

BPDA Real Estate

Decarbonization Strategy

Last updated June 22, 2022

Summary

Recommendation	Adopt a Decarbonization Strategy to guide the Boston Planning & Development Agency (BPDA) in managing its real estate portfolio, to be followed by a more detailed implementation plan (including milestones and reporting standards).
Goal	Embracing its leadership role and supporting the City's carbon neutral goals, while balancing with its mission of economic development, the Boston Planning & Development Agency (BPDA) will immediately embark on a path to achieve zero net carbon emissions as soon as possible for its real estate portfolio.
Proposed Timeline	Additional work to move from strategy to implementation plan and action (including energy audits, clean energy generation siting, etc.) will begin immediately. Some actions will occur in FY23 (e.g., propose hiring one additional role, potential recommendations on clean energy siting, some building renovations) and should be incorporated into the budget process.
Most Impacted Departments	<ol style="list-style-type: none"> 1. Real Estate (Capital Construction, Leasing, and Disposition) 2. Planning (Climate Change & Environmental Planning) 3. Legal 4. Finance
Guiding Documents	<ol style="list-style-type: none"> 1. Building Emissions Reporting and Disclosure Ordinance (BERDO 2.0, 2021, link) 2. Climate Ready Boston (2016, link), including Climate Resilience guidelines, Coastal Resilience Neighborhood Planning, Climate Action Plan Update (2019, link) and more 3. Boston Zoning Code Article 37 Green Buildings (2007, link) 4. Raymond L. Flynn Marine Park Master Plan Update (Feb 2022, link) 5. Boston Zero Net Carbon (ZNC) Building Zoning Initiative (ongoing, link) 6. Potential updates to existing policies, such as proposals outlined Mayor Wu's report Planning for a Boston Green New Deal & Just Recovery 7. Policies and efforts on parallel topics, including: Zero Waste Boston (2018, link),

1. Introduction

While climate change is a global problem, it also has significantly harmful effects on local places. Residents of Boston are already experiencing changing seasonal patterns including extreme temperatures, sea level rise, extreme precipitation, and coastal storms.¹ These create hazards like flooding and extreme heat, with meaningful impacts to city residents including critical infrastructure disruption, property losses, and even personal harm.² These harms are not shared equally, either geographically or socially: “Vulnerable groups such as communities of color and low-income neighborhoods are often disproportionately impacted by environmental shocks and stresses and are less likely to have access to the resources necessary for recovery.”³ The increasing frequency and strength of these hazards will also cause increasing public and private financial losses and costs, reducing the dollars available for other services and benefits.

Choices about transportation, land use, and construction can make a difference in these outcomes, potentially reducing the harms and losses experienced by Bostonians. The City of Boston has “pledged to make Boston a carbon-neutral city by 2050. This means that in 30 years, our community can only release as much carbon pollution as our environment can safely absorb.”⁴

In Boston, buildings account for nearly 70% of greenhouse gas emissions.⁵ This creates an important responsibility – and opportunity – for real estate holders like the Boston Planning & Development Agency (BPDA) to make a positive difference for Boston. Of secondary importance, but still meaningful, it is also often a fiscally responsible decision for any landowner: it has been shown that green buildings reduce maintenance and operation costs year over year, are more valuable than “traditional” buildings, and respond to market demand commanding a higher rent per square foot.⁶

2. Policy context

This strategy is being developed in the context of existing policies and other ongoing efforts:

- City of Boston planning, including Imagine Boston 2030, Climate Ready Boston, and neighborhood-specific climate resiliency guidelines

¹ Climate Ready Boston (Updated 2019) (<https://www.boston.gov/departments/environment/preparing-climate-change>)

² Climate Ready Boston (Updated 2019)

³ Climate Action Report FY2020

(https://www.boston.gov/sites/default/files/file/2020/09/FY20%20Boston%20Climate%20Action%20Report_3.pdf)

