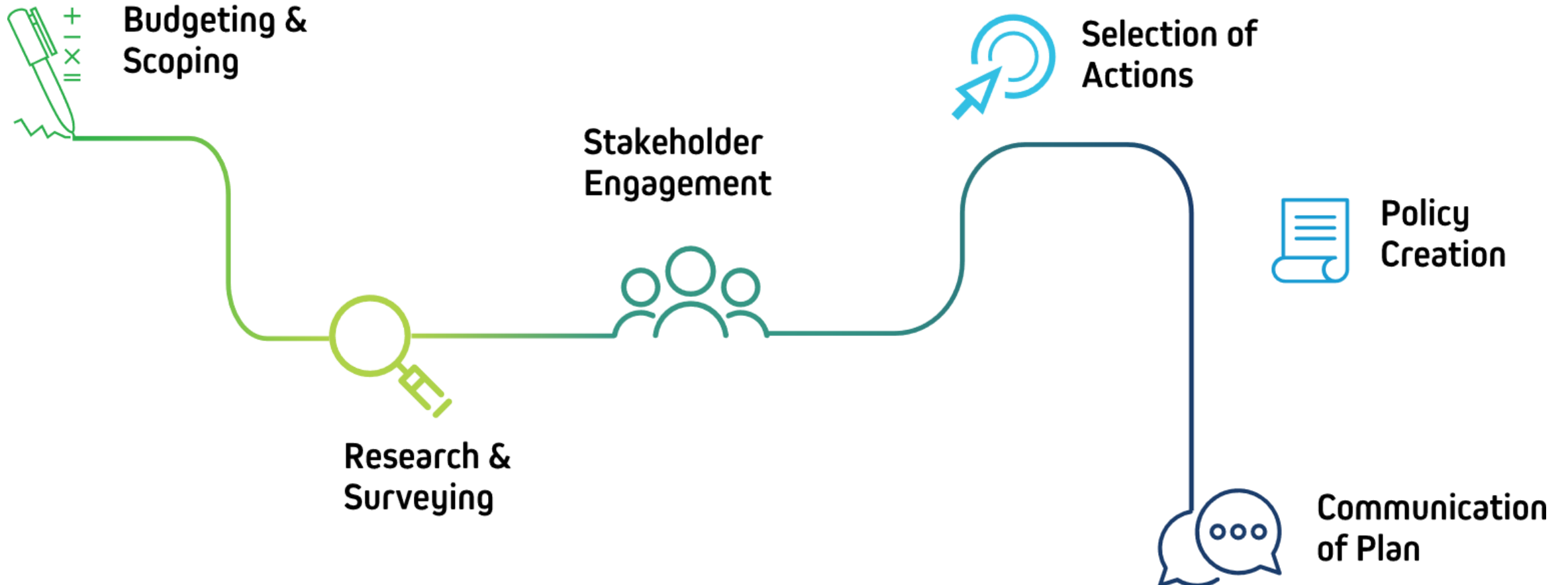
Gather
Necessary
Information

Holistic Planning Framework

Focused on the benefits of carbon mitigation:



How We Can Center Equity



Equity Assessment

For each strategy in the climate action plan, answer:

Who has been historically impacted?



Who will be most impacted by the types of changes to our climate we expect to see?



How will the benefits of this strategy be distributed?



Developing Your Net Zero "Play"

The Playbook's Action Chapters



Playbook Indicators

● TYPE

● TIMEFRAME TO IMPLEMENT

● URGENCY

● FEASIBILITY

● LEAD IMPLEMENTER

● KEY PARTNERS

● PERFORMANCE INDICATORS

● SCALE OF IMPACT

● TYPE OF EXPENSE

● BENEFITS AND IMPACTS

ACTION STEPS

EQUITY CONSIDERATIONS

IMMEDIATE NEXT STEP &
RESOURCES

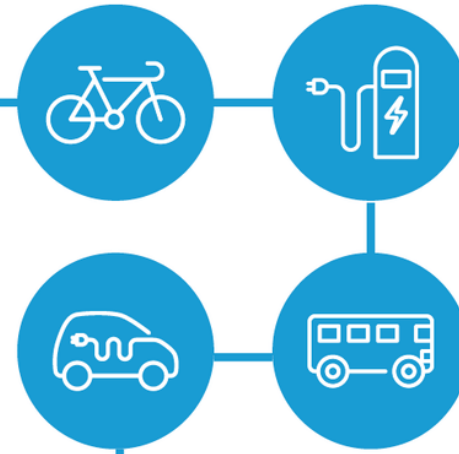


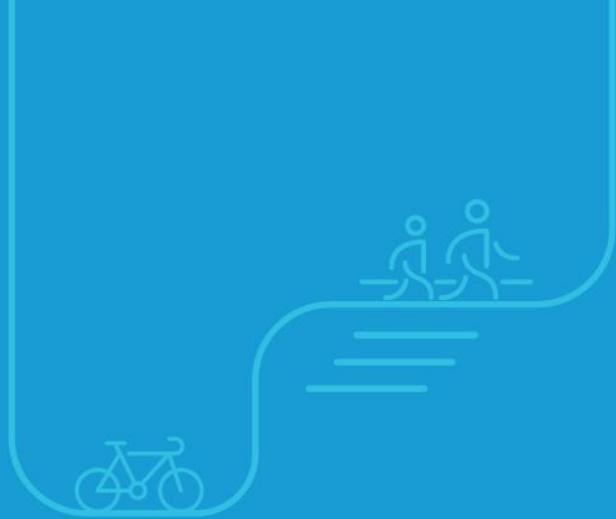
Zero Emission Mobility

Net Zero Playbook

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Zero Emission Mobility Strategies



Support walking, biking, and public transportation options



Advance zero emission vehicle infrastructure



Encourage use of zero emission vehicles



Lead by example in the municipal fleet



Adopt a Complete Streets Policy



Equity Consideration

- Thoughtful and informed **geographic distribution of investments**
- Incentives and supporting equipment **guided by input from priority populations**

Immediate Next Step

- **Develop a local Complete Streets policy and prioritization plan for investments**
- If your community has an existing Complete Streets policy, **consider revisions that address micromobility options** that may not have previously been incorporated.

