STUDY SESSION MEMORANDUM
MEETING DATE: June 22, 2023

TO: Mayor and Members of City Council

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DATE: June 22, 2023

SUBJECT: 2024 City of Boulder Energy Conservation Code (CoBECC) Development Project

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EXECUTIVE SUMMARY

The City of Boulder Energy Conservation Code (CoBECC) is a localized version of the International Energy Conservation Code and is part of the suite of city codes that govern the construction and alteration of residential and commercial buildings within the city. The city currently operates under the 2020 CoBECC, which, when it was approved by council in 2019 was 20% more efficient than the national code at that time. The city updates our energy code on a roughly three-year cycle with the goal of attaining net-zero energy, outcome-verified code by 2031 to meet broader city-wide climate commitment goals. Consistent with this roadmap, staff have begun development of the next version of the CoBECC, which would become effective in early 2024. Like its predecessors, the 2024 CoBECC is intended to start with a foundation of the best available national code modified to advance the city's specific equity, greenhouse gas (GHG) mitigation and resilience goals and priorities.

The purpose of this Study Session is to provide council an update this project and to get feedback on strategies that should be prioritized for further analysis and that council would like to see reflected in the draft code that will be brought back to council in late 2023 for further discussion and potential adoption. The staff-suggested updates to the code primarily concentrate on enhancing energy performance criteria, specifically emphasizing electrification, as the community aims to achieve a 70% reduction in emissions by 2030 and carbon neutrality by 2035. The project update will also consider revisions to the city's code roadmap, specifically revising the 2031 goal from net zero energy to net zero greenhouse gas (GHG) codes. The roadmap update will also consider targets for embodied carbon reduction.

The proposed areas of focus for the 2024 CoBECC are:

- Updated performance targets for both residential and commercial projects.
- Enhancing strategies to encourage and/or prescribe all-electric and electric ready construction to reduce and/or eliminate the use of fossil fuel combustion appliances.
- Requiring 100% offset of natural gas usage through on-site solar for new construction and level 4 alterations.
- Consideration of the DOE's Zero Energy Ready Home Program for residential new construction and an alternative to the ERI path
- Requirements to analyze and reduce embodied carbon for new commercial construction.
- Compliance with state minimum energy code requirements as required by HB19-1260.

QUESTIONS FOR COUNCIL

1. Does City Council agree on the proposed areas of focus for the 2024 CoBECC?
2. Are there other areas of focus that should be included?
3. Does City Council have recommendations on the community engagement strategies for this project?

COMMUNITY SUSTAINABILITY ASSESSMENTS AND IMPACTS

- **Economic** – Updating the city's energy code may result in higher upfront construction costs. This is due to the requirement for more efficient and superior products to meet the enhanced performance standards. While upfront construction cost may be higher, investments in energy efficiency and reducing dependency on natural gas is expected to lead to reduced lifecycle costs for buildings.
- **Environmental** – This project represents a crucial advancement towards achieving a 70% greenhouse gas (GH) emissions reduction by 2030 and carbon neutrality by 2035. In addition to a focus on operational emissions, efforts are also focused on reducing embodied carbon associated with new construction materials, and with deconstruction and construction waste. Additionally, there will be a continued emphasis on on-site renewable energy sources as the community aims to transition away from fossil fuels. These measures will not only enhance the

performance of buildings but also create a healthier indoor environment for occupants. Finally, this code update is expected to more aggressively address the environmental and health impacts associated with natural gas use.

- **Social** – One of the objectives of this project is to carefully examine the equity aspect as the city progresses towards achieving carbon neutrality. These updates will prioritize the equitable impact on the community, aiming to make energy efficiency and net zero energy (or zero energy ready) accessible to all. The focus of this code is on improving efficiency, resilience, and sustainability in buildings and thus improving the well-being of the community as a whole (lower utility bills, lower maintenance, cleaner air, etc.). Staff will utilize the racial equity instrument to further evaluate equity impacts and strategies.

OTHER IMPACTS

- **City Resources** – This project is included in the 2023 work plan for Planning and Development Services and is also supported by staff in the Climate Initiatives department. The city is in the process of contracting with a consulting firm to support analysis and code development. Resources will also be allocated in 2024 to provide training to plan review, inspection and code compliance personnel, and to develop and publish templates and other resources for the city website.

