

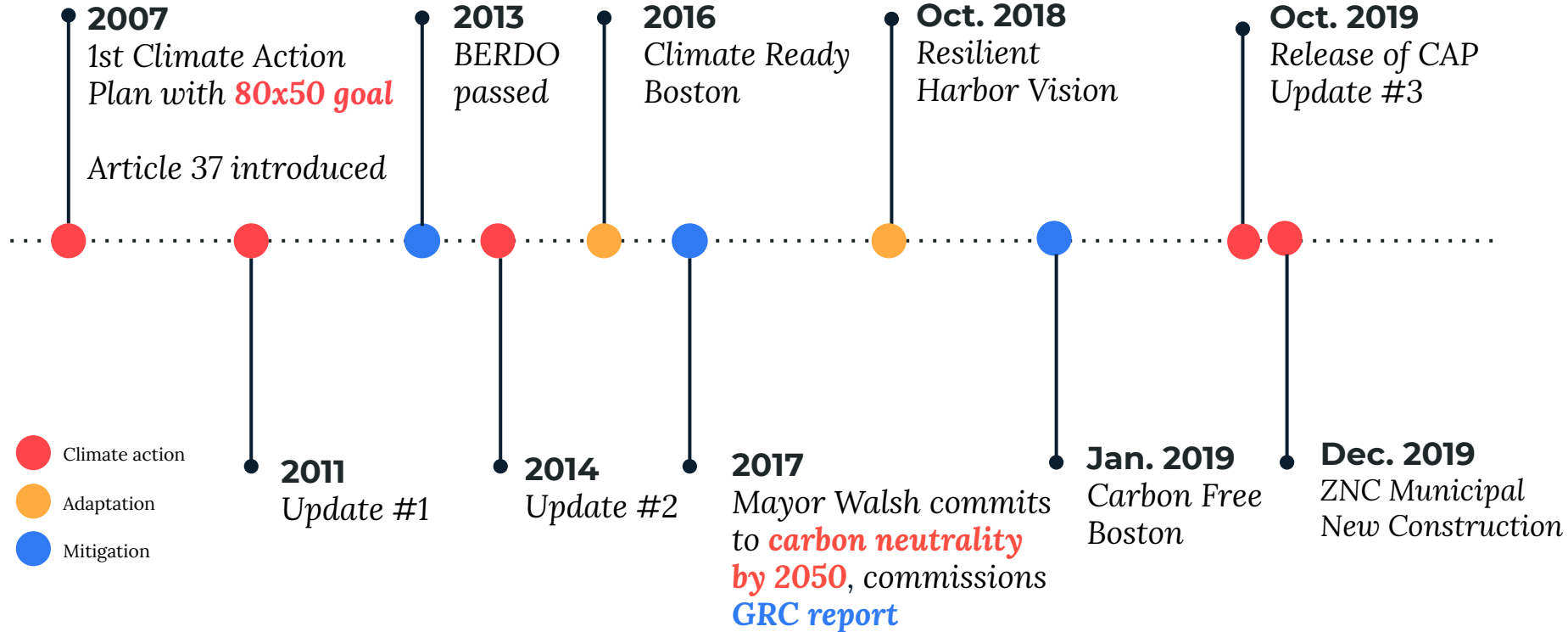


Boston Climate Action

January 22nd 2020



Climate Action in Boston



BUILDING A RESILIENT & CARBON NEUTRAL CITY.