Photo Credit: Wendy Bush, picture of a crosswalk in Amesbury, MA



Expand Public Charging Stations



Equity Consideration

- Strategic geographic placement of charging stations
- Develop programs to reduce economic barriers to EV adoption
- Pair with promotion of available incentives and creation of additional funding support and car sharing models

Immediate Next Step

- Select sites for your next phase of EV charging stations
- Determine appropriate station types for the site use cases

Photo Credit: James K. Lindley, picture of a public charging station in Medway, MA



Net Zero Buildings

Net Zero Playbook

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Net Zero Building Strategies



Reduce greenhouse gas emissions from buildings



Electrify new and existing buildings



Advocate for statewide net zero building policies

Net Zero Playbook

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Create and preserve efficient affordable housing



Equity Consideration

- **Low-income residents and people of color are most impacted** by the climate and housing crises.
- They also face **greater barriers** to accessing resources for energy efficiency and other clean energy solutions.
- Implementation of this action should **prioritize the needs of communities of color** to ensure that the benefits of energy and water efficiency are distributed equitably to those who have been historically excluded.

Immediate Next Step

- **Work with stakeholders to develop a housing production plan** that includes eTOD and prioritizes energy- and water-efficient design such as Passive House.
- Identify municipally-owned land that is suitable for housing development and issue a Request for Proposals (RFP) to dispose of the land for affordable housing development that includes net zero or other high-performance building standards in the selection criteria.

Pictured: 206 Main Street, a Passive House-certified, affordable mixed-use development in Gloucester, MA developed by North Shore CDC and Action Inc. [Photo credit: North Shore CDC](#)



Adopt a net zero standard for new municipally-owned and funded buildings



Equity Consideration

- Public housing has been underfunded for decades, and residents often live in inefficient, unhealthy housing.
- Benefits of net zero buildings can be distributed across the entire community if municipal buildings and public housing are built to net zero standards.

Immediate Next Step

- Research net zero carbon standards adopted by Amherst, Boston, Cambridge, Wayland, and other communities and develop a draft net zero standard that fits your municipality for Town Meeting or City Council within the next year.

Pictured: Putnam Avenue Upper School, Cambridge. [Photo credit: Stephen Turner Inc.](#)



Clean Energy Supply

Net Zero Playbook

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Metropolitan Area Planning Council





Clean Energy Supply Strategies

Net Zero Playbook

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Metropolitan Area Planning Council



**Increase renewable energy
generation, use, and access**



**Build smart and resilient
energy infrastructure**



**Reduce the carbon impact of the
energy system, from the grid to
building scale**



Implement a green municipal aggregation program.



Equity Consideration

- Allows all residents and businesses to participate in the advancement of renewable energy in the community.
- Any electricity customers on low-income rates can maintain their rate status and participate in the aggregation.
- Municipalities should pay particular attention to the costs of participating compared to utility electricity costs and provide a default rate that is competitive with these prices.
- Municipalities should partner with trusted community-based organizations on messaging and outreach for the program.

Immediate Next Step

- Municipalities can start by authorizing municipal aggregation by majority vote from their City Council or at Town Meeting.
- Municipalities with existing municipal aggregation programs can expand their programs by procuring additional amounts of renewable energy and/or by using an operational adder in the next iteration of their program.

Photo Credit: MAPC, picture of a wind turbine in Medford, MA



Deploy energy storage at critical facilities.



Equity Consideration

- Energy storage projects can be designed to improve shelters and services for populations who are most vulnerable during climate events.
- Consider prioritizing buildings that can serve as emergency shelters and provide critical services to community members during extreme weather events.

Immediate Next Step

- Municipalities should convene key staff and partners to review priorities for energy storage and discuss potential project sites.

Photo Credit: MAPC, picture of a solar inverter in Wayland, MA



Climate-Smart Zoning and Permitting

Net Zero Playbook

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Climate-Smart Zoning and Permitting Strategies

Net Zero Playbook

WWW.MAPC.ORG/NET-ZERO

Metropolitan Area Planning Council



**Allow net zero enabling technologies
by-right**



Establish climate zoning overlays



**Mandate energy efficiency and and
renewable energy as appropriate**



**Streamline and expedite permitting
for net zero buildings**



Establish a climate zoning overlay



Equity Consideration

- Consider where an overlay should be located and who will benefit most from high efficiency buildings.
- Consider pairing climate zoning with affordable housing policies.
- Emphasize health, safety and resilience.

Immediate Next Step

- Explore different high-performance building standards that fit your community's goals, such as LEED, Passive House, WELL Building Standard.
- Must provide options for compliance.

Photo Credit: MAPC, picture of a net zero building under construction in Philadelphia, PA



Streamline and expedite permitting for net zero buildings and technologies



Equity Consideration

- Engage minority and women-led businesses/contractors in the process to redesign the permitting and inspections processes.
- Pair with incentives for multi-family buildings.

