

## **Net Zero Carbon Draft Zoning Comment Letters and Survey Responses**

This document contains comments submitted via email and the public survey form regarding the Net Zero Carbon draft zoning text amendment between 4/26/2024 -5/28/2024.

***May 28, 2024***

Travis Anderson  
Boston Planning & Development Agency  
One City Hall, Ninth Floor  
Boston, Massachusetts 02201  
Via: [travis.anderson@boston.gov](mailto:travis.anderson@boston.gov)  
Cc: [Hayne.payne@boston.gov](mailto:Hayne.payne@boston.gov)

RE: 2024 Zero Net Carbon Zoning Initiative

Dear Mr. Anderson and BPDA Smart Utilities staff and Zoning Reform Team:

The Boston Green Ribbon Commission Higher Ed Working Group supports the Zero Net Carbon Zoning Initiative as a means to help the City achieve its Carbon Free goal by 2050. On behalf of the Higher Ed Working Group, thank you for the opportunity to provide comments on the draft zoning amendments to support and advance the City's decarbonization goals.

Thank you for taking into account comments we provided to the BPDA in March. The Higher Ed Working Group members have collaborated responses to the Zero Net Carbon Zoning Draft provided on the BPDA website. Below are our comments on the sections identified:

**Draft language:**

**Section 37-3. Requirements of Green Buildings.**

Any Proposed Project subject to the provisions of this article shall be LEED Certifiable under the most appropriate LEED building rating system.

**Regarding this section:**

- We applaud the BPDA and City Environment Department for maintaining a holistic approach to sustainability in Article 37 through continuing LEED certifiability. However, since Article 37 was implemented, additional holistic sustainability certifications have emerged which are at least equivalent, if not even more stringent than LEED certifiable and more aligned with the City's goals for sustainable development and climate action.

**We strongly recommend formally including the International Living Future Institute's Living Building Challenge Core certification as an additional option to LEED in Article 37.** This provides Owners greater flexibility in holistic sustainability certifications, higher levels of sustainability achievement for the City and reduces duplicative paperwork and administration time and costs for project teams. The current focus only on LEED disincentivizes Owners from using higher performing, more stringent holistic certification schemes.

## **Section 37-6. Requirements of Net Zero Carbon**

### **Draft language:**

1. A Proposed Project shall be reviewed for design compliance with the Greenhouse Gas Emissions standards from Table 1 in the Building Emissions and Reduction Disclosure Ordinance Section 7-2.2(i) as modified by the following:
  - a. Comply with a zero (0) kg of CO<sub>2</sub>e / sf-yr Greenhouse Gas Emissions standard upon effective date and every year thereafter.

### **Regarding this section:**

- We applaud the BPDA and City Environment Department for proposing to align the Article 37 process with the City's Climate Goals and BERDO. The proposal already recognizes alternative Greenhouse Gas emissions standards for certain building types (e.g. Hospitals, Manufacturing and Research Laboratory uses).

The current proposal for Zero Net Carbon would financially penalize higher education institutional buildings connecting to district energy systems for their fossil fuel use by requiring alternate compliance payments for the fossil fuel portion of energy provided from the district energy system once the building starts operation (provided the building isn't a Hospital, Manufacturing and Research Laboratory use).

We urge the BPDA and City Environment Department to allow higher education institutions and other non-profits to continue to add new buildings to existing district energy systems that are actively working to decarbonize so that buildings are not financially penalized for systems that frequently outperform the grid emissions.

## **Section 37-7. Procedures of Net Zero Carbon.**

### **Draft language:**

1. The Applicant shall demonstrate that the Proposed Project is designed to comply with the Net Zero Carbon Requirements in this article by:
  - a. Completing a checklist provided by the Boston Redevelopment Authority which outlines how the Proposed Project will be designed to meet the Greenhouse Gas Emissions requirements. This checklist must be filed with the Boston Redevelopment Authority as part of the Project Notification form in the pre-schematic design phase of Large Project Review or the Small Project Review application of Small Project Review; and
  - b. Submitting a structural life cycle analysis that assesses the embodied CO<sub>2</sub>e emissions from the extraction, harvesting, fabrication, transportation, installation, maintenance, and disposal of structural building products and materials, and other construction-related activities, for any Proposed Project subject to the provisions of this section and having a gross floor area of fifty thousand (50,000) or more square feet, prior to issuance of Certification of Compliance in accordance with Large Project Review procedures of Article 80B, or Certification of Approval in accordance with Small Project Review Procedures of Article 80E, by the Boston

Redevelopment Authority; and

- c. Signing a Net Zero Greenhouse Gas Emissions Ready commitment letter provided by the Boston Redevelopment Authority acknowledging that the Proposed Project will be required to meet the Greenhouse Gas Emissions standards outlined in Section 37-6. This letter must be filed with the Boston Redevelopment Authority prior to issuance of Certification of Compliance in accordance with Large Project Review procedures of Article 80B, or Certification of Approval in accordance with Small Project Review Procedures of Article 80E, by the Boston Redevelopment Authority.

The documentation, checklist, and Net Zero Greenhouse Gas Emissions Ready commitment letter shall be completed by an individual who holds an active professional license, accreditation, or other qualification in the design and engineering of buildings and systems, sufficient to satisfy at least one of the credentials approved from time to time by the Boston Redevelopment Authority. The submissions shall be in accordance with Article 80B, Article 80C, Article 80D, or Article 80E.

#### Regarding Subsection b:

1. While requiring a life cycle analysis of the structure is a good place to start, including enclosure, interiors and MEP systems should also be considered. Only looking at one system for a building could lead to decision-making that has unintended consequences.
2. We understand the need to maintain flexibility in the methodology since a clear standard does not exist, but the current proposed language is too vague and could lead to inconsistent analysis. For example, is structure meant to include substructure, superstructure, and enclosure. We recommend the language or supplemental guidance be clearer on the scope of the analysis and use common industry terms, e.g. embodied carbon life cycle stages. This could provide more consistency in the analysis being provided through the Article 37 process and maintain flexibility until a standard is available.

At least initially, we would recommend using a standard and avoid a rating system for the methodology for LCA analysis. **We would like to reiterate that this is an area where we'd like to propose the HEWG, in collaboration with the Carbon Leadership Forum, could help the City of Boston & BPDA on LCA methodology that addresses holistic solutions and intended impact of fossil fuel elimination.** A methodology consistent with emerging standards in other parts of the country.

3. We also recommend that this analysis is only required at the building permit submission. This is consistent with the City of Cambridge's proposal and more importantly, is the time when this analysis will be most accurate. It's too early at zoning approvals stage to do a meaningful embodied carbon calculation that would yield results to inform the state of the market and future policy.

Thank you again for the City's leadership on climate action and the opportunity to contribute to this important initiative.

Sincerely,

**Boston Green Ribbon Commission Higher Ed Working Group Co-chairs**

Dennis Carlberg, (he/him) AIA, LEED AP BD+C  
Associate Vice President  
Boston University

Jacob Glickel, (he/him)  
Director of Sustainability Operations  
Northeastern University



BOSTON

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Boston Planning & Development Agency (BPDA)  
One City Hall Square  
Boston, MA 02201

Dear Ms. Walker-Stewart and Mr. Anderson:

We want to express our gratitude to the Boston Planning & Development Agency (BPDA) and the City of Boston for bringing the Net Zero Carbon (NZC) Zoning Code for public comment with the goal of it being voted on this summer. The importance of this zoning code cannot be overstated; the majority (at least 60%) of Boston's emissions come from its largest buildings<sup>1</sup> and they have an outsized impact on our air quality and City's ability to reach our collective climate goals. It is estimated by the City of Boston itself that the NZC Zoning Code will reduce Boston's carbon emissions by 19% when compared to business as usual and improve its air quality.<sup>2</sup>

The need for NZC buildings to meet our climate goals was described five years ago in the 2019 *Carbon Free Boston Report*<sup>3</sup> and the 2019 *Boston Climate Action Plan*.<sup>4</sup> Boston recognized that the climate crisis is a public health emergency in January 2020,<sup>5</sup> and still it has taken half a decade to plan, write, and rewrite the NZC Zoning Code. The issue of good policy being too slowly implemented is well recognized by Mayor Wu; in September, 2023 she said that the government is not moving quickly enough to address the climate crisis.<sup>6</sup> It is in this context that we request the following changes be made to the NZC Zoning Code:

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<sup>1</sup><https://www.wbur.org/news/2021/09/23/boston-city-council-zero-emissions-buildings>

<sup>2</sup>[https://www.boston.gov/sites/default/files/embed/file/2019-10/city\\_of\\_boston\\_2019\\_climate\\_action\\_plan\\_update\\_4.pdf](https://www.boston.gov/sites/default/files/embed/file/2019-10/city_of_boston_2019_climate_action_plan_update_4.pdf)

<sup>3</sup> <https://open.bu.edu/ds2/stream/?#/documents/383551/page/1>

<sup>4</sup>[https://www.boston.gov/sites/default/files/embed/file/2019-10/city\\_of\\_boston\\_2019\\_climate\\_action\\_plan\\_update\\_4.pdf](https://www.boston.gov/sites/default/files/embed/file/2019-10/city_of_boston_2019_climate_action_plan_update_4.pdf)

<sup>5</sup> <https://www.boston.gov/news/city-council-affirms-climate-crisis-public-health-emergency>

<sup>6</sup> <https://www.bostonglobe.com/2023/09/21/metro/michelle-wu-boston-globe-summit-climate-crisis/>

1. **Change the effective date** from January 1, 2026 to July 1, 2025. The City first made the public aware of this NZC Zoning Code in 2021 and we understand that many projects are already complying with it.
2. In the “Applicability” section, **reduce covered extensions from 50,000 square feet to 20,000 square feet or larger**. When it comes to carbon impact, there is no difference between an extension and a new building. Both the NZC Zoning Code and BERDO 2.0 are designed to cover buildings that are 20,000 square feet or larger because they are the biggest carbon polluters in Boston. The same standard should apply to extensions. It was stated in the April 29, 2024 NZC zoning code presentation that the City made the extension a higher threshold (50,000 square feet) than what was proposed in the 2022 version of the NZC Zoning Code because of the prospect of encouraging more housing units. If that is the case, we suggest that the exception be made more explicitly for housing to incentivize the production of more housing units and be limited in time to be consistent with other exceptions in the code made hospitals, labs and manufacturing. For example, extensions greater than 20,000 square feet and smaller than 50,000 square feet, may be exempted for five additional years if they add at least 15 units of additional residential space. Otherwise, we expect that all extensions in Boston will be 49,999 feet or smaller to avoid having to comply with NZC requirements.
3. **Require LEED Gold** for buildings 50,000 square feet and larger. Boston should be leading the Commonwealth on its requirements for healthy buildings, and yet it lags behind neighboring cities like Cambridge and Somerville, that already require LEED Gold construction. The City defended its recommendation for the LEED Certified level (the lowest LEED certification) because it said it wants to allow for developers to utilize other rating systems. The language of the zoning code would not require that the developer actually acquire the LEED Gold certification but only that it meet its requirements (i.e., just be certifiable), and that does not preclude developers pursuing an International Living Future Institute (ILFI) certification or other certification. Alternatively, the City could offer two pathways for meeting health and environmental requirements: being LEED Gold certifiable **OR** ILFI certifiable. This would ensure that air quality, water conservation, and healthy material selection remain important goals of building construction in Boston.
4. We thank the BPDA for its commitment to understanding the impacts of embodied carbon, which can make up 50% of a building’s lifecycle carbon emissions. We request that some method be included for **regularly updating embodied carbon requirements in the regulations** as this is a rapidly evolving area of green building construction. We also recommend that the BPDA **set requirements for embodied carbon reductions within the regulations**. Two embodied carbon policy examples are Vancouver<sup>7</sup> and

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<sup>7</sup> <https://vancouver.ca/files/cov/embodied-carbon-guidelines.pdf>

Toronto.<sup>8</sup> Both these cities require buildings to meet embodied carbon standards based on embodied carbon per square foot, with the requirements lowering over time. These requirements signal to the market that low-carbon materials and construction methods are a priority, which have the benefits of bringing down prices in lower carbon materials, and allowing businesses to plan for future changes.

We appreciate the work that the City has done to revive the NZC Zoning Code and we hope that the zoning code will be quickly passed by the BPDA Board and the Zoning Code Commission. We cannot forget that the costs of delay continue to mount. The Boston community at-large will not be the ones to reap the huge financial gains of building construction, but our community already bears the costs of polluting buildings, including hundreds of millions of dollars in resiliency measures needed to combat a more unstable climate;<sup>9</sup> and billions of dollars in health costs stemming from higher asthma rates, heart disease, and premature deaths that result from burning fossil fuels in buildings.<sup>10</sup> If we do not act, economists predict that the climate crisis will cost trillions of dollars, a huge economic drag facing future generations.<sup>11</sup>

We urge you to move quickly to implement a robust NZC Zoning Code because the code is a key pillar of the 2019 Climate Action Plan that is yet unrealized and an essential Green New Deal policy. It is also the right thing to do for Boston and its children.

Sincerely,

Andee Krasner, MPH

On behalf of Mothers Out Front Boston Teams from East Boston, Downtown, West Roxbury/Roslindale/Hyde Park, and Jamaica Plain

CC: Arthur Jemison, Chief of Planning  
Aimee Chambers, Planning Director  
Oliver Sellers-Garcia, Green New Deal Director

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<sup>8</sup><https://mantledev.com/insights/toronto-becomes-first-jurisdiction-in-north-america-to-enact-whole-building-embodied-carbon-caps-on-new-city-owned-buildings/>

<sup>9</sup> <https://www.boston.gov/departments/budget/enhancing-climate-resilience-and-green-spaces>

<sup>10</sup> <https://rmi.org/health-air-quality-impacts-of-buildings-emissions#MA>

<sup>11</sup><https://apnews.com/article/climate-change-damage-economy-income-costly-3e21addee3fe328f38b771645e237ff9>





May 28, 2024

Astrid Walker-Stewart, Urban Planner  
Travis Anderson, Senior Infrastructure and Energy Planner  
Boston Planning and Development Agency  
Boston, MA 02201

**Re: NAIOP Comments on Proposed Article 37 Zoning Update**

Dear Ms. Walker-Stewart and Mr. Anderson:

NAIOP Massachusetts, The Commercial Real Estate Development Association, appreciates the opportunity to offer comment on the proposed language for the Article 37 zoning update, designed to help the City of Boston achieve its carbon reduction target of zero net carbon (ZNC) emissions by 2050.

NAIOP represents the interests of members involved with the development, ownership, management, and financing of office, lab, industrial, mixed use, multifamily, and retail space in Boston and across the Commonwealth. For the past several years, NAIOP has engaged in stakeholder and technical advisory groups convened by the Boston Planning and Development Agency (BPDA) related to a potential Article 37 update.