City of Boston
Mayor Martin J. Walsh

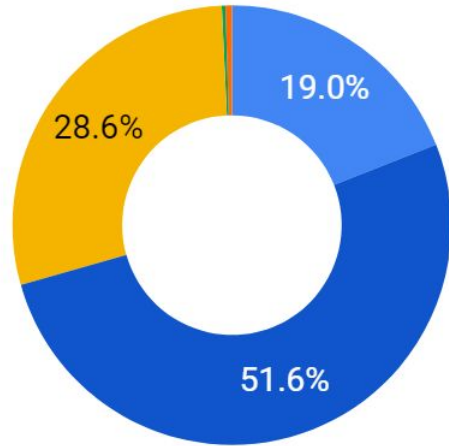


ICA

BOSTON'S CARBON FOOTPRINT



GHG Emissions by Source, 2017

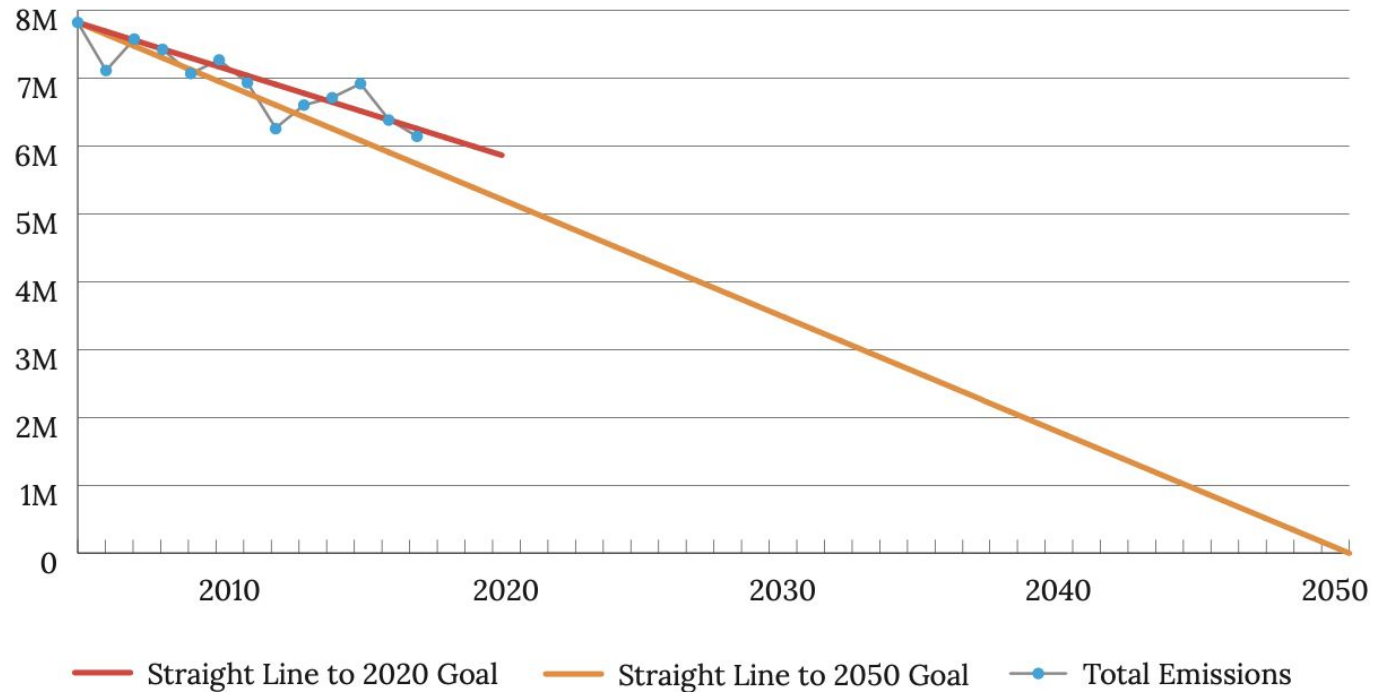


- Small Residential
- Commercial, Industrial a...
- Transportation
- Wastewater Treatment
- Fugitive emissions

The 2019 Climate Action Plan Update will accelerate key actions to **decarbonize Boston's buildings and our transportation system.**