PUBLIC FEEDBACK

The scope of this project has been informed by past public engagement, as well as feedback from Planning Board and City Council during the Site Review Criteria update process. The project is also informed by peer exchange with other municipalities and aligns with Boulder County's Code Cohort adopted roadmap. Staff will be conducting community engagement based on the strategies prioritized through discussions with the Planning Board and Environmental Advisory Board, and through the June 22, 2023, City Council Study Session.

BACKGROUND

In 2017, the City of Boulder implemented its inaugural independent energy code, known as the City of Boulder Energy Conservation Code (CoBECC). On July 1, 2020, the first CoBECC revision, the 2020 City of Boulder Energy Conservation Code (CoBECC), went into effect. In developing the 2020 CoBECC, the city partnered with expert consultants and undertook the task of revising the energy code by incorporating elements from the 2018 IECC (International Energy Conservation Code) along with local amendments. The net result was a local Boulder code that was 20% more stringent than the base 2018 IECC.

The city's current code roadmap[1] outlines a pathway to net zero energy, starting first with residential and then achieving it across all new construction by 2031. The roadmap is

[1] City of Boulder Current Energy Road Map – Page 29 Residential, Page 53 Commercial http://lfprod/WebLink/DocView.aspx?id=14131373&

framed around the approach of imposing the strictest requirements on the largest and/or most cost-effective projects first, then gradually increasing the requirements for projects of all sizes with each code update. This approach was established based on the understanding that larger projects have a greater environmental impact and were also best positioned to be able to absorb the incremental cost of the higher efficiency requirements. The net-zero requirement, and more specifically the requirement for on-site solar generation, was prioritized to mitigate the impact of grid electricity emissions and to support local resiliency and economic development priorities.

The city's experience implementing the CoBECC requirements, as well as recent changes at the state level, inform the strategies staff are exploring with the 2024 CoBECC update:

- Grid Emissions: Since the roadmap was originally developed, the State has passed a regulation that requires utilities to reduce their grid electricity emissions by 80% compared to a 2005 baseline. Utilities, including Xcel Energy, the city's electricity provider, are on track to meet or exceed this requirement.
- Construction Market Transformation: During May of 2022, the state of Colorado passed the Building Energy Codes law (HB22-1362 Building Greenhouse Gas Emissions[2]) which requires jurisdictions throughout Colorado to adopt an energy code that is equal to or more stringent than the 2021 IECC, along with state-prescribed electric- and solar-ready requirements during their next code cycle update or by July 1, 2026, whichever is first. This represents a significant acceleration of construction market transformation in the push for net zero energy and carbon neutrality.
- Barriers to On-Site Solar: Lot orientations and neighboring structures can present challenges for achieving net zero energy solely through on-site solar, even with highly efficient homes. This proves especially challenging for high-density housing, redevelopment of smaller lots and smaller in-fill projects. While the city permits compliance through off-site options, this introduces administrative complexities and may not align with the city's objective of actually reducing greenhouse gas emissions and fostering community resilience, which underpin the net zero energy requirements.
- Equity: While the intention of setting more stringent requirements for larger buildings was to address energy usage, the unintended outcome is that residents of the largest and most affluent homes enjoy the lowest utility bills, while those residing in smaller, low-to-moderate income homes are left exposed to escalating and volatile energy costs. Rather than setting less stringent requirements for smaller homes or commercial projects, there is opportunity to leverage federal, state and local investment to advance equity priorities without sacrificing building performance.