Immediate Next Step

- Convene inspections and zoning staff to review current permitting processes and establish goals for inspections that promote and enable net zero.
- Identify project partners to conduct trainings, such as MassCEC, Mass Save program administrators, Built Environment Plus, and SolSmart.

Photo Credit: SolSmart [Permitting](#) | [SolSmart](#)

Municipal Panel

The Playbook in Action



Meet Our Panelists



Shawn Luz

Sustainability Coordinator
City of Framingham



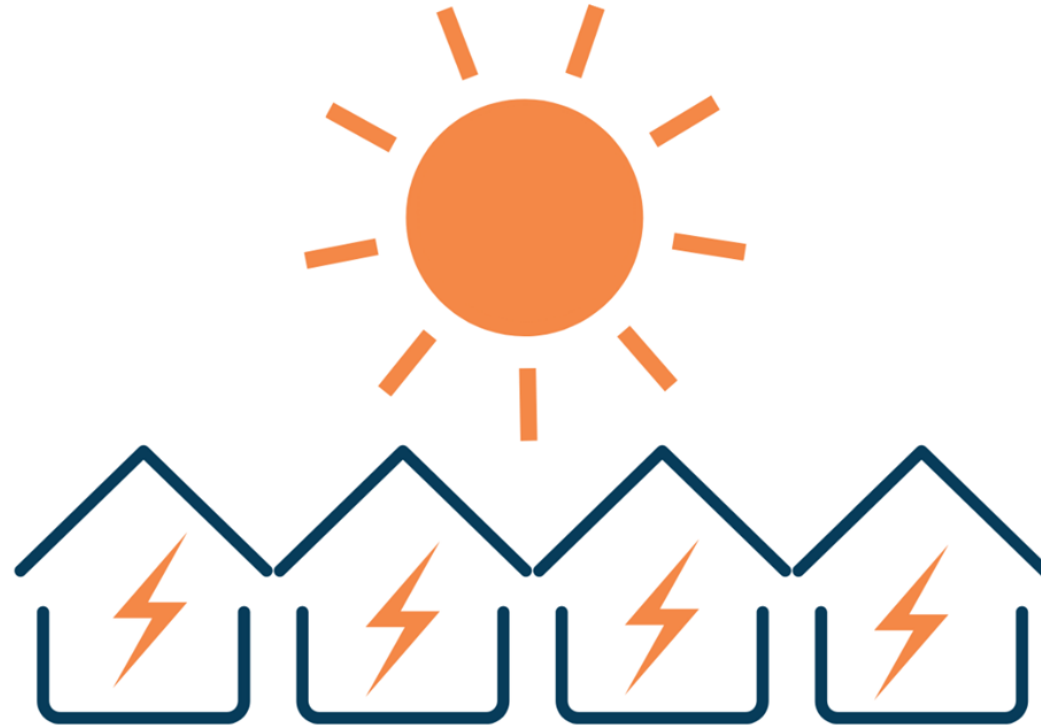
Martha Grover

Sustainability Manager
City of Melrose



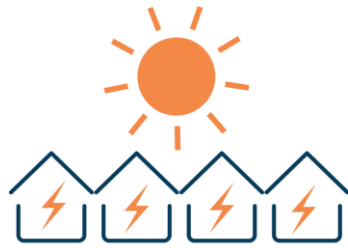
Erina Keefe

Sustainability Director
City of Beverly



MetroWest

Solar + Clean Heat Challenge



MetroWest
Solar + Clean Heat
Challenge

We're neighbors
on a mission



Clean Energy Home



Solar Panels convert clean, free sunlight to electricity, reduce air pollution, and can reduce or eliminate monthly electricity bills.