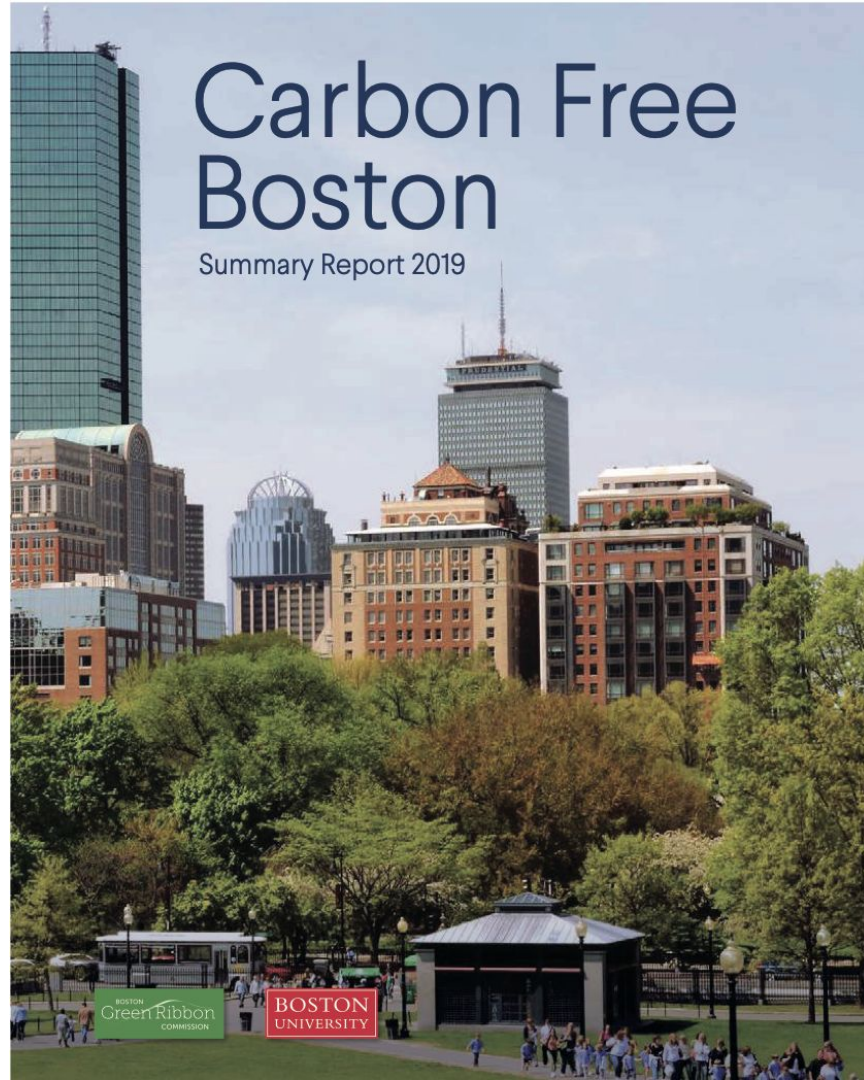
BOSTON'S CARBON FOOTPRINT

Boston Community Carbon Emissions, 2005-2017, and Progress Towards Goals (in metric tons)



Carbon Free Boston

Summary Report 2019



BOSTON
Green Ribbon
COMMISSION

BOSTON
UNIVERSITY

WHAT DOES IT TAKE TO GET TO CARBON NEUTRALITY?

Boston needs to pursue 3 strategies **simultaneously**:



Reduce demand for energy by increasing **efficiency**;



Convert nearly everything that runs on fossil fuels to run on **electricity**;



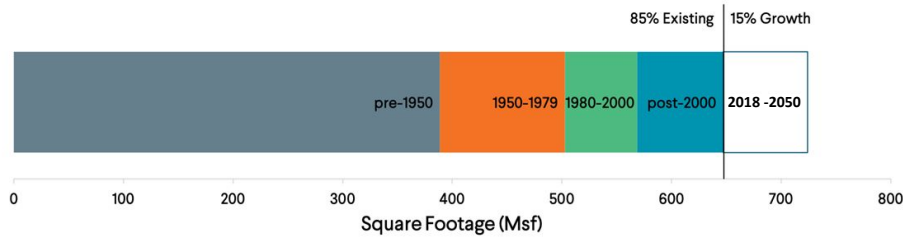
Buy **100% clean energy**

Carbon neutrality can be achieved with the technologies of today and is essential to a healthy, thriving and resilient Boston.

BUILDINGS

Current building stock

Boston's building stock is old.



- $\frac{1}{2}$ of existing floor space was built before 1950.
- 85% of floor space that will exist in 2050 has already been built.





