City of Louisville
COLORADO • SINCE 1878

Sustainability Advisory Board

Agenda

March 20, 2024
Louisville Public Library, Second Floor Board Room
951 Spruce Street
6:30 PM

Members of the public are welcome to attend and give comments remotely; however, the in-person meeting may continue even if technology issues prevent remote participation.

- *You can call in to +1 408 638 0968 or 833 548 0282 (Toll Free)*
  Meeting ID #829 8194 5389
  Meeting Password # 741017
- *You can log in via your computer. Please visit the City's website here to link to the meeting: www.louisvilleco.gov/sustainabilityboard.*

The Board will accommodate public comments during the meeting. Anyone may also email comments to the Board prior to the meeting at KBetzold@LouisvilleCO.gov.

I. Call to Order
   - Allison is March secretary.

II. Roll Call

III. Approval of Agenda

IV. Approval of Minutes

V. Public Comments on Items Not on the Agenda
   - 3 minutes per comment

VI. Staff Updates – 10 minutes

VII. Discussion Item: Residential/Neighborhood Engagement – 45 minutes

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Persons planning to attend the meeting who need sign language interpretation, translation services, assisted listening systems, Braille, taped material, or special transportation, should contact the City Clerk's Office at 303 335-4536 or MeredythM@LouisvilleCO.gov. A forty-eight-hour notice is requested.

Si requiere una copia en español de esta publicación o necesita un intérprete durante la reunión, por favor llame a la Ciudad al 303.335.4536 o 303.335.4574.

- Staff/Partner Presentation
- Public Comment (3 minutes per comment)
- LSAB Discussion

VIII. Discussion Item: Energy Code Amendments – 20 minutes

- Staff Presentation
- Public Comment (3 minutes per comment)
- LSAB Discussion and Direction

IX. Discussion Item: Community Decarbonization Plan Memo – 10 minutes

- Staff Update
- Public Comment (3 minutes per comment)
- LSAB Discussion and Direction

X. Discussion Item: Front Range Passenger Rail Memo – 10 minutes

- Staff and Chair Update
- Public Comment (3 minutes per comment)
- LSAB Discussion and Direction

XI. Sub-Committee and Board Member Updates

XII. Administrative Tasks

- Staff to write next Spotlight, due April 15

XIII. Discussion Items for Next Meeting

- 2025/2026 Sustainability Division budget recommendations
- Bag tax programs
- Internal Decarbonization Plan

XIV. Adjourn

City of Louisville
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Sustainability Advisory Board

Meeting Minutes

February 21, 2024
Louisville Public Library, 2nd Floor Board Room
951 Spruce Street
6:00 PM

Call to Order – Todd Budin, LSAB Chair called the meeting to order at 6:35 pm.

Roll Call was taken and the following members were present:

Board Members Present: Tiffany Boyd, Todd Budin, Josh Cooperman, John Cowley, Allison Kay and Kevin Lombardo
Board Members Absent: Megan Ottesen
Staff Members Present: Kayla Betzold, Samma Fox

Approval of Agenda –
Tiffany moved to approve the agenda; Kevin seconded the motion. The agenda was approved by all members.

Approval of Meeting Minutes –
Kevin moved to approve the meeting minutes; Allison seconded the motion. The meeting minutes were approved by all members.

Public Comments –
There were no public comments.

Staff Update –
Staff Updates for this meeting remain as described in the Sustainability Advisory Board packet for this meeting of Feb. 21, 2024.

In addition to the published updates, Kayla provided the board with a progress update in regard to the Internal Decarbonization Plan. The City has not moved forward with an RFP yet, but have received approval from the city manager to move forward with energy efficiency at all ten facilities, building electrification and EV charging at 5 sites: (1) the White House, (2) the Public Library, (3) the North Water Treatment Plant, (4) the Police and Municipal Court building, and (5) the Rec Center and solar at three sites: the Rec Center (380 kilowatts solar), Police Station (257 kilowatts) and Library (128 kilowatts).

At this point it's unclear if the City will decide to move forward with management assistance via an energy performance contract with the state program or if the City will directly issue an RFP. The city is still talking to the energy office about that but it will be decided soon. Presently, this project is able to move forward without having to seek any new financing. It will be funded through current budgets and through grants, though that will require some reduction in scope.

Over the longer term, the Plan's additional solar installations are scheduled for 2027. For now, the North Water Treatment Plant, Rec Center, and Police Station solar systems' construction could start by the end of the year (2024). However, there could be unanticipated delays in these plans, such as additional requirements imposed if Energy Performance Contracting is involved.

Rebates available for home energy improvements in 2024 –
Approximately $20,000 will be in the budget for 2024 to provide rebates for specific home energy improvements in Louisville. A similar budget was depleted in the last four months of 2023, after the rebate program began.

LSAB member question re: CU/Anschutz evaluation of commercial sector for decarbonization:

This student group is focusing on HVAC systems in commercial buildings, but will they also evaluate lighting and refrigeration systems? Kayla replied that they are focusing on the ages of buildings and potentially reducing the scope of the project because right now they're researching all 700 brick and mortar businesses.

Kayla added that the Spring Cleaning Event is scheduled for Saturday, April 27th from 9:00 AM to 12:30 at Ascent Church. The event is similar to last year, except that the event is no longer offering vouchers for electric lawn equipment because of the state's new 30% sale point of sale discount when buying this equipment. Requests for volunteers to support this event will be posted soon. One LSAB member noted again that it falls on the same day as Earth Day in Lafayette. Sustainability Division is hoping that the funds for the discontinued rebates can be allocated as rebates for other purposes, such as Energy Smart residential rebates.

Follow-up responses to queries from previous month's meeting –

Tiffany commented that she appreciates in the staff update where there is a section called "January meeting follow up" with answers to questions asked earlier. The follow up regarding discussion about "LSAB bylaws is included in the 2024 Work Plan in July" was prompted by John's request to add into the bylaws (and into the online Mission Statement) a phrase to state that "reducing greenhouse gas emissions" is part of our mission.

Tiffany also stated that Climate Con will be held at CU April 20th. Todd asked that an EnergySmart rebate update be provided in an upcoming meeting. Tiffany asked if PACE would consider a heat pump bulking purchasing program for commercial units. Kayla responded that she will address these comments in the March staff updates.

Discussion Item: Youth Advisory Board Collaboration –

Two members of the Youth Advisory Board presented their plans for a youth-oriented scavenger hunt around downtown Louisville to increase awareness about climate issues and what individuals could do to reduce their carbon footprints. Their project for this year is being called “Eco-Seekers”. This is a youth environmental education outreach program to help educate the youth and their parents on different types of climate rebates (including from the City of Louisville), climate conservation activities, and local action that they can take to help reduce their own carbon footprints and that of their families. The purpose of their presentation was to get LSAB’s input on what environmental information to include into “QR code stations” that are planned for various sites around downtown Louisville. They want to engage kids and their parents regarding opportunities such as rebates for buying electric cars or electric lawn mowers.

Public Comment

There was no public comment on this item.

Board Discussion

Tiffany pointed out that a City web site already exists which lists all those incentives, such as for induction stoves, heat pumps, etc. [See: www.louisvilleco.gov/living-in-louisville/residents/sustainability/community-decarbonization] The planned QR codes could go directly to that site, because then it would consolidate accurate information in one place. This is similar to what they did for the parade of lights: they turned this site into a QR code so people could scan that and it would take them right to this page.

For people who prefer not to read, a QR code could connect to an audio file which then tells them stories, with several different story tellers to select from. It was suggested that the scavenger hunt could end at a location like the library where the kids would get a sweet treat, or a day pass at the Rec Center, or a Passport-type card with special deals, or “magic boxes”.

It was also suggested that the Projects could include issues beyond climate, such as local pollinators, public transport, getting around using bikes and skateboards, composting, reducing "urban heat islands", building green roofs, etc. If there's a downtown business with solar panels, that could start a discussion about renewable energy. A scavenger item for finding a bus stop could lead to discussions of public transportation. This could tie in with the Downtown Visioning meeting tomorrow night at City Hall.

Sam said the project could be ready for implementation in about mid-April. The setups for developing the scavenger hunt and the QR codes would happen beforehand in March. Plans are to advertise this activity at all the preschools in the area and in newsletters. LSAB members recommended that all related information be presented in Spanish as well, and that the City partners with professional translators who could help.

John pointed out that there could be some extra opportunities associated with the City's potential closing off of several downtown blocks on Main Street (for outdoor dining in the spring and summer months). He also suggested that the kids participating might appreciated having a "take home" souvenir, like a little passport booklet.

Discussion Item: Community Decarbonization Plan –

Kayla reviewed the Community Decarbonization Plan, recently published in collaboration with Xcel's Partners in Energy and highlighted a residential engagement strategy, 1-2-3 Electrify Workshop Series. See the meeting packet for more information. Kayla asked the board to provide feedback and/or direction on two items: 1) components/partners for the 1-2-3 Electrify series and 2) overall feedback about the Community Decarbonization Plan. Kayla asked the board to draft a memo outline and appoint an LSAB member to write the memo on behalf

of LSAB to include in the Council packet for the Community Decarbonization Plan and Climate Action Goals update.

Public Comment

RJ Harrington: RJ's comments focused on the public engagement process of the Community Decarbonization Plan. He expressed that there was limited engagement, the stakeholder meetings were not open to the public and he had trouble navigating the website. He also wondered about the type of outreach to the community that will be done for the home electrification workshop series.