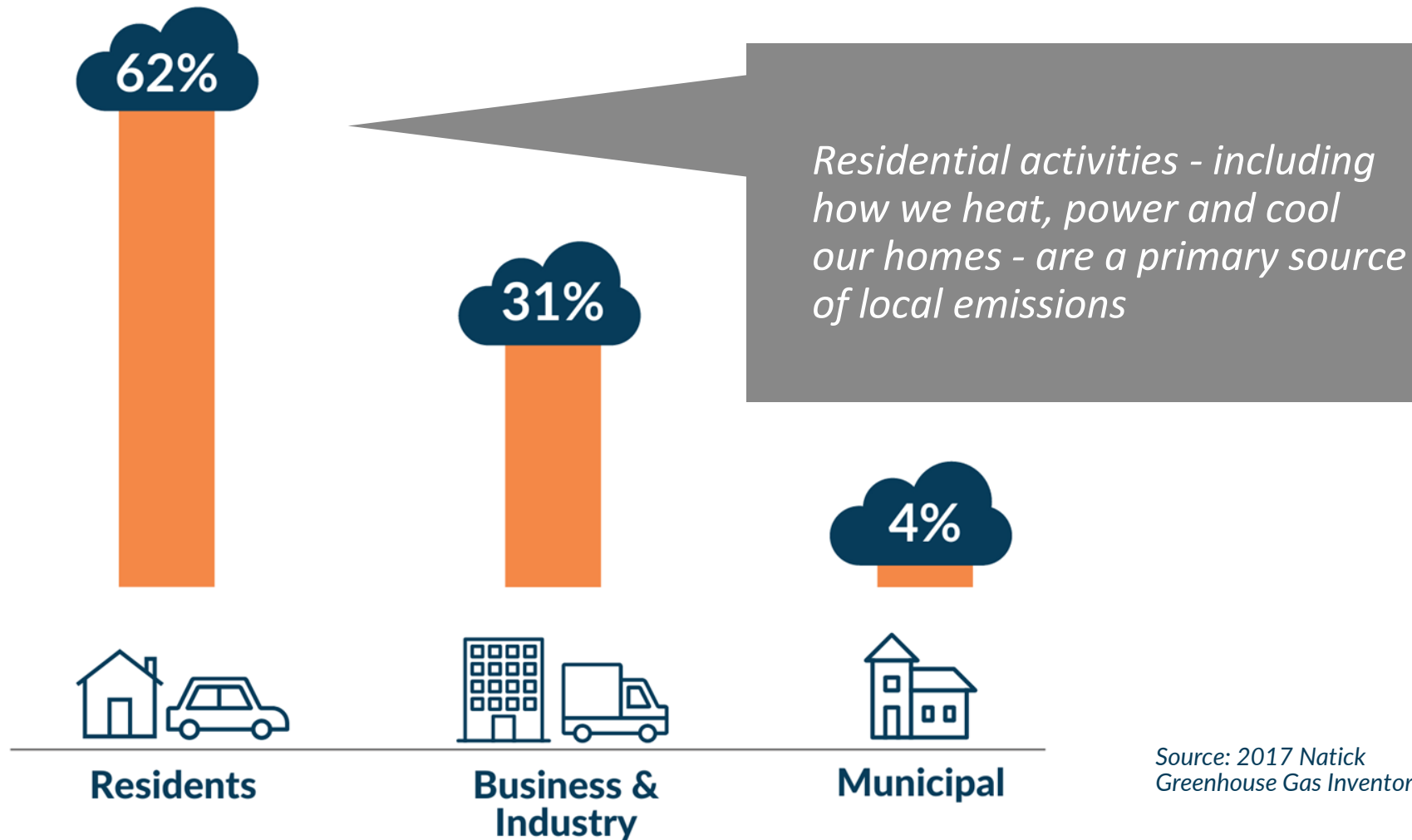


Air-Source Heat Pumps are a flexible, cost-effective and energy-efficient option for heating and cooling.



Ground-Source Heat Pumps are the most efficient heating and cooling system available and are extremely reliable even on the coldest days.

Why We're Here



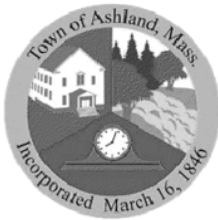
Source: 2017 Natick
Greenhouse Gas Inventory

Our Goal

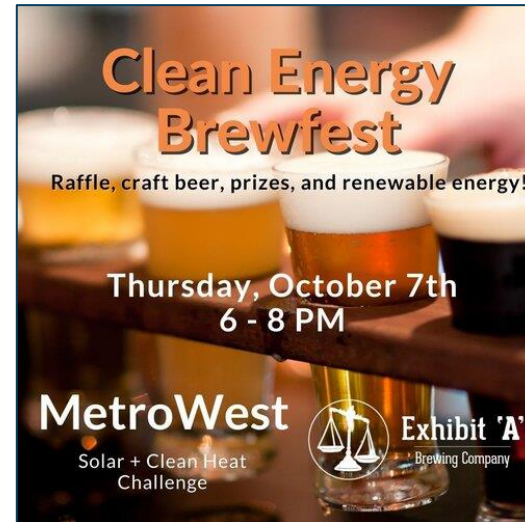


Make switching to clean energy simple and affordable for everyone

- Take a regional approach to promoting solar and heat pumps for heating and cooling
- Engage and educate the community in partnership with volunteers, municipalities and installers
- Follow best practices of established, statewide programs
- Connect residents and businesses to competitively-identified installers & discounted pricing



