

Malden Climate Action Plan

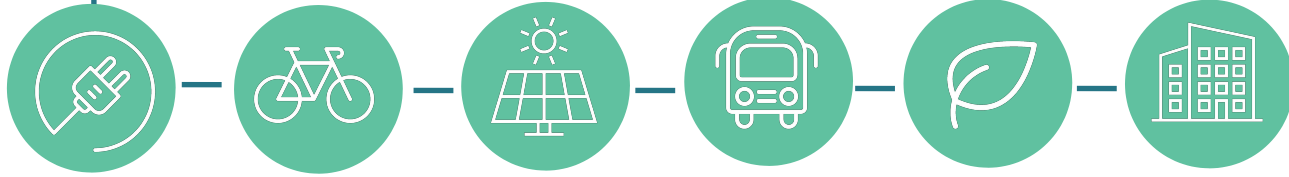
Monday, March 6, 2023

7:00pm



Meeting Goals

- ✓ Introduce Malden's Climate Action Plan process and work to-date
- ✓ Gather feedback to inform the City's vision for its Climate Action Plan and goals
- ✓ Share GHG Inventory Results



MAPC Team



**Marah
Holland**
*Senior
Transportation
Planner*



**Julia
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*Clean
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**Brooks
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**Najee
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Specialist*



**Abbey
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Culture
Planner II*



**Cam
McCutchen**
*Clean Energy
& Climate
Intern*



**Tanaya
Tonpay**
*Public Health
& Climate
Planner II*

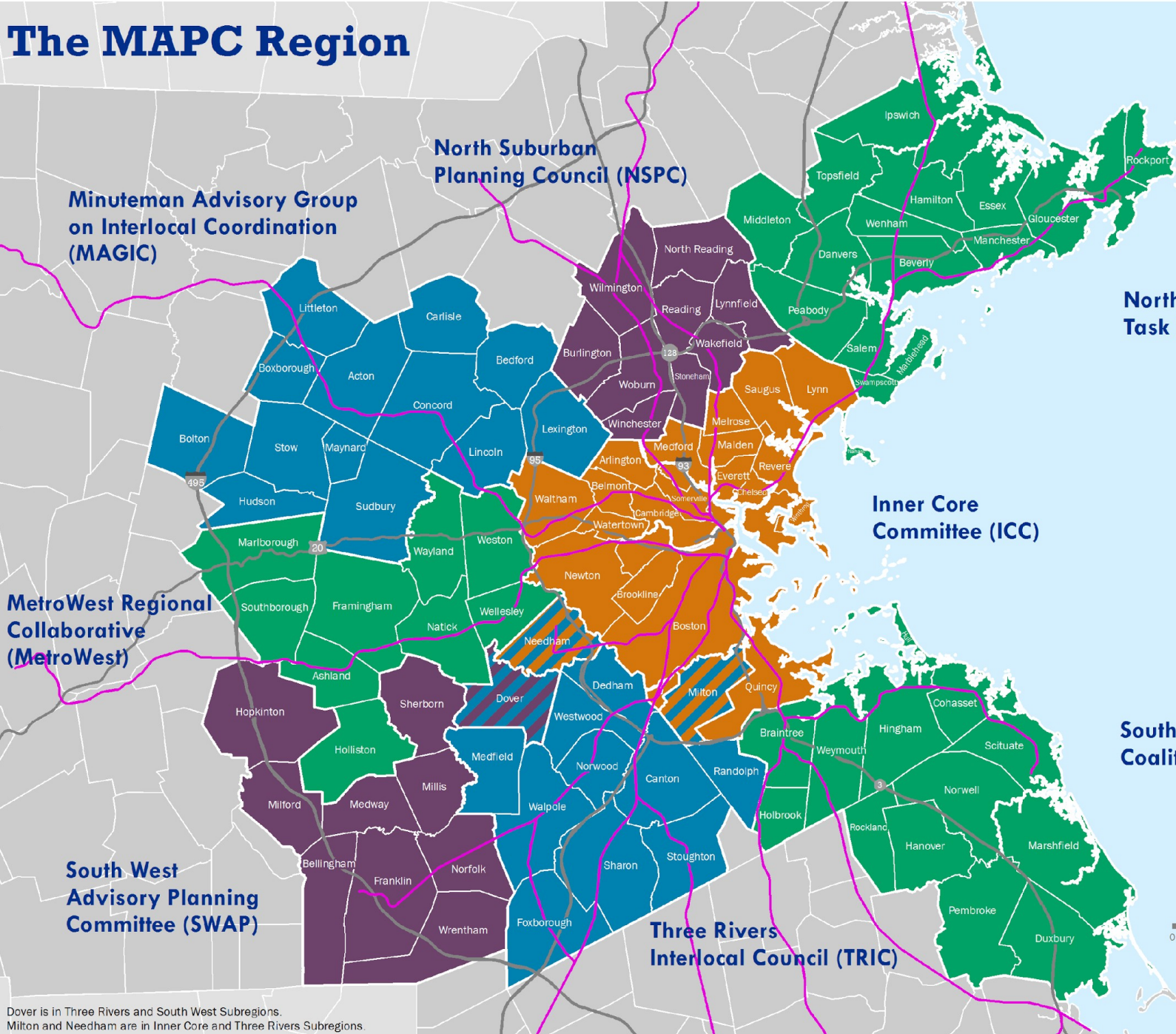
The MAPC Region

MAPC

101 municipalities

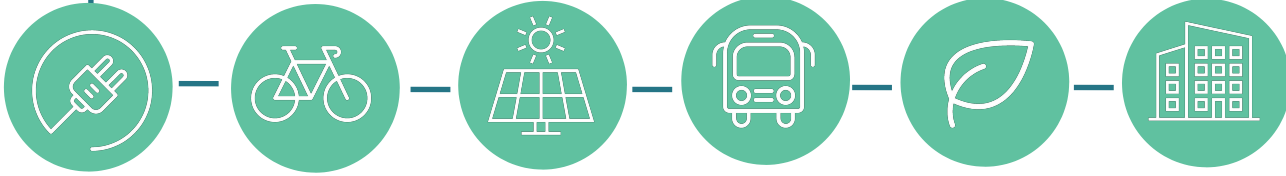
1,440 square miles

Nearly 3.2 million residents



Dover is in Three Rivers and South West Subregions.
Milton and Needham are in Inner Core and Three Rivers Subregions.

Agenda



1. Introduction & Overview

Project Background

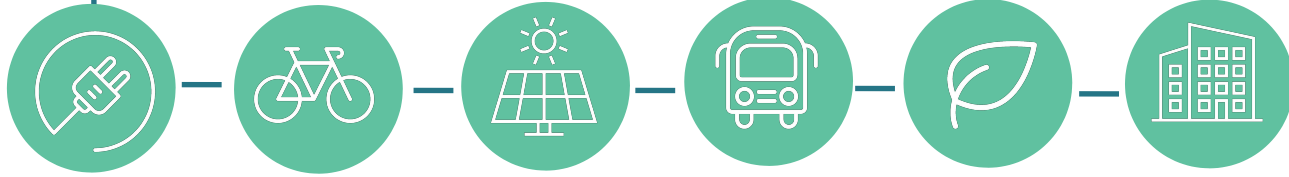
2. Progress Update

Existing Conditions

GHG Inventory Results

3. Next Steps

Project Overview



Overview of Project and Goals:

- MAPC is working with the City of Malden to create a **Climate Action Plan (CAP)** for the City.
- The CAP will include strategies that address both **climate mitigation & climate resilience**, with a **climate justice lens**.
- **CAP Process includes:**
 - **Community Engagement**
 - **Existing Conditions Study**
 - **GHG Inventory**