While NAIOP offers the below comments to clarify the Article 37 proposal if adopted, NAIOP strongly **urges the City to reconsider implementing the update in light of the City's recent adoption of the municipal opt-in stretch energy code – and at the very least to delay adoption until after the new Article 80 process has been released.**

**I. General Comments**

**i. Utility Considerations**

In the development world, a proposed project often makes all efforts to beat or achieve a target in conceptual design. However, there are often significant infrastructure challenges during implementation. While NAIOP understands that some conversations have been had with utilities by the BPDA, member experiences with utilities as they try to implement *already existing City requirements* for electric vehicles and other electrification goals have shown that existing distribution capacity cannot sustain immediate electrification requirements. As discussed in previous working sessions **NAIOP is concerned that requiring additional building electrification through the Article 37 changes without addressing capacity issues first will only slow, and in many cases stop, development - including housing production - in Boston.**

**ii. Applicability Threshold**

While NAIOP understands that the applicability threshold has been lowered to 20,000 SF to align with the BERDO thresholds, NAIOP is very concerned that by lowering this threshold the City will be inundated with project proposals and the development review process will slow down significantly both for projects already in the pipeline at the time of enactment and all future projects. The entitlement process has an enormous impact on the cost of a project – and requires the developer to take on significant risk. Lowering this threshold to projects of 20,000 SF expands the number of projects subject to review. This creates increased risks and permitting timelines for projects not previously subject to Article 37 and further delays for large projects already subject to the Article 80 process. **NAIOP strongly urges the BPDA to remove this threshold.**

**iii. Transition Rule**

NAIOP urges the adoption of a clear, delineated transition rule to allow projects that are currently in the planning phase the ability to move forward without redesign given the immense amount of time and investment a project proposal represents. The draft language proposes that all projects with BPDA Board approval at the time of adoption would not be governed by the new Article 37 language. However, BPDA Board approval occurs very late in the project process – often after two to three years of time and investment by the developer, the BPDA and the community. **NAIOP instead suggests that all projects that have filed a Project Notification Form (PNF) under Article 80B, an application for Small Project Review under Article 80E, a PDA Development Plan under Article 80C, or similar substantive filing on or before the Zoning Commission’s approval of the revised Article 37 should be exempt from the updated Article 37 requirements and subject to the current Article 37.** Further – NAIOP recommends that this zoning update be held until after a new Article 80 process has been finalized to alleviate confusion of staff and project proponents attempting to integrate multiple new steps and requirements.

If the currently language is retained, NAIOP notes that the State Energy Code and Building Code requires a six-month concurrency period for all updates to allow projects that are already far along in the development process and designed to comply with current requirements to proceed without the significant schedule and financing implications of code changes. A similar transition period should be included in connection with the adoption of any new Article 37 requirements, to ensure that economic development and housing projects are not artificially delayed. The BPDA has implemented similar transition rules in the promulgation of new zoning language in the past, such as the Affirmatively Furthering Fair Housing Zoning Amendment.

**II. Additional Technical Comments**

**i. Section 37-6**

While Section 37-6 allows hospitals, manufacturing buildings and lab buildings to implement net zero progressively, the timeline is not aligned with the requirements for existing buildings under BERDO. For example, the progression for lab buildings is 15 years faster than BERDO; and for hospitals and manufacturing, the requirements are 10 years ahead of the BERDO requirements.

In contrast, residential/office/hotel and other product types are not afforded any flexibility, and the language does not speak to blended emissions rates, which the regulated community reads to mean that all of these projects must be net zero day one. **Given one of the stated goals of this update is to align with BERDO requirements, NAIOP recommends aligning the requirements for new buildings with the existing timelines found in the BERDO regulations; and to provide language outlining clarity regarding buildings with blended emissions.**

**ii. Section 37-7**

- a.** Section 37-7.b reads *“Submitting a structural life cycle analysis that assesses the embodied CO<sub>2</sub>e emissions from the extraction, harvesting, fabrication, transportation, installation, maintenance, and disposal of structural building products and materials, and other construction-related activities...”*

NAIOP believes that additional clarity is needed here as it is unclear what would fall under this section. Is the language meant to only require the analysis for structural materials or all materials? Additionally, NAIOP requests that the BPDA clarify what “other construction related activities” encompasses.

- b. Section 37-7.c requires that “an individual who holds an active professional license, accreditation, or other qualification in the design and engineering of buildings and systems” sign a commitment letter on behalf of the owner for a commitment that goes on for many years after project completion – and would require operational compliance. **Consultants are not in a position to make that commitment. NAIOP respectfully urges the BPDA to engage with project proponents to discuss this language and seek amendment before final adoption.**

iii. **Section 80B-5**

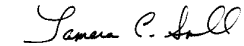
NAIOP suggests the following edit in red to ensure that the language is clearly referring only to the checklist to be included with the PNF and not other provisions of 37-7.

*“A completed checklist as detailed in Section 37-7.1.a”*

Boston is a unique city, both in terms of its history, but also in the pressures it faces on housing production, job creation and redevelopment due to its compact footprint. As stated above, NAIOP **strongly urges the City to rescind this update to Article 37.**

Thank you for your consideration of our comments. We look forward to continuing to collaborate with the BPDA. Please contact me if you have any questions or if additional information is needed.

Sincerely,



Tamara C. Small

Chief Executive Officer

NAIOP Massachusetts, The Commercial Real Estate Development Association



May 17, 2024

Astrid Walker-Steward, Zoning Reform Planner  
Travis Anderson, Infrastructure & Energy Planner  
Boston Planning & Development Agency  
One City Hall Square, 9<sup>th</sup> Floor  
Boston, MA 02201

**By Electronic Submission:** [astrid.walker-stewart@boston.gov](mailto:astrid.walker-stewart@boston.gov); [travis.anderson@boston.gov](mailto:travis.anderson@boston.gov)

**RE: 2024 Net Zero Carbon Zoning Initiative**

Dear Astrid and Travis,

Vicinity Energy Inc. (Vicinity) commends the collaboration between the Boston Planning and Development Agency (BPDA) and the City's Environmental Department in crafting the Net Zero Carbon Zoning language for Article 37. This initiative not only paves the way for the City to reach carbon neutrality by 2050 but also harmonizes current decarbonization strategies, positioning the City at the forefront of environmental leadership. Vicinity is excited to be a partner in the effort to reduce greenhouse gas emissions (GHG) in the communities we serve.


Currently, the electrification of Vicinity's district energy system involves the integration of three distinct technologies: an electric boiler (eboiler), an industrial-scale heat pump, and thermal storage. The installation of our eboiler is currently underway at our Kendall plant and is expected to be operational this summer. Once operational, our customers in Boston and Cambridge will benefit from our 100% renewable and carbon-free thermal energy product, [eSteam™](#). The electrification of our district energy system not only aligns with our commitment to sustainability but also ensures compliance with local regulations for our customers.

We are proud to be revolutionizing the district energy space in North America, and we respectfully advocate for district energy to receive consistent treatment akin to the BERDO emission factors standards of zero (0) kgCO<sub>2</sub>e/MMBTU in the final Net Zero Carbon Zoning language and for the use of eSteam™ to be considered a compliant pathway. Such uniformity is vital for ongoing clarity and essential for our customers, who diligently adhere to regulatory requirements and policies set forth by the City of Boston and the Commonwealth of Massachusetts.

Vicinity is firmly committed to fostering a [Clean Energy Future](#). Drawing on decades of experience tackling global energy problems on a local level while using local resources, Vicinity is committed to ensuring more efficient, reliable, and resilient generation of thermal

energy for consumers across the Commonwealth, especially in its urban centers. We take pride in being at the forefront of innovative approaches and techniques. As proven in Europe, district energy systems can be electrified to quickly decarbonize the heating and cooling profile of all connected buildings and should be considered a pivotal means to quickly decarbonize dense urban environments. We appreciate the opportunity to provide comments and look forward to engaging further.

Best,

A handwritten signature in black ink, appearing to read 'KH', with a stylized flourish at the end.

Kevin Hagerty  
President, Deputy CEO

**Carbon Leadership Forum Boston/Northeast Hub - a Knowledge Community of the Boston Society for Architecture**

May 24, 2024

**City of Boston, Climate Leadership**

**Attn.:**

Astrid Walker-Stewart, Zoning Reform Planner, BPDA  
Travis Anderson, Infrastructure & Energy Planner, BPDA  
Arthur Jemison, Chief of Planning  
Oliver Sellers-Garcia, Green New Deal Director  
Brian Swett, Chief Climate Officer  
Michelle Wu, Mayor, City of Boston

**Letter of Public Comment on the 2024 Boston Net Zero Carbon Zoning Proposed Draft**

Dear Ms. Walker-Stewart, Mr. Anderson and City of Boston climate leadership,

On behalf of the Carbon Leadership Forum Boston/Northeast Hub, I am writing to comment on the proposed City of Boston Zero Net Carbon Zoning. The draft of the BPDA Article 37 zoning revisions is the culmination of the passion, energy, countless volunteer hours and ongoing commitment of many individuals, organizations and city staff in the Boston region, and we applaud this significant achievement in addressing the climate impact of buildings in Boston.

The Carbon Leadership Forum, also known as CLF, has a mission to eliminate embodied carbon in buildings, materials and infrastructure to create a just and thriving future. As part of this work, CLF conducts research on materials, buildings and infrastructure and acts as a technical advisor to inform embodied carbon policy development. CLF has regional chapters, called Hubs, across the U.S. and Canada, made up of volunteers working to make progress locally. The Boston/Northeast Hub of CLF is a large and active chapter, and includes a subgroup focused on embodied carbon policy and advocacy, which has been active in state and local policy for the last 4 years.

Boston's draft zoning includes many critical updates on the path for our buildings to reduce their climate impacts through significant energy and carbon reductions, thereby becoming part of the solution and on track to achieve net zero emissions. The CLF Boston/Northeast Hub is fully in support of the goals proposed for projects to achieve net zero *operational energy and emissions*. We write today to provide comments pertaining specifically to the portion of the proposed language addressing *embodied carbon* in buildings.

**We commend the City for including embodied carbon in the net zero carbon zoning proposal.** Emissions released now are more critical than emissions released later because (1) emissions will accumulate in the atmosphere and (2) there is limited time remaining before the tipping point of the climate crisis. In the near-term, reducing embodied carbon is therefore as important as—or more important than—operational carbon, because the majority of emissions from new construction between now and key climate targets will be embodied carbon. For example, a recent CLF [study](#) found that for newly constructed buildings in California, embodied emissions would contribute approximately **80%** of total emissions between now and 2030 and approximately 70% of total emissions between now and 2045.

Materials used in the construction of buildings (i.e. cement, steel, aluminum, glass, bricks, insulation) are estimated to represent around 10% of total global energy-related emissions. Materials used to construct infrastructure make up an additional 10% (IEA. 2021. *Global energy use and energy-related CO2 emissions by sector, 2020*). Building materials are one of the largest sources of industrial emissions and therefore are critical to reducing emissions from this sector.

Our comments are organized by section of the ‘Draft Net Zero Carbon Zoning Proposal Summary’ and the ‘Net Zero Carbon Zoning Draft.’ The published draft language is included below in italics, and our comments are non-italicized.

**Summary and Proposed Impact:**

*4. ‘Position Boston as a climate leader at the forefront of building sustainability, setting an example for other cities and communities to follow.’*

Massachusetts is leading the way on climate and sustainability topics in many cases. We support Boston's goal to be a climate leader and to put in place policies that will achieve the goal of carbon neutrality in the City by 2050. On the local municipal scale in Massachusetts, the City of Cambridge and the City of Newton have already adopted zoning ordinances that address embodied carbon, in addition to addressing operational energy and carbon. We support the inclusion of embodied carbon in this amendment to Article 37 and encourage Boston to align with other MA municipalities that have positioned themselves as climate leaders in addressing the impacts of the built environment.

**Zoning Proposal Exemptions:**

*‘The Net Zero Emissions and Embodied Carbon Reporting proposals would not apply to renovations and changes of use.’*

Arguably the **most significant strategy** the City can adopt to reduce embodied carbon is to reuse its existing buildings and prevent demolition whenever the building can be renovated for reuse.

The Boston Environment Department recently conducted an innovative pilot program to encourage deconstruction and reuse of building elements and materials. Reusing the majority of existing structures will always yield a lower embodied carbon than deconstruction and materials salvage.

It is critical that the City create a mechanism to prioritize the reuse of existing buildings and building materials over demolition as part of the goal of addressing and reducing embodied carbon. We encourage the BPDA to include a mandatory assessment for reuse of any building being proposed for demolition, and if not able to be saved, then a mandatory deconstruction plan to allow eligible materials to be reused.

The LEED version 5 public comment draft out now has increased its prioritization of building and material reuse, with a stated intent to “reduce embodied carbon, keep materials in circularity, reduce demand for virgin material sourcing, preserve cultural resources and histories, and foster markets for reuse materials.” It includes a credit titled ‘Building and Materials Reuse’ with options to either reuse an existing building (structure and enclosure) or reuse materials by completing a salvage assessment for the project and doing an off-site assessment of reuse material procurement opportunities. We encourage the BPDA to require the LEED Building Materials Reuse credit or to use its goals and requirements as a framework for prioritizing retaining existing buildings in the City.

**Key Concept Definitions:**

*'Embodied Carbon is carbon dioxide emissions associated with the manufacturing, transportation, and construction of building materials throughout the entire life cycle of a product.'*

We recommend making some small edits to this definition to clarify and align with technical elements of how embodied carbon is calculated. Embodied carbon includes other greenhouse gas emissions besides carbon dioxide (this is why there is an “e” for “equivalent” at the end of kgCO2e). Embodied carbon also includes use and end of life phase emissions, as noted in Section 37-7.

We suggest adopting the Carbon Leadership Forum’s definition of embodied carbon, as follows: ‘Embodied carbon is the greenhouse gas (GHG) emissions associated with the manufacturing, transportation, installation, maintenance, and disposal of construction materials used in buildings, roads, and other infrastructure. Embodied carbon is measured using a life cycle assessment and reported as global warming potential (GWP), which is quantified in kilograms of CO2 equivalent (kg CO2e).’

### **Net Zero Carbon Zoning Draft Language:**

#### **Section 37-34. Green Building Requirements of Green Buildings.**

*'Any Proposed Project subject to the provisions of this article shall be LEED Certifiable under the most appropriate LEED building rating system.'*

We suggest changing to ...”under the most appropriate **and recent** LEED green building rating system.”

The LEED version 5 proposed draft is currently out for public comment and includes new Prerequisites and Credits that address embodied carbon. This version is slated to be published in Q1 of 2025, and if the embodied carbon requirements remain in the final version, it will streamline and make consistent the requirements for embodied carbon reporting and reductions across all projects pursuing LEED.