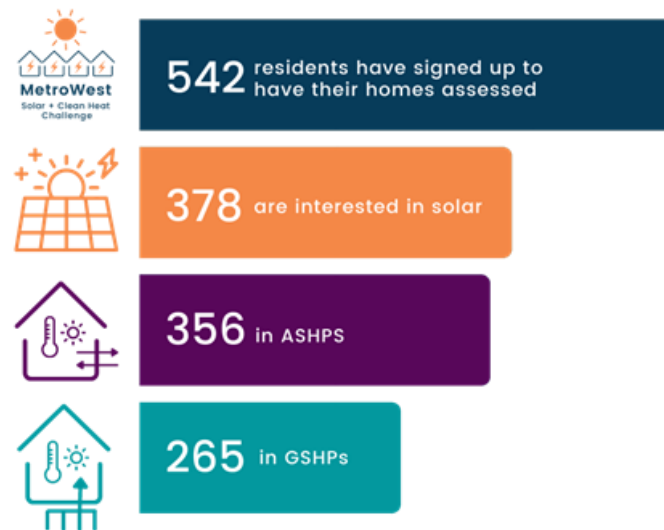
Outreach



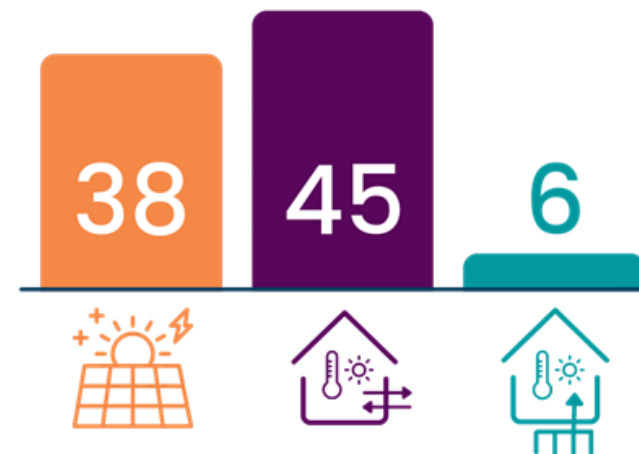
Progress



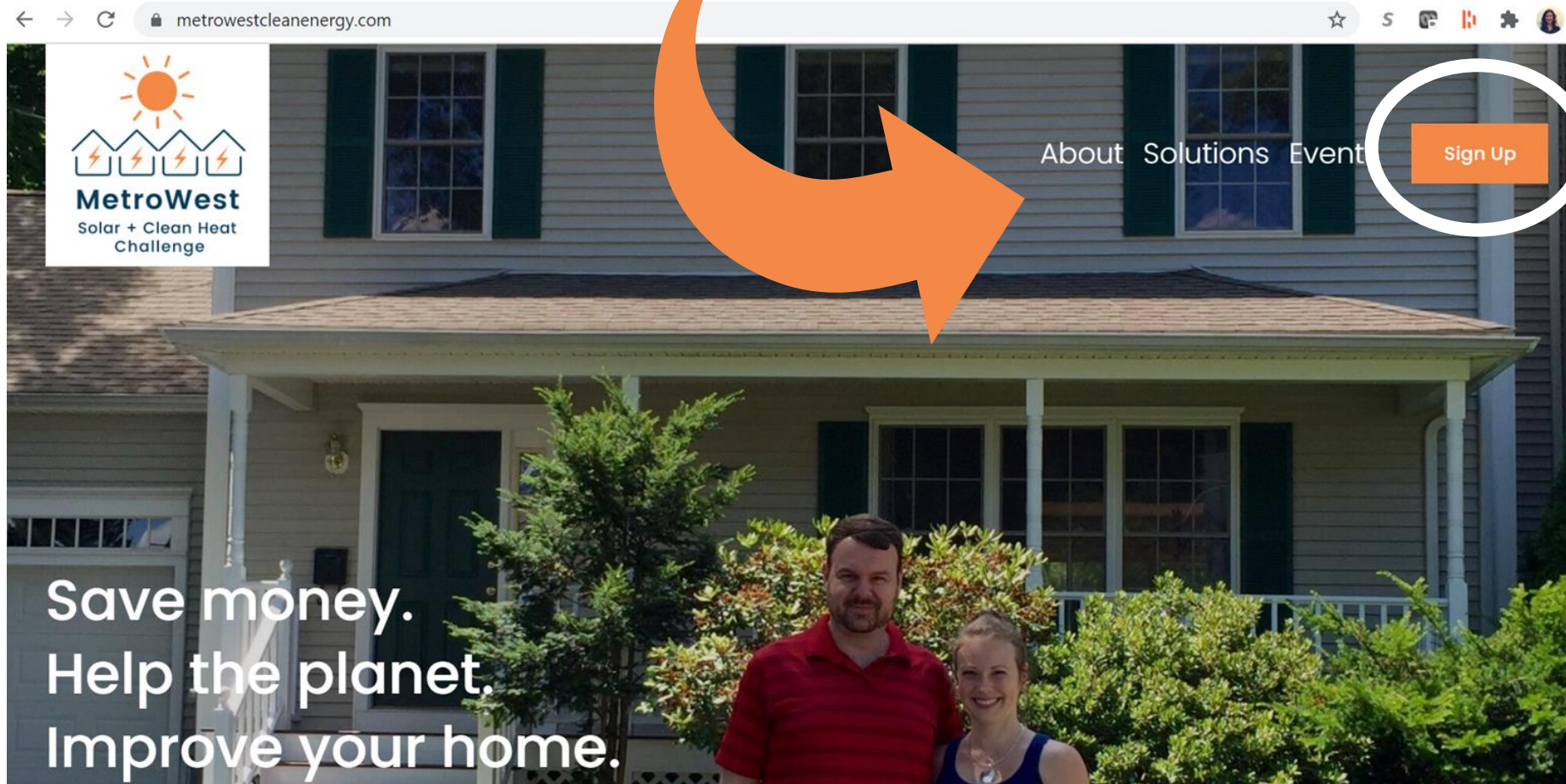
HOME ASSESSMENTS REQUESTED



CONTRACTS AS OF 11/8/21



Sign up for a no-cost clean energy
assessment of your home
metrowestcleanenergy.com



Thank you!