CITY OF BOSTON
CLIMATE ACTION PLAN
2019 UPDATE



MAYOR MARTIN J. WALSH
October 2019

1 CONSTRUCT NEW MUNICIPAL BUILDINGS TO A ZERO NET CARBON STANDARD

2 ADOPT A ZERO NET CARBON STANDARD FOR CITY-FUNDED AFFORDABLE HOUSING IN BOSTON

3 STRENGTHEN GREEN BUILDING ZONING REQUIREMENTS TO A ZERO NET CARBON STANDARD

4 INVEST IN ENERGY EFFICIENCY AND RENEWABLE ENERGY GENERATION IN MUNICIPAL BUILDINGS

5 DEVELOP A CARBON EMISSIONS PERFORMANCE STANDARD TO DECARBONIZE EXISTING LARGE BUILDINGS

6 EXPAND WORKFORCE DEVELOPMENT PROGRAMS FOR BUILDING DECARBONIZATION

7 ADVOCATE FOR STATE BUILDING POLICIES THAT ALIGN WITH CARBON NEUTRALITY BY 2050



New city-owned buildings will be carbon-neutral under updated climate plan

By [Milton J. Valencia](#) Globe Staff. Updated October 8, 2019, 12:00 a.m.



Boston City Hall MATTHEW J. LEE/GLOBE STAFF/GLOBE STAFF

All of Boston's new city-owned buildings will be constructed with new carbon-neutral designs, under an update to the city's climate plan Mayor Martin J. Walsh will announce Tuesday to help the city reach its goal of going carbon-neutral by 2050.

4

INVEST IN ENERGY EFFICIENCY AND RENEWABLE ENERGY GENERATION IN MUNICIPAL BUILDINGS



RENEW BOSTON TRUST

Investing in energy conservation measures and renewable energy in municipal buildings through an energy performance contract

3

STRENGTHEN GREEN BUILDING ZONING REQUIREMENTS TO A ZERO NET CARBON STANDARD



Building on existing resources and tools, the City will expand and strengthen its green building requirements to a zero net carbon (ZNC) standard in order to accelerate towards our 2050 carbon neutrality goal.

A ZNC standard requires that buildings emit no net carbon emissions. A ZNC building has an airtight, well-insulated exterior envelope and smaller, more efficient all-electric or carbon-free heating, cooling, and hot water systems. There are no on-site fossil fuel systems. Combined with on-site renewable generation and off-site renewable energy purchases, ZNC buildings with efficient envelopes and no fossil fuel systems can run entirely on clean, renewable energy, thus bringing their annual carbon emissions down to zero.

EXPECTED BENEFITS



Up to a 19 percent reduction in total annual building emissions from business as usual



Increased thermal comfort and indoor air quality improvements for building occupants



Avoided costs of deep energy retrofits to comply with future performance standards