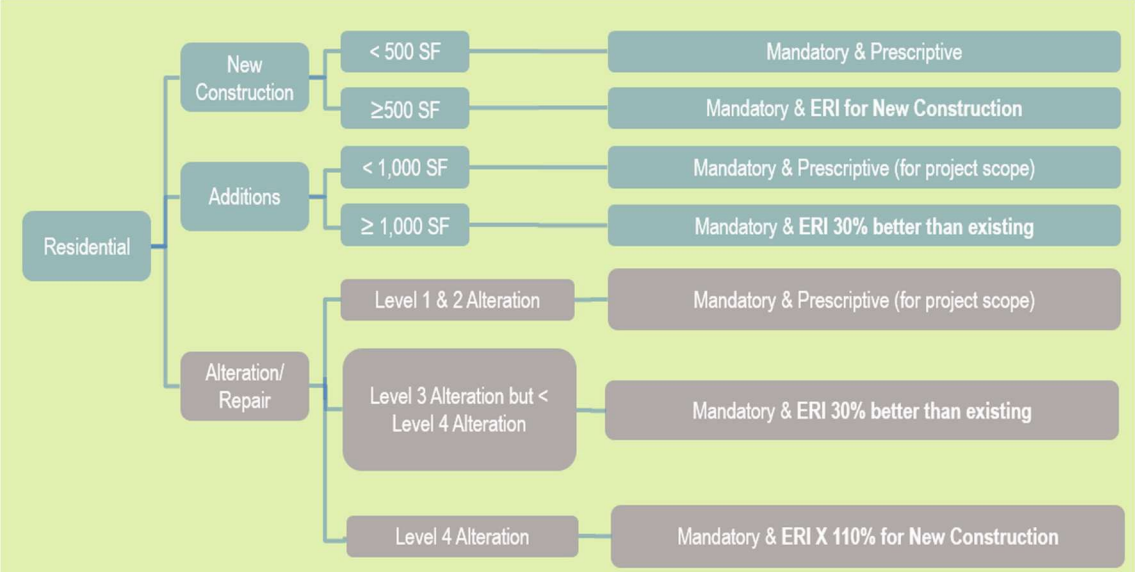
[2] The Colorado General Assembly passed the Building Energy Codes law (HB22-1362 Building Greenhouse Gas Emissions) in May of 2022. The law requires that cities and counties with building codes must adopt at least the 2021 International Energy Conservation Code (IECC) when they update other building codes between July 1, 2023 and July 1, 2026. This adoption must include the electric and solar ready provisions in the model electric ready and solar ready code, which are set to be published by June 1, 2023.

Taking into account these factors, staff will be considering a revision to the city's code roadmap. In particular, staff proposes to transition from a net zero energy focus to a net zero GHG focus that considers grid emissions reductions when imposing requirements on projects. The updated roadmap would also have increased emphasis on embodied carbon reductions targeting strategies that can reduce embodied carbon by as much as 40% as compared to a 2018 baseline.

Residential Energy

With the 2017 CoBECC, the city began requiring new residential buildings 5,000 square feet and larger to be constructed as net zero energy, meaning that on-site solar would produce as much energy as the home consumed on an annual basis. Under the 2017 CoBECC, approximately half of the total new home square footage was constructed to be net zero energy. With the 2020 CoBECC, the net-zero energy threshold was lowered to 3,000 square feet; 3,000 square feet represents the majority of all residential (single family and townhomes) construction in Boulder, with the exception of accessory dwelling units (ADUs) and some permanently affordable housing. Among those homes that were mandated to be net zero energy, about half have been built as all-electric residences. In cases where natural gas infrastructure is present, electricity serves as the main source for space and water heating.

Figure 1 - Residential Energy Code Compliance Path Flow Chart



Level 1 Alteration: Alteration with scope that includes the removal and replacement or the covering of existing materials, elements, equipment, or fixtures using new material, elements, equipment, or fixtures that serve the same purpose.
Level 2 Alteration: Alteration with scope that includes the reconfiguration of space, the addition or elimination of any door or window, the reconfiguration or extension of any system, or the installation of any additional equipment.
Level 3 Alteration: Alteration where the work area exceeds 50% of the building area.
Level 4 Alteration : An alteration where the work area exceeds 50 percent of the building area, mechanical and lighting systems are substantially replaced, and the alteration meets the criteria of substantial structural alteration, including fenestration replacement.
CV: Construction Value as determine per City of Boulder Construction Value Guidance Document. A cost estimate must be provided with permit application.