⁴ Reducing Emissions (Updated 9/29/2021, Accessed 1/24/2022) <https://www.boston.gov/environment-and-energy/reducing-emissions#:~:text=We%20have%20pledged%20to%20make.our%20environment%20can%20safely%20absorb.>

⁵ BERDO website (website updated 1/24/2022, Accessed 1/24/2022)

<https://www.boston.gov/departments/environment/building-emissions-reduction-and-disclosure>

⁶ IGBC, Benefits of Green Building (<https://www.usgbc.org/press/benefits-of-green-building>)

- City of Boston's policies, including Carbon Neutral 2050 Goal and any new/updated policies⁷
- City of Boston's ordinances for sustainability and resiliency, including the Building Energy Reduction and Disclosure Ordinance (BERDO) and Zoning Ordinance Article 37 Green Building Guidelines
- BPDA planning and zoning efforts, policies and programs including the Retrofit Resource Hub, Mass Timber Accelerator, E+ Boston, Zero Net Carbon Zoning, and more
- Other city agencies' efforts, including Public Works Department's Climate Resilience Design Standards, Mayor's Office of Housing (f/k/a Department of Neighborhood Development) Zero Emissions Building guidelines
- State and federal policies and funding priorities

BPDA Real Estate Department & Portfolio

The Real Estate Department manages, develops, acquires and leases the Agency's real estate with a focus on fiscal responsibility and community development. We treat our property like we live next door, and strive to find ways to use our real estate to make the lives of Bostonians better.

The BPDA manages a 13 million square foot property portfolio that spans Boston's neighborhoods. Our two largest land holdings are the Charlestown Navy Yard and the Raymond L. Flynn Marine Park in South Boston. To learn more about how we redevelop our real estate and our property inventory, visit [BPDA Owned Land](#) and the [BPDA Owned Land \(BOLD\) application](#).

Properties in this portfolio fall into roughly four categories:

1. **Existing buildings** that the BPDA **owns and manages** (these have commercial leases and/or licenses for all or parts of the building)
2. **Existing buildings** on land that the BPDA **ground leases** (to long-term ground lease tenants, who most frequently develop, own, and manage those buildings on BPDA land)
3. **New buildings** that will be developed on BPDA-owned land, managed through **disposition and leasing** processes
4. **Other property** (property without active buildings; includes parking structures and lots, community gardens and public/open space, and some vacant lots which are not yet ground leased or in active disposition)

The BPDA believes that its real estate portfolio creates an important responsibility to reduce the negative and inequitable impacts of consumption while offering an opportunity to support the country's, state's, and city's carbon reduction goals simultaneously with advancing economic development.

⁷ We observe that this goal may shift to an earlier timeline to reflect the Wu administration's priorities, potentially as outlined in Mayor Wu's report Boston's Green New Deal. We will update this document as additional information becomes available.

Baseline status

The BPDA gathered information to understand the BPDA's portfolio's emissions level today. This is based on publicly-available data from BERDO reports, converted electricity bills, and straight-line extrapolation for unknown information. It is estimated that the full BPDA real estate portfolio, of almost 13 million land square feet and 8.4 million built square feet, emits an approximated 31,000 metric tons of carbon dioxide equivalent (MTCO_{2e}) in one year. This is the equivalent of almost 6,750 passenger vehicles driven for one year. Though this is a small fraction of the emissions generated by all commercial, industrial, and large residential buildings in Boston (~1% of a total 3,100,000 metric tons of greenhouse gasses from these sources), the BPDA can make a meaningful change to the City's emissions.

Property Category	Total Built SF	Estimated total GHG Emissions* (MTCO_{2e}) (2021)	% Total built SF reported / known**
Owned & Managed	381,336	1,649	100%
Ground leased	6,559,590	29,335	44%
Other	1,427,633	85	61%
Total	8,368,559	31,070	49%

* Rough estimation, based on the % built square footage known and unknown to extrapolate from the reported/known emissions. **The BPDA will continue to improve this estimate by working with the Environment Department, contacting ground lease tenants for additional BERDO reporting, and more.