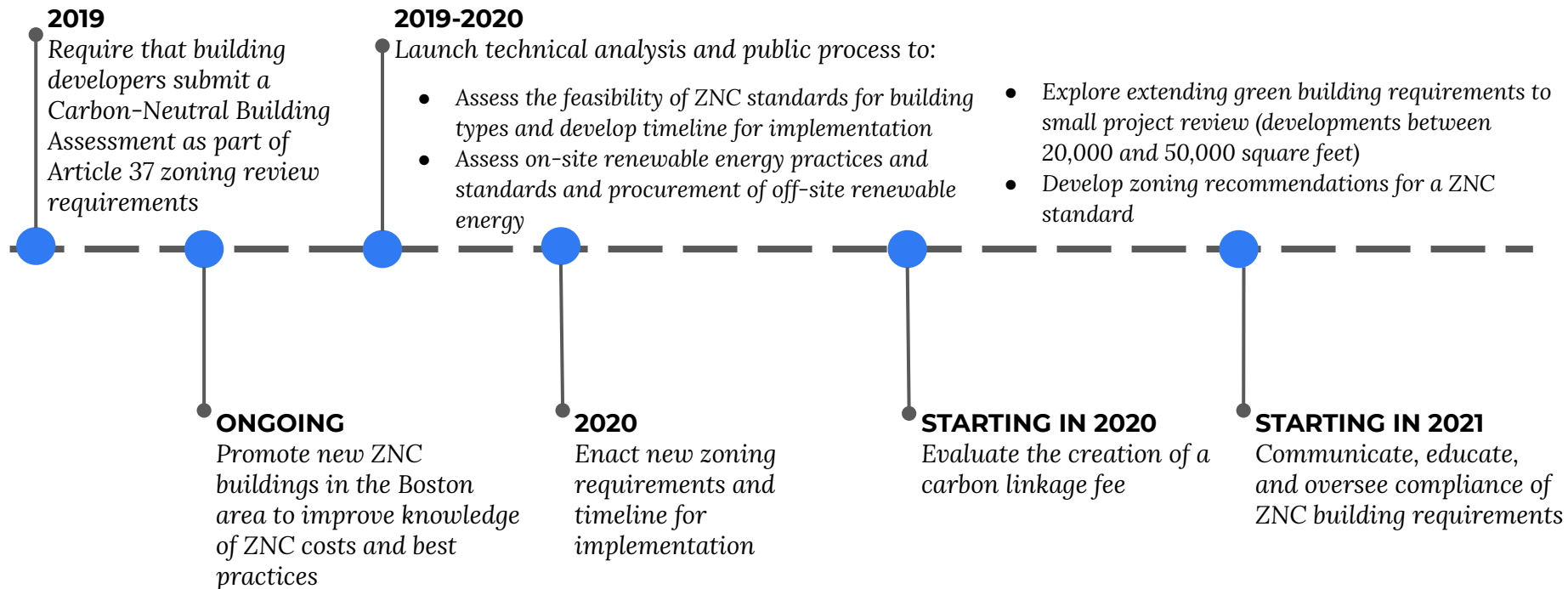


Lower operating costs for building owners and lower energy bills for tenants and occupants

ZERO NET CARBON ZONING



To strengthen its green building requirements, the Boston Planning & Development Agency (BPDA) will lead a public process to develop new zoning. As part of that work, the BPDA will work with other key City departments and engage the building sector and community.



5 | DEVELOP A CARBON EMISSIONS PERFORMANCE STANDARD TO DECARBONIZE EXISTING LARGE BUILDINGS

The City of Boston will develop and introduce a performance standard to reduce carbon emissions from Boston's existing large buildings. Just 2,200 of Boston's largest buildings represent about 34 percent of Boston's total floorspace and approximately half of our total emissions.