Deb Fahey: Deb suggested that the workshop series focus on hands-on activities, such as an induction stove demonstration. She added that this demonstration after the Marshall Fire was an important piece for residents determining if they wanted to rebuild with this technology. She also recommended focusing on rebates and incentives through the workshop series and postcards, as this was an effective marketing strategy post Marshall Fire. She also requested that some of the workshops be hosted in Louisville and Marshall Fire networks could be utilized to spread information about these events.

Board Discussion

Kayla said that the workshops being developed focus on outreach to the single family homeowner. There will be a separate implementation strategy for renters and multifamily and a separate implementation strategy for the mobile home park (PDZ), which will dovetail with the bag tax programs that we'll be doing at PDZ this year. The workshops will be more centrally focused and will use public buildings so there's enough capacity. Also, there would be space for an Expo, where vendors would display equipment to educate residents about low-emissions appliances. LSAB suggested that after the general meetings, as with the Marshall Fire recovery meetings, people could travel separately to visit selected homes near the Rec Center. Speakers at the workshops could be

community members who have done some of these upgrades, similar to what was done at meetings promoting Solar Co-Ops. From personal experiences, they could answer questions about costs and other issues that need clarification.

For our workshops, after the presentations the attendees could go to someone's house and watch a demonstration on an induction stove, for example. They could visit basements to examine duct-work or state-of-the-art insulation (perhaps with imaging from infrared cameras). They could get the feel of being in a house that's heated with a heat pump (or in the summer, cooled). They could experience the chill of being near a heat-pump type water heater.

There are organizations that can arrange to drive groups of people to individual homes, the volunteer showcases. Also, it could be smart to announce that the addresses of the open houses won't be available until people attend the workshops, assuring that residents attend to get this information.

Importantly, how do you incentivize people to take the next steps and actually transition (make the jump) to the installing low-emissions options? And how do you validate the success of the outreach programs, tracking and quantifying how many such transitions have taken place, and how much carbon dioxide they have prevented? (Quantifying could partly come from tracking Xcel and EnergySmart rebates.) Resources to help residents make this step include software such as Buildee for creating a decarbonization capital investment roadmap.

Putting in place a system of Neighborhood Captains could be one way to help assure followups with residents who show interest in decarbonizing their homes. For example, the Captains could help interested residents fill out software questions for decarbonization planning, mentioned above.

Additionally, board members recommended the City split the workshops into two parts – part two would include a tour of the community after the workshop

content has concluded. They recommended including new Marshall Fire homes and retrofits of existing, older homes. A member recommended the home tours have labels that show the changes made and the utility bill impacts. The members want to see hands-on components such as infrared cameras to show insulation, sound of heat pumps and cross-cutting of walls. LSAB suggested partners that include: Go Electric Colorado, Alpine Windows, EnergySmart, an induction chef, and the Colorado Green Building Guild. LSAB suggested outreach through Eco-leaders and Marshall Fire groups. LSAB suggested metrics to track progress and a focus on taking the next step, rather than just education. They suggested all rebates be collected in one place and the event handouts focus on the return on investment that comes from upgrading the home.

A draft outline of a letter to City Council is needed to present the Community Decarbonization Plan for approval. This will include support for the staff's recommendation to update the climate action goals to align with elements of the Plan recommended by the stakeholder group: to reduce by 2030 the city-wide greenhouse gas emissions by 60% (up from 50%) relative to the emissions in 2016.

Since this letter will be supporting the Community Decarbonization Plan as a whole, this outline would include all the components, including the residential education workshop series, PACE supporting businesses in decarbonizing, third-party engineering firms doing business audits, EV chargers at multifamily units, funding a dedicated PACE advisor, working with Lafayette and Superior, Partners in Energy, etc.

Additional funding may be requested for additional temporary assistants, neighborhood Captains, marketing and outreach (mailings, flyers), etc.

It was moved (by Tiffany) and seconded (by Allison) that Todd write the draft of the memo to Council, with support by Josh.

Kevin recommended that if it could be included in this memo, a statement should encourage the Council to be firm in requiring builders to abide by the current energy building codes. (He recalled that two City Council meetings ago a developer presented a need to get a waiver from 2021 ICC codes.) He emphasized the importance of adhering strictly to the requirements of the 2021 codes, in light of the intensifying consequences of climate change.

Discussion Item: Sustainability Spotlight –

Kayla reviewed the components of the City's solid waste hauling RFP and asked the board which components of the RFP were board priorities. See packet for more information.

Public Comment

There was no public comment on this item.

Board Discussion

LSAB's discussion and resulting board priorities are outlined below:

- Board Priority: EV trucks – or EV transition plan
    - Concern about "greenwashing" or unreliability with carbon offsets for RNG trucks
- Board Priority: No limitations on compostables
- Recommend opt-in option for weekly recycling
    - However, consideration about emissions due to more trucks on the street
- Recommend large increases for larger trash bins – incentivize smaller bins

- Recommend more transparent information when homes are sold/bought about options – or automatically switch trash back to smallest size
- Recommend education about GHG emissions associated with waste decomposition in landfill

Discussion Item: 2024 LSAB Work Plan –

Kayla and Todd reviewed the plan to present the 2024 LSAB Work Plan to Council on March 12. See packet for Work Plan and additional information.

Public Comments

There were no public comments on this item.

Board Discussion

Josh asked that Council clarify what they mean on their Work Plan in regard to "Sustainability Programs". Kevin asked that LSAB voice their support for energy codes and ask Council to provide feedback on this topic. Tiffany recommended LSAB include language around additional funding for staffing and rebates and additionally said that the board should include information about alignment with other City plans, including the Comprehensive Plan. If Council also agrees that sustainability is aligned with a planning effort, it supports the claim that there should be additional funding for staffing and rebates. The board also agreed that this is an opportunity to voice support for the Internal Decarbonization Plan.

Sub-Committee and Board Member Updates –

None.

Administrative Tasks –

Allison to write the next Sustainability Spotlight, due March 15. Hannah will reach out to Josh about signing up for a Spotlight in 2024.

Discussion Items for Next Meeting –

The Board did not discuss future agenda items.

Adjourn –

Kevin moved to adjourn the meeting and Tiffany seconded the motion. The meeting was adjourned at 8:28 p.m.

City of Louisville
City Manager's Office

Memorandum

To: **Louisville Sustainability Advisory Board**

From: **Kayla Betzold, Sustainability Manager**

Date: **March 20, 2024**

Re: **Staff Updates**

Projects and Programs

- Solar United Neighbors
  - There are 20 Louisville residences installing rooftop solar through the co-op, totaling 139 kW of PV. 2 of those residences are installing battery storage (12 kW).
- City of Louisville/EnergySmart rebates
  - City of Louisville rebates are still available for residential energy efficiency and electrification projects.
  - 6 new rebates for 5 homes have been issued since the last LSAB update.
  - A full report will be provided quarterly (April).
- Spring Cleaning Event
  - The annual event will be on Saturday, April 27 from 9a-12:30p at Ascent Church parking lot and will be similar to last year's event (HHW, electronics, lawn equipment recycling). Register for your spot here.
  - Lawn equipment vouchers will not be provided as there is a statewide 30% point-of-sale discount on electric lawn equipment.
  - Volunteers are needed! Register here.
- 1-2-3 Electrify Workshop Series
  - 4 home electrification workshops have been scheduled (May – August) and the 1-2-3 Electrify webpage is live, replacing the Community Decarbonization page.

Council Work Plan Items

- The City's Comprehensive Plan project has begun. Stay up to date with the project here.
  - The Comprehensive Plan online survey is available on Engage Louisville now. Share your thoughts!
  - In person Comprehensive Plan Open House scheduled for Thursday, March 21 from 5:30 – 7:30 p.m. at the Louisville Recreation & Senior Center.

- The City's Downtown Vision project is live on Engage Louisville. Information from the Open House and a survey is available now.
- Solid waste contract proposals went to Council on March 5.
    - Council selected Republic Services as the city contracted waste hauler for the next 5 years and selected the base option that includes all electric vehicle waste hauling trucks! The trucks will begin servicing Louisville when the new contract begins (fall 2024).
- LSAB's 2024 Work Plan went to Council on March 12. Council feedback included:
    - Lawn equipment electrification – Interest in rebates/incentives rather than regulation and interested in learning more
    - Memos – Agreement that this is an impactful way to communicate, Council will try to close the loop on communication/feedback through staff liaison. Request from CM Fahey for a memo that explains the impacts of a 'business as usual' scenario.
    - Internal Decarbonization Plan – When staff send a memo update to Council, include an LSAB memo that explains the board's recommendations and anything missing from the project (April).
    - Energy Code – Include LSAB recommendations in the energy code memo, interested in hearing from LSAB but don't want to be the first to pass advanced codes.
    - Budget – Council would like to see LSAB's budget recommendations, ranked based on impact and return on investment.
- The Community Decarbonization Plan will go to Council on April 2.
- Energy code amendments will go to Council on April 16.
- Internal Decarbonization Plan
    - Public Works is hiring a new Project Manager who will oversee the implementation/construction of phase 1 of the Plan.
    - Full update will be provided at the April meeting.