Draft Goal and Initiatives

Embracing its leadership role and supporting the City’s carbon neutral goals while balancing with its mission of economic development, the Boston Planning & Development Agency (“BPDA”) will embark immediately on a path to achieve the earliest possible zero net carbon for its real estate portfolio.

The BPDA will take urgent action on this goal through four **initiatives** aligned to the four property types listed above:

1. For existing buildings that the BPDA owns and manages: immediately begin planning and implementing operational improvements and renovations to achieve zero net carbon for each building this decade.
2. For existing buildings on land that BPDA ground leases: immediately begin tenant engagement and education, lease renegotiation (where possible), and complementary tactics in coordination with BERDO 2.0 to achieve significant progress toward a fully zero net carbon ground lease portfolio by 2030, and full carbon neutrality by 2040.
3. For new buildings: rapidly include this goal in relevant disposition RFPs and lease re/negotiations so that new buildings over 20,000 square feet will be immediately carbon neutral. In the rare case where a new building is developed but is not carbon neutral, it will have a clear decarbonization plan.
4. For other parcels in BPDA’s portfolio: identify creative options to offset operational carbon emissions elsewhere, to contribute to a net zero carbon portfolio and advance related priorities including environmental justice.⁸

Across all four initiatives, BPDA will **track anticipated results** and **engage with other impacted BPDA departments** to reflect this priority and any process changes required.

Initiatives	Anticipated result(s)	Processes impacted (Real Estate team & other Departments)

⁸ Note that offsets are not a compliance pathway under BERDO.

<p>1. For existing buildings that the BPDA owns and manages, improve operations and renovate</p>	<p>The BPDA's owned & managed properties already meet 2025-2029 BERDO Emissions Standards for Office building use.</p> <p>Owned & managed properties achieve zero net carbon from operations by 2032, without displacing local business & nonprofit tenants</p> <ul style="list-style-type: none"> • Suite lease tenants are better educated and empowered to reduce operational emissions • Reduce and optimize energy consumption and associated operational GHG emissions building-wide • Identify or rule out any opportunities for clean energy generation on-site • Procure renewable energy (e.g., procure through Community Choice Electricity 100% Renewable or another procurement strategy) • Offset remaining emissions (see Initiative 4; but note this is not a compliance pathway under BERDO) <p>Reduced embodied carbon impact</p>	<p>Capital Construction, Finance (funding, budget processes and projections) Legal (review proposed procurement language)</p>
<p>2. For existing buildings with ground leases, and date/encourage tenants to make improvements</p>	<p>The combined ground leases are zero net carbon by 2040</p>	<p>Leasing, Legal (input to green lease language, weigh in on mandate) Finance (e.g., if funding supports or incentives offered)</p>
<p>3. Disposition & leasing for new buildings</p>	<p>All new buildings over 20,000 SF are designed to be zero net carbon</p>	<p>Disposition, Acquisition, Leasing Planning Legal (Review proposed RFP language)</p>
<p>4. Explore creative opportunities</p>	<p>Offset carbon emissions across portfolio</p> <ul style="list-style-type: none"> • Generate clean energy <p>Advance other, related BPDA and citywide priorities including environmental justice (others TBD)</p>	<p>Capital Construction, Disposition Finance, Planning</p>

Draft Actions

Each initiative has associated **actions** to help the BPDA achieve the stated goal.

Initiative 1: For existing buildings that the BPDA owns and manages, immediately begin operational improvements and renovations to achieve zero net carbon for each building this decade.

- a. Renovate BPDA's 2 owned and managed properties (i.e., 12 Channel St in the Raymond L. Flynn Marine Park and China Trade Building in Chinatown) to be "showcase" retrofit buildings while maintaining affordability for local business and nonprofit tenants in line with our economic development mission
- b. Incorporate goal into relevant Capital Construction processes
- c. Support suite tenant behavior change for operational carbon reduction
- d. Reduce additional embodied carbon that might result from renovations

Initiative 2: For existing buildings on land that the BPDA ground leases, immediately begin tenant engagement and education, lease renegotiation (where possible), and complementary tactics to mandate/encourage tenants to achieve a zero net carbon ground lease portfolio no later than the following decade (by 2040).