CLIMATE JUSTICE

CLIMATE MITIGATION

- Addresses the **causes** of climate change.
- Actions to reduce/prevent GHG emissions; increase carbon sinks
- Sample Strategies:
 - Improve EE in buildings
 - Promote EVs
 - Switch to renewable energy sources
 - Expand tree canopy for carbon sequestration

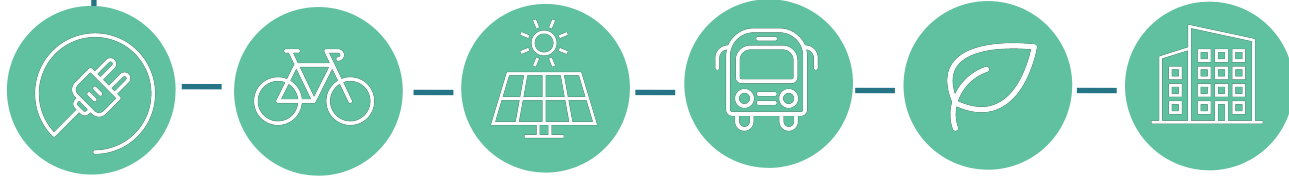


CLIMATE RESILIENCE

- Addresses the **effects** of climate change.
- Actions to reduce climate risks and vulnerability; prepare residents, infrastructure, and systems to climate impacts
- Sample Strategies:
 - Floodproofing and buildings & infrastructure
 - Build community capacity
 - Protect & restore natural resources



Project Overview



Overview of Community Engagement

The process will include various types of **community engagement**, focusing on meeting people where they are, and communicating in a variety of languages.



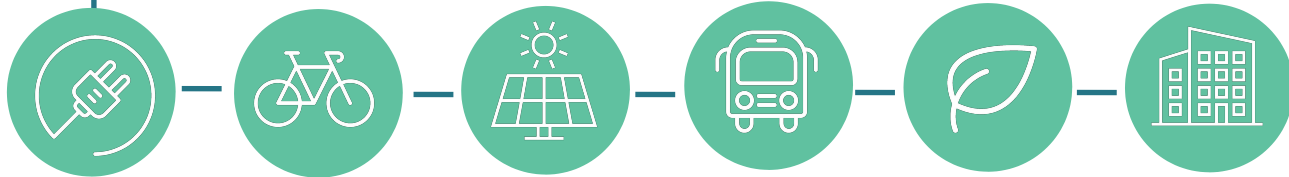
In-Person
Workshops

Focus
Groups

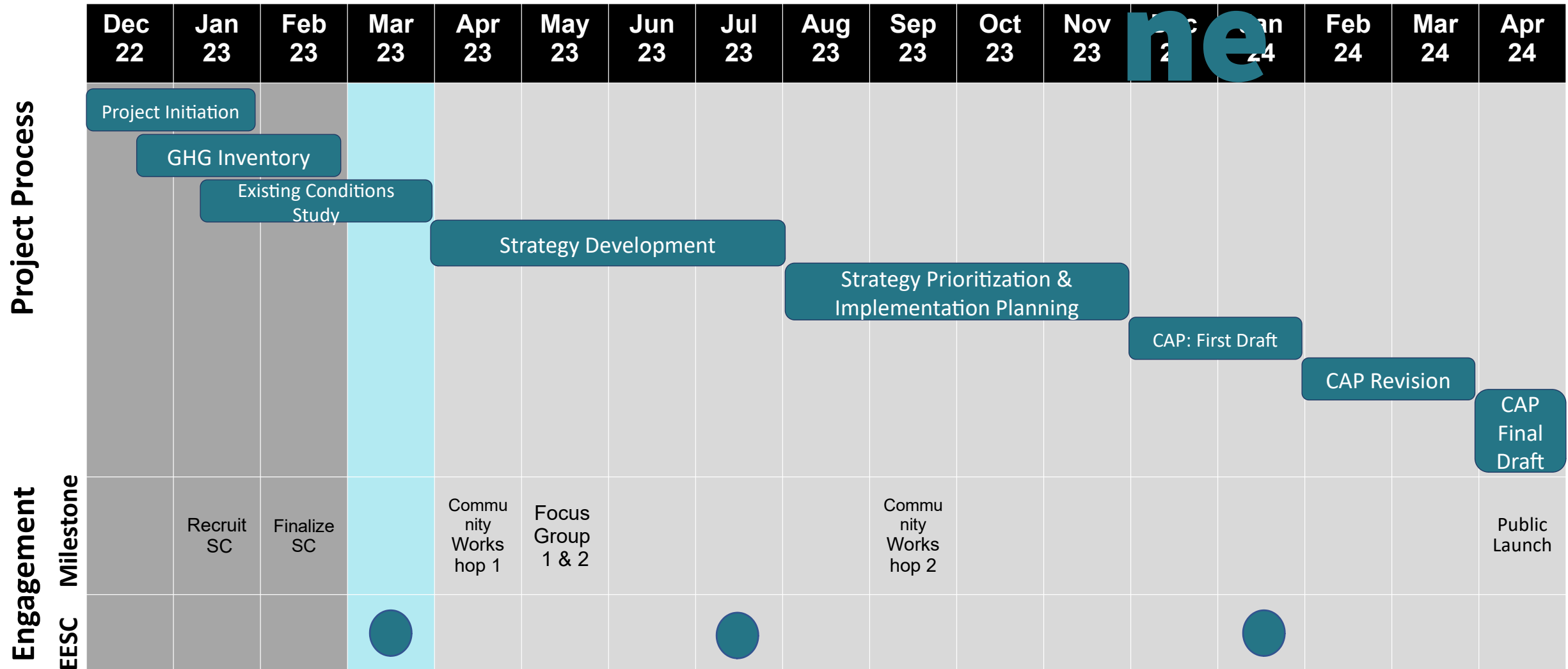
CAP
Steering
Committee

Resident &
Business
Interviews

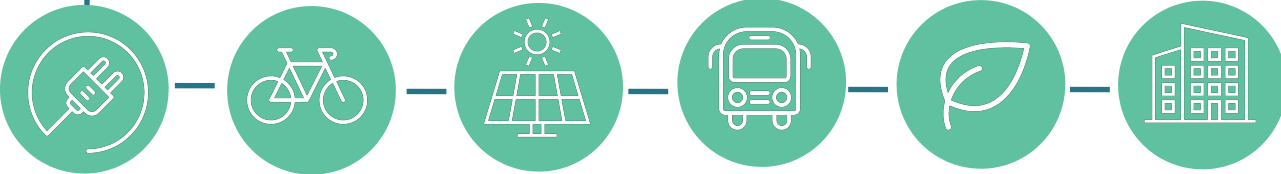
Residents
in Malden
speak 60+
languages



Timeli



CAP Players & Role

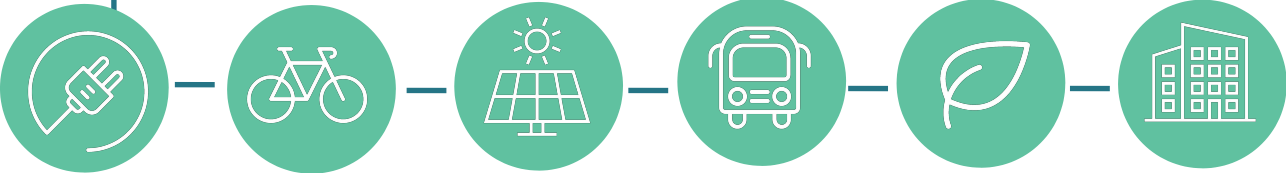


- Malden: Energy Efficiency and Sustainability Commission
- Malden: Internal Sustainability Working Group (municipal-led)
- Malden: Steering Committee (resident-led)
- MAPC (consultants)
- MIT Leventhal Center for Advanced Urbanism