Grants

- The City of Louisville, in collaboration with the Front Range Beneficial Electrification Network (FRBEN) and the Denver Regional Council of Governments (DRCOG) are applying for the EPA's Carbon Pollution Reduction Grant (CPRG) to accelerate building electrification in the region.
    - The application is due April 1, 2024 and the group will likely be applying for $100M+ in funding.

- The City is applying for the Department of Revenue's Alternative Transportation Option Tax Credit to support the purchase of e-bikes for a municipal e-bike library, to encourage employees to reduce VMT throughout the work day.

LSAB (February meeting follow up)

- PACE is not considering a bulk purchase program for commercial heat pumps, as they vary widely and are more complicated than residential heat pumps, however there is research being done around the permitting fees for heat pumps and potential strategies to decrease permit fees when multiple heat pumps are being installed.

Other

- Boulder County is exploring the feasibility of a local compost facility. As part of this initial phase, Boulder County will be investigating compost facility models and compost end markets to determine whether a local facility can move the county closer to its zero waste and climate action goals. Key in this initial phase will be robust community outreach and engagement. A couple important aspects to note about this exploration:
    - There is no selected site for a compost facility at this time.
    - The Rainbow Tree Nursery site will NOT be considered for a compost facility.
    - Boulder County will not explore Boulder County Parks & Open Space land for a compost facility.
- Visit the compost facility website and FAQ page. To stay informed about the project and future public meetings, please register for the project email list. To provide feedback or ask questions, use the project comment and question form.

SUSTAINABLE NEIGHBORHOODS PROGRAM

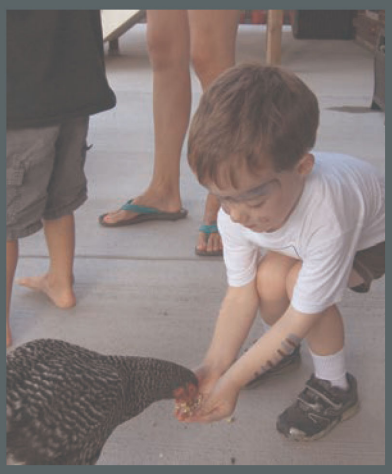
Sustainable Neighborhood Network

EMPOWERING RESIDENTS TO CREATE SUSTAINABLE AND RESILIENT COMMUNITIES











WWW.SUSTAINABLENEIGHBORHOODNETWORK.ORG

Sustainable Neighborhood Network

OUR MISSION

The Sustainable Neighborhoods Program helps cities harness the passion of their community for climate action and neighborhood resilience.





PROGRAM OVERVIEW

Neighborhoods participating in this unique certification program use guidance from city or county staff to organize workshops, projects, and events that fall under one of five categories: energy, air, water, land or people. These activities advance community climate goals, enhance sustainability and increase neighborhood resilience.

By crowd-sourcing the expertise, passion and volunteerism of residents. this program provides a place for innovation and is an effective tool for the implementation of community climate action and sustainability plans.

OUR IMPACT

9 years

4 cities

30 neighborhoods

38,000+ participants

1,100+ projects, events and workshops

THE BENEFITS OF CITIZEN-DRIVEN INNOVATION

The Sustainable Neighborhoods Program leverages the combined power of citizen-driven participation with structured tools, technical advice, and leadership coaching.

Combining resident passion and expertise with staff guidance results in innovative problem-solving, strengthens community cohesion, and builds strong relationships between residents and local government.

Going beyond a typical resident "pledge" platform, the Sustainable Neighborhoods Program uses a combination of online tools and direct neighborhood engagement techniques to realize tangible and measurable results.

MEMBERSHIP BENEFITS

Sustainable Neighborhood Network members are provided with the training, resources, technical assistance and frameworks to successfully implement the Sustainable Neighborhoods Program in their community. Membership provides local governments with:

- License to utilize the Sustainable Neighborhood Program design, credit system, collateral and trademark,
- Access to the SNN project reporting and tracking platform,
- Technical assistance for program administration and project implementation.
- Community engagement and implementation frameworks, best practices, and leadership development opportunities for both government staff and residents of member communities, and
- Connection and engagement with the expanding network of member communities.

LICENSING FEE

The Sustainable Neighborhood Network licensing fee covers the Network's cost of community on-boarding, ongoing program administration, and maintenance and improvement of digital resources.

Population Tier	New Member Year One	Annual Fee Starting Year Two
I <75,000	$5,000	$3,000
II 75-200,000	$6,500	$4,000
III 200-500,000	$7,500	$5,000
IV 500,000+	$10,000	$6,000

NEXT STEPS...

CONNECT WITH US

We will provide more information on the Program & becoming a member

MEMBERSHIP APPROVAL & LICENSING FEE

Staff is available to discuss agreement responsibilities & requirements

STAFF TRAINING

Receive one-on-one training & participate in peer-to-peer networking

PROGRAM CUSTOMIZATION

Make the Program fit your community's unique needs & goals!

LAUNCH SUSTAINABLE NEIGHBORHOODS IN YOUR COMMUNITY!

Sustainable Neighborhood Network

THIS IS HAPPENING...

School lunchroom recycling, literacy tutoring, construction of community gardens, bee-safe neighborhoods, neighborhood produce stands, water-wise yard conversions, clothing and food drives, tree planting programs, emergency preparedness training, customized alternative transportation mapping, organic waste collection contracts, household hazardous waste recycling, chicken-keeping classes, seed swaps, historic preservation projects, energy efficiency workshops, rooftop solar buy-down programs, chemical-free parks pilots, hundreds more!



ABOUT THE NETWORK

The Sustainable Neighborhood Network was formed as a nonprofit in 2020 to manage the successful adoption, implementation and maintenance of the Sustainable Neighborhoods Program in participating communities.

Since 2012, neighborhoods across four member cities have planned and implemented over 1,000 sustainability-related programs, events and projects.

FOR MORE INFORMATION

info@sustainableneighborhoodnetwork.org

www.sustainableneighborhoodnetwork.org









City of Louisville
COLORADO • SINCE 1878

CITY COUNCIL COMMUNICATION
AGENDA ITEM ___

SUBJECT: **ORDINANCE XX, SERIES 2024 – AN ORDINANCE AMENDING TITLE 17 OF THE LOUISVILLE MUNICIPAL CODE CONCERNING ELECTRIC VEHICLE CHARGING INFRASTRUCTURE – 1st READING AND SET PUBLIC HEARING FOR APRIL 16, 2024**

DATE: **MARCH 19, 2023**

PRESENTED BY: **ROB ZUCCARO, AICP, COMMUNITY DEVELOPMENT DIRECTOR**

SUMMARY:
Staff is presenting a proposed ordinance that updates the City's standards for Electric Vehicle Charging Infrastructure that must be installed with new development. The update is intended to align with the standards set forth in the Colorado Model Electric and Solar Ready Code, published by the Colorado Energy Office.

BACKGROUND:
The City adopted Ordinance No. 1816, Series 2021 on October 19, 2021, which established Electric Vehicle (EV) Charging Infrastructure requirements for all new residential and commercial developments in the City and additions that add 25% or more new commercial building area or 50% or more new residential building area to an existing development. The standards established categories for *EV Installed, Capable* and *Ready* parking spaces. An *EV Installed* parking space is a fully functional charging station. An *EV Ready* parking space is wired for a charging station but does not have the charger installed. An *EV Capable* parking space has a conduit for a future wiring and space reserved in the electrical service panel to install future wiring and a charger. The City based the number of spaces required on a review of similar ordinances from other jurisdictions and anticipated demand by use. Table 1 below summarizes the currently adopted number of spaces required by use.

In 2021 and 2022, the City also adopted a series of building code amendments to improve energy efficiency in new development and redevelopments. This included adoption of the 2021 International Energy Conservation Code, with amendments, requirements for all new commercial development to incorporate all-electric water and space heating systems as a way to limit the use of fossil fuels, and a requirement for certain commercial and multi-family developments to meet minimum *Energy Use Intensity* (EUI) ratings.

Table 1: EV Charging Standards Established by Ordinance No. 1816, Series 2021

	EV Installed	EV- Ready	EV Capable
Residential Uses			
Single-Family unit		1 space	1 space
Multi-Family unit, with dedicated parking spaces or garages		1 space	1 space
Tier 1			
Multi-Family, without dedicated parking spaces or garages	10% of spaces	10% of spaces	50% of spaces
Hotel, Motel, Extended Stay Lodging Facility			
Tier 2 – Employment oriented uses	7% of spaces	10% of spaces	15% of spaces
Business and Professional Offices			
General research facilities, light industrial facilities including manufacturing, assembly, warehouse and fabrication			
Hospital			
Tier 3 – Service and Sales oriented uses	5% of spaces	10% of spaces	10% of spaces
Private and public recreational and social facilities, membership clubs, lodges, and fraternal organizations			
Religious institution			
Commercial amusement, indoor and outdoor			
Schools, including public, private, vocational or business			
Restaurant			
Retail			
Personal service			
Medical and dental clinics			

Following the adoption of each of these ordinances, the City Council asked City staff to conduct additional outreach to businesses, commercial property owners and developers to address concerns over feasibility of implementing certain parts of these new ordinances. The City held a public open house in August of 2023 to review the codes and gather input. Included in the input from this open house was that the City consider aligning its EV charging infrastructure standards with the Colorado Model Electric and Solar Ready Code, which the Colorado Energy Office adopted June 1, 2023 (see Attachment 2). This new model code has less stringent standards than what the City has adopted.