- a. Engage with tenants to understand their priorities and needs
- b. Create and provide educational materials
- c. Where possible, renegotiate leases to include this goal (e.g., define plan for achieving carbon neutrality, require an energy audit, require minimum improvements to property, and/or introduce standard green lease terms)
- d. Explore potential financial support and/or incentives for desired changes

Initiative 3: For new buildings, rapidly include this goal in relevant disposition RFPs and lease re/negotiations, so that new buildings over 20,000 square feet will be immediately carbon neutral.

- a. Incorporate into BPDA Real Estate Disposition strategy & processes (e.g., include specific RFP language with minimum expectations; provide examples of successful local projects)
- b. Incorporate into BPDA Real Estate Leasing strategy & processes (e.g., develop standard green lease terms)
- c. Better coordinate action across the BPDA Real Estate Division (e.g., better link disposition outcomes and leasing by incorporating maximum emissions thresholds or other parts of accepted proposal into lease terms) and the broader Agency
- d. Evaluate opportunities for other BPDA Real Estate Division teams to contribute to carbon neutral goals

Initiative 4: For other parcels in the BPDA's portfolio, identify creative options to offset operational carbon emissions elsewhere, to contribute to a net zero carbon portfolio and advance related priorities including environmental justice.⁹

- a. Identify sites for clean energy generation, beginning with photovoltaic opportunities
- b. Identify links with (and then advance) other BPDA and citywide priorities. This may include considering transportation-related and other scope 3 emissions.¹⁰

Next steps: Decision and speeding to implementation

This policy can be truly meaningful to the city's goals, but only if the BPDA is willing to dedicate the human and financial resources required. This is anticipated to include spending the required money on renovations (and additional non-budget-neutral actions required, to be determined).

The tables below lay out an **implementation plan** for each numbered initiative and associated lettered actions. For each initiative and action, the implementation plan includes both the **immediate next steps** (to be completed during FY22 & 23) and **further next steps** (after completion of immediate next steps). Tasks will be initiated as quickly as feasible, *without* waiting for the full plan to be finalized but *with* consideration to prioritization.

Progress should be monitored, evaluated, and reported to the BPDA Director of Real Estate and the Real Estate Division, twice annually (after BERDO reporting and six months later). A framework and tools for monitoring & reporting should be evaluated after the next round of BERDO reporting. Monitoring should include total and segmented GHG emissions, progress toward goals and targets, past year's actions & spend, updated work plan with milestones for the coming year.

Initiative 1: For existing buildings that we own and manage, immediately begin operational improvements and renovations and to achieve zero net carbon for each building this decade (by 2030).

⁹ Note that offsets are not a compliance pathway under BERDO.

¹⁰ Scope 1 emissions are from sources owned or controlled by an organization, including company facilities and vehicles. Scope 2 emissions include purchased electricity, steam, heating, and cooling for own use. "Scope 3 emissions are the result of activities from assets not owned or controlled by the reporting organization, but that the organization indirectly impacts in its value chain... Scope 3 emissions fall within 15 categories ... both upstream and downstream of an organization's main activities." For more, see: <https://www.epa.gov/climateleadership/scope-3-inventory-guidance>.