Massachusetts
Institute of
Technology

EESC's Role



March '23

Review existing conditions, GHG inventory, and community engagement plan

July '23

Support strategy development, prioritization, and implementation planning

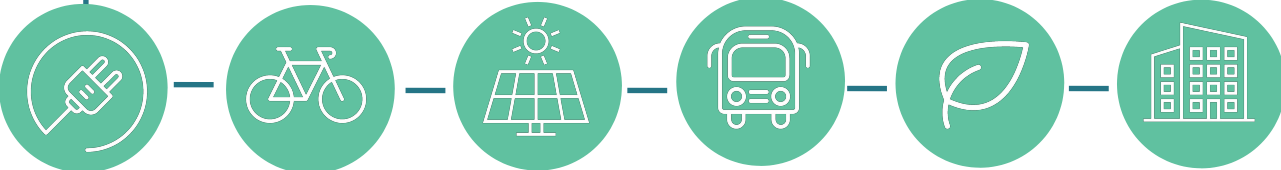
January '24

Review CAP draft and provide feedback

EESC Engagement Opportunities

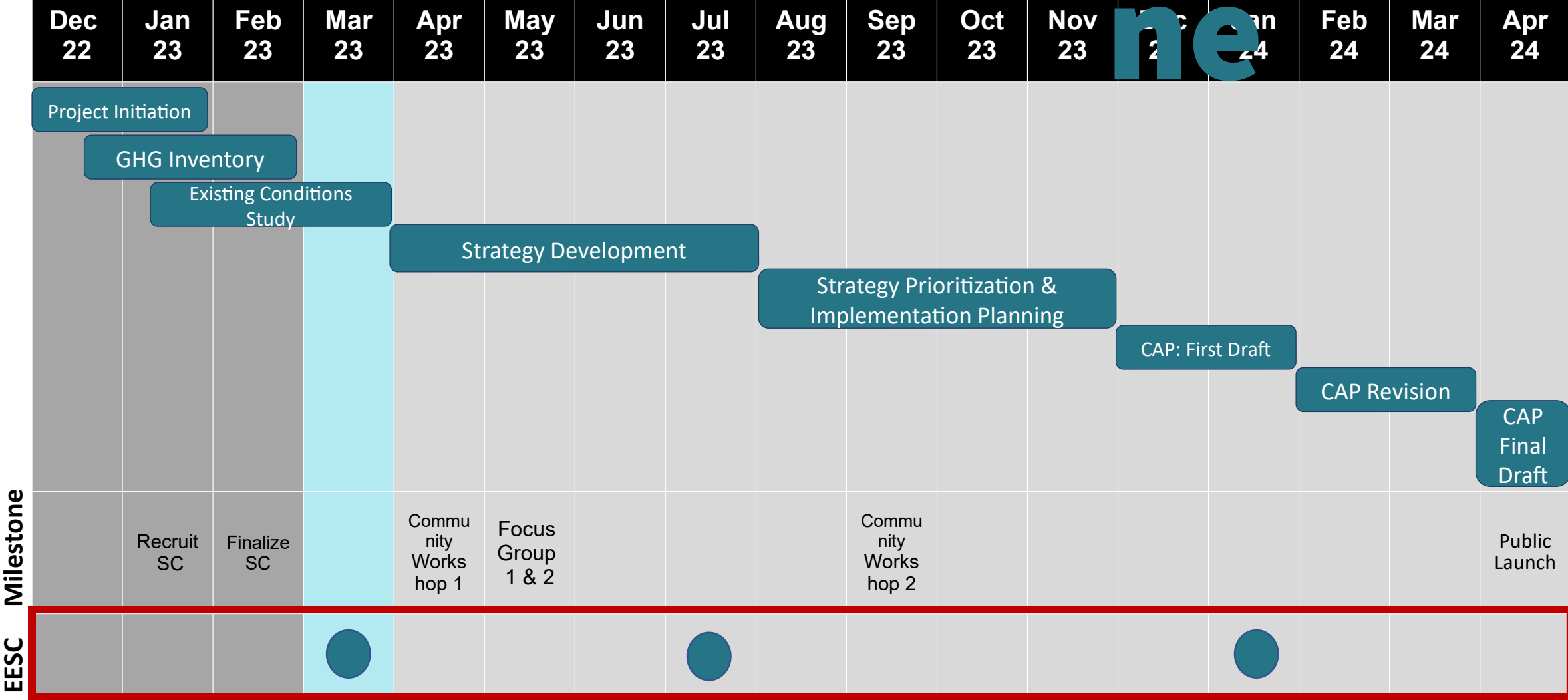
Question:
How does this proposed level of involvement resonate with you?

Timeli

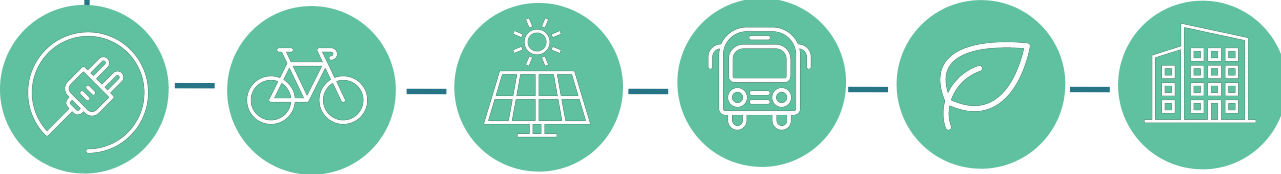


Project Process

Engagement



Existing Conditio



Top Climate Hazards:

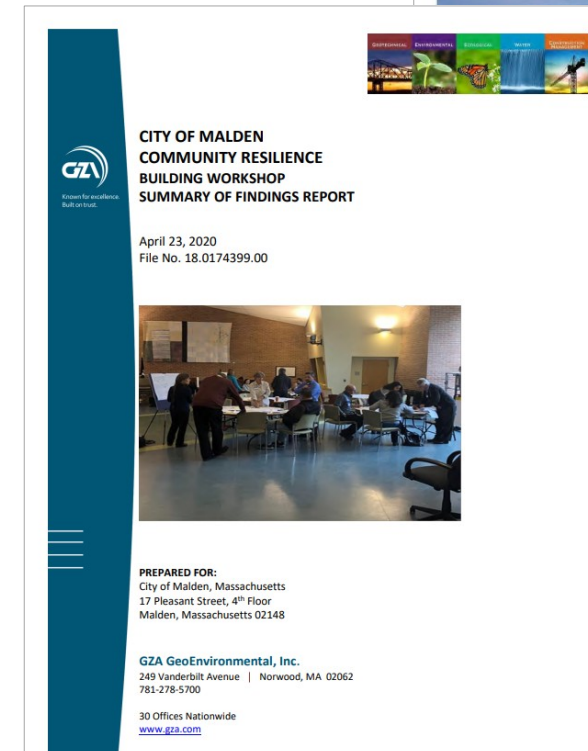
- Rising temperatures
- Changes in precipitation
- Sea level rise
- Extreme weather

Hazard Mitigation Plan (2022)