PROPOSAL:
The proposed ordinance would combine use types into three categories: commercial, multifamily residential (commercial R-2 occupancies), and other residential uses. A new category of *EV Capable Light* parking spaces is added. This category only requires a conduit from the electrical panel to the parking space for future upgrades, but does not require electrical panel capacity for the circuit. The number of required *EV Installed, Ready* and *Capable* parking spaces would all be reduced under the proposal from the current ordinance for commercial and multifamily development. The number of required spaces for other residential development would remain the same as the current ordinance. Table 2 below provides a summary of the proposed number of EV charging spaces.

Table 2: Proposed Revised EV Charging Standards

Building Type	EVSE Installed Space	EV Ready Space	EV Capable Space	EV Capable Light Space
Commercial Buildings: Non R-2 Occupancies				
With 10 or less parking spaces	0	2 spaces	0	0
With greater than parking spaces	2% of spaces	8% of spaces	10% of spaces	10% of spaces
Commercial Buildings: R-2 Occupancies				
With 10 or less parking spaces	1 space	1 space	1 space	1 space
With greater than 10 parking spaces	5% of spaces	15% of spaces	10% of spaces	30% of spaces
Residential Buildings				
Per Dwelling	0	1 space	1 space	0

The proposal also adds definitions to the zoning code (LMC Title 17) that currently exist in the building code (LMC Title 15) for ease of reference. A definition for *EV Capable Light* space would also be added to the code.

ANALYSIS:
In a review of other local codes, the City's existing EV Charging Infrastructure code is more stringent than some and less stringent than others. For example, Boulder County's EV charging code requires a lower percent of EV Installed spaces for commercial development and does not require for EV Capable or Ready spaces (see Attachment 3). Lafayette's code does require EV Capable and Ready spaces in addition to Installed Spaces, but with some categories at a higher percentage than the City's existing code (see Attachment 4). Aligning with the Colorado Model Electric and Solar Ready Code is a way to provide more consistency and predictability for property developers, while still meeting the City's goals to promote EV infrastructure.

PUBLIC COMMENTS:
No public comments have been submitted.

FISCAL IMPACT:
No fiscal impact is anticipated from the changes to the code.

PLANNING COMMISSION RECOMMENDATION:
The Planning Commission reviewed the draft ordinance at their February 8, 2024 meeting and voted unanimously to recommend approval with the following conditions:

- Provide language to ensure a minimum "Level 2" EV charging station standards for installed spaces.
- Change R-2 multi-family residential occupancy with 10 or fewer parking spaces to require at least one EVSE Installed Space.
- Add language so that if EVSE Installed Spaces are provided above the minimum number that a credit can be provided to the required number of EV Capable, EV Ready, or EV Ready Light Spaces.
- Require labeling in electrical panels for the spaces reserved for breakers to support future EV Capable Spaces.

All Commission conditions were incorporated into the 1st reading draft for City Council.

The recording of the meeting is at the following link (6:30 – 1:14:30).
https://www.youtube.com/live/YCc4rVSudEc?si=hzQH-bhurnTipPHf

Minutes from the meeting will be available for the public hearing and second reading of the proposed ordinance.

STAFF RECOMMENDATION:
Staff recommends approval of Ordinance XX, Series 2024 on first reading and setting the public hearing for April 16, 2024

ATTACHMENTS:

1. Ordinance XX, Series 2024
2. Colorado Model Electric and Solar Ready Code
3. Boulder County Building Code Section K111.4, and R329
4. Lafayette Building Code Sections CD103, RD103, RD104, and RD105
5. Planning Commission Resolution 01, Series 2024

STRATEGIC PLAN IMPACT:

☐	Financial Stewardship & Asset Management	☐	Reliable Core Services
☒	Vibrant Economic Climate	☐	Quality Programs & Amenities
☒	Engaged Community	☐	Healthy Workforce
☐	Supportive Technology	☐	Collaborative Regional Partner

ORDINANCE NO. _____, SERIES 2023

AN ORDINANCE AMENDING TITLE 17 OF THE LOUISVILLE MUNICIPAL CODE CONCERNING ELECTRIC VEHICLE CHARGING INFRASTRUCTURE

WHEREAS, the City of Louisville remains committed to its adopted goals to reduce energy consumption, increase clean energy sources, and support the transition to a low-carbon community as outlined in the Sustainability Action Plan and Resolution 25, Series 2019, "A Resolution Setting Clean Energy and Carbon Reduction Goals"; and

WHEREAS, the City Council desires to add requirements for solar readiness, electric vehicle charging infrastructure, and building electrification to build a more resilient building stock and support future building and transportation electrification efforts pursued by residents and businesses; and

WHEREAS, by Ordinance No. 1816 adopted on October 19, 2021, the City Council amended the Zoning Code to require new construction include electric vehicle charging infrastructure; and

WHEREAS, the City Council desires to amend the City's electric vehicle charging standards to better align with the Colorado Model Electric Ready and Solar Ready Code, published June 1, 2023 by the Colorado Energy Office; and

WHEREAS, the Planning Commission, after property notice required by law, held a public hearing on this ordinance on February 8, 2024 and provided a recommendation to the City Council on its adoption; and

WHEREAS, the City Council, after proper notice as required by law, has held a public hearing on this ordinance providing for the adoption of said code; and

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF LOUISVILLE, COLORADO:

Section 1. Louisville Municipal Code Section 17.20.170. – Electric Vehicle Charging Infrastructure, is hereby amended as follows (words added are underlined; words deleted are ~~stricken through~~):

Sec. 17.20.170. – Electric Vehicle Charging Infrastructure.

A. Purpose and Intent. The purpose and intent of this section is to facilitate and encourage the use of electric vehicles, to expedite the establishment of convenient and cost-effective electric vehicle infrastructure, and establish the minimum requirements for such infrastructure to serve both short and long-term parking needs.

B. Definitions. The following definitions shall apply to this Section:

Commercial Buildings, for this section, means commercial buildings and R-Occupancies that are covered by the International Building Code.

Electric Vehicle (*EV*) means a vehicle registered for on-road use, primarily powered by an electric motor that draws current from a rechargeable storage source that is charged by being plugged into an electrical current source.

Electric Vehicle Supply Equipment (EVSE) means the electrical conductors and associated equipment external to the electric vehicle that provide a connection between the premises wiring and the electric vehicle to provide electric vehicle charging.

Electric Vehicle (EV) Capable Space means a designated parking space that is provided with conduit sized and rated for a minimum 40-amp, 208/240-Volt dedicated branch circuit and shall be no less than 1" in size. Conduit must be continuous from the future or existing electrical panelboard or switchboard location(s) and end at a junction box or receptacle located within close proximity of the parking space. The electrical panel serving the parking space shall have sufficient capacity and physical space for a dual-pole, 40-amp breaker and shall be labeled "For Future Electric Vehicle Supply." The conduit shall be sealed at the junction or outlet box that is capped off, with the conduit sealed and the cap labeled as "For future electric vehicle charging."

Electric Vehicle (EV) Capable Light Space means a designated parking space that is provided with conduit sized and rated for a minimum 40-amp, 208/240-Volt dedicated branch circuit and shall be no less than 1" in size and has sufficient physical space adjacent to the existing electrical equipment for future electric upgrades.

Electric Vehicle (EV) Ready Space means a designated parking space that is provided with a dedicated branch circuit with wiring capable of supporting a minimum 40-ampere, 208/240-Volt circuit that terminates at a receptacle, plug, junction box, or an installed electric vehicle supply equipment within close proximity of the parking space. There shall be adequate reserved space in an electrical panelboard or switchboard to meet the electric vehicle requirements.

Electric Vehicle Supply Equipment (EVSE) Installed Space means a designated parking space with dedicated electric vehicle supply equipment capable of supplying a minimum 40-amp, dedicated circuit rated at 208/240 Volt from a building electrical panelboard.

Electric vehicle charging stations (EVCS) means a public or private parking space that is served by battery charging station equipment that has as its primary purpose the transfer of electric energy (by conductive or inductive means) to a battery or other energy storage device in an electric vehicle.

Electric vehicle charging station – private restricted use means an electric vehicle charging station that is:

1. Privately owned and restricted access (e.g., single-family dwelling unit, executive parking, designated employee parking, assigned parking at multi-family residential building); or

2. Publicly owned and restricted (e.g., fleet parking with no access to the general public).

Electric vehicle charging station – public use means an electric vehicle charging station that is:

1. Publicly owned and publicly available (e.g., Park-n-ride, public library parking lot, Recreation and Senior Center lot, etc); or

2. Privately owned and available to visitors of the use (e.g., shopping center, hotel, office, etc.)

Electric vehicle parking space means any marked parking space that identifies the use to be exclusively for the parking of an electric vehicle.

Residential Buildings, for this section, means dwellings that are covered by the International Residential Code

C. Number of required electric vehicle charging stations. The following table sets forth the number of required charging stations for all new development or redevelopments as required in Chapter 15.18 of the Louisville Municipal Code. ~~This list is not intended to be exhaustive of each use category, however is intended to establish general categories of use tiers. The Director of Planning and Building Safety shall determine the appropriate tier if the use is not identified in the table below.~~ For each EVSE Installed Space beyond the minimum number of required spaces, a credit may be given for a required EV Ready, EV Capable, or EV Capable Light Space.