#### **Section 37-7. Procedures of Net Zero Carbon.**

1. *The Applicant shall demonstrate that the Proposed Project is designed to comply with the Net Zero Carbon Requirements in this article by:*

*B. Submitting a structural life cycle analysis that assesses the embodied CO2e emissions from the extraction, harvesting, fabrication, transportation, installation, maintenance, and disposal of structural building products and materials, and other construction-related activities, for any Proposed Project subject to the provisions of this section and having a gross floor area of fifty thousand (50,000) or more square feet, prior to issuance of Certification of Compliance in accordance with Large Project Review procedures of Article 80B, or Certification of Approval in accordance with Small Project Review Procedures of Article 80E, by the Boston Redevelopment Authority; and*

### **Terminology**

We recommend the following language changes to adhere to the terminology used in standards and provide clarity to practitioners completing the LCA required for this draft language:

*Submitting a “... **cradle-to-grave** life cycle **assessment** that **reports the global warming potential of the product, construction, use, and end-of-life stages** of...”*

OR



Submitting a "... life cycle **assessment** that assesses the **global warming potential** (embodied CO<sub>2</sub>e emissions) from the **raw material supply, transport, manufacturing, construction, use, and end-of-life** of..."

### **Project applicability-**

Item b. (the section addressing embodied carbon) applies to both Large and Small Project Review procedures. We support this requirement for both large (over 50,000 gsf) and small projects (over 20,000 gsf or with a minimum of 15 dwelling units).

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Proposed Item b. requires an LCA of only the structural components of the building, and is completed for disclosure purposes only. Many current policies that address embodied carbon include, at a minimum, the structural and enclosure systems, and ideally go beyond that to include the whole building. The proposed *BSR/ASHRAE/ICC Standard 240P: Quantification of Life Cycle Greenhouse Gas Emissions in Buildings*, will provide a whole life carbon assessment methodology for evaluating and reporting GHG emissions of both embodied and operational emissions of a building over its full life cycle that can be referenced by policies, codes, and other standards. The final version of the standard is expected to be published in January 2025. In the February 2024 draft release for public comment, the standard requires substructure, superstructure, enclosure, interiors, and MEP and services to be included in a life cycle assessment, and requires inclusion of life cycle stages A-D, also known as cradle to grave. We encourage alignment with this Standard.

### **Life cycle assessment in policy-**

Life cycle assessment (LCA) is the agreed upon methodology for measuring embodied carbon. By providing a standardized and robust approach to estimating the carbon impacts of construction products and projects, LCA can support more informed decision-making from early design through procurement. Life cycle assessment is now a widely adopted and understood methodology for estimating the environmental impacts of building projects. Project teams in our region frequently conduct LCAs as part of the design process using well-established and inexpensive or free tools for projects that are within the threshold of Article 37. Architects, structural engineers, and green building professionals, among other project team members, can readily conduct WBLCAs using these tools.

In creating a policy specific to using LCA, it is important to provide clear and explicit guidance, particularly in areas with the greatest differences in existing requirements, such as required life cycle scope and building elements, floor area definitions used to calculate the embodied carbon per floor area, reference study period, and in which phase the LCA is expected to be completed.

These items can be clarified in the policy itself, through requiring adherence to agreed-upon standards for calculation and modeling guidance (such as *BSR/ASHRAE/ICC Standard 240P Quantification of Life Cycle GHG* once published), or through publication of building LCA guidance from a city agency. If the City of Boston provides guidance to complement this requirement, we encourage the following to be included:

- Clearly identify the required life cycle scope. We recommend A-A5, B1, B4, and C3-4.
- Clearly identify the reference study period. We recommend 60 years to align with other requirements.
- Includes a list of recommended tools that comply with the referenced standards
- Provide recorded trainings for designers and builders on LCAs and data collection
- If requiring comparison to a baseline, provide detailed description and calculation guidance of business-as-usual. For a comprehensive example, see the City of Vancouver Embodied Carbon Guidance: <https://vancouver.ca/files/cov/embodied-carbon-guidelines.pdf>

### **Decarbonization requirements-**

Some policies require that the results of an LCA demonstrate compliance with a target or maximum embodied carbon. Others require reductions in embodied carbon, either immediately or phased in over time. Requiring only the disclosure of a project's embodied carbon is helpful for increasing local capacity to comply with future regulations, but does nothing to reduce a building's impact or make progress on reducing the City's emissions from buildings due to its materials and construction.

The speed of growth of embodied carbon data for all building elements is unprecedented, fueled by the growth in policies and private sector commitments to measure and reduce embodied carbon, as well as major funding provided by the Inflation Reduction Act (IRA) to accelerate the adoption of low carbon materials. We encourage this innovative zoning revision to be comprehensive in order to be flexible in addressing the rapidly accelerating state of data and tools that will exist when it becomes effective.

### **Section 37-8. Effective Date of Net Zero Carbon.**

*'The provisions of Section 37-5. through Section 37-8. shall become effective on January 1, 2026.'*

We recommend making this effective prior to January 1, 2026. The proposed date creates a loss of over a year to work towards reducing emissions from buildings and meeting the City's carbon neutrality goal of 2050.

### **LCA Documentation**

The proposed language does not specify the documentation required to meet item b. We suggest providing a **reporting template**. At a minimum, biogenic carbon and module D must always be reported separately and GWP should be broken down by systems and life cycle stage, as suggested by the World Business Council for Sustainable Development (WBCSD) [Building System Carbon Framework](#).

### **Summary**

Many communities across the country, including several Massachusetts municipalities, have enacted policy that requires that projects analyze, quantify, and in some cases, reduce embodied carbon, often through zoning and special permit requirements. In our region these include Cambridge, Newton, and Brookline. The City of Boston has the opportunity to join this leadership position by requiring that embodied carbon be addressed in all buildings that are required to comply with Article 37. The path to a true zero carbon built environment includes both reducing operating energy/carbon and the embodied energy/carbon in the materials we build with.

Thank you,



**MICHELLE LAMBERT**, Assoc. AIA, LEED BD+C, CPHC, ENV SP

**CLF Boston/Northeast Hub (a Knowledge Community of the Boston Society for Architecture)**

**Research Affiliate, Carbon Leadership Forum**

**Policy Researcher, Life Cycle Lab at the University of Washington**

[www.carbonleadershipforum.org](http://www.carbonleadershipforum.org)

[www.lifecyclelab.org](http://www.lifecyclelab.org)

Boston Planning and Development Agency

May 23, 2022

Attn:

Astrid Walker-Stewart, Zoning Reform Planner

Travis Anderson, Infrastructure & Energy Planner

## **Letter of Public Comment on the 2024 Boston Net Zero Carbon Zoning Proposed Draft**

Dear Ms. Walker-Stewart and Mr. Anderson,

On behalf of the Carbon Leadership Forum, I am writing to comment on the proposed City of Boston Zero Net Carbon Zoning. The Carbon Leadership Forum, also known as CLF, has a mission to eliminate embodied carbon in buildings, materials and infrastructure to create a just and thriving future. As part of this work, CLF conducts research on materials, buildings and infrastructure and acts as a technical advisor to inform embodied carbon policy development.

Boston's draft zoning includes many critical updates on the path for our buildings to reduce their climate impacts through significant energy and carbon reductions, thereby becoming part of the solution and on track to achieve net zero emissions. The CLF is fully in support of the goals proposed for projects to achieve net zero *operational energy and emissions*. We write today to provide comments pertaining specifically to the portion of the proposed language addressing *embodied carbon* in buildings.

**We commend the City for including embodied carbon in the net zero carbon zoning proposal.** In the near-term, reducing embodied carbon is as important as addressing operational carbon because the majority of emissions from new construction between now and key climate targets will be embodied carbon. For example, a recent CLF [study](#) found that for newly constructed buildings in California, embodied emissions would contribute approximately **80%** of total emissions between now and 2030 and approximately 70% of total emissions between now and 2045. These findings are on par with what we find in other jurisdictions with strong operational emissions requirements and targets, such as Boston.

Materials used in the construction of buildings (i.e. cement, steel, aluminum, glass, bricks, insulation) are estimated to represent around 10% of total global energy-related emissions. Materials used to construct infrastructure make up an additional 10% (IEA. 2021. [Global energy use and energy-related CO2 emissions by sector, 2020](#)). Building materials are one of the largest sources of industrial emissions and therefore are critical to reducing emissions from the industrial sector.

Our comments are organized by section of the 'Draft Net Zero Carbon Zoning Proposal Summary' and the 'Net Zero Carbon Zoning Draft.' The published draft language is included below in italics, and our comments are non-italicized.

### **Summary and Proposed Impact:**

4. *‘Position Boston as a climate leader at the forefront of building sustainability, setting an example for other cities and communities to follow.’*

Massachusetts is leading the way on climate and sustainability topics in many cases. We support Boston's goal to be a climate leader and to put in place policies that will achieve the goal of carbon neutrality in the City by 2050. On the local municipal scale in Massachusetts, the City of Cambridge and the City of Newton have already adopted zoning ordinances that address embodied carbon, in addition to addressing operational energy and carbon. We support the inclusion of embodied carbon in this amendment to Article 37 and encourage Boston to align with other MA municipalities that have positioned themselves as climate leaders in addressing the impacts of the built environment.

**Key Concept Definitions:**

*‘Embodied Carbon is carbon dioxide emissions associated with the manufacturing, transportation, and construction of building materials throughout the entire life cycle of a product.’*

We recommend making some small edits to this definition to clarify and align with technical elements of how embodied carbon is calculated. Embodied carbon includes other greenhouse gas emissions besides carbon dioxide (this is why there is an “e” for “equivalent” at the end of kgCO<sub>2</sub>e). Embodied carbon also includes use and end of life phase emissions, as noted in Section 37-7.

We suggest the following definition to address these comments:

Embodied carbon is the greenhouse gas (GHG) emissions associated with the manufacturing, transportation, installation, maintenance, and disposal of construction materials used in buildings, roads, and other infrastructure. Embodied carbon is measured using a life cycle assessment and reported as global warming potential (GWP), which is quantified in kilograms of CO<sub>2</sub> equivalent (kg CO<sub>2</sub>e).

**Net Zero Carbon Zoning Draft Language:**

**Section 37-34. Green Building Requirements of Green Buildings.**

*‘Any Proposed Project subject to the provisions of this article shall be LEED Certifiable under the most appropriate LEED building rating system.’*

We suggest changing to “...under the most appropriate **and recent** LEED green building rating system.”

The LEED version 5 proposed draft is currently out for public comment and includes new Prerequisites and Credits that address embodied carbon. This version is slated to be published in Q1 of 2025, and if the embodied carbon requirements remain in the final version, it will streamline and make consistent the requirements for embodied carbon reporting and reductions across all projects pursuing LEED.

**Section 37-7. Procedures of Net Zero Carbon.**

1. *The Applicant shall demonstrate that the Proposed Project is designed to comply with the Net Zero Carbon Requirements in this article by:*

*B. Submitting a structural life cycle analysis that assesses the embodied CO<sub>2</sub>e emissions from the extraction, harvesting, fabrication, transportation, installation, maintenance, and disposal of structural building products and materials, and other construction-related activities, for any Proposed Project subject to the provisions of this section and having a gross floor area of fifty thousand (50,000) or more square feet, prior to issuance of Certification of Compliance in accordance with Large Project Review procedures of Article 80B, or Certification of Approval in accordance with Small Project Review Procedures of Article 80E, by the Boston Redevelopment Authority; and*

### **Terminology**

We recommend the following language changes to adhere to the terminology used in standards and provide clarity to practitioners completing the LCA required for this draft language:

*Submitting a "... **cradle-to-grave** life cycle **assessment** that **reports** the **global warming potential of the product, construction, use, and end-of-life stages of...**"*

OR

*Submitting a "... life cycle **assessment** that assesses the **global warming potential** (embodied CO<sub>2</sub>e emissions) from the **raw material supply, transport, manufacturing, construction, use, and end-of-life** of..."*

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Meghan Lewis, LEED AP BD+C  
Program Director, Carbon Leadership Forum  
Colorado State Architecture License #00405400



May 28, 2024

Transmitted electronically via email to [james.jemison@boston.gov](mailto:james.jemison@boston.gov)

Mr. James Arthur Jemison  
Chief of Planning and Director of the Boston Planning and Development Agency  
Boston Planning & Development Agency (BPDA)  
One City Hall Square  
Boston, MA 02201

**RE: Comments Regarding the BPDA's Draft Net Zero Carbon Zoning**

Dear Chief Jemison,

On behalf of the Longwood Collective (LC), Longwood Medical Energy Collaborative, Inc. (LMEC), and the Conference of Boston Teaching Hospitals (COBTH), we appreciated the opportunity to meet with you on April 25<sup>th</sup>, 2024, following the submittal of our preliminary comment letter regarding the BPDA's Net Zero Carbon Building (NZC) Zoning Initiative ("NZC zoning"). As you know, the Longwood Collective (LC), Longwood Medical Energy Collaborative (LMEC), and the Conference of Boston Teaching Hospitals (COBTH) collectively represent the leading academic medical centers, biomedical, educational, and cultural institutions in the City of Boston.

First and foremost, we strongly support the City of Boston's commitment to both reduce greenhouse gas emissions and address the impacts of climate change and remain deeply committed to doing everything we can to support these shared goals and position our City as a leader in these critical efforts.

Since we met last month, we have attended three office hour sessions with Travis Anderson, Astrid Walker-Stewart, Hannah Payne, and others from the BPDA and the City's Environment Department to ask clarifying questions about the recently released NZC zoning language. We are extremely grateful for the process that has allowed us to raise a number of questions and appreciate the team's thoughtful responses to the concerns that we have expressed and the clarifications we have requested. We note, however, that there continue to be fundamental questions requiring further thought and clarification. Having reviewed the proposed zoning language and attended the office hours, we feel it is critical for the BPDA to allow additional time for discussion, collaboration, and meaningful changes to the zoning language as drafted to make it workable for both the City and our institutions.



This letter seeks to 1) confirm responses we received at the office hours; 2) identify fundamental concerns, considerations, and constructive commentary to address each within the NZC language, and 3) offer a redline mark-up to the NZC language with suggested edits, to be shared under separate cover later this week.

## 1) Confirmation of Responses Received at Office Hours

Below is a summary of the answers provided by the BPDA team in response to technical questions that we raised during the Office Hours sessions. If these answers are not accurate, please clarify.