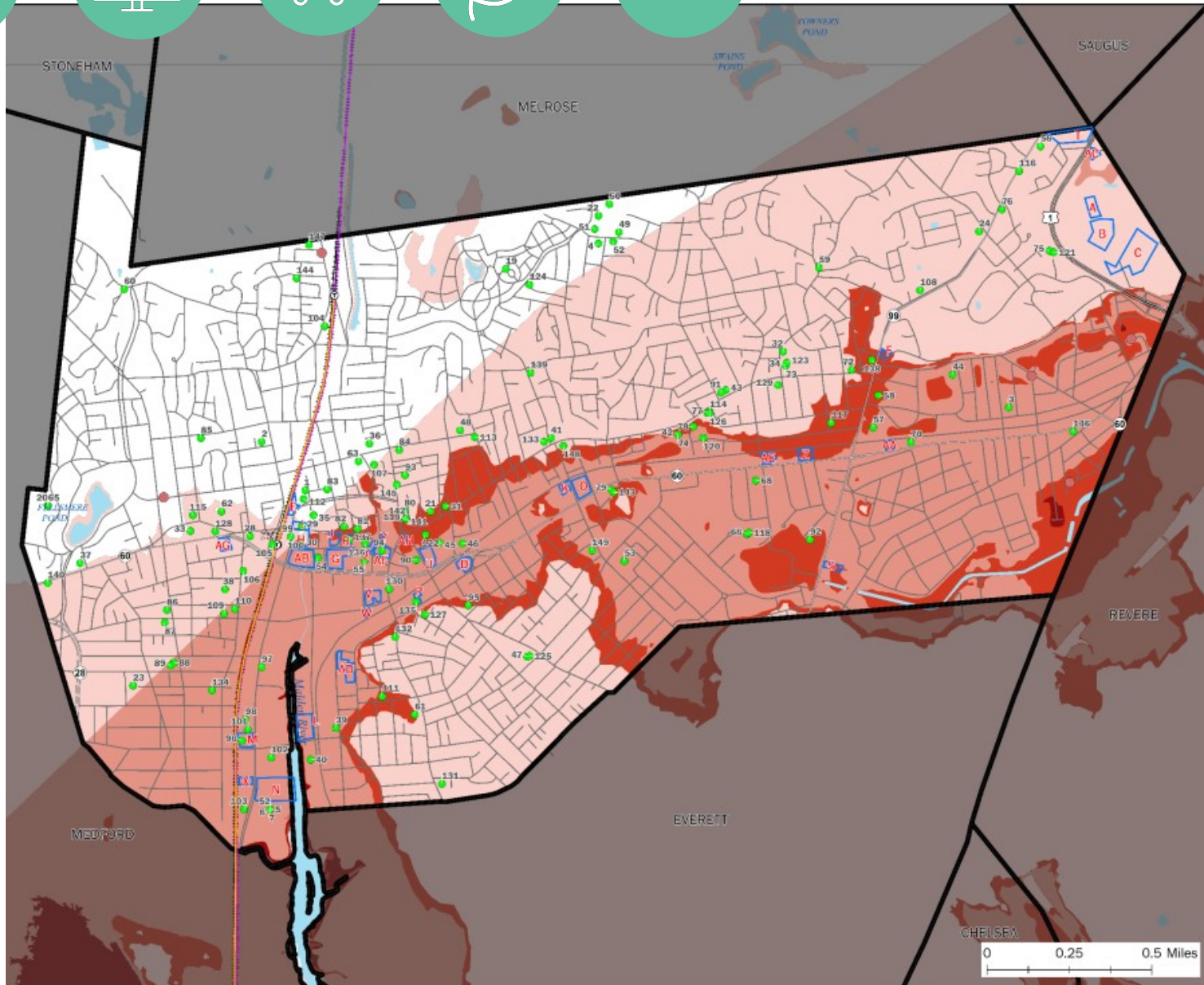
- Actions to reduce the dangers to life & property from natural hazard events.

Community Resilience Building Workshop (2020)

- Defines top climate hazards, vulnerabilities, and adaptive capacity
- Lists prioritized resilience actions



Existing

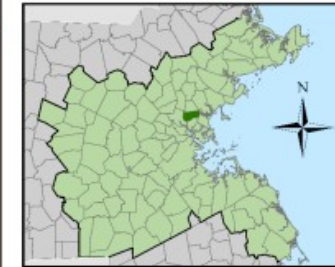


Map 7: Composite Natural Hazards



FEMA Hazard Mitigation Planning Grant
MALDEN, MA

- Sites**
- Critical Infrastructure
 - Repetitive Loss Sites
 - Development Areas
* See details in separate table
- Composite Natural Hazards**
- Low (2 Hazards)
 - Moderate (3 Hazards)
 - High (4 Hazards)
 - Very High (5 Hazards)
- Composite natural hazards shown for areas of existing development. Hazards include:
- 100 year wind speed of 130 MPH or higher
 - Moderate landslide risk
 - FEMA flood zones (100 year and 500 year)
 - Average annual of 36.1" or more
 - Hurricane surge inundation areas
- Water Bodies**
- Water Bodies
- All Roads**
- Interstate
 - U.S. Highway
 - State Route
 - Street
- Train Stations**
- Train Stations
 - Commuter Rail Lines
 - Trains
- Subway Lines**
- Blue
 - Green
 - Orange
 - Red
 - Silver



The information depicted on this map is for planning purposes only. It is not adequate for legal boundary definition, regulatory interpretation, or parcel-level analyses.

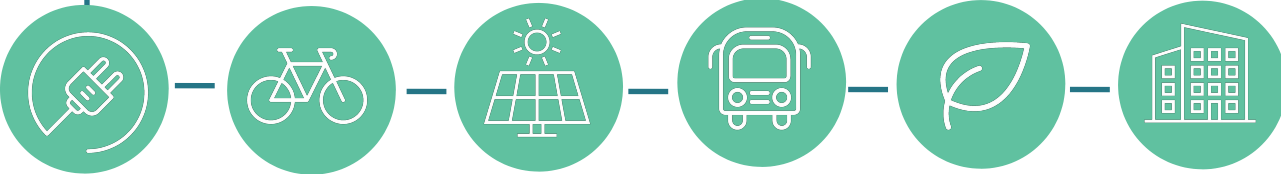
Produced by MAPC Data Services
60 Temple Place, Boston, MA 02111 (617) 451-2770

Date Sources

Composite Natural Hazard:
Wind, Landslide Risk, Snow /Northwest States Emergency Consortium (NES)
Flood Zones - 2013 FEMA/Hazards
Hurricane Surge - 2013 U.S. Army Corps of Engineers, New England Dist
Roads/Trains: MassDOT/CTPS
Repetitive Loss Sites: DCR/Office of Flood Hazard Management
Critical Infrastructure: Metropolitan Area Planning Council (MAPC) /

MALDEN, MA





Existing Conditions

Existing Conditions Tool (Ongoing):

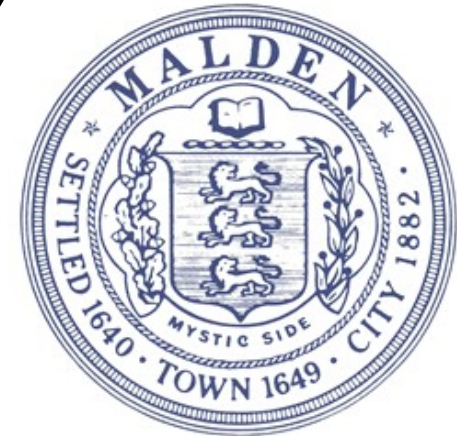
Inform CAP strategies by identifying:

- 1) where the Malden is currently implementing **best practices** in climate action,
- 2) **existing initiatives** that can be expanded, extended, or accelerated,
- 3) **gaps** where new strategies or policy updates may be needed.