As depicted in Figure 1, compliance with residential energy codes is determined by the size of the project. For new homes larger than 500 square feet, additions greater than 1,000 square feet, and level 3 or 4 alterations, the Energy Rating Index (ERI) pathway is mandatory for compliance, with ERI score requirements ranging from 50 down to 0 depending on the home's size.[3] Additions greater than 1,000 square feet and level 3 alterations must have an ERI score no greater than 50 OR demonstrate a 30% reduction in the existing building's ERI. Level 4 alterations are required to be modeled as new construction, with a 10% allowance above the required ERI target. The 10% allowance is intended to incentivize preservation of the original structure and the embodied carbon contained within it. Homes equal to or less than 500 square feet, additions equal to or less than 1,000 square feet, and level 1 and 2 alterations have the option to follow either the ERI (total performance outcome) or a prescriptive (defined percent better than code minimum) pathway.

Commercial Energy

Similar to the residential sector, the city has adopted an approach for commercial buildings that establishes performance requirements surpassing the most recent national standards. This ensures the city's commitment to being at the forefront of energy conservation efforts, while considering the cost implications for new construction and significant renovations. With the implementation of the 2020 City of Boulder Energy Conservation Code as of July 1, 2020, the City became one of the pioneers in adopting an Energy Use Index (EUI) compliance approach.[4] The EUI pathway, which is now part of the national code, provides designers with greater flexibility for achieving the performance outcomes, while still preserving critical backstops at design. Under the 2020 CoBECC, new commercial construction projects are mandated to achieve an annual operating energy cost that is 25% lower than the 2016 American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE) 90.1 standard while for major renovations a 10% allowance above the permitted operating expense is allowed.

In addition to prescribed energy performance, new commercial buildings must offset at least 5% of the annual energy use through on-site solar. While this is a relatively small amount, the intent of this requirement was to help motivate the inclusion of more solar to be installed as part of the project as well as reduce cost barriers to future solar expansion.

[3] The Energy Rating Index (ERI) utilizes an established national standard to measure home performance against a baseline code, where a score of 100 is equivalent to the 2006 IECC and a score of 0 represents net zero energy use on an annual basis.

[4] Energy Use Index (EUI) is measured as total energy use per square foot of gross floor space.

Electric Vehicle (EV) Infrastructure

In addition to mitigating the operational emissions impacts of buildings, CoBECC also advances the community's goals for mitigating transportation-related emissions by supporting electric vehicle (EV) adoption. All new residential and commercial projects must install EV infrastructure as outlined in Table 1, where EV-Ready means there is a fully wired, dedicated circuit terminated at an outlet or junction box, and EV-Capable means there is space in the electric panel and conduit installed to allow a circuit to be added in the future.

Table 1 – Electric Vehicle (EV) Infrastructure Requirements

Building Type	Number of EV-Ready Spaces	Number of EV-Capable Spaces	Number of Spaces Served by Installed EV Charging Equipment
Residential single-family and townhomes	1	0	0
R-2 Occupancies* with 1-25 total parking spaces	1	0	0
R-2 Occupancies* with >25 parking spaces	10% of spaces	40% of remaining spaces	5% of spaces (minimum 1 dual port charging station)
Commercial with 1 parking space	1	0	0
Commercial with 2-25 parking spaces	1	1	0
Commercial with >25 parking spaces	10% of spaces	10% of remaining spaces	5% of spaces (minimum 1 dual port charging station)

*R-2 Occupancies are defined in the International Building Code and include multifamily housing, non-transient congregate living facilities, hotels and live/work motels, and vacation timeshare properties

In establishing the distribution of different space types – EVSE installed, EV ready and EV capable - staff considered the following barriers and opportunities for EV adoption:

- Charging convenience: Given current technology, charging times and charging costs, the most economical and preferred charging location is where people live and park their cars for eight or more hours. For this reason, priority was given to ensuring the infrastructure readiness for residential and R-2 commercial properties.
- Cost of retrofit and mitigating the stranding of investment: The EV charging market is continuously evolving. From managed charging systems, to vehicle-to-building and vehicle-to-grid applications, to the significant variability as to how property owners make charging available to workers, visitors and the general public, infrastructure deployed today may or may not prove useful as EV adoption rates continue to rise. The two main cost impacts for future retrofit are electrical service upgrades and conduit installation. Wiring and charging equipment installation costs are not appreciably different in terms of original construction verses retrofit as long as service capacity, including panel space for the circuit breaker, and conduit from the panel to the parking space is available. For this reason, EV-capable was seen as a balance between mitigating future retrofit costs and uncertainty around the evolution of the EV charging market.