Action	Immediate next steps (FY 22 & 23)	Further next steps
1.a: Renovate BPDA's 2 owned and managed properties (i.e., 12 Channel St in the Raymond L. Flynn Marine Park and China Trade Building in Chinatown) to be "showcase" retrofit buildings while maintaining affordability in line with BPDA's economic development mission	<ul style="list-style-type: none"> For 2 owned and managed buildings, conduct energy audit and modeling to identify and prioritize steps to optimize energy use Collaborate with Eversouce/MassSaves if relevant to fund/procure Connect with BIDFA about relevant funding 	<ul style="list-style-type: none"> For 2 buildings, create renovation plans with cost estimates and timeline (based on audit & modeling) Identify financing requirements and funding sources, incorporate into budgeting process Incorporate renovation plans with timeline into Capital Construction planning
	<ul style="list-style-type: none"> Ensure procurement of clean energy (CCE 100% renewable) 	<ul style="list-style-type: none"> Evaluate opportunities for on-site clean energy generation (coordinate and/or learn from City of Boston work on same topic) If relevant, evaluate alternative clean energy procurement options
	<p><i>No immediate next step; sequenced after the above three steps</i></p>	<ul style="list-style-type: none"> For China Trade Building Management RFP, consider adding in an evaluation of progress toward emission reduction goals Evaluate expected emissions reductions through operations improvements, renovation plan, and procurement; identify remaining requirement to achieve zero net carbon for each building Evaluate options to reduce or offset remaining operational carbon with building management technologies (e.g., AQI sensors, real time monitoring and demand response, fault detection & analytics)
1.b: Incorporate goal into relevant Capital Construction processes	<ul style="list-style-type: none"> Draft and incorporate new language into design RFPs, including in qualifications evaluation and (if relevant) subconsultant requirement; Require a sustainability contingency to be available for design beyond known initial scope 	<ul style="list-style-type: none"> Reassess annually for updated language
1.c: Support suite tenant behavior change for operational carbon reduction	<ul style="list-style-type: none"> Engage with (interview) suite tenants to categorize, understand needs 	<ul style="list-style-type: none"> Develop and share educational materials for suite tenants Identify and encourage tenant-level operational improvements for energy use optimization
1.d: Reduce additional embodied carbon that might be result from renovations	<ul style="list-style-type: none"> Identify processes that generate high embodied carbon 	<ul style="list-style-type: none"> Evaluate embodied carbon standard language into design RFPs, for example a requirement for a Life Cycle Analysis (to assess low emission solutions and materials during design phase) and/or a requirement for products / materials with Environmental Product Declarations

Initiative 2: For existing buildings on land that we ground lease, immediately begin tenant engagement and education, lease renegotiation (where possible), and complementary tactics to mandate/encourage tenants to achieve a zero net carbon ground lease portfolio no later than the following decade (by 2040).

Action	Immediate next steps (FY 22 & 23)	Further next steps
2.a: Engage with tenants to understand their priorities and needs	<ul style="list-style-type: none"> Engage with (interview) select/representative ground lease tenants to categorize, understand needs, and begin communicating this priority 	<ul style="list-style-type: none"> Encourage and track BERDO reporting (including encouraging tenants to sign up for BERDO newsletter)
2.b: Create and provide educational materials	<ul style="list-style-type: none"> [Done] Letter sharing BERDO requirements and thanking for reporting or reminding to report 	<ul style="list-style-type: none"> Develop and share educational materials for ground tenants (likely extremely similar to suite tenant educational materials)
2.c: Where possible, renegotiate leases to include this goal	<ul style="list-style-type: none"> Develop options for new, standard green lease language (e.g., require an energy audit, minimum improvements to property, define plan for achieving carbon neutrality, and/or other standard green lease terms) 	<ul style="list-style-type: none"> Informally test options with select ground lease tenants Begin including green lease language in any new negotiations or re-negotiations
2.d: Explore potential incentives	<i>No immediate next step; sequenced after tenant engagement</i>	<ul style="list-style-type: none"> Explore (internal discussion and analysis) any incentives that the BPDA might be willing to offer to encourage earlier commitments than BERDO requires

Initiative 3: For new buildings, rapidly include this goal in relevant disposition RFPs and lease re/negotiations, so that new buildings¹¹ over 20,000 square feet will be immediately carbon neutral.¹²