Q. How were the 2045 (hospital) and 2035 (lab) net zero dates selected for the new zoning?

A. *Based on analysis from previous consultant work and some project filings.*

Q. How does the regulation apply to mixed use buildings such as a hospital and a lab?

A. *If the primary use is hospital, with a lab, then the regulations applicable to a hospital use would prevail. BPDA staff will clarify this and add language to a guidance document. Once the building is constructed, then the BERDO blended emission rates would apply.*

Q. Under Linkage there is a separate definition for commercial vs. non-profit labs. Would that apply here?

A. *No. For-profit and non-profit labs will be treated the same under ZNC. The intent and purpose of Linkage which is related to payments for jobs and housing is different from NZC which seeks to regulate emissions.*

## 2) Outstanding Concerns with NZC as Drafted

**Need for a Relief Mechanism from NZC:** For non-profit institutions that may be unable to achieve net zero design, we encourage the BPDA to ensure that there will be mechanisms available to grant those institutions alternatives to strict compliance, either via relief or within the normal Article 80 review process. For example, the healthcare and biomedical institutions in Longwood Medical and Academic Area (LMA) are unique in that they receive their steam, electricity, and chilled water from the Medical Area Total Energy Plant (MATEP), the nearby privately-owned district energy plant that is powered primarily by natural gas. These institutions have long-term contracts with MATEP with an initial term expiring in 2051. Importantly, under BERDO, institutions subject to long-term energy contracts without the opportunity for a reopener can qualify for a Hardship Compliance Plan as an alternative compliance pathway. It is critical that the BPDA consider the potential for similar alternative compliance pathways under NZC zoning so that our member hospitals that are connected to District Energy systems have the opportunity to grow and expand as needed in the years to come.

**NZC Timeline:** NZC buildings will need to meet the recently adopted Opt-In Specialized Stretch Energy Code (Specialized Code) for Boston. Although buildings under the Specialized Code will be energy efficient (and many will be all-electric), they will still be required to comply with

BERDO obligations for electric use. This means these buildings could be financially penalized for electric use once they start operations, because the electric grid is not green. We respectfully request that BPDA allow NZC buildings to be on a 2035 timeline for zero net carbon emissions, which is tied to electrical grid parity as it relates to greenhouse gas (GHG) emissions. If grid parity is not reached in 2035, then the actual year of grid parity should be used as the date by which NZC buildings are required to be zero net carbon emissions.

**Timing for Submissions/Reporting:** It is unclear at what stages during Article 80 review the Climate Resiliency Checklist, Structural Lifecycle Analysis, and Commitment letter are each required. This importance of the timing is further explored in the comment below.

**Designing for Future, Unknown Net Zero Building Technologies Raises Practical and Legal Concerns:** The proposed zoning requires that if an institution proposes a new hospital or laboratory building, the new building must be net zero by 2045 or 2035, respectively, and meet interim carbon reduction targets before these dates. Although we very much appreciate the additional time that new hospital and laboratories buildings would have to achieve net zero (2045 and 2035 respectively), we have practical and legal concerns.

As a practical matter, how can project proponents be expected to present building designs that would show compliance with the required phase-in of Greenhouse Gas Emission requirements, and how could the BPDA be expected to evaluate such designs as part of Article 37 review? To meet the NZC requirements in 10-20 years means designing a building today incorporating technology that may be unknown or subject to change as technology evolves, which could lead to redundant or outdated equipment and/or building design and use of space that needs to be significantly retrofitted. This is both impractical and cost prohibitive in an environment where space is at a premium and prioritized for patient care and biomedical research.

As a legal matter, what would it mean for zoning compliance if a project failed to meet Greenhouse Gas Emission requirements in the future, which under current law would be a failure to comply with BERDO but not a failure to comply with zoning? We are concerned that the importing of future looking BERDO requirements into zoning will introduce unintended consequences that, over time, could call into question the zoning compliance of institutional and lab projects throughout the City.

BPDA staff informed us that the details of each design phase are being thought through. Although we look forward to receiving clarification on these critical questions, we think a better approach would be to bifurcate these requirements between Article 37 and BERDO as follows:

First, the GHG Emissions standards applicable at time of Article 37 review should correspond with the applicable standard set out in the proposed zoning – e.g., for a Hospital project filing review in 2026, the 2030-2034 BERDO GHG Emissions standards should apply at time of review. Then, once the project is placed in service, it should be required through BERDO to adhere to a modified phase-in schedule for Greenhouse Gas Emissions (e.g., during the years 2030 through 2034, the same project should be required to step up to the 2035-2039 BERDO

Greenhouse Gas Emissions standards). We recognize that this would require an update to BERDO, but we believe this is the appropriate mechanism for enforcing different future emission standards.

**Challenges of Designing a Net Zero Medical/Research Facility.** The following reiterates and adds to points made in our April 11, 2024, letter that further describe the significant challenges in meeting NZC requirements for Boston's teaching hospitals and research facilities.

Experienced Mechanical/Electrical/Plumbing (MEP) design firms are having difficulty designing a Net Zero Carbon hospital because of the specialized equipment requirements of modern hospitals. Hospitals and other healthcare facilities have equipment requirements imposed by regulation such as dedicated and redundant Air Handling Units (AHUs) for operating rooms, pharmacies, central processing, and pathology labs. Other required equipment includes reverse osmosis deionization systems, medical air compressors, medical and lab vacuum pumps, and waste anesthetic gas disposal vacuum pumps.

With electrification there are additional space requirements for dedicated air source heat pumps, chiller heat recovery systems, more and larger emergency generators, and additional switchgear electrical vaults. There are requirements for emergency back-up sources of energy, and, as needed, natural gas peaking equipment. Collectively, these requirements are essential to preserving lifesaving capabilities at all times, and particularly in the event of unexpected disaster or emergency. These also add to space requirements and confront the feasibility of a net zero carbon building. The system space requirements and complexity to build an urban net zero health care facility are truly challenging from an MEP and cost perspective. These challenges need to be understood before enacting new zoning requirements and balanced against the need for our facilities to fulfill their 24/7/365 missions.

**Exemptions.** Projects exempt from the January 1, 2026 deadline are those that have received zoning relief, a building or use permit and/or have already been approved by the BPDA. Given the significant cost incurred by institutions to develop submittals, we request that projects that have already been filed, or have otherwise started the permitted process, also be exempt for this window of time.

We have additional comments regarding proposed reporting requirements:

- **Embodied Carbon:** We understand that the BPDA may promulgate regulations to define the need for embodied carbon accounting (via a Structural Lifecycle Analysis) using specific modeling. Given the fact that the BPDA will continue to require LEED certification as a part of the Large Project Review process, we recommend that the city use the LEED embodied carbon methodology. Some of our members have offered to participate in stakeholder testing of this approach as a pilot project.

- **Guidance:** The documents, checklist, and Net Zero GHG Emissions Ready commitment letter need to be signed by an accredited professional. Please define the accreditations required as a part of the A80 submission guidance or regulations.

### 3) Suggested Redline Edits to ZNC

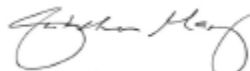
We are working with our members to complete a set of specific suggested edits to the proposed zoning language consistent with the ideas offered in this letter, and we intend to share those edits with you under separate cover later this week. We would be happy to discuss these edits with the BPDA via phone or zoom and appreciate your consideration of them.

We appreciate the opportunity to offer these comments and look forward to working with you to achieve our shared goals in the coming days and beyond.

Sincerely,



**Tom Yardley**  
Vice President of Area  
Planning & Development  
Longwood Collective



**Gretchen May**  
President & Executive Director  
Longwood Medical Energy  
Collaborative, Inc



**Patricia McMullin**  
Executive Director  
Conference of Boston  
Teaching Hospitals

CC:

Kathleen Onufer, Deputy Director of Zoning  
Aimee Chambers, Director of Planning  
Hannah Payne, Director of Carbon Neutrality, Boston Environment Department  
Aladdine Joroff, Director of Climate Policy, City of Boston  
Travis Anderson, Infrastructure & Energy Planner  
Astrid Walker-Stewart, Zoning Reform Planner



May 28, 2024

The American Wood Council (AWC) appreciates the opportunity to provide the following comments in response to the Net Zero Carbon Zoning Draft, which establishes embodied carbon reporting for building projects in the City of Boston.

AWC is the voice of North American wood products manufacturing, an industry that provides over 450,000 men and women in the United States with family-wage jobs. AWC represents 87 percent of the structural wood products industry, and our members make products that are essential to everyday life that are derived from a renewable resource that absorbs and sequesters carbon for many decades. Our staff experts develop state-of-the-art engineering data, technology, and standards for wood products to ensure their safe and efficient design, as well as provide information on wood design, green building, and environmental regulations.

With buildings contributing approximately 39 percent of the United States' annual carbon dioxide emissions<sup>1</sup>, and building materials contributing approximately 11% to these emissions, it is imperative that steps be taken to address the climate impacts of the built environment, particularly embodied carbon emissions. AWC is a strong advocate of a whole building life cycle assessment (WBLCA) approach to effectively design embodied carbon out of buildings. This approach allows for carbon to be designed out at building design, allowing architects, building owners, and designers to construct buildings in a manner that best meets the project goals.<sup>2</sup> The result is a building that has a lower embodied carbon footprint compared to a similar, baseline building and an architect and building community which retains the freedom and flexibility to choose the best materials and systems for their own projects.

AWC commends the City of Boston for considering WBLCA as a mechanism to report the embodied carbon emissions of building projects larger than 50,000 ft<sup>2</sup>. We write to express our support for WBLCA approaches to reducing embodied carbon in the built environment and the City's step forward in recognizing how WBLCA can be used in reporting.

In Section 37-7, 1.b., AWC recommends that the structural life cycle analysis evaluates the life cycle assessment of a building's structure and enclosure that assesses, at a minimum, the global warming potential (GWP) impact category, using nationally or internationally recognized standards that conform to the International Organization for Standardization standards 14040 and 14044, to help building designers focus their efforts to capture the greatest overall reduction in embodied emissions of the project.

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<sup>1</sup> Environmental and Energy Study Institute, "Buildings & Built Infrastructure," <https://www.eesi.org/topics/built-infrastructure/description>

<sup>2</sup> For example, this study demonstrates how WBLCA provided for significant carbon reductions of building with mass timber in an office building in Denver, Colorado while still meeting project goals: KL&A Engineers and Builders and Adolfson & Peterson, [Platte Fifteen 2021 Life Cycle Assessment](https://www.nordic.ca/data/files/publication/multilang_file/Platte15LCACaseStudy_July2021_KLA.pdf), (July 2021), p. 5. {HYPERLINK: [https://www.nordic.ca/data/files/publication/multilang\\_file/Platte15LCACaseStudy\\_July2021\\_KLA.pdf](https://www.nordic.ca/data/files/publication/multilang_file/Platte15LCACaseStudy_July2021_KLA.pdf) }



AWC appreciates the opportunity to weigh in on this policy and the overall embodied carbon emissions reduction goals in the City of Boston. We would be happy to assist on any technical advisory committees established to help guide the implementation of policies with regards to structural wood products. We also welcome any questions you may have and would appreciate the opportunity to continue these important climate conversations.

Again, we thank you for the work you are doing in Boston to help address climate change and embodied carbon in the built environment. If you have any questions, please feel free to contact me at the number below. Thank you for your consideration.

Sincerely,

*W Layden*  
Will Layden

Vice President, Government Affairs  
American Wood Council  
Email: [wlayden@awc.org](mailto:wlayden@awc.org)  
Phone: 202-463-2788



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Dana E. Warren  
David Wilkinson

Kate Dineen  
**PRESIDENT & CEO**

Richard A. Dimino  
**PRESIDENT EMERITUS**

\* Former Chair

Arthur Jemison  
Chief of Planning and Director of the Boston Planning and Development Agency  
One City Hall Square  
Boston, MA 02201

May 28th, 2024

**RE: A Better City’s Recommendations for Zero Net Carbon (ZNC) Zoning Draft Regulations**

Chief Jemison:

On behalf of A Better City’s nearly 130 member businesses and institutions, thank you for your efforts to ensure that the City of Boston is on track to meet its climate goal of net zero emissions by 2050. We are grateful to be a part of the Zero Net Carbon (ZNC) zoning process.

A Better City’s recommendations build off our preliminary comments sent for consideration on March 5<sup>th</sup>, 2024, that include: a suggested timeline for a ZNC building to meet net zero emissions; and the review process not requiring LEED certification.

A Better City’s staff and members would be happy to meet with you and your team to discuss any of these recommendations and to learn how we can best support this effort in the coming weeks and months.

Thank you for your consideration, for your leadership, and for your commitment to Boston’s climate goals. Please reach out to Yve Torrie ([ytorrie@abettercity.org](mailto:ytorrie@abettercity.org)) with any comments or questions.

Thank you,

*Y. L. Torrie*

Yve Torrie  
Director of Climate, Energy & Resilience  
A Better City

Cc: Aimee Chambers, Director of Planning  
Travis Anderson, Senior Infrastructure and Energy Planner  
Astrid Walker-Stewart, Urban Planner  
Hannah Payne, Director of Carbon Neutrality

## 1) A Suggested Timeline for a ZNC Building to Meet Net Zero Emissions

We are grateful that hospitals, general manufacturing, and labs have been exempted from the requirement to be ZNC at the time of a building's occupation but remain concerned that all other buildings will continue to be penalized for a dirty grid. ZNC buildings will need to meet the recently adopted Opt-In Specialized Stretch Energy Code (Specialized Code) for Boston, so we expect them to be well within BERDO compliance thresholds. As the Specialized Code only allows a small amount of fossil fuels, we assume any Alternative Compliance Payments for fossil fuel use under BERDO to be small. However, although buildings under the Specialized Code will be super energy efficient (and many will be all-electric), they will still be required to comply with BERDO obligations for electric use by choosing Power Purchase Agreements/Renewable Energy Credits/Community Choice Aggregation, etc., because the grid is not green. In effect, they are being financially penalized for projects once they are complete and start operations, because the electric grid is not green. A Better City, therefore, recommends that ZNC buildings have a different timeline to achieve zero net carbon emissions than at initial operation. Instead, ZNC buildings should be on a 2035 timeline for zero net carbon emissions (as opposed to at completion/initial operation for BERDO buildings), which is tied to electrical grid parity with natural gas as it relates to greenhouse gas (GHG) emissions. Per BERDO's approved policies from December 2023, [Appendix A](#) (page 20) "Projected Grid Emissions Factors," estimates electric grid parity with [natural gas GHG emissions](#) (page 7) in 2035. If grid parity is not reached in 2035, then the actual year of grid parity should be used as the date by which ZNC buildings are required to be zero net carbon emissions.

***A Better City recommends that ZNC buildings be on a net zero carbon emissions by 2035 timeline so that ZNC buildings are not penalized for a dirty grid. If grid parity takes longer than the projected goal of 2035, then the date by which ZNC buildings are obligated to reach zero net carbon emissions should change accordingly.***

## 2) The Review Process Not Requiring LEED Certification

The current ZNC Zoning draft regulations require LEED certification under the most appropriate LEED building rating system. A Better City members continue to agree that a LEED framework for review is unnecessary if the project is already meeting the Specialized Code, as LEED is going to have items that aren't relevant to carbon or energy, and it seems out of place for ZNC zoning. We therefore suggest that LEED certification is redundant and could add confusion to the design process because LEED updates and Stretch Codes won't always update concurrently, and the review process could be slowed down if LEED is required.