ANALYSIS

The following summarizes staff's analysis of the primary areas of focus for the 2024 CoBECC update.

Natural Gas

Natural gas combustion appliances in buildings significantly contribute to GHG emissions, urban air pollution and poor indoor air quality. As seen particularly this past year, the reliance on natural gas appliances also leaves building occupants vulnerable to volatile fuel costs as well as unforeseen health problems. Achieving carbon and urban air quality goals, as well as mitigating future energy cost burdens, necessitates the elimination of natural gas use, at least in any application for which there is a technically viable and economically feasible electric alternative.

The current CoBECC has several embedded strategies to reduce GHG emissions and air pollution through attractive standards for all-electric or largely electric construction compliance options. For example, residential mixed-fuel buildings and commercial mixed-fuel buildings have more stringent requirements than all-electric buildings. Despite these incentives aimed to promote electrification and reduce GHG emissions, projects continue to incorporate natural gas combustion systems. With the 2024 update, staff expects to propose one or more strategies to further incentivize reduction or elimination of natural gas use.

One strategy that some jurisdictions have employed is to prohibit natural gas infrastructure within a new building and on a new building's property (past the gas meter). This strategy was first implemented by Berkeley, California (the Berkeley Ordinance). The Berkeley Ordinance was not part of Berkeley's building and energy code, but part of Title 12 of Berkeley's Municipal Code which concerns Health and Safety and adopted in reliance on Berkeley's general police power. The Ordinance stated that it attempts to address the global impacts caused by the combustion of natural gas. The Berkley ordinance was challenged by the California Restaurant Association (CRA). CRA alleged that Berkeley's ordinance was preempted by federal law, in particular the Energy Policy and Conservation Act (EPCA). EPCA establishes energy efficiency standards for certain consumer and commercial appliances and expressly preempts state and local regulations "concerning the energy efficiency" and "energy use" of the products for which energy conservation standards are established pursuant to EPCA. The ordinance was initially upheld at the federal district court level where the court found that Berkeley's ordinance was not preempted as it regulates natural gas piping and does not directly regulate the energy use or energy efficiency of appliances covered by EPCA. On appeal, the 9th Circuit Court of Appeals disagreed and held that EPCA preempts the Berkeley Ordinance finding that EPCA's preemption encompasses an ordinance that effectively eliminates the "use" of an energy source. The court stated "EPCA preemption extends to regulations that address the products themselves and the on-site infrastructure for their use of natural gas. The 9th Circuit Court of Appeals decision was issued on April 17, 2023. The City of Berkeley could petition the U.S. Supreme Court to hear its case, which would have to be submitted within 90 days of the court of appeals final judgment.

Other jurisdictions, such as Crested Butte and Denver have adopted all-electric construction requirements, with exceptions for certain applications, such as commercial kitchens. Public feedback engagement conducted by both municipalities suggested less resistance to all-electric requirements limited to space and water heating. Staff is not aware of any legal challenge of a local all-electric construction requirement. However, such a requirement as it relates to products covered by EPCA could also be challenged as preempted by EPCA. In the 9th Circuit Court of Appeals decision on the Berkeley Ordinance the judge wrote that "EPCA no doubt preempts an ordinance that directly prohibits the use of covered natural gas appliances in new buildings." Based on that decision, a significant risk of litigation and finding of preemption also exists with this approach.

At a minimum, the 2024 CoBECC will need to meet state minimum requirements,[5] which mandate electric-ready in new construction. Electric ready refers to construction having adequate electrical service, breakers, wiring and outlets to easily be converted to electric from natural gas. Staff expects to propose extending these requirements to Level 4 alterations and potentially to Level 3 alterations, as well. Staff also is exploring to further incentivize all-electric design options.