EXPECTED BENEFITS



Avoided carbon emissions



Energy savings due to enhanced building efficiency

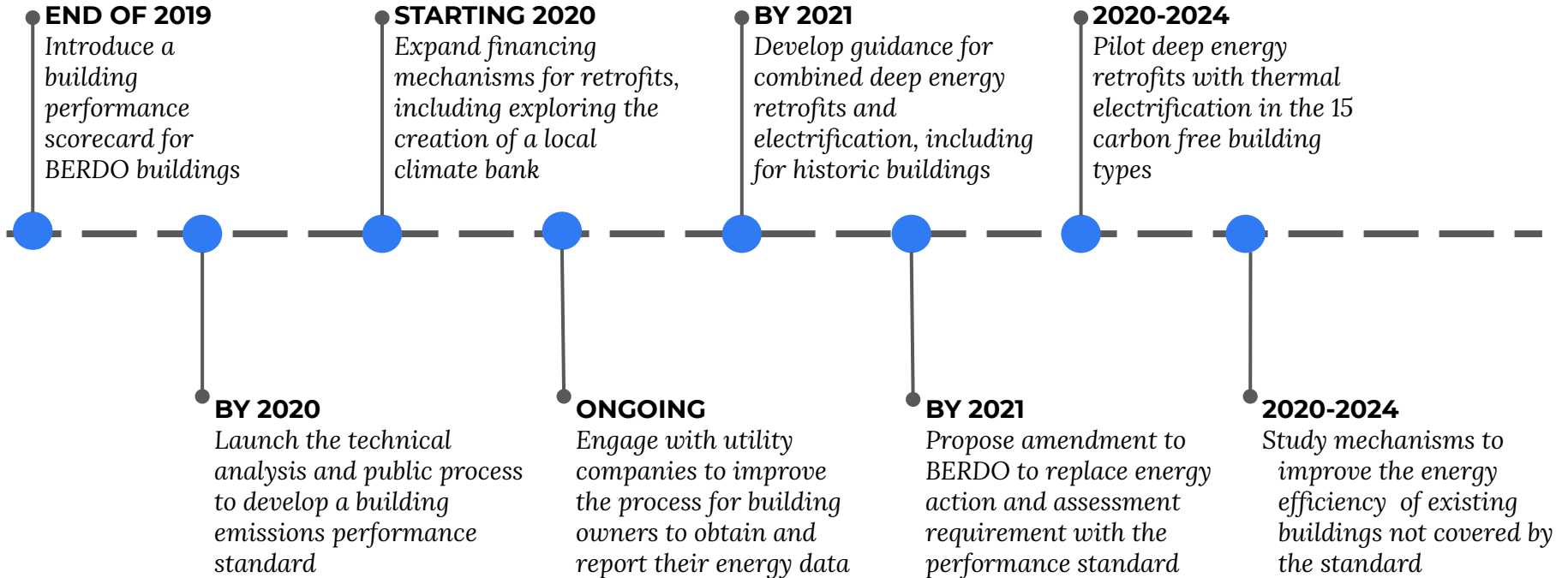


Increased thermal comfort and indoor air quality for building occupants

EMISSIONS PERFORMANCE STANDARD



The standard will require that all buildings larger than a certain threshold meet fixed carbon targets that decrease over time. The City will work with partners to develop case studies and foster best practices throughout the Boston region.



BERDO

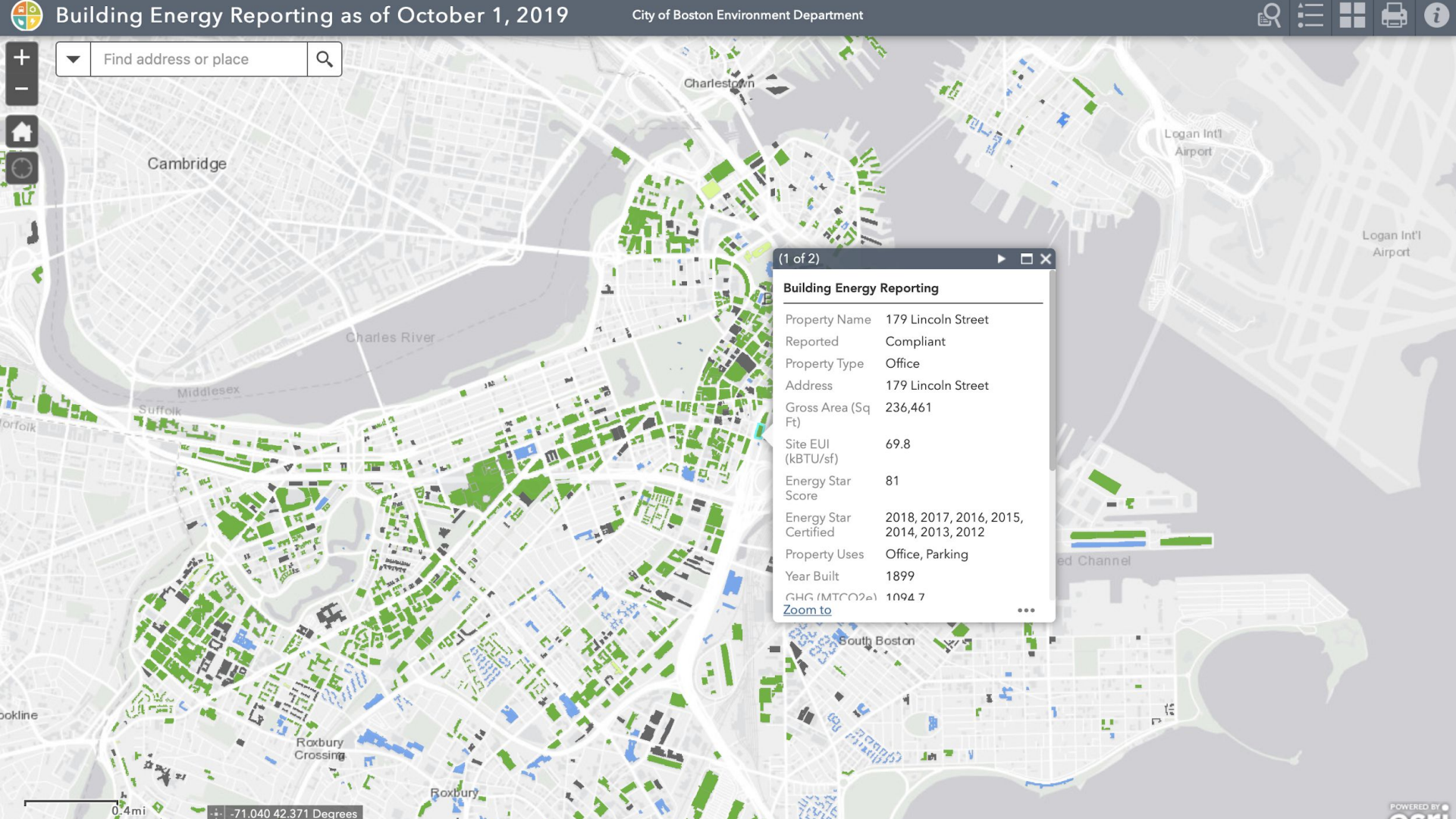
Building Energy Reporting and Disclosure Ordinance (BERDO)