metrowestcleanenergy.com

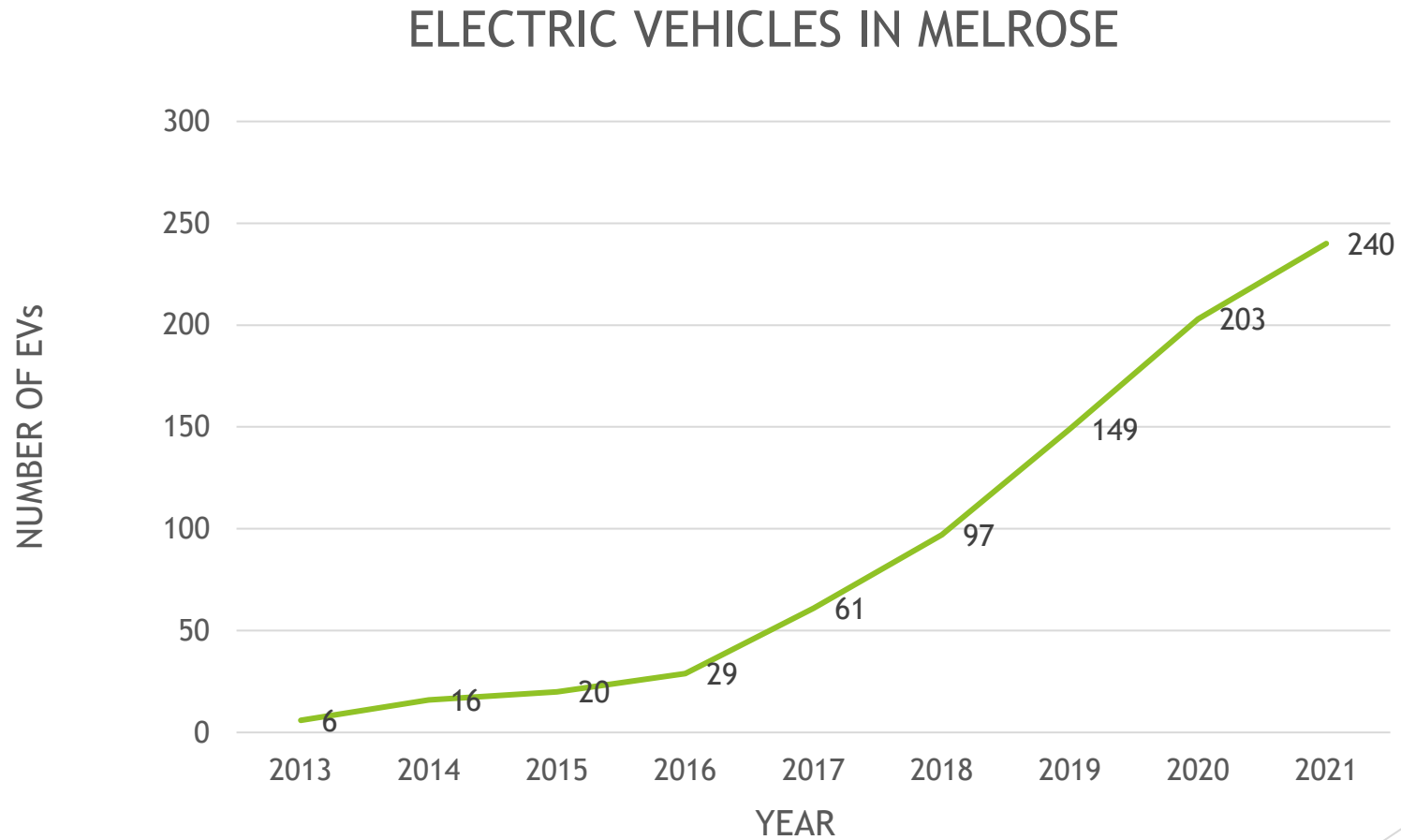
Melrose Pole Mounted EV Charger Demonstration



Martha Grover
City of Melrose
Sustainability Manager
MGrover@CityofMelrose.org



EV Adoption



Represents 1% of Registered Vehicles



► Cedar
Park
Charging
Station



► City Hall
Charging
Station



About the Demonstration

Benefits

- ▶ **Target Hard-to-Reach Areas:** Provide charging solution for customers without private garage & for cities/urban areas
- ▶ **Lower Complexity and Cost:** Leverage electricity already present on pole, no digging required
- ▶ **Public & Visible:** Customer insights demonstrate increased EV adoption when charging infrastructure is visible

Specs

- ▶ **Location:** EVSE mounted up to 10' on utility pole
- ▶ **Ease of Use:** When activated, the EV charger cord lowers
- ▶ **Suitable Poles Only:** Overhead poles owned by National Grid with a secondary. Poles must have sufficient clearance and limited existing attachments.

Proof of Concept

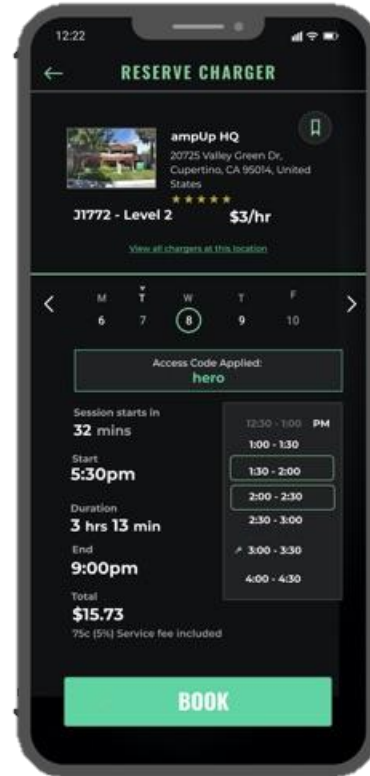
- ▶ Deploy approximately 10 stations in Melrose