GHG Offset vs. Net-Zero Energy

Even buildings built to the highest level of efficiency possible may not be able to achieve net zero energy with on-site resources alone. Lot orientations and adjacent structures can limit solar access. Multi-story commercial buildings and high-density multi-family housing may not have adequate roof or ground space available to them. While off-site solutions, such as solar gardens, can be an option, given the rapidly increasing share of renewables on the grid and the state's grid-emissions reduction trajectory, the cost and administrative complexity of utilizing off-site solutions likely far exceeds the incremental benefits. For this reason, staff is considering shifting from a net-zero energy strategy to instead focus on future GHG emissions. Specifically, staff is considering preserving the current minimum percent of energy use that must be supplied by on-site solar, but then require that any new mixed fuel building offset 100% of their natural gas use with on-site renewables. Under the proposed provision, off-site renewables would not be allowed to serve as an offset. Extending this same requirement to Level 4 alterations is also a consideration.

Updated Performance Targets

Consistent with the city's policy of adopting energy conservation codes that are more stringent than the national baseline code, the 2024 CoBECC will build upon the current code while incorporating elements of the 2021 and potentially the 2024 IECC and adding a target of at least 15-25% greater energy efficiency than the 2021 IECC.

Outcome Verified Performance

While modeled building performance continues to evolve and be refined, post-occupancy energy use can often be far different than was predicted. Outcome-verified code compliance is an emerging strategy and one the city sought to pilot through the 2020 CoBECC. Unfortunately, no projects elected to pursue the pilot option, and, therefore, the methodology for implementing outcome verified code compliance is not yet established.

Staff is considering a proposal for this code update to require outcome verified performance for one or more commercial building types. Since 2016, new commercial buildings over 10,000 square feet have been required to annually report their energy use, beginning after their first full year of occupancy. Staff will analyze this data and will propose one or more commercial building types to become subject to verified performance.

EV Charing Infrastructure

The 2024 CoBECC will represent continued refinement of the requirements for EV charging infrastructure, as well as ensuring alignment with the new state model codes. In particular, consideration will be given to incorporating the state's EV capable light category, which focuses on installation of conduit for future use and physical space for future electrical service expansion. This class of EV infrastructure could be employed to

increase the number of parking spaces that can more cost effectively be retrofitted if charging demand grows beyond initially installed infrastructure, without adversely driving up the initial cost of construction.

Embodied Carbon

In addition to regulating operational energy use through building codes, jurisdictions have begun tackling embodied carbon. Currently, CoBECC sets requirements for deconstruction and construction waste minimization. Based on Board and Council feedback during the Site Review Criteria update process, this project will develop new requirements for larger construction projects to target embodied carbon in construction materials. This may include requirements for low carbon concrete and other strategies to lower embodied carbon. Requirements for projects to conduct a full carbon accounting and demonstrate steps that are being taken to reduce embodied carbon may also be proposed in this code update.

DOE Zero Energy Ready Home Program Alternative

Since 2013, the Department of Energy's (DOE) Zero Energy Ready Home (ZERH) program has been setting the highest Federal standards for the U.S. Housing industry to pursue. With over 12,000 homes certified across the country, they are often seen to be 40-50% more efficient than a typical new home. The program requires compliance with the ENERGY STAR® program as well as the EPA's Indoor airPLUS to achieve certification.

Currently CoBECC sets performance targets based on the size of the home with homes 3,000 square feet and larger to have a maximum Energy Rating Index (ERI) of zero or less; and homes less than 3,000 square feet having a required ERI determined by the home size with smaller homes having more relaxed targets, up to an ERI of 50. Staff is proposing that this code update analyze ZERH program as an alternative pathway for code compliance. This alternative would be available to all homes with the requirement that those 3,000sqft and larger still need to be net zero. An added benefit of the ZERH is that some utilities, including Xcel, as well as the federal government, provide tax credits or other incentives to help offset the cost of the implementing ZERH, which helps homeowners take the next step from solar ready to solar active.