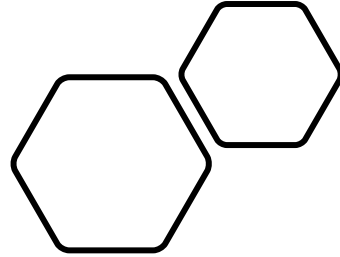
General	<ul style="list-style-type: none"> • Staffing capacity & funding • Monitoring/evaluation, • Climate policies, • Other
Mitigation	<ul style="list-style-type: none"> • Transportation/Mobility • Clean Energy Supply • Net Zero Buildings • Planning/Zoning & Permitting
Adaptation/ Resilience	<ul style="list-style-type: none"> • Community Resilience • Resilient Infrastructure/Buildings • Natural Environments

Malden Greenhouse Gas Inventory

Preliminary
summary for
Commission
Review



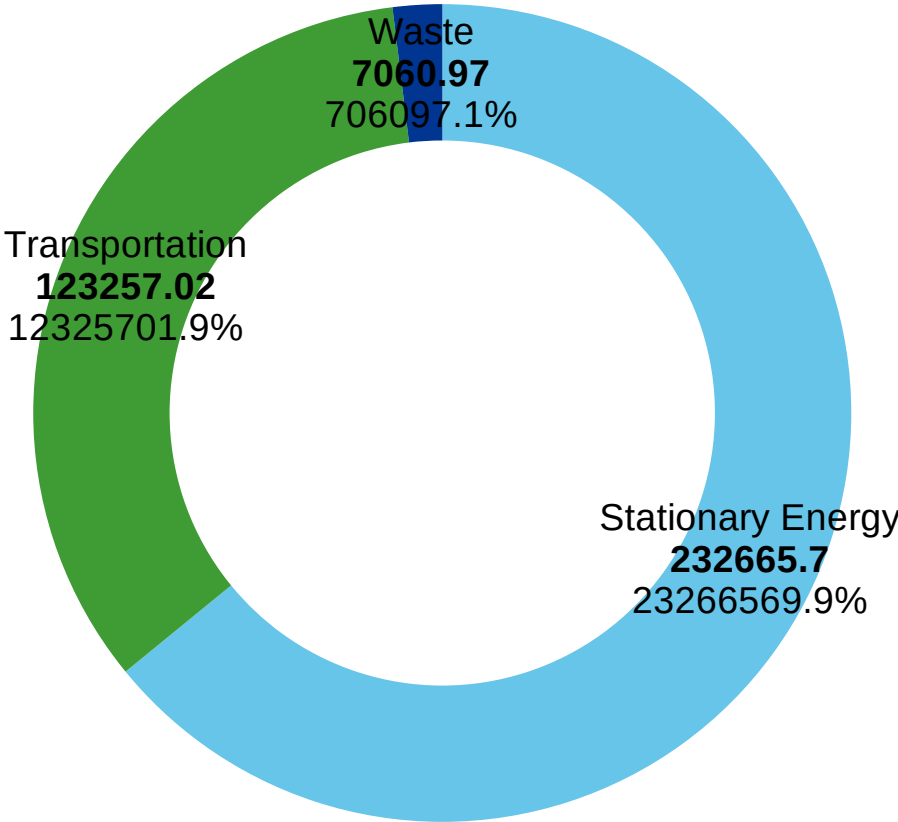
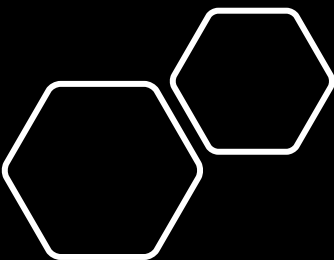
Topline Takeaways



- Total emissions in 2017: **362,984 MT CO2 equivalent (CO2e)**
- Residential buildings are the largest single source of emissions: **36.4% MT CO2e (132,096 MT CO2e)**
- On road vehicles almost 1/3 of total emissions: **32.9% MT CO2e (119,592 MT CO2e)**
- Natural gas is the largest source of emissions for all buildings at **53.6%**

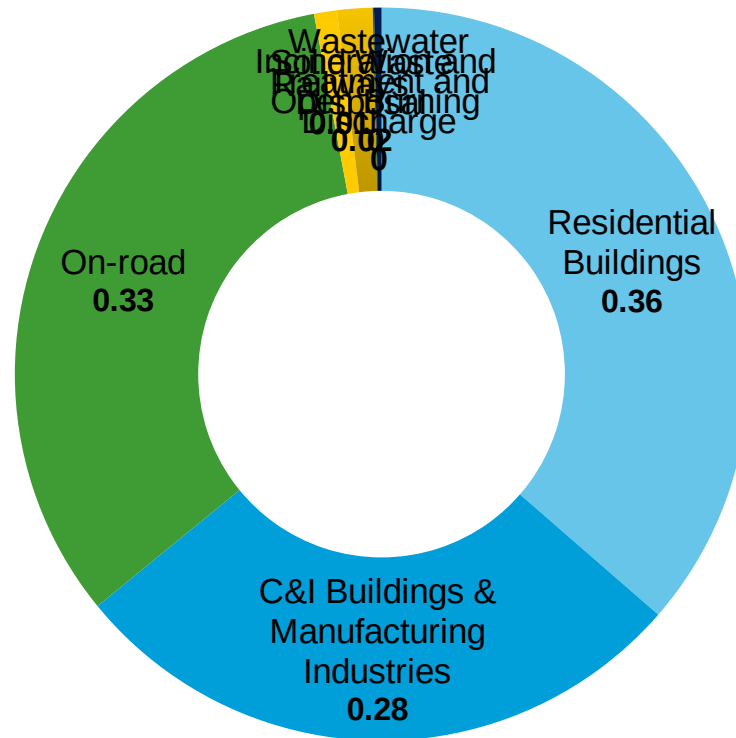
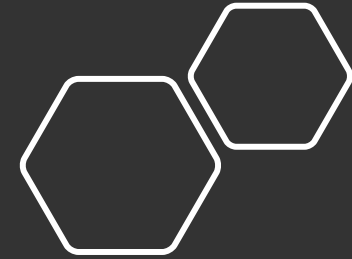
Community-wide Emissions