***A Better City recommends that LEED certification is not required as part of ZNC Zoning.***



Timestamp	Name	Feedback:
5/1/2024 20:05:27	Cole	<p>Please also factor in transportation to and from the building. Parking drives demand for driving: <a href="https://www.bloomberg.com/news/articles/2016-01-12/study-the-strongest-evidence-yet-that-abundant-parking-causes-more-driving">https://www.bloomberg.com/news/articles/2016-01-12/study-the-strongest-evidence-yet-that-abundant-parking-causes-more-driving</a></p> <p>VMT is strongly associated with emissions. <a href="https://ssti.us/wp-content/uploads/sites/1303/2015/06/Ganson-VMT-Impacts-on-the-Environment-Human-Health-and-Fiscal-Health-Working-Paper-1.pdf">https://ssti.us/wp-content/uploads/sites/1303/2015/06/Ganson-VMT-Impacts-on-the-Environment-Human-Health-and-Fiscal-Health-Working-Paper-1.pdf</a></p> <p>Parking garages can never truly be net zero because of this. Please factor this into the analysis.</p> <p>Incentivize developments that include bike parking, and add bike lanes, or provide transit passes to the residents.</p>
5/2/2024 16:32:16	John Quatrala	<p>I attended the April 29, 2024 meeting and I was told that parking will continue to be a separate issue. While I understand the need to keep regulations separate, allowing a large development to be called fossil fuel free but still allow its garage to accommodate hundreds of fossil fuel autos is inconsistent with the goal of carbon neutrality. Why not require 50%-75% EV vehicles?</p>
5/3/2024 15:48:08	Robert Tumposky	<p>I hope you will keep the requirement for at least LEED 4.1 gold. I also want to see free standing medical clinics fall under the rules. Putting all the requirements in place by 1/1/2025 seems essential to me.</p>
5/6/2024 15:05:22	James Kitchin	<p>Firstly I really commend this effort so thank you. My comments are:</p> <ol style="list-style-type: none"> <li>1. I think LEED is a helpful certification to align with but just LEED Certified is not an onerous building design and would not require any conformance with the climate objectives. ILFI Zero Carbon or LEED Zero Carbon are directly related to climate objectives. You can see a good comparison of certifications here <a href="https://www.buildinggreen.com/news-analysis/review-current-net-zero-energy-and-net-zero-carbon-certification-programs">https://www.buildinggreen.com/news-analysis/review-current-net-zero-energy-and-net-zero-carbon-certification-programs</a></li> <li>2. Is this an opportunity to become real leaders through more than just a carbon lens? What if there was a net zero biodiversity requirement like the UK has released? <a href="https://www.gov.uk/guidance/understanding-biodiversity-net-gain">https://www.gov.uk/guidance/understanding-biodiversity-net-gain</a></li> <li>3. While there is no standard way of measuring embodied carbon there are hundreds of different methodologies so we should just pick one. Aligning with LEED or LBC is helpful with this respect.</li> <li>4. How does this link into historic preservation? I don't know enough about this but it is important that zoning requirements still encourage existing buildings to be adapted and become more energy efficient, without it being easier for someone to demolish them and start again just to meet energy and zoning requirements.</li> </ol>
5/10/2024 19:08:58	Rickie Harvey	<p>May 10, 2024</p> <p>To Mayor Wu and the NZC Zoning Team,</p> <p>First, thank you to Mayor Wu and to the current NZC Zoning team for getting this initiative once again to the brink of being ready to go to the BPDA Board and Commission. I appreciate having the opportunity to make comments on the latest draft of what was originally the ZNC Building Zoning Initiative and am grateful to the BPDA and others involved in doing this hard work as well as your willingness to seriously consider the comments herein.</p> <p>Among the reasons I was given by erstwhile members of the administration over the past two years for the delay in moving this important zoning initiative forward was that "we want it to be the very best and strongest update possible" so that additional updates would not be necessary soon after passing it into zoning law. Nearly two years later, I have to question whether this has been achieved, especially in light of the months that have passed and the several areas where the 2022 draft has been weakened in the current draft. It is in the spirit of making this the strongest update possible that I offer the following comments.</p> <p><b>EMBODIED CARBON.</b> I was told 15 months ago (and since) that it was a priority to include strong embodied carbon requirements in this zoning update. This is even more the case today. Additionally, LCA of embodied carbon is sufficiently more familiar within the industry now, many months later, that it will not be the impediment to development that it was once considered to be. Therefore, please include meaningful, strong, and goal-oriented requirements for measuring and limiting embodied carbon in new Article 37 buildings. I don't pretend to be an expert on how best to measure and track embodied carbon, but you have experts at the ready to help you; they made up the Embodied Carbon TAG who consulted for the 2022 draft. In addition, multiple tools are readily available—including Tally, OneClickLCA, and others—that are free, easy to use, and already widely employed by architects, engineers, and designers. You can find out more at the Carbon Leadership Forum website: <a href="http://carbonleadershipforum.org">carbonleadershipforum.org</a>.</p> <p><b>LEED.</b> Please do not reduce the LEED requirement from LEED Gold (2022 draft) to LEED Certified—two giant steps down. I understand that you are anticipating LEED v. 5, but that is not a reason to make this reduction in strength of the LEED requirement. Boston needs to show some leadership here, not have a weaker requirement than nearby cities. Whatever the reasoning behind using LEED Certified, please reconsider. This falls exceedingly short as a requirement, especially in light of your currently proposed effective date of 2026 and the requirements of the Opt-In Specialized Stretch Code.</p> <p><b>And about that EFFECTIVE DATE.</b> Please do not put off implementation until 2026. The time for this zoning law is now. (Actually, the time was two years ago, but here we are.) Please move the effective date for this initiative to July 2025. You can do this. Everyone in the building community has known this initiative was coming; they have been involved in devising it; they are prepared; there will not be chaos because of it. By your own admission, 39 projects in the past two years have adopted the ZNC requirements in the 2022 draft by choice. Please, please, please be bold enough to move the effective date to July 2025.</p> <p>Again, thank you for your time in considering these comments. They are submitted out of no self-interest; they come to you only from a place of ongoing efforts to get Boston to reduce the carbon emissions from our city's buildings. I have no other agenda than a desire to get this done now and to get it done with strength (unlike the requests you will receive from many others who will submit comments). Let's put the residents of Boston first and stop construction of new buildings that use fossil fuels.</p> <p>Sincerely, Rickie Harvey (she/her) Boston</p>

5/14/2024 10:02:19	Valinda Chan	<p>Dear BPDA:</p> <p>My name is Valinda Chan and I live in Boston.</p> <p>We urge the city to quickly pass and implement the NZC Zoning Code as soon as possible. It's the last unrealized goal of the 2019 Climate Action Plan for buildings. We cannot continue to delay the NZC Zoning Code's implementation until 2026. Delay will result in millions of square feet of carbon polluting buildings – a delay that is too costly to our children's health and future.</p> <p>Sincerely, Valinda</p>
5/14/2024 10:04:20	Shaina Tenentes	<p>Dear BPDA,</p> <p>My name is Shaina Tenentes and I live in Boston. As a mother of two young children, I am worried about climate change and its implications for our children's long-term health.</p> <p>We urge the city to quickly pass and implement the NZC Zoning Code as soon as possible. It's the last unrealized goal of the 2019 Climate Action Plan for buildings. We cannot continue to delay the NZC Zoning Code's implementation until 2026. Delay will result in millions of square feet of carbon polluting buildings – a delay that is too costly to our children's health and future.</p> <p>Sincerely, Shaina Tenentes</p>
5/14/2024 10:28:57	Anna Sommers	<p>My name is Anna Sommers and I live in Boston.</p> <p>Given climate change, I urge the city to quickly pass and implement the NZC Zoning Code as soon as possible. It's the last unrealized goal of the 2019 Climate Action Plan for buildings. We cannot continue to delay the NZC Zoning Code's implementation until 2026. Delay will result in millions of square feet of carbon polluting buildings – a delay that is too costly to our children's health and future.</p> <p>Sincerely, Anna Sommers</p>
5/14/2024 10:30:22	Laura Babbitt	<p>Dear BPDA:</p> <p>My name is Laura Babbitt and I live in Boston. I am worried about climate change because I want my kids to inherit a healthy, stable planet.</p> <p>We urge the city to quickly pass and implement the NZC Zoning Code as soon as possible. It's the last unrealized goal of the 2019 Climate Action Plan for buildings. We cannot continue to delay the NZC Zoning Code's implementation until 2026. Delay will result in millions of square feet of carbon polluting buildings – a delay that is too costly to our children's health and future.</p> <p>Sincerely, Laura Babbitt</p>
5/14/2024 10:42:07	Elizabeth Tamton	<p>Dear BPDA:</p> <p>My name is Elizabeth Tamton and I live in Jamaica Plain. I am committed to helping preserve a livable climate for my kids and children in the community. Each new building will outlive me and our children and we cannot continue to burn gas and contribute to carbon emissions.</p> <p>We urge the city to quickly pass and implement the NZC Zoning Code as soon as possible. It's the last unrealized goal of the 2019 Climate Action Plan for buildings. We cannot continue to delay the NZC Zoning Code's implementation until 2026. Delay will result in millions of square feet of carbon polluting buildings – a delay that is too costly to our children's health and future.</p> <p>Sincerely, Elizabeth Tamton</p>
5/14/2024 10:54:12	Francesca Ippolito Riley	<p>I fully support this long overdue proposal. Developers have not stepped up to join with us for a cleaner, better environment for us. More importantly our children. This is not impossible but highly recommended and doable. Do the right thing. We are Watching, and clearly involved with resolve.... Francesca Ippolito Riley</p>
5/14/2024 11:03:30	Dawn Kramer	<p>Dear BPDA:</p> <p>My name is Dawn Kramer, and I live in Roslindale (Boston.) I am worried about climate change because I have five grandchildren, and I want them and all children to have a livable world as they grow up.</p> <p>We urge the city to quickly pass and implement the NZC Zoning Code as soon as possible. It's the last unrealized goal of the 2019 Climate Action Plan for buildings. We cannot continue to delay the NZC Zoning Code's implementation until 2026. Delay will result in millions of square feet of carbon polluting buildings – a delay that is too costly to our children's health and future. Asthma is a documented side effect of carbon emissions, and one of my grandchildren already has asthma.</p> <p>Thank you for doing the right thing.</p> <p>Sincerely,</p>

5/14/2024 11:07:55	Gregory L. Caplan	<p>Dear BPDA:</p> <p>My name is Gregory Caplan and I live in Boston. I am aware that the climate catastrophe is In Progress. As persons responsible for planning some of the essential features of how we will be living in our environment going forward, you have to take our dire predicament seriously. Please do not let the deluded minds of so many people of wealth and power blind you to the crisis.</p> <p>Our city must quickly pass and implement the NZC Zoning Code as soon as possible. It's the last unrealized goal of the 2019 Climate Action Plan for buildings. We cannot continue to delay the NZC Zoning Code's implementation until 2026.</p> <p>Delay will result in millions of square feet of carbon polluting buildings – a delay that is too costly to our children's health and future and that will only help accelerate the disruption of our natural support systems!!</p> <p>Sincerely, Gregory L Caplan</p>
5/14/2024 11:15:01	Miranda Dotson	<p>Dear BPDA:</p> <p>My name is Miranda and I live in Boston. I am worried about climate change because I don't know where it will be safe for me or my loved ones to live in the decades to come.</p> <p>We urge the city to quickly pass and implement the NZC Zoning Code as soon as possible. It's the last unrealized goal of the 2019 Climate Action Plan for buildings. We cannot continue to delay the NZC Zoning Code's implementation until 2026. Delay will result in millions of square feet of carbon polluting buildings – a delay that is too costly to our children's health and future.</p> <p>Sincerely, Miranda Dotson</p>
5/14/2024 11:43:11	Dave Newbold	<p>Dear BPDA:</p> <p>I live in Boston. I am worried about climate change because I fear the havoc of extremem weather, displaced people and ecosystem damage; not to mention my daughter who lives here too.</p> <p>We urge the city to quickly pass and implement the NZC Zoning Code as soon as possible. It's the last unrealized goal of the 2019 Climate Action Plan for buildings. We cannot continue to delay the NZC Zoning Code's implementation until 2026.</p> <p>Delay will result in millions of square feet of carbon polluting buildings – a delay that is too costly to our children's health and future. Please do not give into the building and developer lobby - they need to be pushed to do the right thing.</p> <p>Sincerely, Dave Newbold</p>
5/14/2024 12:08:33	Samantha Vaughan	<p>Dear BPDA:</p> <p>My name is Samantha Vaughan and I live in Boston. I am worried about climate change because I already had to move away from my home and CA and to Boston because of really bad wildfires and smoke.</p> <p>We urge the city to quickly pass and implement the NZC Zoning Code as soon as possible. It's the last unrealized goal of the 2019 Climate Action Plan for buildings. We cannot continue to delay the NZC Zoning Code's implementation until 2026. Delay will result in millions of square feet of carbon polluting buildings – a delay that is too costly to our children's health and future.</p> <p>Sincerely, Samantha Vaughan</p>
5/14/2024 12:23:47	Anuradha Desai	<p>Dear BPDA:</p> <p>My name is Anuradha Desai and I live in Boston. I am worried about climate change because of its impact on our planet and for the future generations.</p> <p>We urge the city to quickly pass and implement the NZC Zoning Code as soon as possible. It's the last unrealized goal of the 2019 Climate Action Plan for buildings. We cannot continue to delay the NZC Zoning Code's implementation until 2026. Delay will result in millions of square feet of carbon polluting buildings – a delay that is too costly to our children's health and future.</p> <p>Sincerely, Anuradha Desai</p>
5/14/2024 12:28:48	Pamela Haran	<p>Dear BPDA:</p> <p>My name is Pamela Haran, and I live in Boston. I am worried about climate change because we already see the damage it is creating, and it is only going to get worse if we don't act now. Are children are relying on us to do something, do anything.</p> <p>We urge the city to quickly pass and implement the NZC Zoning Code as soon as possible. It's the last unrealized goal of the 2019 Climate Action Plan for buildings. We cannot continue to delay the NZC Zoning Code's implementation until 2026. Delay will result in millions of square feet of carbon polluting buildings – a delay that is too costly to our children's health and future.</p> <p>Sincerely, Pamela Haran</p>