- Established in 2013
- Buildings report energy, emissions and water use annually
- Generally covers buildings >35,000 square feet or > 35 units
- ~2,200 buildings currently covered

BERDO Energy Action and Assessment

- Every 5 years perform energy saving actions or complete an energy assessment
- First cohort of buildings completed EAA this year
- For more information: boston.gov/berdo

Find address or place



(1 of 2)

Building Energy Reporting

Property Name	179 Lincoln Street
Reported	Compliant
Property Type	Office
Address	179 Lincoln Street
Gross Area (Sq Ft)	236,461
Site EUI (kBtu/sf)	69.8
Energy Star Score	81
Energy Star Certified	2018, 2017, 2016, 2015, 2014, 2013, 2012
Property Uses	Office, Parking
Year Built	1899
GHG (MTCO ₂ e)	1094.7

[Zoom to](#)

We need your help!



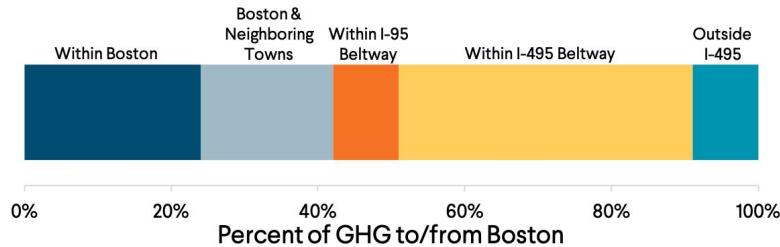
Over the next year we will be working with technical experts and key stakeholders to update BERDO to include a building performance standard.

TRANSPORTATION

Current emissions

Commuters drive emissions:

- 65% of Boston's transportation emissions come from personal vehicles.
- $\frac{3}{4}$ of transportation emissions come from travel to and from the metro area.



8 ADVOCATE FOR BOSTON'S PRIORITY
TRANSIT PROJECTS WITHIN REGIONAL
PLANS

9 IMPROVE AND EXPAND ACTIVE
TRANSPORTATION INFRASTRUCTURE

10 ENCOURAGE MODE SHIFT THROUGH
TRANSPORTATION DEMAND
MANAGEMENT AND SUSTAINABLE
PARKING POLICIES

11 SUPPORT CITYWIDE ZERO-EMISSION
VEHICLE (ZEV) DEPLOYMENT

12 ACCELERATE MUNICIPAL FLEET
TRANSITION TO ZERO- AND LOW-
EMISSION VEHICLES



13 | IMPLEMENT AND EXPAND
COMMUNITY CHOICE ENERGY

14 | PLAN FOR THE DEPLOYMENT
OF CARBON-NEUTRAL DISTRICT
ENERGY MICROGRID SYSTEMS

15 | SUPPORT STATE POLICIES AND
PROGRAMS THAT FURTHER
DECARBONIZE THE REGION'S AND
BOSTON'S ENERGY SUPPLY

16 | DECARBONIZE THE CONSUMPTION OF
BOSTON RESIDENTS AND BUSINESSES

17 | GREEN MUNICIPAL INVESTMENTS

18 | DEVELOP A VALUES-BASED
FRAMEWORK FOR CARBON OFFSETS





Want to get involved?

To provide feedback or join a working
group: alison.brizius@boston.gov

An aerial photograph of a building with a dark grey metal roof. A large array of solar panels is installed on the roof, arranged in several rows. The building is surrounded by lush green trees. In the background, a city skyline is visible under a clear blue sky. The text "Thank You!" is overlaid in the center of the image in a large, white, sans-serif font.

Thank You!