Community-wide Emissions (MT CO2e) by Sector



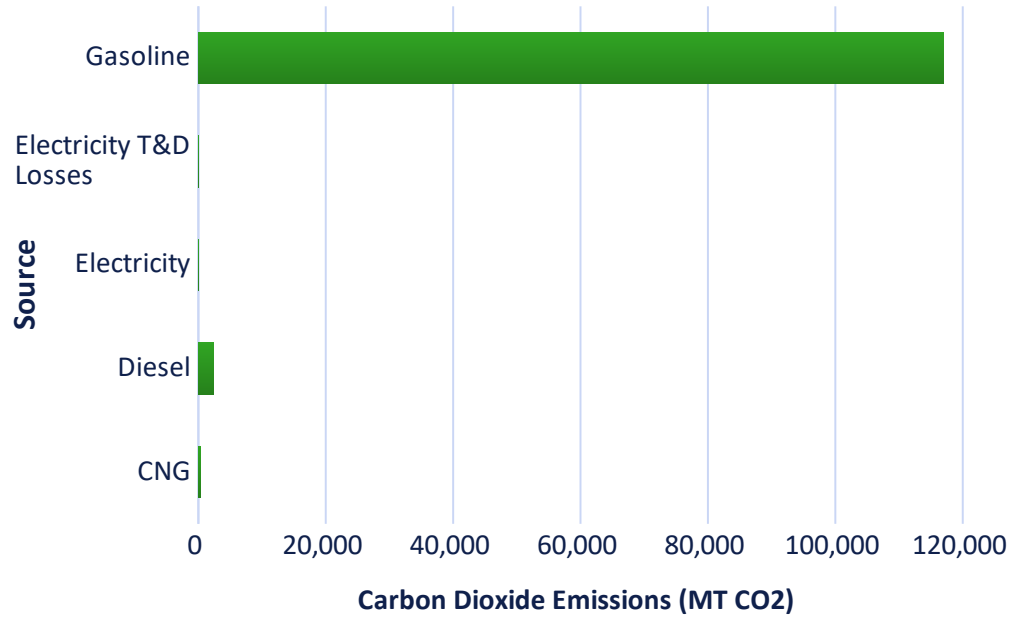
Community-wide Emissions

Percent of Total Community-wide Emissions by Subsector

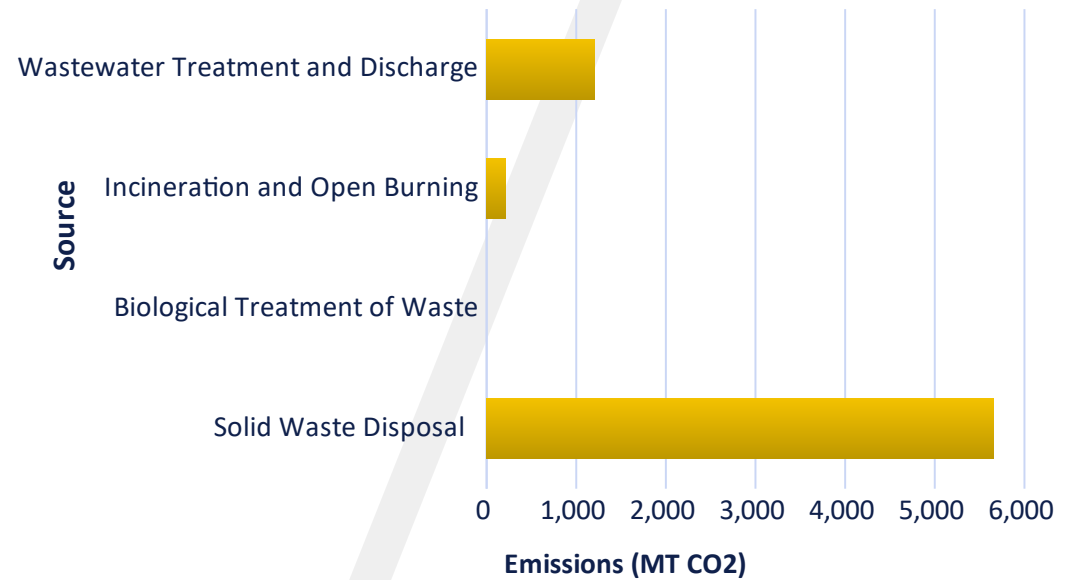


Transportation & Waste Emissions

On- Road Transportation Emissions

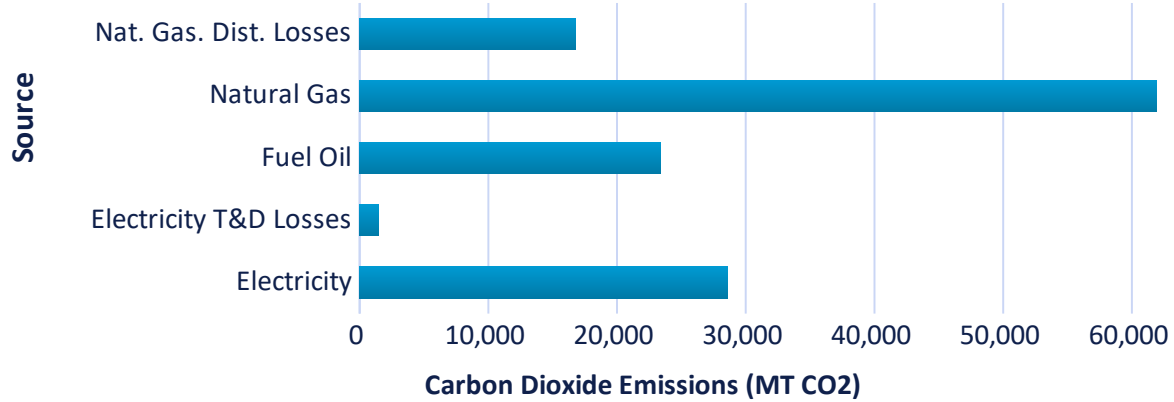


Waste Emissions

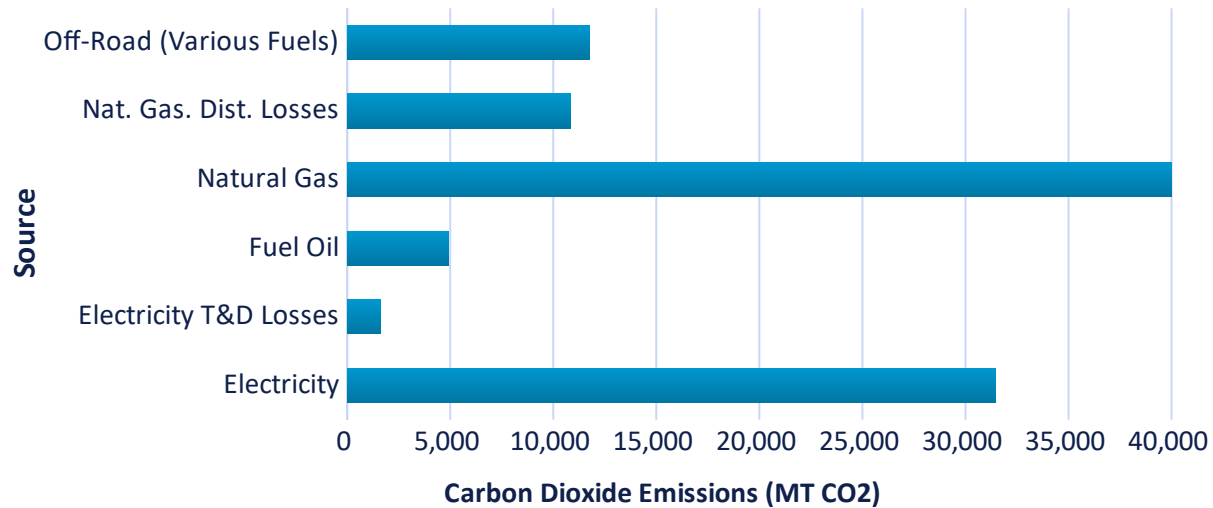


Buildings Emissions

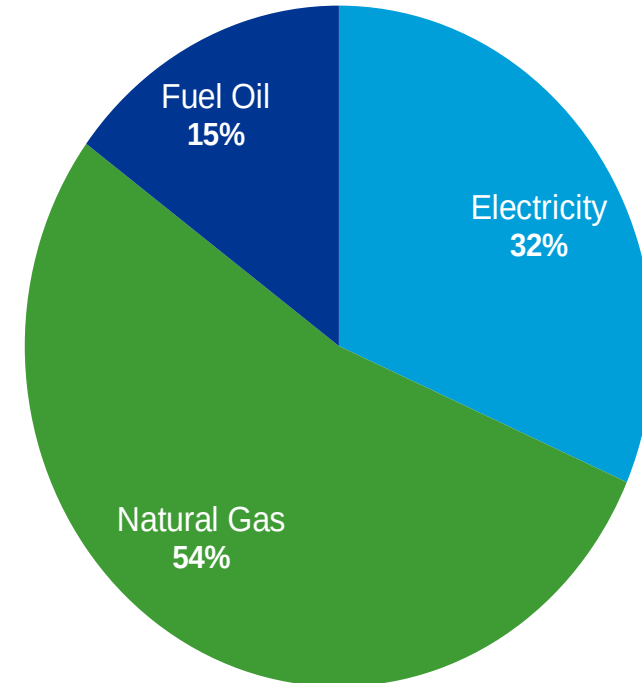
Stationary Residential Buildings Emissions