5/14/2024 13:13:11	Neeru Bhardwaj	<p>Dear BPDA:</p> <p>My name is Neeru Bhardwaj and I live in West Roxbury. I am extremely worried about the climate change and that we are falling behind in efforts to curtail our greenhouse gas emissions.</p> <p>We urge the city to quickly pass and implement the NZC Zoning Code as soon as possible. It's the last unrealized goal of the 2019 Climate Action Plan for buildings. We cannot continue to delay the NZC Zoning Code's implementation until 2026. Delay will result in millions of square feet of carbon polluting buildings – a delay that is too costly to our health, and next generations' health and future.</p> <p>Best Regards, Neeru Bhardwaj</p>
5/14/2024 13:17:30	Geri Medina	none
5/14/2024 13:20:36	Diane	<p>My name is Diane Valle and I live in Charlestown. I am worried about climate change because of massive heat islands being built as mature tree canopies are destroyed, open greenspace is replaced with paving increasing stormwater risk, temperatures rise and residents are hospitalized with heat stroke, and asthma/respiratory and cardiac disease rates increase as developers and the City give lip service to true climate resiliency.</p> <p>Our children and grandchildren deserve clean air and a clean planet. Stop building luxury buildings that most Bostonians can not afford, as billionaires get richer. Charlestown is a vulnerable flood zone without a resilient coast, without adequate open greenspace for recreation, and urban wilds for mature tree canopies to act as a buffer for toxic particulate matter: THAT is climate resilience. Stop building because too many buildings in Boston, luxury housing, bio labs, former offices, retail, etc are vacant.</p> <p>Protect the people who live in Boston. What does it take for the people to be heard? Must the children gasp to be heard? I pray not.</p> <p>We urge the city to quickly pass and implement the NZC Zoning Code as soon as possible. It's the last unrealized goal of the 2019 Climate Action Plan for buildings. We cannot continue to delay the NZC Zoning Code's implementation until 2026. Delay will result in millions of square feet of carbon polluting buildings – a delay that is too costly to our children's health and future.</p> <p>Sincerely, Diane Valle</p>
5/14/2024 13:24:39	Clark Freifeld	<p>To Whom It May Concern:</p> <p>I am a software developer for a company that develops grid efficiency software. While there are certainly challenges in updating the grid, we can address them. Electric grid issues should not get in the way of passing a net zero carbon zoning code.</p> <p>Delay in implementing the zoning code will result in millions of square feet of carbon polluting buildings – a delay that is unnecessary. I urge you to implement the Net Zero Zoning Code as soon as possible and no later than July 1, 2025.</p> <p>Sincerely, Clark Freifeld, PhD</p>
5/14/2024 13:46:17	Sefira Bell-Masterson	<p>Dear BPDA:</p> <p>My name is Sefira Bell-Masterson and I live in Boston. I am worried about climate change because of the impacts it will have on our city. From flooding in the seaport to heat related effects for our neighbors in heat deserts to extreme weather disrupting school for kids we will all be impacted by it. Not to mention as our tax dollars go more and more to disaster response, we will have less to spend on schools, libraries, and other services.</p> <p>I urge the city to quickly pass and implement the NZC Zoning Code as soon as possible. It is estimated that the code will cut 19% of building emissions. We cannot put off the NZC Zoning Code's implementation until 2026. Delay will result in millions of square feet of carbon polluting buildings – a delay that is too costly to our children's health and future.</p> <p>Sincerely, Sefira Bell-Masterson</p>
5/14/2024 14:20:07	Casey Mullen	<p>Dear BPDA:</p> <p>My name is Casey Mullen and I live in Boston. I am worried about climate change because I want my child and all future generations to have access to a safe and healthy environment, free from climate related disasters and injustices.</p> <p>We urge the city to quickly pass and implement the NZC Zoning Code as soon as possible. It's the last unrealized goal of the 2019 Climate Action Plan for buildings. We cannot continue to delay the NZC Zoning Code's implementation until 2026. Delay will result in millions of square feet of carbon polluting buildings – a delay that is too costly to our children's health and future.</p> <p>Sincerely, Casey Mullen, PhD</p>
5/14/2024 14:49:34	jane kelley	<p>Greetings:</p> <p>I urge the city to pass and implement the Net Zero Carbon Zoning (NZC) Code as soon as possible. It's the last unrealized goal of the 2019 Climate Action Plan for buildings. We cannot continue to delay the NZC Zoning Code's implementation until 2026. Delay will result in millions of square feet of carbon polluting buildings – a delay that is too costly to our children's health and future.</p> <p>Please take action now! Thank you.</p> <p>Yours sincerely, Jane Kelley</p>

5/14/2024 15:01:38	Miriam Rowan	<p>Dear BPDA:</p> <p>My name is Miriam Rowan and I live in Boston. As a new mother, I am greatly worried about climate change and how it will impact the opportunities and health afforded to my child and his peers over the course of their lives. Climate change was something of concern even when I was a kid in the 90s, and yet so little has been done at the local, state, and federal government levels to mitigate the effects. Immediate policies are critically needed here.</p> <p>We urge the city to quickly pass and implement the NZC Zoning Code as soon as possible. It's the last unrealized goal of the 2019 Climate Action Plan for buildings. We cannot continue to delay the NZC Zoning Code's implementation until 2026. Delay will result in millions of square feet of carbon polluting buildings – a delay that is too costly to our children's health and future.</p> <p>Sincerely, Miriam Rowan</p>
5/14/2024 16:01:38	Lauren Ockene	<p>Dear BPDA:</p> <p>My name is Lauren Ockene. I live in Boston. I know that our city needs to be far more proactive about climate change, especially about decreasing our emissions. Our children's chances and opportunities to live happily and in good health are already far less than our own we're at their ages.</p> <p>I urge the city to quickly pass and implement the NZC Zoning Code as soon as possible. It is estimated that the code will cut 19% of building emissions. We cannot put off the NZC Zoning Code's implementation until 2026. Delay will result in millions of square feet of carbon polluting buildings – a delay that is too costly to our children's health and future.</p> <p>Sincerely, lauren Ockene</p>
5/14/2024 16:06:20	Sharon Berke	<p>Dear BPDA:</p> <p>My name is Sharon Berke and I live in Boston. My list of reasons I am worried about climate change is long. There is no turning back and we have let it get too far along already. The effects are being felt and it will be utterly devastating to so many— the poor and disenfranchised more so. I feel we are frogs in the pot of water.</p> <p>I urge the city to quickly pass and implement the NZC Zoning Code as soon as possible. It is estimated that the code will cut 19% of building emissions. We cannot put off the NZC Zoning Code's implementation until 2026. Delay will result in millions of square feet of carbon polluting buildings – a delay that is too costly to our children's health and future.</p>
5/14/2024 16:12:23	Mira Brown	<p>I live in Boston, And have lived here for over 45 years. I am worried about climate change because, while the mayor and the city government are trying to make dealing with the climate emergency of priority, we have seen nothing like the enormous economic social and consumer habit changes that are necessary to bring down emissions fast enough. Boston is one of the most vulnerable coastal cities in the world.</p> <p>I urge the city to quickly pass and implement the NZC Zoning Code as soon as possible. It is estimated that the code will cut 19% of building emissions. We cannot put off the NZC Zoning Code's implementation until 2026. Delay will result in millions of square feet of carbon polluting buildings – a delay that is too costly to our children's health and future. We cannot afford to build more infrastructure that will increase carbon emissions.</p>
5/14/2024 17:21:01	Paula Chasan	<p>My name is Paula Chasan and I live in Boston. I am worried about climate change because we can already see the effects of more intense and destructive weather, inundation of low -lying land, and devastating impacts on wildlife, plants and our own species.</p> <p>I urge the city to pass and put into action, as soon as possible, the NZC Zoning Code. This code will cut an estimated 19% of building emissions. Do not delay getting this Code passed and working for us! A delay until 2026 will result in millions of square feet of buildings emitting carbon pollution. Our childrens' health and our future need action now. No delay!</p> <p>Sincerely, Paula Chasan</p>
5/14/2024 17:21:34	David Weinstein	<p>My name is David Weinstein and I live in Jamaica Plain. I am very worried about climate change because I want my children to be able to raise families in a safe and healthy environment, which I fear will not be possible because of the climate crisis.</p> <p>I urge the city to quickly pass and implement the NZC Zoning Code as soon as possible. It is estimated that the code will cut 19% of building emissions. We cannot put off the NZC Zoning Code's implementation until 2026. Delay will result in millions of square feet of carbon polluting buildings – a delay that is too costly to our children's health and future.</p>
5/14/2024 17:40:37	Max Hunter	<p>I urge the city to quickly pass and implement the NZC Zoning Code. We cannot continue to delay the NZC Zoning Code's implementation until 2026. Delay will result in millions of square feet of carbon polluting buildings – a delay that is too costly to our children's health and future.</p> <p>Sincerely, Maxine Hunter</p>

5/14/2024 18:07:57	Irene M. Desharnais	I live at 31 Hall St. in Jamaica Plain. I have watched with joy, at the new housing along Washington Street from Forest Hills beyond Green Street. I have also watched with great dismay that no roof has solar panels. I complained to Mayor Walsh to no avail. I am REALLY disappointed that Mayor Wu has ignored Mothers Out Front about the NZC Zoning Code.
5/14/2024 20:24:52	Nancy Ryan	Dear BPDA:  My name is Nancy Ryan and I live in Boston. I am worried about climate change because I am raising my two sons and want them to be able to lead a healthy and full life well into the future in this city. One of my sons has severe asthma and he already has to alter his life to accommodate this disease. Please do your part to reduce emissions in the city of Boston as soon as possible for children and families in Boston.  I urge the city to quickly pass and implement the NZC Zoning Code as soon as possible. It is estimated that the code will cut 19% of building emissions. We cannot put off the NZC Zoning Code's implementation until 2026. Delay will result in millions of square feet of carbon polluting buildings – a delay that is too costly to our children's health and future.  Sincerely, Nancy Ryan
5/14/2024 21:03:25	Jana Pickard-Richardson	Dear BPDA:  My name is Jana and I live in Boston. I am worried about climate change because I live on planet Earth, I have kids, and I believe the scientists who tell us that we have just a couple years left to DRASTICALLY reduce our carbon emissions if we want to preserve a liveable climate.  We urge the city to quickly pass and implement the NZC Zoning Code as soon as possible. It's the last unrealized goal of the 2019 Climate Action Plan for buildings. We cannot continue to delay the NZC Zoning Code's implementation until 2026. Delay will result in millions of square feet of carbon polluting buildings – a delay that is too costly to our children's health and future.  Sincerely, Jana Pickard-Richardson
5/14/2024 22:45:07	Mary Boyle	Dear BPDA:  My name is Mary Boyle and I live in Boston. I am worried about climate change because because the evidence of climate change increases every day. I worry that the lose of pollinators and arable land will cause food shortages. I worry that wildlife will not be able to adapt quickly enough and that there will be extinctions. I worry that increasing temperatures will necessitate migration leading to crowding and conflicts. I worry that those with the fewest resources will suffer the most.  I urge the city to quickly pass and implement the NZC Zoning Code as soon as possible. It's the last unrealized goal of the 2019 Climate Action Plan for buildings. We cannot continue to delay the NZC Zoning Code's implementation until 2026. Delay will result in millions of square feet of carbon polluting buildings – a delay that is too costly to our children's health and future.  Sincerely, Mary Boyle
5/15/2024 7:14:31	Gabrielle McFrane	Hi, My name is Gabbie, I've lived in Boston for 15 years now and I'm worried about climate change because I fear with all the climate migration that will have to happen, our nation will turn into a very hostile place full of fear and anger. My six year old son and all kids deserve a healthy environment to grow up in. I urge the city to quickly pass and implement the NZC Zoning Code as soon as possible. It is estimated that the code will cut 19% of building emissions. We cannot put off the NZC Zoning Code's implementation until 2026. Delay will result in millions of square feet of carbon polluting buildings – a delay that is too costly to our children's health and future.  Sincerely, Gabbie McFrane
5/15/2024 7:24:09	Virginie Esain	My name is Virginie Esain and I live in Boston. I am worried about climate change because of the many consequences it will have on food security, catastrophic climate events, biodiversity and human health as my two elementary school age children grow and try to build their own life.  I urge the city to quickly pass and implement the NZC Zoning Code as soon as possible. It is estimated that the code will cut 19% of building emissions. We cannot put off the NZC Zoning Code's implementation until 2026. Delay will result in millions of square feet of carbon polluting buildings – a delay that is too costly to our children's health and future.  Sincerely, Virginie Esain
5/15/2024 7:29:37	Meg Scarborough	This is great! Please pass

5/15/2024 7:37:12	Virginia Marcotte	<p>2. Modifying the note below and submit it.</p> <p>Dear BPDA:</p> <p>My name is Virginia Marcotte and I live in Boston. I am worried about climate change because one can just look around to see the effects of global warming --no snow this winter, earlier greening of our trees, not to mention looking at extreme weather events world wide.</p> <p>Please pass and implement the NZC Zoning Code quickly. It's the last unrealized goal of the 2019 Climate Action Plan for buildings. We cannot continue to delay the NZC Zoning Code's implementation until 2026. That delay will result in millions of square feet of carbon polluting buildings – a delay that is too costly to our children's health and future.</p> <p>Sincerely,</p> <p>Virginia Marcotte</p>
5/15/2024 10:23:04	Maggie Roth	<p>Dear BPDA:</p> <p>My name is Maggie Roth and I live in Jamaica Plain. I am worried about climate change because of my two small children. I don't want them to inherit an inhospitable city or world, and we have the power NOW to do something to change that.</p> <p>I deeply urge the city to quickly pass and implement the NZC Zoning Code as soon as possible. It's the last unrealized goal of the 2019 Climate Action Plan for buildings. We cannot continue to delay the NZC Zoning Code's implementation until 2026. Delay will result in millions of square feet of carbon polluting buildings – a delay that is too costly to our children's health and future.</p> <p>Sincerely,</p> <p>Maggie Roth</p>
5/15/2024 10:29:03	Evan Zinner	<p>Net zero zoning is a bad way to reduce greenhouse gas emissions. The way to lower greenhouse gas emissions on a country-wide scale is to get as many people living in dense cities as possible. This proposed zoning does the opposite.</p> <p>People living in Boston already have significantly lower greenhouse gas emissions than people who live in the suburbs of Boston or people who live in most other American metro areas. The requirement for all new residential buildings with 15 or more units to be net-zero emissions, will make it harder to build housing in Boston. If it is harder to build housing, less people can live here. When people can't live in Boston, they move to distant suburbs or they move to metro areas like Houston where houses are being built. Every unit of housing that doesn't get built because of this zoning will result in someone moving to a place where they will have a larger carbon footprint, a place where they will most likely drive a car for every trip they make.</p> <p>This well-intentioned zoning proposal misses the forest for the trees. Trying to eliminate all greenhouse gases from the few people who live in Boston while forcing significantly more people to live in the suburbs where they drive everywhere is very misguided.</p>
5/15/2024 11:53:18	Amy Lieb	<p>Dear BPDA:</p> <p>My name is Amy Lieb and I live in Boston. I am worried about climate change because the impacts of ghg emissions are already creating higher temperatures, more intense storms, and more flooding for us here in Boston.</p> <p>I urge the city to quickly pass and implement the NZC Zoning Code as soon as possible. It's the last unrealized goal of the 2019 Climate Action Plan for buildings. We cannot continue to delay the NZC Zoning Code's implementation until 2026. Delay will result in millions of square feet of carbon polluting buildings – a delay that is too costly to our children's health and future.</p> <p>Sincerely,</p> <p>Amy Lieb</p>
5/15/2024 11:54:03	Julia Hansen	<p>Dear BPDA:</p> <p>My name is Julia and I live in Boston. I am worried about the climate emergency because governments have known for 30 years that if we passed 1.5C global warming, we'd face truly dangerous climate impacts, and the last 11 months have passed 1.5C with no signs of even slowing our collective rate of burning fossil fuels. My first child will be born this year, and in her lifetime she will face much worse climate impacts than we can even imagine in 2024.</p> <p>I urge the city to quickly pass and implement the NZC Zoning Code as soon as possible. It's the last unrealized goal of the 2019 Climate Action Plan for buildings. We cannot continue to delay the NZC Zoning Code's implementation until 2026. Delay will result in millions of square feet of carbon polluting buildings – a delay that is too costly to our children's health and future.</p> <p>Sincerely,</p> <p>Julia</p>