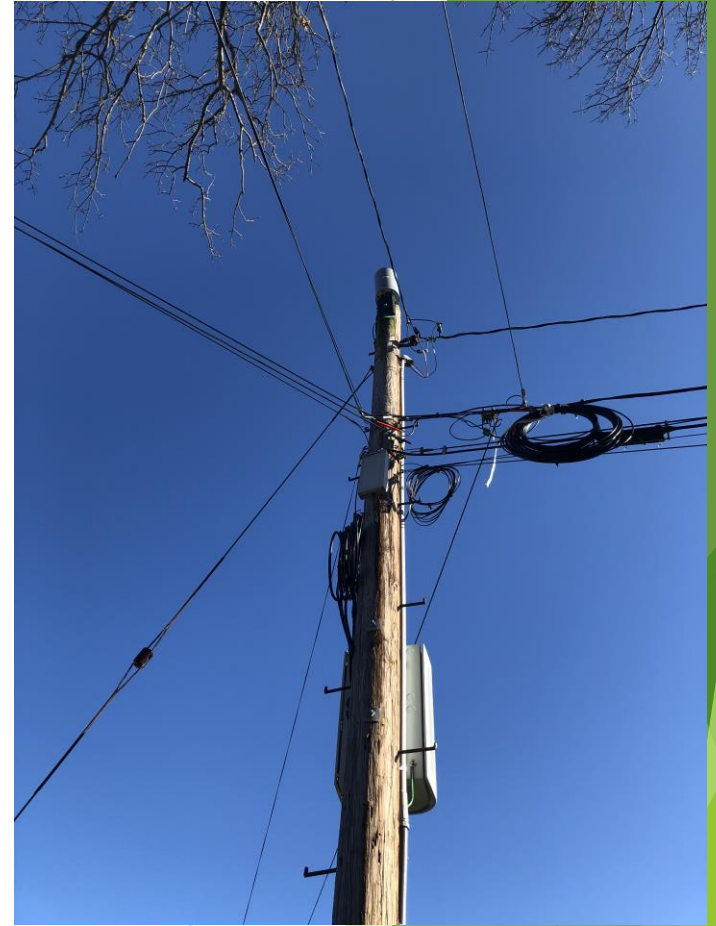
Our Partners

BROUGHT TO YOU BY
nationalgrid®

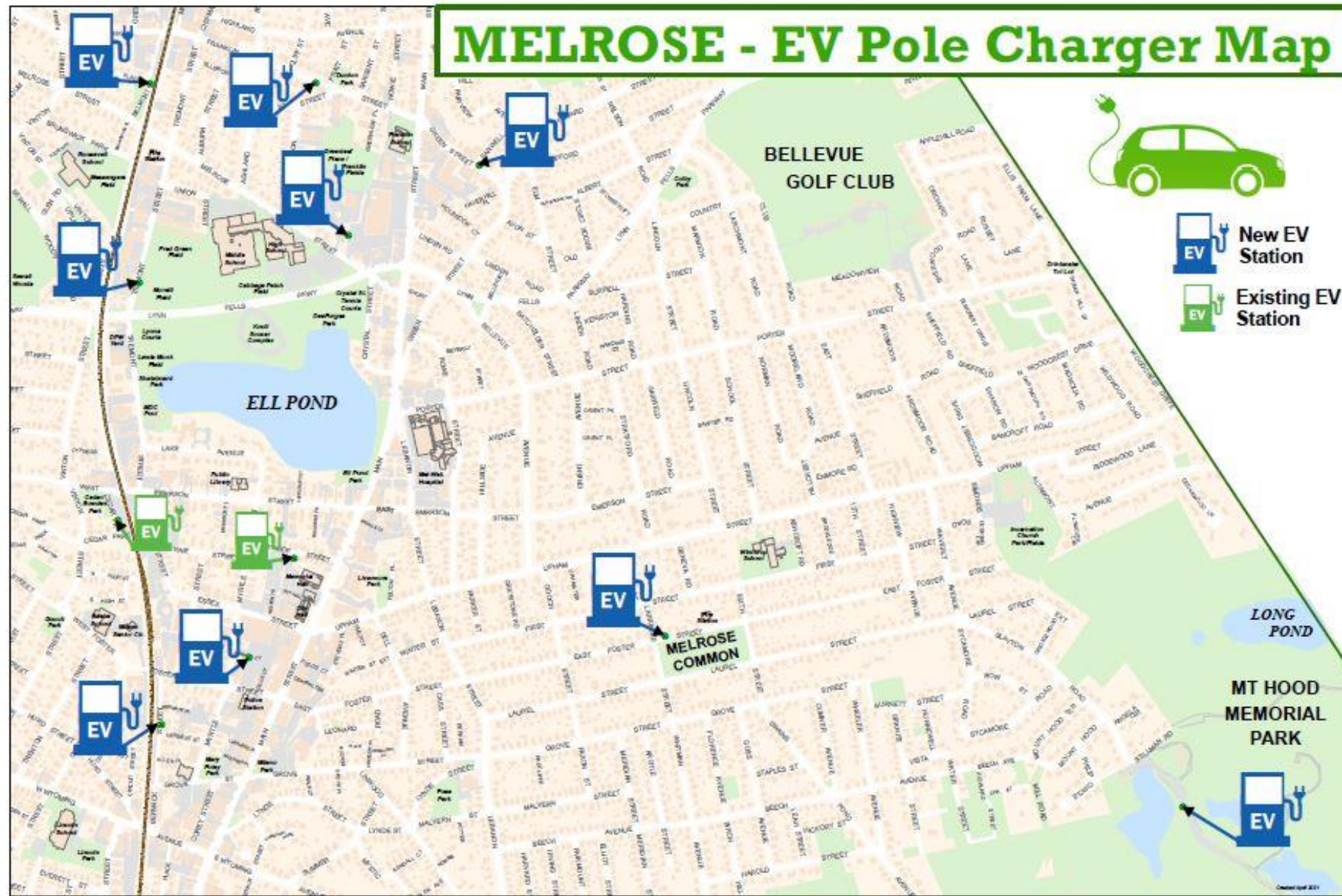
verizon✓



Key Step: Locate Good Poles



MELROSE - EV Pole Charger Map



How It Works



Also check out: https://www.youtube.com/watch?v=UjiR-Wz_Z8s

Pole-Mounted EV Chargers Progress

- ▶ Installation of all 15 chargers on 9 poles completed Tuesday!
- ▶ Traffic Commission approved EV Only parking at all locations in October
- ▶ Increase wayfinding/signage
- ▶ General outreach to raise awareness