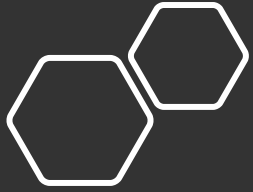


Stationary Commercial Buildings Emissions



Percentage of Building Energy Emissions by Source Energy

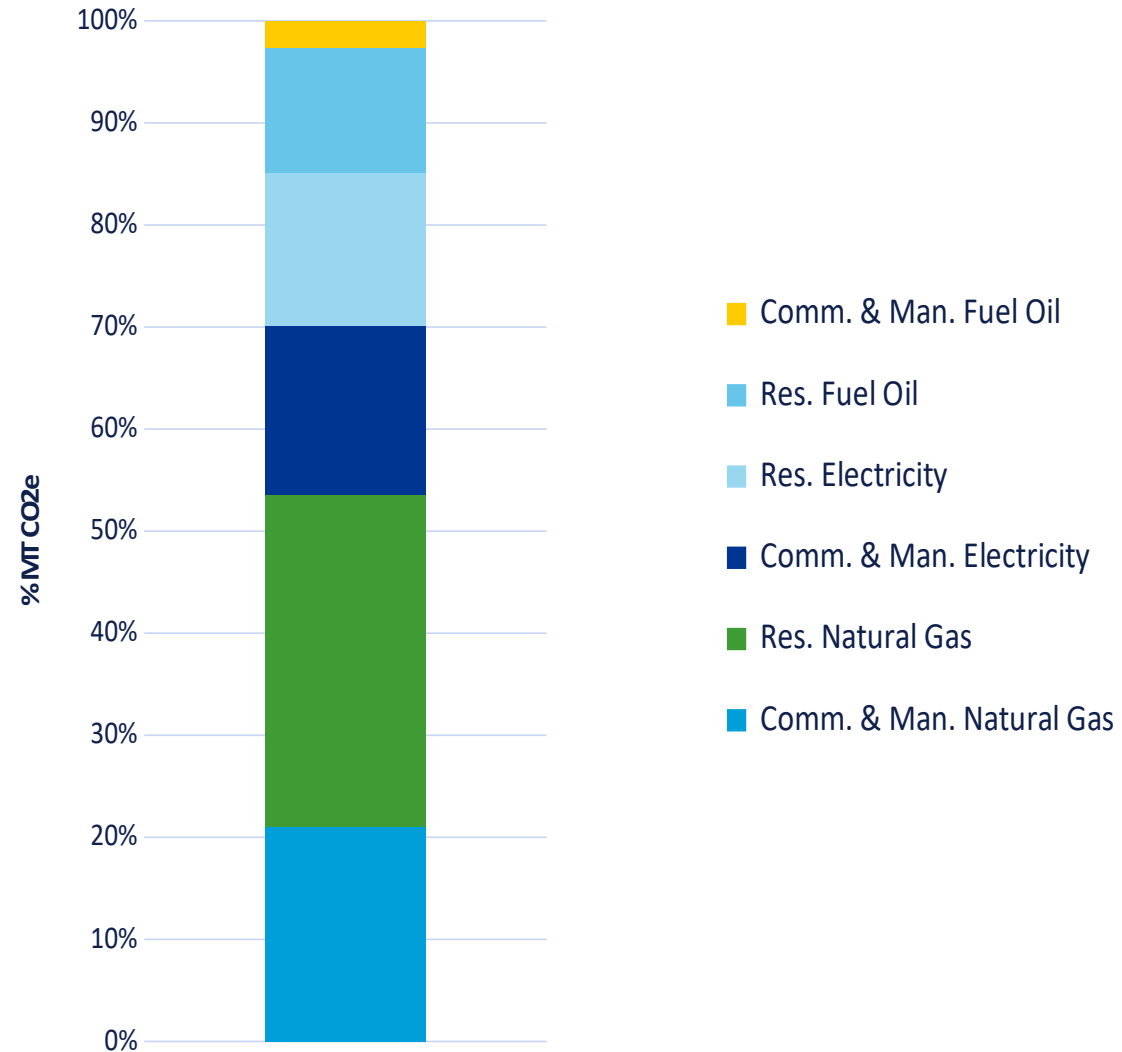




Natural Gas is the largest source of emissions by fuel

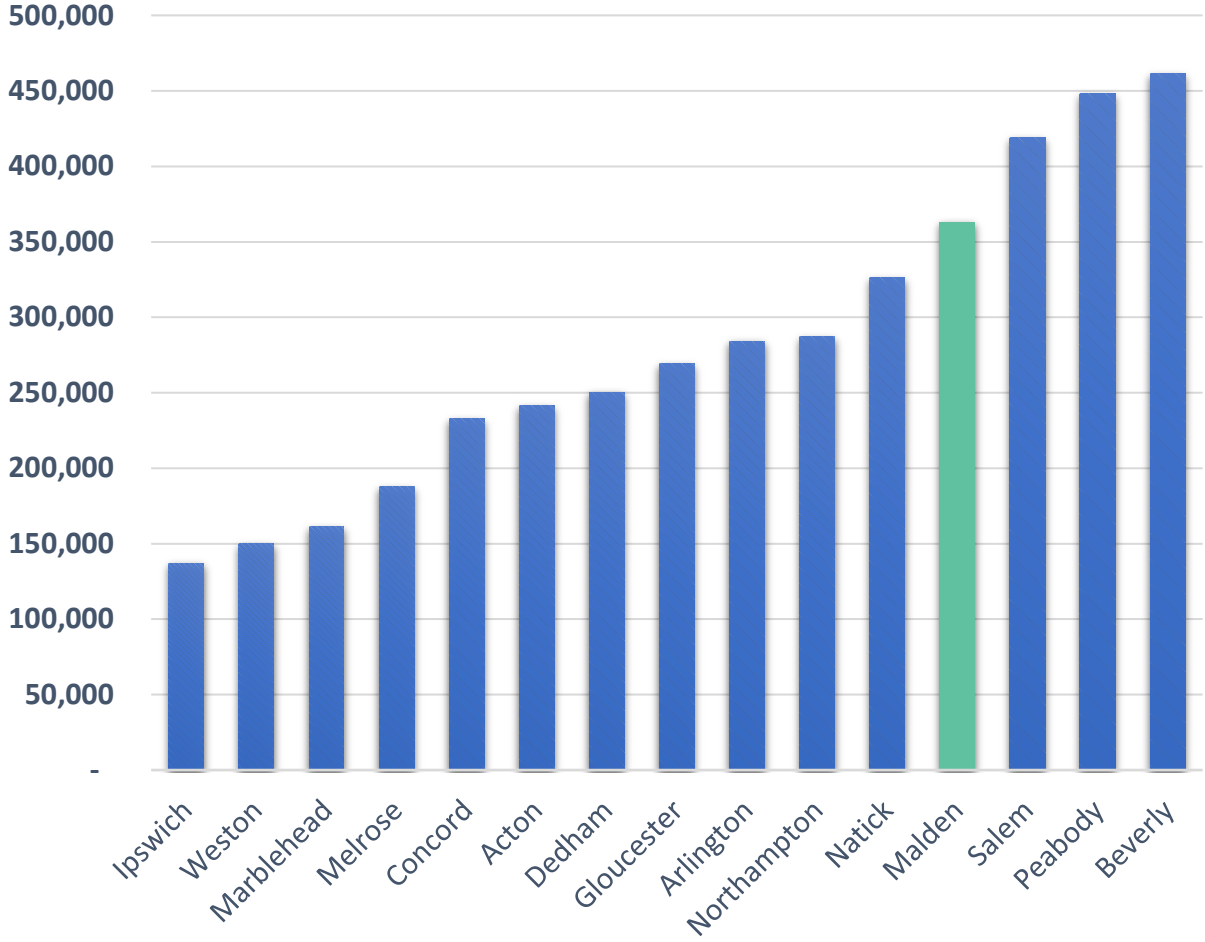
- Natural gas emissions from direct combustion in buildings
 - Natural gas emissions from electricity generation accounted for in Electricity emissions
- Fuel oil (estimate) still a significant source of emissions