1. Requirements will be rounded up to the nearest whole number.

2. Minimum electrical and hardware requirements for EVSE Installed, EV Ready, and EV Capable are set forth in Chapter 15.18 of the Louisville Municipal Code.

3. Minimum Charging Rate. Each installed EVSE shall comply with one of the following:

a. Be capable of charging at a minimum rate of 6.2 kVA (or 30A at 208/240V).

b. When serving multiple EVSE installed spaces and controlled by an energy management system providing load management, be capable of simultaneously sharing each EVSE installed space at a minimum charging rate of no less than 3.3 kVA.

	~~EV Installed~~	~~EV- Ready~~	~~EV Capable~~
~~**Residential Uses**~~			
~~— Single-Family unit~~		~~1 space~~	~~1 space~~
~~— Multi-Family unit, with dedicated parking spaces or garages~~		~~1 space~~	~~1 space~~
~~**Tier 1**~~			
~~— Multi-Family, without dedicated parking spaces or garages~~	~~10% of spaces~~	~~10% of spaces~~	~~50% of spaces~~
~~— Hotel, Motel, Extended Stay Lodging Facility~~			
~~**Tier 2 – Employment oriented uses**~~	~~7% of spaces~~	~~10% of spaces~~	~~15% of spaces~~
~~— Business and Professional Offices~~			
~~— General research facilities, light industrial facilities including manufacturing, assembly, warehouse and fabrication~~			
~~— Hospital~~			
~~**Tier 3 – Service and Sales oriented uses**~~	~~5% of spaces~~	~~10% of spaces~~	~~10% of spaces~~
~~— Private and public recreational and social facilities, membership clubs, lodges, and fraternal organizations~~			
~~— Religious institution~~			
~~— Commercial amusement, indoor and outdoor~~			
~~— Schools, including public, private, vocational or business~~			
~~— Restaurant~~			
~~— Retail~~			
~~— Personal service~~			
~~— Medical and dental clinics~~			

Building Type	**EVSE Installed Space**	**EV Ready Space**	**EV Capable Space**	**EV Capable Light Space**
Commercial Buildings: Non R-2 Occupancies				
With 10 or less parking spaces	0	2 spaces	0	0

With greater than parking spaces	2% of spaces	8% of spaces	10% of spaces	10% of spaces
Commercial Buildings: R-2 Occupancies				
With 10 or less parking spaces	1 space	1 space	1 space	1 space
With greater than 10 parking spaces	5% of spaces	15% of spaces	10% of spaces	30% of spaces
Residential Buildings				
Per Dwelling	0	1 space	1 space	0

D. Permitted locations.

1. EVCS are permitted in every zoning district when accessory to a principal permitted use. Such stations located a single-family and designated multi-family units shall be private restricted use only.

2. If the primary use of the parcel is the retail electric charging of vehicles, then the use shall be considered an automotive fueling station for zoning purposes. Installation shall be located in zone districts which permit this use.

E. General requirements.

1. Accessible spaces. A charging station will be considered accessible if it is located adjacent to, and can serve, an accessible parking space as defined and required by the ADA. It is not necessary to designate the EVSE exclusively for the use of vehicles parked in the accessible space.

2. EVCS – public use shall be subject to the following requirements.

a. The EVCSs shall be located in a manner that will be easily seen by the public for informational and security purposes.

b. The EVCSs shall be located in desirable and convenient parking locations will serve as an incentive for the use of electric vehicles.

c. The EVCSs must be operational during the normal business hours of the use(s) that it serves.

d. The EVSE shall be maintained in all respects, including the functioning of equipment. A phone number or other contact information shall be provided on the equipment for reporting problems with the equipment or access to it.

e. The property owner may collect a service fee for the use of EVSE.

Section 2. If any article, section, paragraph, sentence, clause, or phrase of this ordinance is held to be unconstitutional or invalid for any reason, such decision shall not affect the validity or constitutionality of the remaining portions of this ordinance. The City Council hereby declares that it would have passed this ordinance and each part or parts hereof irrespective of the fact that any one part or parts be declared unconstitutional or invalid.

Section 3. The repeal or modification of any provision of any prior ordinance by this ordinance shall not release, extinguish, alter, modify, or change in whole or in part any penalty, forfeiture or liability, either civil or criminal, which shall have been incurred under such provision, and each provision shall be treated and held as still remaining in force for the purpose of sustaining any judgment, decree, or order which can or may be rendered, entered, or made in such actions, suits, proceedings, or prosecutions.

Section 4. All other ordinances or portions thereof inconsistent or conflicting with this ordinance or any portion hereof are hereby repealed to the extent of such inconsistency or conflict.

INTRODUCED, READ, PASSED ON FIRST READING, AND ORDERED PUBLISHED this _____ day of _____, 2023.

_____
Christophe M. Leh, Mayor

ATTEST:

_____
Meredyth Muth, City Clerk

APPROVED AS TO FORM:

_____
Kelly PC, City Attorney

PASSED AND ADOPTED ON SECOND AND FINAL READING, this _____ day of _____, 2023.

_____
Christophe M. Leh, Mayor

ATTEST:

_____
Meredyth Muth, City Clerk

City of Louisville
COLORADO • SINCE 1878

CITY COUNCIL COMMUNICATION
AGENDA ITEM ___

SUBJECT: **ORDINANCE XX, SERIES 2024 – AN ORDINANCE AMENDING LOUISVILLE MUNICIPAL CODE SECTION 15.18.030 CONCERNING THE 2021 INTERNATIONAL ENERGY CONSERVATION CODE – 1st READING AND SET PUBLIC HEARING FOR APRIL 16, 2024**

DATE: **MARCH 19, 2023**

PRESENTED BY: **ROB ZUCCARO, AICP, COMMUNITY DEVELOPMENT DIRECTOR**

SUMMARY:

Attached for consideration on first reading, and to set the public hearing for April 15 2024, is a draft ordinance amending Louisville Municipal Code Section 15.18.030. The proposed ordinance is the result of staff research and public input on how to ensure the feasibility of implementing the City's amendments to the 2021 International Energy Conservation Code (IECC). The proposed code update provides alternative paths to meet the intended code outcomes, clarifies certain aspects of the code, streamlines certain administrative procedures, and aligns the code with equipment and material availability. Specific changes to the code include the following:

- Specifies that the commercial all-electric space and water heating requirement only applies to all new construction and removes any standards for additions and alternations to existing commercial buildings.
- Allows gas backup space heating equipment for the commercial all-electric space heating standards.
- Removes post-construction documentation, one-year compliance check, monitoring and metering requirements for new commercial construction subject to Appendix PT, Energy Use Intensity (EUI) modeling standards.
- Clarifies the EUI standards applicable to small office development between 0-5,000 sq. ft.
- Clarifies that R-1 and R-2 occupancies shall be subject to Appendix PT, the EUI modeling standards, rather than Appendix RC, Zero Energy Residential Building Provisions.
- Amends the commercial door U-value to match market availability of commercial type doors.
- Changes the minimum glazing standards for industrial and warehouse development to be measured by wall area rather than floor area.
- Corrects missing commercial R-values for insulation of metal buildings, and for piping and ducting.
- Adds minimum heat pump standards for both commercial and residential development to ensure that they are climate appropriate.
- Updates furnace efficiency standards to match product availability.

- Allows an exception to meeting Appendix RC, Zero Energy Residential Building Provisions if a home is certified through the Passive House Institute US, Inc. (PHIUS) program.
- Allows a Home Energy Rating System (HERS) in lieu of the Energy Rating Index (ERI) specified in the code.
- Removes the requirement to install electric vehicle charging infrastructure for commercial development when parking spaces are added or reconfigured if not part of a new building or building addition.

BACKGROUND:
On October 29, 2021, the City Council adopted the 2021 IECC with amendments, including the adoption of Appendix RC, which provides net-zero development standards for new residential development. The 2021 IECC provides minimum energy efficiency standards above that found in the International Residential Code (IRC) and International Building Code (IBC). The ordinance also included minimum electric vehicle (EV) charging standards for all new development. Ordinance No. 1816, Series 2021 and the minutes from the adoption hearing are included as Attachment Nos. 2 and 3.

On December 20, 2022, the City Council adopted further amendments to the 2021 IECC specific to commercial development. This included the adoption of all-electric standards for commercial space and domestic water heating, with exemptions for commercial kitchens and a broad range of commercial, industrial and institutional processes. The ordinance also included a new appendix that requires certain commercial uses, including office, multi-family residential development, and warehouse development, to meet minimum energy use performance targets that is more stringent than the base IECC or IBC codes. As part of the development of this code, the City hired Group 14 Engineering and Lotus Engineering and Sustainability to conduct a study and gather community input on options to strengthen the City's commercial energy code standards. This included an analysis of a net-zero commercial code option vs an energy use standard as an alternative to a full net-zero code. The final report and recommendations from Group 14/Lotus are included as Attachment No. 4. Ordinance 1845, Series 2022 and the minutes from the adoption hearing are included as Attachment Nos. 5 and 6.