FEEDBACK FROM BOARDS AND COMISSIONS

Planning Board

Staff provided the Planning Board an update on the 2024 CoBECC Development Project on June 6, 2023. Overall, there was strong support of the strategies as presented by staff. The Planning Board offered the following recommendations and feedback:

- Recommended consideration of strategies that encourage and/or require passive design for both commercial and residential projects. Staff should analyze the benefits, costs and feasibility of requiring passive design.
- Related to EV, the Planning Board suggested that revisions to EV requirements should consider the impact of parking reductions on EV infrastructure, revisions should consider further increasing the EV requirements for both multi-family and commercial, and additional strategies should be considered that support and encourage shared vehicle spaces. The board also recommended that EV-parking and e-bike charging should be evaluated in the context of broader transportation demand management (TDM) goals to ensure they are supporting the right TDM outcomes.
- Recognizing that new construction represents a very small percentage of total building stock, the code update should also emphasize strategies to address existing buildings.
- There was support for exploring electric-only requirements for end-of-life replacement of equipment similar to Denver.
- Encouraging all-electric, electric-preferred and electric-only requirements should be prioritized. There should be an evaluation of what electric-preferred provisions would drive the decision to build all-electric.
- Embodied carbon reductions should be considered in residential construction as well as commercial.
- The energy code benefits those with the newest largest homes because they have the benefit of lower ongoing operating costs. Additionally, even though the energy code requires the largest homes to be the most efficient, large homes represent a much higher per capita embodied carbon impact. Consider making larger homes pay into a fund similar to inclusionary housing that would support more community access to the benefits of the energy code, and which could yield better equity outcomes.
- Supported de-emphasizing net-zero energy requirements, provided that on-site solar is still encouraged and supported.
- Staff should evaluate how to balance and preserve rooftop solar access with the growth in the use of roof areas as open space amenities.
- Consider requiring cool roofing materials, along with other strategies, to mitigate urban heat island impacts. Title 9 landscaping requirements should also be evaluated as an energy efficiency measure.
- Setting EUI targets for building's > 50,000 sq. ft.

Community engagement strategies:

- Engage with Empower our Future.
- Focus on stakeholders such as homeowners, builders, architects, engineers, and other design professionals.
- Engage with community connectors.

General Comments:

- There is an opportunity for much greater integration across codes.
- There needs to be a holistic look at how housing affordability and equity within the energy codes can be supported by other incentives and subsidies.
- Consideration should be given to ways to encourage and/or require landlords to maintain/upgrade buildings (e.g., next generation SmartRegs)
- The city needs to keep pushing at the state level to make electricity affordable.
- Staff should consider ways to better educate property owners considering projects on pros and cons of different options.

Environmental Advisory Board (EAB)

Staff provided the EAB an update on the 2024 CoBECC Development Project on June 6, 2023. In addition to offering full support of staff's recommended strategies, EAB offered the following recommendations and feedback:

- There is strong support for setting EUI targets for more building types.
- Staff should consider ways to incentivize and/or require passive design strategies.
- In addition to requiring outcome verified performance path participation for one or more building types, ways to incentivize broader participation in this path should be considered.
- EV parking requirements should be increased for multi-family and commercial.
- Increasing the commercial 5% solar minimum requirement should be evaluated.
- Additional natural gas offset requirements should be considered for residential.
- Expand to target health centers undergoing remodeling. The board considered this particularly pertinent as healthcare has been identified as a major emitter of carbon by the consumption-based carbon inventory team.

Community engagement strategies:

- Engage with developers and designers
- Consider outreach to HOAs

General Comments:

- Given their high embodied carbon impact, strategies that help educate and support hospitals on reducing carbon emissions should be pursued.
- Consider increasing energy use offsets in buildings to account for transportation impacts.
- Consideration should be given to financial incentives to help drive even higher efficiency and advance equity goals.

NEXT STEPS

- Incorporate feedback from recent boards meetings and City Council Study Session.
- Conduct engagement with stakeholders and the community and incorporate feedback into the analysis and draft code package.
- Return to the Planning Board, Environmental Advisory Board, and council with draft code package for further input, refinement and/or concurrence, as applicable.
- Initial public reading targeted for early November, followed by subsequent readings as required with goal of an effective code date of not later than March 1, 2024.

ATTACHMENT(S)

1. Attachment A Commercial Energy Code Road Map http://lfprod/WebLink/DocView.aspx?id=14131373&(page 29)

2. Attachment B Residential Energy Code Road Map http://lfprod/WebLink/DocView.aspx?id=14131373&(page 53)