Percent of Total Building Energy Emissions by Customer Type and Fuel

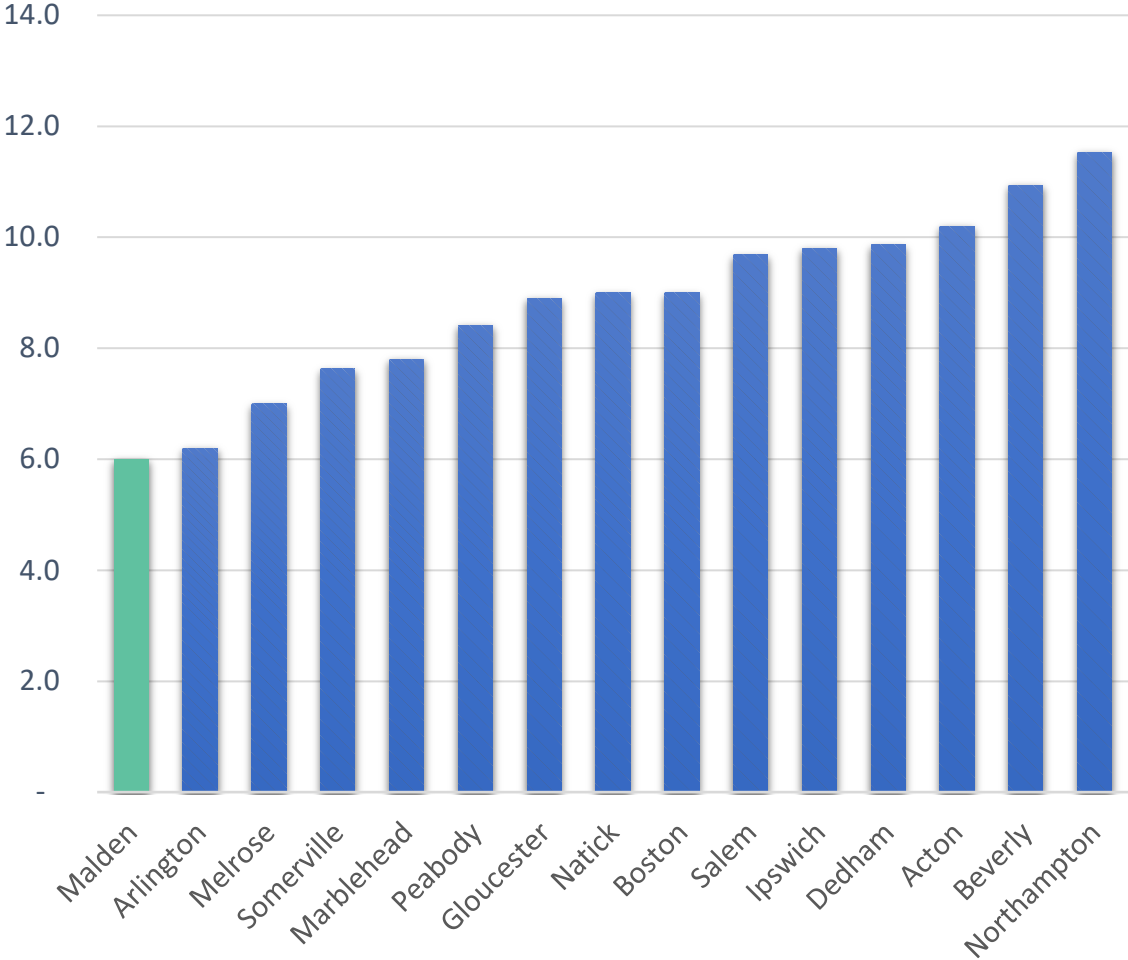


Regional Comparison

Total Emissions (MTCO2e)

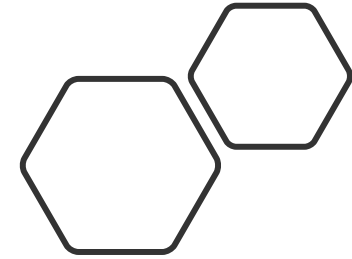


Emissions per capita (MTCO2e)



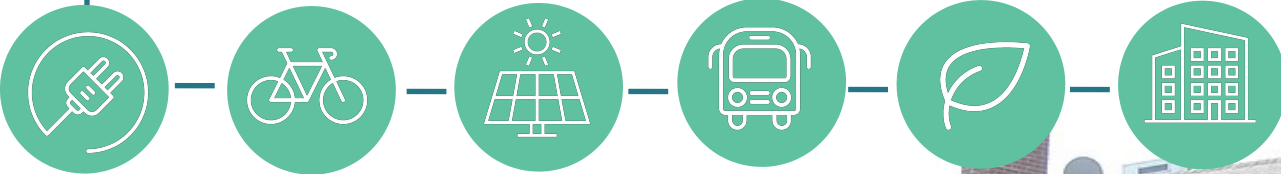
Regional Comparison

Municipality	Emissions per capita (M TCO₂e)	Total emissions (M TCO₂e)	Inventory Year
Malden*	6.0	362,984	2017
Arlington*	6.2	284,078	2017
Melrose*	7	187,642	2017
Marblehead*	7.8	161,130	2017
Somerville	7.6	618,374	2016
Peabody*	8.4	448,283	2017
Gloucester*	8.9	269,221	2017
Boston	8.9	6,200,000	2019
Natick*	9	326,297	2017
Salem	9.7	419,005	2018
Ipswich*	9.8	137,255	2017
Dedham	9.9	250,428	2018
Acton*	10.2	241,390	2017
Beverly	10.9	461,499	2018
Northampton	11.5	287,440	2016
Weston	12.4	150,142	2018
Concord	13.2	232,951	2016
Cambridge	13.6	1,462,236	2012



*Inventory completed using MAPC's GHG Inventory Tool

SOURCES: MAPC GHG INVENTORY USED FOR MALDEN DATA, CENSUS AND CAP DATA USED FOR OTHER MUNICIPALITIES



Questions?



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

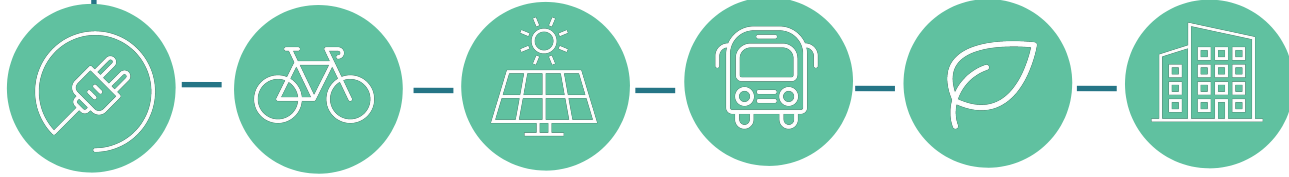
Take a strategic approach to local zoning and permitting updates.



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.

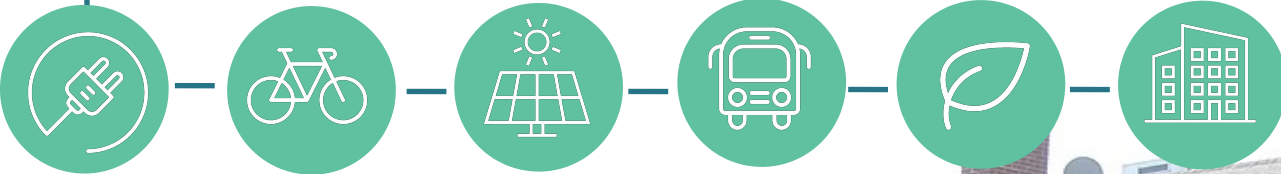
WWW.MAPC.ORG/NET-ZERO



Next

Steps

- **Ongoing:** Existing Conditions Study, Planning Community Engagement, CAP steering committee monthly meetings
- **Spring 2023:** Launch CAP during Earth Week
- **Summer 2023:** Community Engagement
 - Workshops, Focus groups, Interviews
- **Summer 2023-Fall 2023:** Strategy Development



Thank you!