Following the adoption of Ordinance 1845, Series 2022, City Council asked that staff conduct outreach on the adopted codes after hearing concerns over the feasibility and stringency of some of the code standards. In August of 2023 City staff and a City consultant with Shums Coda Associates held a public open house to gather feedback on the adopted codes. Staff received feedback from residents, business owners, land owners, developers and their design consultants on specific issues of concern. The feedback received at the open house is the basis for several of the proposed updates to the code. City staff has also identified several code provisions as part of implementing the codes since their adoptions and after conducting further research that are included in proposed updates.

ANALYSIS:
The purpose of the proposed code updates is to meet the same intent of the original code adoption to have progressive energy standards than the base codes, but also ensuring that the codes are structured so that they are feasible and balanced to support economic vitality in the City. Staff has worked with the community and a consultant with Shums Coda Associates with special expertise in drafting energy codes.

PUBLIC COMMENTS:
No public comments have been received.

FISCAL IMPACT:
No fiscal impact is anticipated from the changes to the code.

STAFF RECOMMENDATION:
Staff recommends approval of Ordinance XX, Series 2023 on first reading and setting the public hearing for April 16, 2024

ATTACHMENTS:
1. Ordinance XX, Series 2023
2. Ordinance 1816, Series 2021
3. October 19, 2021 City Council Minutes
4. Group 14/Lotus Energy Code Update Recommendation Report
5. Ordinance 1845, Series 2022
6. December 20, 2022 City Council Minutes

STRATEGIC PLAN IMPACT:

☐	**Financial Stewardship & Asset Management**	☐	**Reliable Core Services**
☒	**Vibrant Economic Climate**	☐	**Quality Programs & Amenities**
☒	**Engaged Community**	☐	**Healthy Workforce**
☐	**Supportive Technology**	☐	**Collaborative Regional Partner**

ORDINANCE NO. _____, SERIES 2024

AN ORDINANCE AMENDING CHAPTER 15.18.030 OF THE LOUISVILLE MUNICIPAL CODE CONCERNING THE 2021 INTERNATIONAL ENERGY CONSERVATION CODE

WHEREAS, the City Council has adopted from time-to-time certain building and construction standards; and

WHEREAS, it is deemed to be in the interest of the public health, safety and general welfare to adopt by reference thereto the 2021 edition of the International Energy Conservation Code with amendments and additions to such code; and

WHEREAS, the City Council adopted Ordinance No. 1816, Series 2021 and Ordinance No. 1845, Series 2022, which included the adoption of Appendix RC to the 2021 edition of the International Energy Conservation Code, and provisions for electric space and water heating provisions for commercial development, and a new Appendix PT setting standards for energy ratings for certain commercial development; and

WHEREAS, following additional research and public input on the provisions adopted in Ordinance No. 1816, Series 2021 and Ordinance No. 1845, Series 2022, the City desires to make certain amendments to such codes to ensure the feasibility of implementation of the codes; and

WHEREAS, the City of Louisville remains committed to its adopted goals to reduce energy consumption, increase clean energy sources, and support the transition to a low-carbon community as outlined in the Sustainability Action Plan and Resolution 25, Series 2019, A Resolution Setting Clean Energy and Carbon Reduction Goals; and

WHEREAS, reducing building energy consumption is an effective strategy to reduce community-wide energy consumption and increase long-term cost savings for businesses; and

WHEREAS, the City Council is committed to environmental, economic and social sustainability, ensuring the International Energy Conservation Code is attainable for current and future business owners and tenants, supporting affordable housing and local businesses development.

WHEREAS, the City Council, after proper notice as required by law, has held a public hearing on this ordinance providing for amendments to said codes; and

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF LOUISVILLE, COLORADO:

Section 15.18.030 of the Louisville Municipal Code, concerning amendments and deletions to the 2021 International Energy Conservation Code, is hereby amended as follows (deleted text in ~~strikethrough~~ and new text <u>underlined</u>):

1. *Section C101.1 Title,* is amended to insert "the City of Louisville" so the section will read:

   C101.1 Title. These regulations shall be known as the Energy Conservation Code of the City of Louisville, and shall be cited as such. It is referred to herein as "this code."

2. *Section C103.2 Information on construction documents*, is hereby amended to read as follows:

   C103.2 Information on construction documents. Construction documents shall be drawn to scale upon suitable material. Electronic media documented are permitted to be submitted when *approved* by the *code official*. Construction documents shall be of sufficient clarity to indicate the location, nature and extent of the work proposed, and show in sufficient detail pertinent data and features of the building, systems and equipment herein governed. Details shall include the following as applicable:

   1. Energy compliance path.
   2. Insulation materials and their *R*-values
   3. Fenestration *U*-factor and solar heat gain coefficients (SHGCs).
   4. Area-weighted *U*-factor and solar heat gain coefficient (SHGC) calculations.
   5. Mechanical system design criteria.
   6. Mechanical and service water heating systems and equipment types, sizes, fuel source and efficiencies.
   7. Economizer description.
   8. Equipment and system controls.
   9. Fan motor horsepower (hp) and controls.
   10. Duct sealing, duct and pipe insulation and location.
   11. Lighting fixture schedule with wattage and control narrative.
   12. Location and *daylight* zones on floor plans.
   13. Air barrier and air sealing details, including the location of the air barrier.
   14. Location of pathways for routing of raceways or cable from the solar ready zone to the electrical service panel.

3. *Section C202 General Definitions*, is hereby amended by adding, in alphabetical order, the following definitions:

   All-Electric Building: A building that contains no combustion equipment, or piping or plumbing for combustion equipment, installed within the building or building site.

Combustion Equipment: Any equipment or appliance used for space heating, service water heating, cooking, clothes drying and/or lighting that uses fuel gas or fuel oil.

~~*Electric Vehicle (EV):* A vehicle registered for on-road use, primarily powered by an electric motor that draws current from a rechargeable storage source that is charged by being plugged into an electrical current source.~~

~~*Electric Vehicle Supply Equipment (EVSE):* The electrical conductors and associated equipment external to the electric vehicle that provide a connection between the premises wiring and the electric vehicle to provide electric vehicle charging.~~

~~*Electric Vehicle Capable Space:* A designated parking space that is provided with conduit sized and rated for a minimum 40-amp, 208/240-Volt dedicated branch circuit and shall be no less than 1" in size. Conduit must be continuous from the future or existing electrical panelboard or switchboard location(s) and end at a junction box or receptacle located within close proximity of the parking space. The electrical panel serving the parking space shall have sufficient capacity and physical space for a dual-pole, 40-amp breaker. The conduit shall be sealed at the junction or outlet box that is capped off, with the conduit sealed and the cap labeled as "For future electric vehicle charging".~~

~~*Electric Vehicle Ready Space:* A designated parking space that is provided with a dedicated branch circuit with wiring capable of supporting a minimum 40-ampere, 208/240- Volt circuit that terminates at a receptacle, plug, junction box, or an installed electric vehicle supply equipment within close proximity of the parking space. There shall be adequate reserved space in an electrical panelboard or switchboard to meet the electric vehicle requirements.~~

~~*Electric Vehicle Supply Equipment (EVSE) Installed Space:* A designated parking space with dedicated electric vehicle supply equipment capable of supplying a minimum 40-amp, dedicated circuit rated at 208/240 Volt from a building electrical panelboard.~~

Emergency Power System: A source of automatic electric power of a required capacity and duration to operate required life safety, fire alarm, detection, and ventilation systems in the event of a failure of the primary power. Emergency power systems are those required for electrical loads where interruption of the primary power could result in loss of human life or serious injuries.

Energy Use Intensity (EUI): The annual building site energy use per square foot of gross floor area in units of kBTU/sq ft.

Residential Building: For this code, includes detached one- and two-family dwellings and multiple single-family dwellings (townhouses) R-3 and R-4 buildings three stories or less in height above grade plane.

Standby Power System: A source of automatic electric power of a required capacity and duration to operate required building, hazardous materials or ventilation systems in the event of a failure of the primary power. Standby power systems are those required for electrical loads where interruption of the primary power could create hazards or hamper rescue or fire-fighting operations.

Tenant Finish: The first tenant occupying a space(s) in a core and shell. Multiple tenants may be considered as a tenant finish until the entire space within the core and shell has had a tenant. Once a space within a core and shell has been occupied it becomes an existing building.

4. *C401.2.* Commercial buildings shall comply with ~~Section C401.2.1~~ <u>one of the following, as applicable</u>

C401.2.1 Performance targets. New commercial building types included in the scope of Appendix PT shall comply with Appendix PT and Sections C403.2.4 and C404.10.

C401.2.2 Core and shell. Core and shell buildings shall comply with the provisions of Section C402.1.3 through C402.5. When mechanical systems are installed, core and shell buildings shall also meet the provisions in C403.2.4, C404.10, and Section C408.

C401.2.2.1 Core and shell buildings shall submit a letter of agreement to the City stating the tenant spaces included in the scope of Appendix PT shall meet the EUI target established in Table PT103 and shall include these requirements in their lease or purchase agreements.

C401.2.3 Tenant finish. Tenant finishes included in the scope of Appendix PT shall comply with Appendix PT and C403.2.4 and C404.10. All other tenant finishes shall comply with the Prescriptive Compliance option, which requires compliance with Sections C401.3, C401.4, C402 through C406, and C408.

C401.2.4 Other commercial building types. Commercial building types not included above<u>, including additions,</u> shall comply with the Prescriptive Compliance option, which requires compliance with Sections C401.3, C401.4, C402 through C406, and C408.