5/15/2024 12:23:19	Justine Portmann Katz	<p>Dear BPDA:</p> <p>My name is Justine Portmann Katz and I live in Roslindale. I am worried about climate change because I have a 2 year old daughter who deserves to grow up in a healthy environment, and who will inherit an unstable climate, society, and world if we do not act to make high impact change fast, with urgency, starting right now.</p> <p>As a member of Mother's Out Front, I urge the city to quickly pass and implement the NZC Zoning Code as soon as possible. It's the last unrealized goal of the 2019 Climate Action Plan for buildings. We cannot continue to delay the NZC Zoning Code's implementation until 2026. Delay will result in millions of square feet of carbon polluting buildings – a delay that is too costly to our children's health and future.</p> <p>Sincerely,</p> <p>Justine Portmann Katz</p>
5/15/2024 12:36:01	Christine Ventura	<p>Dear BPDA,</p> <p>My name is Christine and I live in Boston. I am worried about climate change because it threatens all life on earth.</p> <p>I urge the city to quickly pass and implement the NZC Zoning Code as soon as possible. It is estimated that the code will cut 19% of building emissions. We cannot put off the NZC Zoning Code's implementation until 2026. Delay will result in millions of square feet of carbon polluting buildings – a delay that is too costly to our children's health and future.</p> <p>Sincerely, Christine Ventura</p>
5/15/2024 13:06:55	Keegan Sougherty	<p>Although we're in a housing affordability crisis, nothing is more shortsighted and expensive in the long run than building without net zero requirements. Please do this for our children.</p>
5/15/2024 13:11:13	Margaret Woodruff	<p>Dear BPDA:</p> <p>My name is Margaret Woodruff and I live in Boston. I am very worried about climate change because I have children and grandchildren.</p> <p>We urge the city to quickly pass and implement the NZC Zoning Code as soon as possible. It's the last unrealized goal of the 2019 Climate Action Plan for buildings. We cannot continue to delay the NZC Zoning Code's implementation until 2026. Delay will result in millions of square feet of carbon polluting buildings – a delay that is too costly to our children's health and future.</p> <p>Sincerely,</p> <p>Margaret Woodruff</p>
5/15/2024 14:33:44	Molly Phelps	<p>Dear BPDA:</p> <p>My name is Molly Phelps and I live in Boston. I am worried about climate change because it amplifies injustices that already plague our city. If we don't act, it will be too late.</p> <p>I urge the city to quickly pass and implement the NZC Zoning Code as soon as possible. It is estimated that the code will cut 19% of building emissions. We cannot put off the NZC Zoning Code's implementation until 2026. Delay will result in millions of square feet of carbon polluting buildings – a delay that is too costly to our children's health and future.</p> <p>Sincerely, Molly Phelps</p>
5/15/2024 17:17:01	Amy Galblum	<p>Dear BPDA,</p> <p>I am a Roslindale/Boston resident and I really really care about climate change. It is my number one community concern. I urge the city to quickly pass and implement the NZC Zoning Code as soon as possible. It's the last unrealized goal of the 2019 Climate Action Plan for buildings. We cannot continue to delay the NZC Zoning Code's implementation until 2026. Delay will result in millions of square feet of carbon polluting buildings – a delay that is too costly to our children's and grandchildren's health and future.</p> <p>Sincerely, Amy Galblum</p>
5/15/2024 17:50:31	May Moreshet	<p>My name is May and I live in Boston. I am worried about climate change because of the health of our children, among many other reasons.</p> <p>I urge the city to quickly pass and implement the NZC Zoning Code as soon as possible. It is estimated that the code will cut 19% of building emissions. We cannot put off the NZC Zoning Code's implementation until 2026. Delay will result in millions of square feet of carbon polluting buildings – a delay that is too costly to our children's health and future.</p> <p>Sincerely,</p> <p>May Moreshet</p>



5/15/2024 18:24:02	Michael McCord	<p>Now—finally, after several years of delay around the Net Zero Zoning proposal—the BPDA proposes delaying implementation of this new critically important zoning regulation until JANUARY 2026! This makes no sense. When we know, now, how to build net zero carbon buildings, why are we NOT requiring ALL new building proposals in Boston to meet that standard tomorrow—or at least by July 1, 2025 which is the 'ask' being proposed by Mothers Out Front and others.</p> <p>It's not that developers haven't seen this regulation coming. And a year-plus 'lead time' ---from May 14th, 2024 (today) to July 1, 2025 (the revision start date I and others propose) is more than sufficient to make plans based on this critically important regulation. And if it is not enough time for some of them, then they can take the time they need to construct the net zero carbon buildings that the rest of us (and future generations) deserve.</p> <p>Thank you for 'listening.'</p>
5/15/2024 19:42:19	Shari Caplan	<p>My name is Shari Caplan and I live in Boston. I am worried about climate change because we need to take urgent action in order to have a livable world.</p> <p>We urge the city to quickly pass and implement the NZC Zoning Code as soon as possible. It's the last unrealized goal of the 2019 Climate Action Plan for buildings. We cannot continue to delay the NZC Zoning Code's implementation until 2026. Delay will result in millions of square feet of carbon polluting buildings – a delay that is too costly to our children's health and future.</p> <p>Sincerely, Shari Caplan</p>
5/15/2024 20:16:56	Elizabeth Bellis-Kates	<p>As a resident of Boston, I urge the city to quickly pass and implement the NZC Zoning Code. It's the last unrealized goal of the 2019 Climate Action Plan for buildings. We cannot afford to delay the NZC Zoning Code's implementation until 2026. Delay will result in millions of square feet of carbon polluting buildings and millions of dollars in avoidable retrofits in the future. It is imperative that we address climate change immediately and decisively.</p>
5/15/2024 21:14:27	Ann Walsh	<p>I urge the city to quickly pass and implement the NZC Zoning Code as soon as possible. It's the last unrealized goal of the 2019 Climate Action Plan for buildings. We cannot continue to delay the NZC Zoning Code's implementation until 2026. Delay will result in millions of square feet of carbon polluting buildings – a delay that is too costly to our children's health and future.</p>
5/17/2024 6:45:18	Kelly Lawman	<p>Dear BPDA:</p> <p>I'm Kelly Lawman and I live in Boston. I am worried about the existential threat climate change because it threatens every aspect of life. I know we have the technology to help mitigate the effects, but we are struggling with the political will.</p> <p>I urge the city to quickly pass and implement the NZC Zoning Code as soon as possible. It is estimated that the code will cut 19% of building emissions. We cannot put off the NZC Zoning Code's implementation until 2026. Delay will result in millions of square feet of carbon polluting buildings – a delay that is too costly to our children's health and future.</p> <p>Sincerely, Kelly Lawman</p>
5/17/2024 11:22:13	Rachel Thornton	<p>Dear BPDA:</p> <p>My name is Rachel Thornton and I live in Boston. I am worried about climate change because of the devastating toll it is already taking on populations and the natural world around the globe.</p> <p>I urge the city to quickly pass and implement the NZC Zoning Code as soon as possible. It's the last unrealized goal of the 2019 Climate Action Plan for buildings. We cannot continue to delay the NZC Zoning Code's implementation until 2026. Delay will result in millions of square feet of carbon polluting buildings – a delay that is too costly to our children's health and future.</p> <p>Sincerely, Rachel Thornton</p>
5/18/2024 12:52:32	Angela Markle	<p>Dear BPDA:</p> <p>My name is Angela Markle and I live in Boston. I am worried about climate change because I want my two children to live on a habitable earth.</p> <p>We urge the city to quickly pass and implement the NZC Zoning Code as soon as possible. We cannot wait until 2026 to implement the NZC Zoning Code. Delay will result in millions of square feet of carbon polluting buildings – a delay that is too costly to our children's health and future.</p> <p>Sincerely, Angela Markle</p>
5/18/2024 13:19:50	David August	I support Net Zero Carbon zero building code
5/18/2024 13:25:18	Cindy Johnson	Please implement NZC Zoning Code ASAP
5/18/2024 13:39:45	Molly heyman@gmail	
5/18/2024 13:44:07	Maria Pinos	
5/18/2024 13:50:44	Alejandra Hung	Please implement changes to the new building codes ASAP, net zero carbon emissions.
5/18/2024 14:10:12	Annina DeLeo	Please be net zero!
5/18/2024 14:46:35	Chelsea Adams	

5/18/2024 15:00:15	Anthony McArthur	Please implement code starting today.
5/18/2024 16:22:50	Jen Doyle	<p>Dear BPDA:</p> <p>My name is Jen Doyle and I live in Boston. I am worried about climate change because I have three children, one of whom--my 24yo--has already told me that she will not be bringing children into this world because she doesn't believe it will be livable even throughout her lifetime. Which I find both terrifying and absolutely heartbreaking.</p> <p>I therefore--and desperately--urge the city to quickly pass and implement the NZC Zoning Code as soon as possible. It's the last unrealized goal of the 2019 Climate Action Plan for buildings. WE CANNOT CONTINUE TO DELAY THE NZC ZONING CODE'S IMPLEMENTATION UNTIL 2026. Delay will result in millions of square feet of carbon polluting buildings -- a delay that is too costly to our children's health and future.</p> <p>Sincerely,</p> <p>Jen Doyle</p>
5/20/2024 0:23:04	Giovannina Bruno	<p>Dear BPDA:</p> <p>My name is Giovannina Bruno and I live in Boston. I am worried about climate change because it quite literally affects every aspect (including the quality and length of) our lives. As a Bostonian, I especially working about the way climate change will affect us living in a city with vulnerable air and water quality. We need to be actively fighting the harmful effects of climate change, not making it worse.</p> <p>We urge the city to quickly pass and implement the NZC Zoning Code as soon as possible. It's the last unrealized goal of the 2019 Climate Action Plan for buildings. We cannot continue to delay the NZC Zoning Code's implementation until 2026. Delay will result in millions of square feet of carbon polluting buildings -- a delay that is too costly to our children's health and future.</p> <p>Sincerely,</p> <p>Giovannina Bruno</p>
5/20/2024 17:25:29	Lauren Gunther	The Specialized Opt-in Code requires Passive House for multifamily buildings greater than 12,000 sf and it's typical for our office to pursue compliance with Phius, and show compliance using WUFI Passive. For LEED Gold certifiable, we typically use USGBC's interpretation that allows Passive House certified projects to take a standard 30% reduction in lieu of an ASHRAE model. However, WUFI Passive is not a great predictor of energy use intensity (pEUI), because of the lack of hourly modelling. With Boston's updated Net Zero Draft, it seems like another energy modeling software is needed for better understanding getting to zero, which increases a project's soft costs. Could there be a way to streamline the number of energy models needed for the Specialized Opt-in Code, LEED, and Article 37?
5/21/2024 12:21:19	Jovielle Gers	<p>Hello BPDA,</p> <p>I am a resident of Jamaica Plain/ Boston and I'm deeply concerned about climate changes' impacts on our planet and the future generations.</p> <p>While it's challenging and inconvenient to be strict with new building codes, the disasters that climate change brings, will make passing codes pale in comparison.</p> <p>I implore the city to pass and implement the NZC Zoning Code urgently.</p> <p>It is the final goal of the 2019 Climate Action Plan for buildings, and it's one of the most important for reducing carbon emissions from Boston. Waiting to implement the NZC Zoning Code's until 2026 may seem insignificant, yet the urgency of the crisis demands every stakeholder in their kids future to act like they care and implement like it matters.</p> <p>All my thanks, Jovielle</p>

		<p>Steven Winter Associates strongly encourages policy that accounts for the structure and enclosure's embodied carbon impact of new construction along with operational efficiency. While structure dominates the embodied carbon of new construction, the enclosure significantly impacts both embodied and operational emissions, or total carbon. Design decisions should be made when considering the tradeoffs between operational carbon and embodied carbon, early in the design phase through a total carbon sensitivity analysis. Using a simple box model and hotspot analysis can inform design decisions when changes are still cost-effective during the schematic design.</p> <p>Small buildings, &lt;50,000 SF, should be included in the embodied carbon conversation, as the net zero carbon zoning amendment has the unique opportunity to influence the design process for all buildings. We understand that this round of amendments is meant to gather data on the Life Cycle Analyses of buildings, but if the process is to be made common place for the building industry, then all buildings should be included, and more information on the guidelines of what to be included in the Life Cycle analysis should be published. This includes life cycle stages (cradle to grave), service life (60 years), ISO standard 14044 and baseline source data like GSG or CLF 2023 Baseline report, or reference to LEED v4.1 MRc1 Whole-Building Life-Cycle Assessment. Including methodology would allow there to be consistency of how the LCA is being conducted and the ability to directly compare the LCA of two different buildings.</p> <p>We strongly encourage the envelope to be included in the Life Cycle Analysis. Case studies have shown up to 40% of total carbon associated with enclosure. Total carbon should be considered when designing the building's envelope as a lot of tradeoffs between operational and embodied carbon have been found. For example, increasing the envelope's performance from R-20 to R-30 has diminishing returns on operational carbon and increases embodied carbon with an overall modest total carbon reduction. The window to wall ratio has been found to have the largest impact on operational and embodied carbon. A higher window to wall ratio increases the total carbon of a building. Operational savings from triple pane do not outweigh embodied carbon in 30-year studies and can significantly increase total carbon emissions. These tradeoffs need to be part of the conversation when designing a building, as they have a significant impact on the overall carbon emissions of a building.</p> <p>We also note that adopting LEED v5 will carry more stringent flood mitigation requirements than the City of Boston currently requires. Although SWA (Steven Winter Associates) is not a resiliency expert, we have had conversations with other consultants and have been made aware that the LEED requirement to locate critical utilities above the 500-year floodplain will be financially impactful for many projects in Boston.</p>
5/21/2024 16:33:45	Shari Rauls on behalf of Steven Winter Associates	Thank you for taking the time to read our comments.
5/21/2024 22:43:29	Sally Jones	Please help us reach net zero sooner fir the greater good for the health of the people and planet !!! When we start here then other regions can start too !!!!
5/22/2024 11:27:25	Rev Dr Sandy Range	<p>I strongly support the USGBC's mission to address the following. I suggest you do too if we're all to live healthier in the long term.</p> <p>Supporting the expanded applicability of the zoning, to align with BERDO applicability                      Supporting the proposal's continued inclusion of LEED to enable holistic sustainability outcomes.</p> <p>Recommending the City provide for, outside of the zoning code, identification of specific LEED credits it encourages as aligned with City goals.</p> <p>Recommending the City retain its ability to track information on project registration and certification, and offering to work with the City to track outcomes for those projects pursuing certification.</p> <p>Supporting the City's addition of net zero emissions requirements as efforts to align these new construction requirements in zoning with BERDO, the building performance standards for existing buildings, and accelerate progress.</p> <p><i>Recommending that the zoning provisions for net zero emissions take into account anticipated grid emission intensity pathways such that an all-electric building in 2026 would not be penalized for grid emissions.</i></p> <p>Supporting the proposal's inclusion of embodied carbon reporting and recommending the City provide for identification of alternative compliance pathways via guidance, to enable future alignment with LEED v5 embodied carbon credits.</p> <p>Recommending the City separately work with the development community towards more predictable and streamlined approval processes.</p> <p>Thank you! Dr. Sandy</p>
5/23/2024 13:18:16	Echo Bergquist	<p>For multifamily affordable housing, what coordination has been done with the burgeoning city/state funding opportunities to ensure that these requirements won't pose an undue financial burden on projects with limited budget capacity? In terms of embodied carbon, does the city anticipate incentivizing the reuse of existing buildings and existing building materials in new buildings? Recognizing that this zoning revision centers on new buildings, I want to comment generally that existing building reuse is a great way to reduce embodied carbon associated with demo/new construction. Thanks.</p>
5/23/2024 15:37:35	Lindsey Lawson	<p>I support the overall goals and language of the Draft Net Zero Carbon Zoning Code including: using LEED as a standard for holistic building sustainability efforts, the net zero carbon emissions requirements and applicability, and the inclusion of embodied carbon reporting.</p> <p>I would like to see the following changes made to the Draft Net Zero Carbon Zoning Code: update Section 37-3 Requirements of Green Buildings from "LEED certifiable" to "LEED Gold certifiable" and add back the text about a LEED accredited professional being required under Sections 37-4 and 80B-5. As a LEED Accredited Professional working on projects in the City of Boston, I think that LEED certifiable is too easy a goal and not aligned with the aggressive targets set forth in the rest of the draft ZNC zoning code. I also think it is critical to have a LEED Accredited Professional (AP) involved in all projects because the City is not requiring formal LEED review. The LEED AP will bring their experience in interpreting and enforcing proper credit documentation to ensure that the intent of the pursued credits is met.</p>