Example of signage we are considering



Municipal Solar City of Beverly

Erina Keefe
Sustainability Director



Beverly and Salem have
committed to:

REDUCING GHGS

50%

by 2030

**EXCEEDING THE
COMMONWEALTH'S
GOAL TO ACHIEVE**

**CARBON
NEUTRALITY**

by 2050

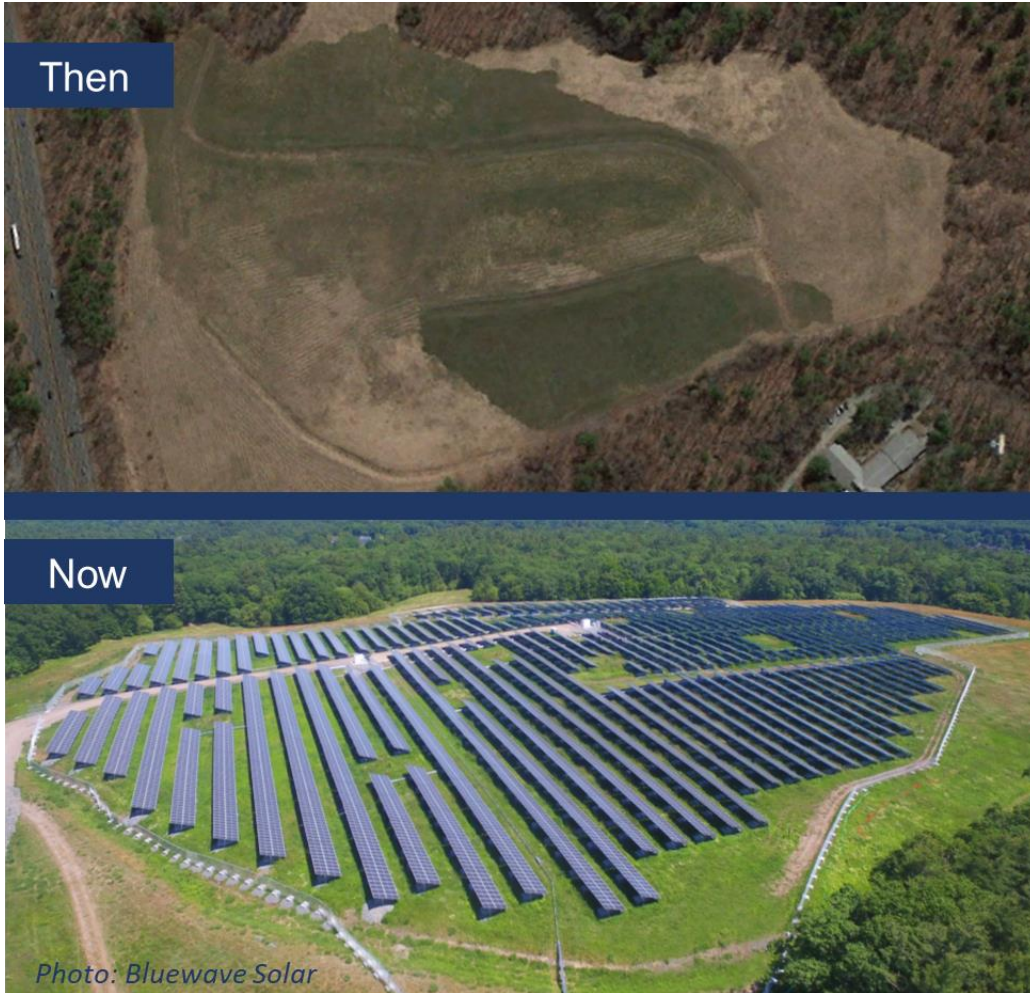


ENERGY

GOALS *(Excerpt)*

- Regional clean energy will supply 100% of municipal asset operations by 2030 and 100% of community energy by 2040.

Existing solar arrays – 7.5 MW



1981

100 kW at Greenergy Park at Beverly High School

2014

2.6 MW at Beverly Airport on 9.5 acres

Net metering; 100% credits to City

2020

4.9 MW Community Solar at former landfill - Beverly Brightfield




100 shares for Beverly residents

36.7% to Beverly Public Schools

Solar pipeline – 5 MW

2022 *(Planned construction)*

PPA across 8 sites:

			
Beverly High School	✓	✓	✓
Beverly Middle School	✓		✓
10 & 11 Pond St parking lots	✓		
McPherson YMCA Youth Center	✓		
Police station	✓		✓
City Hall / former police station			✓
Senior Center			✓

Q & A



Shawn Luz

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City of Beverly

Learn More & Share!

Explore the Playbook in full at:

[**https://www.mapc.org/net-zero/playbook/**](https://www.mapc.org/net-zero/playbook/)

Check out all our net zero planning resources at:

[**https://www.mapc.org/net-zero**](https://www.mapc.org/net-zero)



MEGAN AKI

Clean Energy & Climate Systems Manager

[**maki@mapc.org**](mailto:maki@mapc.org)

617-933-0795