Exception: ~~Additions, alterations,~~ <u>Alterations,</u> repairs, and changes of occupancy to existing buildings complying with Chapter 5.

5. *Section C401.2.1 International Energy Conservation Code,* is hereby deleted and replaced to read as follows:

   C401.2.1 International Energy Conservation Code

   Commercial buildings shall be built all-electric unless the fuel gas options of C403.3.2 and the additional electric infrastructure requirements of C405.14 are met. All buildings must comply with the following:

   City of Louisville's Prescriptive Compliance. The Prescriptive Compliance option requires compliance with Sections C401.3, C401.4, C402 through C406, and Section C408.

   Core and shell buildings shall be required to comply with the provisions of Section C402.1.3 through C402.5 of the 2021 International Energy Conservation Code.

6. *Section C401.2.2 ASHRAE 90.1*, is hereby deleted in its entirety.

7. A new *Section C401.4 Mandatory Requirements for Commercial Buildings*, is hereby added to read as follows:

   C401.4 Mandatory Requirements for Commercial Buildings. Commercial buildings must comply with Table C401.4.

Table C401.4 (Mandatory)
Requirements for Commercial Buildings

Title	IECC Section
Air leakage	C402.5
Calculation of heating and cooling loads	C403.1.1
Data centers	C403.1.2
System Design	C403.2
Heating and cooling equipment efficiency	C403.3
Heating and cooling system controls	C403.4, except C403.4.3, C403.4.4, C403.4.5
Economizer fault detection and diagnostics	C403.5.5
Ventilation and exhaust systems	C403.7, except C403.7.4.1
Fan and fan controls	C403.8, except C403.8.6
Large diameter ceiling fans	C403.9
Refrigeration equipment performance	C403.11, except C403.11.3
Construction of HVAC system elements	C403.12

Mechanical systems located outside of the building thermal envelope	C403.13
Service water heating	C404
Electrical power and lighting systems	C405, except C405.3
Maintenance information and system commissioning	C408

8. *Table C402.1.3 Opaque Thermal Envelope Insulation Component Minimum Requirements, R-Value Method*, is hereby deleted and replaced with the following:

Table C402.1.3 (Mandatory)
Opaque Thermal Envelope Insulation Component of an Average Minimum Requirements, *R*-Value Method in following locations:

Roof C402.2.1	
Insulation entirely above roof deck	R-49
Metal buildings[a]	R-21 + R-11 LS
Attic and other	R-49
Walls. Above grade C402.2.2	
Mass[d]	R-21
Metal buildings	R-21 + R-10ci
Metal framed	R-21+ R-10ci
Wood framed and other	R-21
Walls, Below grade C402.2.5	
Below-grade wall[b]	R-10
Floors C402.2.3	
Mass[c]	R-21
Joist/framing	R-38
Slab-on-grade floors C402.2.4	
Unheated	R-20 for 24" below
Heated[e]	R-15 for 36" below + R-5 full slab

For SI: 1 inch = 25.4 mm, 1 pound per square foot = 4.88 kg/m^2, 1 pound per cubic foot = 16 kg/m^3.
NR = No Requirement, LS = Liner System.

a.Where using *R*-value compliance method, a thermal spacer block shall be provided,
b.Where heated slabs are below grade, below-grade walls shall comply with the exterior insulation requirements for heated slabs.
c."Mass floors" shall bc in accordancc with Scction C402.2.3.
d."Mass walls" shall be in accordance with Section C402.2.2.
e. The first value is for perimeter insulation and the second value is for full, under-slab insulation.

9. *Section C402.1.4 Assembly U-factor, C-factor or F-factor-based method,* is hereby deleted in its entirety.

10. *Section C402.1.5 Component performance alternative,* is hereby deleted in its entirety.

11. *Table C402.4 Building Envelope Fenestration Maximum U-Factor and SHGC Requirements,* is hereby deleted and replaced with the following:

Table C402.4
Building Envelope Fenestration

Vertical Fenestration	
Maximum U-Factor	0.45
Maximum SHGC	0.33
Maximum Air leakage rate for all fenestration except curtain walls and storefront glazing	.20 cfm/ft2
Maximum air leakage rate for curtain walls and storefront glazing	.06 cfm/ft
Skylights	
Maximum U-Factor	0.50
Maximum SHGC	0.40
Maximum Air leakage rate	.20 cfm/ft2

~~12. *Section C402.4.1 Maximum area*, is hereby deleted and replaced with the following:~~

~~C402.4.1 Minimum area of natural lighting. Not less than eight percent of the floor area shall be glazed .~~

12. Section *C402.4.1.2* is deleted and replaced with the following:

C402.4.1 Minimum area of natural lighting. Not less than 8% of wall area for warehouses~~,~~ and industrial shall be glazed.

~~13. *Section C402.4.2 Minimum skylight fenestration area*, is hereby deleted and replaced with the following:~~

~~**C402.4.2 Minimum area of natural lighting.** A minimum skylight area of three percent of the roof area shall be provided for all roofs.~~

~~Exception: Roof areas designated for solar ready zones shall not be included in roof area calculation.~~

13. **C403.2** *System design.* Mechanical systems shall be designed to comply with Sections C403.2.1 through ~~403.2.3~~ C403.2.4. Where elements of a building's mechanical systems are addressed in Sections C403 through C403.14, such elements shall comply with the applicable provisions of those sections.

14. Section C403.2.4 Space heating equipment is added as follows:

C403.2.4 Space heating equipment. Fossil-fuel warm air furnaces appliances and electric resistance space heating equipment shall not be permitted for space heating in new construction.

4. Heat pump efficiencies:
   a. Ductless System
      1. 14.3 SEER2;
      2. 7.5 HSPF2; or
      3. EnergyStar Cold Climate certified
   b. Ducted System
      1. 15.2 SEER2;
      2. 9 HSPF2; or
      3. EnergyStar Cold Climate certified

Exceptions:
1. *Emergency backup.* Where it is required by an applicable law or regulation to provide space heating with an emergency power system or a standby power system.
2. *Certain make-up air systems.* Electric resistance in make-up air systems where energy recovery ventilation is prohibited by the International Mechanical Code.
3. *Supplementary heat.* Electric resistance and natural gas/ propane heat used for supplementary heat in accordance with Section C403.4.1.1
4. *Electric resistance budget.* In addition to any exceptions in this section, Up to 5 W of electric resistance space heating per square foot of conditioned floor area in the building, not including supplementary heat.
5. *Integrated units.* Electric resistance heating elements, natural gas, propane supplemental heating integrated into heat pump equipment.
6. *Heated plenums.* Electric resistance in heated plenums.
7. *Temporary systems.* Temporary electric resistance heating systems are permitted where serving future tenant spaces that are unfinished and unoccupied, provided that the heating equipment is sized and controlled to achieve interior space temperatures no higher than needed to prevent freezing.
8. *Freeze protection.* Electric resistance in heating systems intended for freeze protection.
9. Outdoor systems. Equipment used for outdoor heating.
10. Specific conditions. Portions of buildings that require fossil fuel or electric resistance space heating for specific conditions approved by the Building Official for research, health care, process or other specific needs that cannot

practicably be served by heat pump or other space heating systems. This does not constitute a blanket exception for any occupancy type.

11. Replacements. Replacement fuel-fired appliances.
12. Backup heat. For back up heat to operate when the heat pump cannot adequately heat the space/buildings due to extreme cold weather.
13. Where cfm/sq. ft. ventilation requirements result in conditions where the Building Official determines that space heating requirements cannot reasonably be met without combustion space heating systems.

14. *Section C403.3.2 HVAC equipment performance requirements*, is hereby ~~deleted in its entirety and replaced~~ amended by adding the following at the beginning of the section with remainder of section to remain ~~to read as follows~~:

C403.3.2 When HVAC fuel fired equipment is permitted to be installed, equipment shall meet the minimum efficiency requirements of Tables C403.3.2(1) through C403.3.2(16) when tested and rated in accordance with the applicable test procedure. Plate-type liquid-to-liquid heat exchangers shall meet the minimum requirements of AHRI 400. The efficiency shall be verified through certification under an approved certification program or, where a certification program does not exist, the equipment efficiency ratings shall be supported by data furnished by the manufacturer. Where multiple rating conditions or performance requirements are provided, the equipment shall satisfy all stated requirements. Where components, such as indoor or outdoor coils, from different manufacturers are used, calculations and supporting data shall be furnished by the designer that demonstrates that the combined efficiency of the specified components meets the requirements herein.