5/24/2024 7:21:30	Mary Brady	<p>Implement Zoning Code NOW! The NZC building code still matters because it is the only code that specifically reduces carbon emissions from Boston's biggest polluters. While we have been waiting for this code to be implemented for the last five years, millions of square feet of polluting new buildings have been approved. The health and economic costs of these emissions will be borne by our children in the form of more and worse asthma, learning deficits, and medical costs, as well as more extreme weather events from climate change.</p> <p>Developers may be arguing for delay, but the children of Boston deserve the emissions reductions that can only result when a strong NZC building code is implemented.</p> <p>We know that every fraction of a degree of warming we avoid will matter for people's health and the economic future of our city.</p>
5/24/2024 8:56:18	Erik Ruoff	<p>I support the overall goals and language of the Draft Net Zero Carbon Zoning Code including: using LEED as a standard for holistic building sustainability efforts, the net zero carbon emissions requirements and applicability, and the inclusion of embodied carbon reporting.</p> <p>I would like to see the following changes made to the Draft Net Zero Carbon Zoning Code: update Section 37-3 Requirements of Green Buildings from "LEED certifiable" to "LEED Gold certifiable". As a professional working on projects in the City of Boston, I think that LEED certifiable is too easy a goal and not aligned with the aggressive targets set forth in the rest of the draft ZNC zoning code.</p>
5/28/2024 16:28:18	Hessann Farooqi	<p>I write on behalf of the Boston Climate Action Network (BCAN), a grassroots group of residents in the City. We appreciate the opportunity to comment on the Net Zero Carbon Zoning Code Draft Article 37 Amendment. As you are aware, the cost of living, including housing, in Boston is high. No one aims to raise it any further. We know housing costs are more than a mortgage or rent payment, but also include utility bills. To this end, studies consistently show the cost of gas will rise. According to Groundwork Data and ZeroCarbonMA, for example, the cost of gas will double in the next decade and rise exponentially after that. Constructing new buildings with gas burdens tenants with paying more for gas in the future. This Amendment does not ban gas in new constructions, but it does further incentivize developers to build without gas lines, thus protecting future tenants from utility bill volatility. While we support this Amendment in large part, we also see key opportunities to further improve it, as described below:</p> <p><b>Implementation Date</b> Given the general fundamentals of this Amendment have been in discussion for several years, they should come as no surprise to any large building developer. Further, with more and more developers building without gas lines, we believe the development community is more prepared than ever to operationalize this Amendment. Thus, we propose this Amendment take effect by July 1, 2025.</p> <p><b>LEED Requirements</b> The US Green Building Council's LEED certification offers an array of benefits for building tenants, from improved health to lower bills over time. LEED is now an accepted industry standard. Developers everywhere have more knowledge than ever, including fantastic local buildings, that implement the LEED Platinum standard. We thus propose this Amendment to require LEED Platinum standards for all Article 80 buildings. We are aware that the BPDA may opt to integrate sustainability requirements, similar to LEED, holistically into Article 80 of the Zoning Code through their ongoing Article 80 Modernization process. Nonetheless, we still advocate for these standards to model the LEED Platinum standards, which are widely agreed to be the model for healthy, green buildings.</p> <p>Ultimately, while the Building Emissions Reduction and Disclosure Ordinance (BERDO) requires all large buildings to achieve net zero emissions by 2050, we need not wait until 2050 to do so, particularly on new construction. This Amendment, with a few tweaks, will be a national model for energy efficient, zero emissions large buildings. We appreciate your consideration of our comments and look forward to working together to ensure the Zoning Code improves affordability, resilience, and equity for all Bostonians.</p>

May 28, 2024

The American Wood Council (AWC) appreciates the opportunity to provide the following comments in response to the Net Zero Carbon Zoning Draft, which establishes embodied carbon reporting for building projects in the City of Boston.

AWC is the voice of North American wood products manufacturing, an industry that provides over 450,000 men and women in the United States with family-wage jobs. AWC represents 87 percent of the structural wood products industry, and our members make products that are essential to everyday life that are derived from a renewable resource that absorbs and sequesters carbon for many decades. Our staff experts develop state-of-the-art engineering data, technology, and standards for wood products to ensure their safe and efficient design, as well as provide information on wood design, green building, and environmental regulations.

With buildings contributing approximately 39 percent of the United States' annual carbon dioxide emissions (1), and building materials contributing approximately 11% to these emissions, it is imperative that steps be taken to address the climate impacts of the built environment, particularly embodied carbon emissions. AWC is a strong advocate of a whole building life cycle assessment (WBLCA) approach to effectively design embodied carbon out of buildings. This approach allows for carbon to be designed out at building design, allowing architects, building owners, and designers to construct buildings in a manner that best meets the project goals (2). The result is a building that has a lower embodied carbon footprint compared to a similar, baseline building and an architect and building community which retains the freedom and flexibility to choose the best materials and systems for their own projects.

AWC commends the City of Boston for considering WBLCA as a mechanism to report the embodied carbon emissions of building projects larger than 50,000 square feet. We write to express our support for WBLCA approaches to reducing embodied carbon in the built environment and the City's step forward in recognizing how WBLCA can be used in reporting.

In Section 37-7, 1.b., AWC recommends that the structural life cycle analysis evaluates the life cycle assessment of a building's structure and enclosure that assesses, at a minimum, the global warming potential (GWP) impact category, using nationally or internationally recognized standards that conform to the International Organization for Standardization standards 14040 and 14044, to help building designers focus their efforts to capture the greatest overall reduction in embodied emissions of the project.

AWC appreciates the opportunity to weigh in on this policy and the overall embodied carbon emissions reduction goals in the City of Boston. We would be happy to assist on any technical advisory committees established to help guide the implementation of policies with regards to structural wood products. We also welcome any questions you may have and would appreciate the opportunity to continue these important climate conversations.

Again, we thank you for the work you are doing in Boston to help address climate change and embodied carbon in the built environment. If you have any questions, please feel free to contact me at the number below. Thank you for your consideration.

Sincerely,

Will Layden  
Vice President, Government Affairs American Wood Council

References:

(1) Environmental and Energy Study Institute, "Buildings & Built Infrastructure," <https://www.eesi.org/topics/built-infrastructure/description>

(2) For example, this study demonstrates how WBLCA provided for significant carbon reductions of building with mass timber in an office building in Denver, Colorado while still meeting project goals: KL&A Engineers and Builders and Adolfsen & Peterson, Platte Fifteen 2021 Life Cycle Assessment, (July 2021), p. 5. {HYPERLINK: [https://www.nordic.ca/data/files/publication/multilang\\_file/Platte15LCAcaseStudy\\_July2021\\_KLA.pdf](https://www.nordic.ca/data/files/publication/multilang_file/Platte15LCAcaseStudy_July2021_KLA.pdf) }

5/28/2024 16:42:22 Sophie Morin, on behalf of the American Wood Council

		<p>USGBC appreciates the opportunity to comment on the City of Boston Net Zero Carbon Zoning Proposal. Boston was an early leader in green building policy, reflecting the City's interest in the multiple ways that buildings can support people and the planet, including through materials selection, healthy indoor environments, green infrastructure, and conserving energy and water.</p> <p>We comment the City for its significant steps in the past few years to address the role of buildings in the climate crisis, notably addressing existing buildings with BERDO and BERDO 2 (building performance standard), and as minimum energy requirements for new buildings with adoption of the specialized energy code. In light of these new policies, along with the City's goal to be climate neutral by 2050, updating the current green zoning to incorporate emissions reductions makes sense.</p> <p>USGBC concurs with the intent of the proposal and largely with the provisions. We offer the following specific comments.</p> <ol style="list-style-type: none"> <li>1. We support the expanded applicability of the zoning, to align with BERDO applicability. We agree this simplifies compliance for buildings already under BERDO, by setting up those new buildings for success. It also should be expected to improve understanding of which buildings are covered by owners, by using the same thresholds.</li> <li>2. We support the proposal's continued inclusion of LEED to enable holistic sustainability outcomes. The holistic approach of LEED and the regulatory limits approach of BERDO, as incorporated into the Zero Carbon Zoning, complement each other. Using LEED will mean project teams pay attention to outcomes including resilience, quality of life, and biodiversity, along with emissions. With LEED v4, Boston projects have achieved a wide range of best practices such as enhanced commissioning and refrigerant management, enhanced indoor air quality, building life cycle impact reduction, materials with characteristics such as reduced carbon, low-emitting, ad others, heat island and light pollution measures, cooling tower water use reduction, and others. We appreciated the chance to share the proposed LEED v5 highlights with the City and look forward to providing information on the final rating system once completed. USGBC is happy to work with the City to share information on LEED and project outcomes.</li> <li>3. We understand that the City cannot require specific credits and we recommend the City provide for, outside of the zoning code, identification of specific LEED credits it encourages as aligned with City goals. Other jurisdictions have used this approach to signal to project teams which practices are most important to the City. Even if non-binding, this can help project teams in planning their projects for optimum community benefit.</li> <li>4. We recommend the City retain its ability to track information on project registration and certification, and offer to work with the City to track outcomes for those projects pursuing certification. Under Section 80B-5, (ix), retain "a statement as to whether the developer will register the project with USGBC and seek certification;"</li> <li>5. Section 37-6 as proposed would apply a zero GHG emission standard to projects covered by the code (with special standards set for hospitals, manufacturing, and labs). As described in briefings, this essentially moves up the BERDO standard for a building from 2050 under BERDO, to the first year of operation (say, 2026). To achieve zero GHG emissions, a new building would likely be all-electric, and, to make up for grid emissions either purchase eligible renewable energy or pay alternative compliance payments, along with any onsite generation that may be possible depending on the site and building. However, it is unclear whether new buildings under the proposed zoning emission standard would be able to take advantage of the future cleaner electricity grid. According to the Synapse Energy Economics report "Boston Building Emissions Performance Standard – Technical Methods," electricity emissions are expected to decline as state utilities implement the Clean Energy Standard. To illustrate, the predicted power emissions factor in 2050 is predicted to be only 29% of what is it in 2026 (according to that analysis). We recommend that the City clarify whether the calculations under the zoning provisions for net zero emissions take into account anticipated grid emission intensity changes such as by applying a future year emissions rate, or would be based on actual emissions in the year operational.</li> <li>6. We strongly support the proposal's inclusion of embodied carbon reporting. We recommend the City make provisions such that the City can, through guidance, identify alternative compliance pathways to enable future alignment with approaches such as LEED v5 embodied carbon credits and potentially other standards related to embodied carbon measurement. This will help streamline efforts by building project teams and potentially provide more data to the City while facilitating comparisons with emerging databases. This could also lead to reducing embodied carbon in the near term, rather than only measuring. To this end, we recommend under Section 37-7 (1)(b), adding text bracketed as follows: <ul style="list-style-type: none"> <li>o Submitting a structural life cycle analysis that assesses the embodied CO2e emissions from the extraction, harvesting, fabrication, transportation, installation, maintenance, and disposal of structural building products and materials, and other construction-related activities; [ADD: or in the alternative, an embodied CO2e emissions analysis and/or commitment to embodied CO2e emissions reduction practices through compliance with a reference credit or standard identified by the Boston Redevelopment Authority,] for any Proposed Project...</li> </ul> </li> <li>7. We recommend the City separately work with the development community towards more predictable and streamlined approval processes. While the City seeks flexibility in conditions to shape developments to meet community needs, the process can be lengthy and uncertain for project teams. We suggest structured dialogue to identify potential improvements that meet City goals.</li> </ol>
5/28/2024 18:41:50	Elizabeth Beardsley	<p>As a co-chair of the CLF Boston   NE Hub, I fully endorse the comment letter submitted by Michelle Lambert. I would also like to commend the City for including embodied carbon in the Net Zero Carbon proposal, but echo Michelle's suggestion for inclusion of a mandatory assessment for reuse of any building being proposed for demolition. I would also like to emphasize the importance of utilizing industry tested methods and standards for performing LCA. Michelle has provided an excellent resource for baseline LCA's, however, I would like to encourage the City to require projects to analyze and quantify embodied carbon reductions at this time. Similar to the model provided with BERDO, I suggest that embodied carbon reductions be required in the future, rather than in this first iteration. This provides the industry and the related economy time to prepare for impacts on project budgets and delivery timelines.</p> <p>Thank you, Nicole Voss</p>
5/28/2024 19:09:07	Nicole Voss	