Action	Immediate next steps (FY 22 & 23)	Further next steps
3.a: Incorporate into BPDA Real Estate Disposition strategy & processes	<ul style="list-style-type: none"> Standard sustainability language already exists for large, commercial or mixed-use disposition RFPs; consider whether there is room to improve (i.e. to get buildings to ZNC by 2050; ensure all new construction projects pursue and achieve the LEED urban heat island reduction credit and onsite renewable energy credit) or to provide examples of sustainable and successful projects 	<ul style="list-style-type: none"> Consider creating formal step in disposition process to evaluate preserving open space versus developing parcel Evaluate guidance or standardized language for disposition RFPs for potential buildings under 20k SF
3.b: Incorporate into BPDA Real Estate Leasing strategy & processes	<ul style="list-style-type: none"> <i>See above (1.a, 2.a - engage / interview suite lease, ground lease tenants)</i> <i>See above (2.c - Develop options for new, standard green lease language)</i> <i>See above (2.d - Explore incentives)</i> 	<ul style="list-style-type: none"> Incorporate into 2022 (and future) Leasing Strategy
3.c: Better coordinate action across BPDA	<ul style="list-style-type: none"> Evaluate new, dedicated staff position as part of budget cycle 	<i>To be determined</i>

¹¹ New buildings over 20,000 square feet and remaining in the BPDA Real Estate portfolio

¹² Note that this document is focused on large properties over 20,000 SF. Most of this development is commercial (residential is a small portion of the total portfolio at less than 2.8% of total square feet). Any decisions impacting small, infill housing will require additional study.

Action	Immediate next steps (FY 22 & 23)	Further next steps
Real Estate Division and broader Agency	<ul style="list-style-type: none"> Better link disposition outcomes and leasing 	<ul style="list-style-type: none"> When standard green lease terms are drafted, clearly reflect in future RFP language When RFP commitments are made and approved, reflect in ground lease terms
	<ul style="list-style-type: none"> In the Development Review process for new RLFMP construction, communicate to the Real Estate Department what sustainability measures are proposed. This practice is intended to help recognize potential synergies that might be implemented on a wider scale. 	<i>Ongoing; no further next step</i>
	<i>No immediate step</i>	<ul style="list-style-type: none"> Support Finance and Legal in reviewing by identifying tradeoffs and clarifying prioritization
3.d: Evaluate opportunities for other BPDA Real Estate Division teams to contribute to carbon neutral goals	<ul style="list-style-type: none"> As part of BPDA Real Estate Division annual planning, ask all teams (Admin, Operations, Strategy) to identify & evaluate additional opportunities to improve (e.g., RE staff trainings, water reduction, waste reduction...) 	<ul style="list-style-type: none"> Annually review and revise

Initiative 4: For other parcels in our portfolio, identify creative options to offset operational carbon emissions elsewhere, to contribute to a net zero carbon portfolio and advance related priorities including environmental justice.

Action	Immediate next steps (FY 22 & 23)	Further next steps
4.a: Identify sites for clean energy generation, beginning with photovoltaic opportunities	<ul style="list-style-type: none"> Evaluate photovoltaic generation opportunities across BPDA real estate portfolio, especially parking lots & open spaces 	<ul style="list-style-type: none"> Initiate clean energy generation pilot; learn from process and monitor results Based on pilot learnings, decide whether to expand initial clean energy generation selection Identify and analyze other clean energy options across the BPDA portfolio (e.g., geothermal, biogas, etc.)
4.b: Identify links with (and then advance) other BPDA and citywide priorities. Identify links with (and then advance) other BPDA and citywide priorities. This may include considering transportation-related and other scope 3 emissions.	<ul style="list-style-type: none"> Engage Environmental Justice groups and seek opportunities to advance environmental justice including heat island reduction and tree canopy increase Look for tie ins with resiliency investments (ongoing) Identify links with other priorities (e.g., dark skies/light pollution; reduce water use; increase waste diverted from landfill; healthy buildings e.g., fitwel) and incorporate into initiatives, outcomes, and monitoring 	<ul style="list-style-type: none"> Brief other impacted BPDA departments on the work and update if they provide feedback Brief other City offices on the work and update if they provide feedback Evaluate an Electric Vehicle (EV) policy Introduce recycling to owned and managed buildings (12 Channel and China Trade) Expanding the tree canopy on and around our assets, and supporting efforts to expand the tree canopy citywide.

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