~~HVAC/fuel fired equipment performance requirements. Unless built all-electric, all new combustion equipment shall comply with the more efficient HVAC equipment performance of Sections C406.2, C406.2.3, and C406.2.4 and the additional electric infrastructure requirements in Section C405.14. A mechanical compliance certificate demonstrating compliance with section C406.2.3 and/or C406.2.4 shall be required for all HVAC, fuel fired and Service Water Heating equipment.~~

~~The efficiency shall be verified through certification under an approved certification program or, where a certification program does not exist, the equipment efficiency ratings shall be supported by data furnished by the manufacturer. Where multiple rating conditions or performance requirements are provided, the equipment shall satisfy all stated requirements. Where components, such as indoor or outdoor coils, from different manufacturers are used, calculations and supporting data shall be furnished by the designer that demonstrates that the combined efficiency of the specified components meets the requirements herein. (Tables C403.2.(1) through (16) are expressly retained and remain applicable to HVAC equipment performance.)~~

~~Exceptions:~~

~~1. Factory, laboratory, and high hazard occupancy combustion equipment, except for HVAC and domestic water heating.~~

~~2. Commercial Kitchens.~~

~~3. Other combustion equipment approved by the Building Official based on demonstration by the applicant that compliance with this section is not feasible and the equipment proposed is the most efficient appliance reasonably available.~~

16. *Section C403.4.1 Thermostatic controls*, is hereby deleted and replaced with the following:

C403.4.1 Thermostatic controls. The supply of heating and cooling energy to each *zone* shall be controlled by individual thermostatic controls capable of responding to temperature within the *zone*. Where humidification or dehumidification or both is provided, no fewer than one humidity control device shall be provided for each humidity control system. Occupancy sensors shall be provided on the thermostat to setback in accordance with C403.4.2.1

Exception: Independent perimeter systems that are designed to offset only building envelope heat losses, gains or both serving one or more perimeter *zones* also served by an interior system provided that both of the following conditions are met:

1. The perimeter system includes not fewer than one thermostatic control *zone* for each building exposure having exterior walls facing only one orientation (within ±45 degrees) (0.8 rad) for more than 50 contiguous feet (15 240 mm).
2. The perimeter system heating and cooling supply is controlled by thermostats located within the *zones* served by the system.

17. *Section C403.12.1 Duct and plenum insulation and sealing*, is hereby deleted and replaced with the following:

C403.12.1 Duct and plenum insulation and sealing. All supply and return air ducts and plenums shall be insulated with not less than R-12. Ducts, air handlers and filter boxes shall be sealed. Joints and seams shall comply with Section 603.9 of the International Mechanical Code.

18. *Section C403.12.3 Piping insulation*, is hereby amended to read as follows:

C403.12.3 Piping insulation. Piping serving as part of a heating or cooling system shall be thermally insulated to R-5.

19. *Section C404.4 Insulation of piping*, is hereby amended to read as follows:

C404.4 Insulation of piping. Piping from a water heater to the termination of the heated water fixture supply pipe shall be insulated to R-3. On both the inlet and outlet piping of a storage water heater or heated water storage tank, the piping to a heat trap or the first 8 feet (2438 mm) of piping, whichever is less, shall be insulated. Piping that is heat traced shall be insulated to R-3 or the heat trace manufacturer's instructions.

20. Section C404.10 Water heating equipment is added as follows:

C404.10 Water heating equipment. Fossil fuel and electric resistance instantaneous and storage water heaters shall not be used to provide hot water in new construction.

Exceptions:

1. *Emergency backup.* Where it is required by an applicable law or regulation to provide water heating with an emergency power system or a standby power system.
2. *Integrated units*. Resistance heating elements integrated into heat pump water heating equipment.
3. *Recirculation loops*. Electric resistance elements used for recirculation loop temperature maintenance.
4. *Small systems.* Electric storage water heaters with a rated water storage volume no greater than 20 gallons.
5. *Point-of-use systems.* Instantaneous electric water heaters located within 10 feet of the point of use.
6. *Renewable electricity*. Electric resistance equipment where not less than 100 percent of the annual service water-heating requirement is provided by an *on-site renewable energy system* not used to meet any other provision of this code.
7. *Renewable or waste thermal energy*. Electric resistance storage water heating equipment in *buildings* where not less than 75% of the annual service water heating requirement is met by a solar thermal system or other renewable thermal system.
8. *High-temperature requirements*. Water heating systems that serve end-uses or have a storage requirement that necessitates a water temperature of 141°F (55°C) or hotter.
9. *Electric resistance budget.* In addition to any exceptions in this section, a budget of 24 kW plus 0.1 watts per square foot of building area of electric resistance service water heating capacity per building.
10. *Commercial kitchens*. Electric booster-heaters serving commercial dishwashers, commercial food service equipment, and other approved process equipment that require supply water temperatures of 120°F (49°C) or higher.
11. *Replacements.* Replacement of gas-fired storage water heaters or instantaneous water heaters.

21. Section C405.2.1 Occupant sensor controls, is hereby amended to read as follows:

C405.2.1 Occupant sensor controls. Occupant *sensor controls* shall be installed to control lighting.

22. *Section C405.2.2 Time-switch controls*, is hereby deleted in its entirety.

23. *Section C405.2.2.1 Time-switch control function*, is hereby deleted in its entirety.

24. *Section C405.2.3 Light-reduction controls,* is renumbered to C405.2.2.

25. *Section C405.2.3.1 Light-reduction function*, is renumbered to C405.2.2.1.

26. *Section C405.2.4 Daylight-responsive controls*, is renumbered to C405.2.3.

27. *Section C405.2.4.1 Daylight-responsive control function,* is renumbered to C405.2.3.1.

28. *Section C405.2.4.2 Sidelit daylight zone*, is renumbered to C405.2.3.2.

29. *Section C405.2.4.3 Toplit daylight zone,* is renumbered to C405.2.3.3.

30. *Section C405.2.4.4 Atriums,* is renumbered to C405.2.3.4.

31. *Section C405.2.5 Specific application controls,* is renumbered to C405.2.4.

32. *Section C405.2.6 Manual controls,* is renumbered to C405.2.5.

33. *Section C405.2.7 Exterior lighting controls,* is renumber to C405.2.6.

34. *Section C405.2.7.1 Daylight shut off,* is renumbered to C405.2.6.1.

35. *Section C405.2.7.2 Building façade and landscape lighting,* is renumbered to C405.2.6.2.

36. *Section C405.2.7.3 Lighting setback,* is renumbered to C405.2.6.3.

37. *Section C405.2.7.4 Exterior time-switch control function,* is renumbered to C405.2.6.4.

38. *Section C405.2.8 Parking garage lighting control*, is renumbered to C405.2.7.

39. *Section C405.4.3 Gas lighting, is hereby amended to read as follows:*

C405.4.3 Gas lighting. Gas-fired lighting appliances shall not be permitted.

40. A new *Section C405.13 Electric vehicle charging infrastructure for new construction and building addition of 25% or more of original square footage*, is hereby added to read as follows:

Section C405.13.1 Electric vehicle charging infrastructure for new construction and building addition of 25% or more of original square footage. Electric vehicle charging shall be provided and installed in accordance with this section, National Electrical Code (NFPA 70), and Section 17.20.170 of the Louisville Municipal Code. ~~When parking spaces are added or modified~~

~~without an increase in building floor area, only the new parking spaces are subject to this requirement.~~ All *EVSE Installed*, *EV Ready* and *EV Capable* spaces are to be included in the calculation for the number of minimum vehicle spaces required, as provided by the applicable article of the Louisville Zoning Code.

Section C405.13.2 Identification. The circuit breakers or circuit breaker spaces reserved for the *EVSE Installed, EV Ready*, and *EV Capable* spaces shall be clearly identified in the panelboard directory. The conduit for electric vehicle capable spaces shall be clearly identified at both the panelboard and the termination point at the parking space~~.~~

40. A new *Section C405.14 Additional electric infrastructure*, is hereby added to read as follows:

Section C405.14 Additional electric infrastructure. All *combustion equipment* and end-uses shall be installed in accordance with this section.

C405.14.1 Electric infrastructure for dwelling and sleeping units. *Combustion equipment* and end-uses serving individual dwelling units or sleeping units shall comply with Section R404.5.

C405.14.2 Combustion equipment. *Combustion equipment* shall be provided with conduit that is continuous between a junction box located within 3 feet (914 mm) of the appliance or equipment and an electrical panel. The junction box, conduit and bus bar in the electrical panel shall be rated and sized to accommodate a branch circuit with sufficient capacity for an equivalent electric appliance, equipment or end use with an equivalent equipment capacity. The electrical junction box and electrical panel shall have labels stating, "For Future Electric Equipment".

Exception: Industrial and manufacturing uses are exempt from Section C405.14.

41. *Section C502.1.1 General,* is hereby amended to read as follows:

Additions to an existing building, building system or portion thereof shall conform to the provisions of Section C401.2.4 as those provisions relate to new construction without requiring the unaltered portion of the existing building or building system to comply with this code. Additions shall not create unsafe or hazardous condition or overload existing building systems. An addition shall be deemed to comply with this code if the addition alone complies or if the existing building and addition comply with this code as a single building.

42. *Section C503.1 General* Exception 3 is deleted in its entirety.

43. *Section C503.2 Building Envelope* is amended with exception remaining to read as follows:

New building envelope assemblies that are part of the alteration shall comply with Sections C402.1 through C402.5. Existing ceilings, roofs, all wall types, or floors exposed during construction shall comply with Table C402.1.3.

44. *Section C505.1 General*, is hereby amended to read as follows:

C505.1 General. Where the use in a space changes from one use in Table C405.3.2(1) or C405.3.2(2) to another use in Table C405.3.2(1) or C405.3.2(2), the installed lighting wattage shall comply with Section C405.3. Where the space undergoing a change in occupancy or use is in a building with a fenestration area that exceeds the limitations of Section C402.4.1, the space is exempt from Section C402.4.1 provided that there is not an increase in fenestration area.

Exception: Egress doors with fenestration are allowed to bring total fenestration percentages over the allowed maximum amount of vertical fenestration.

APPENDIX PT
MODELING TO A PERFORMANCE TARGET

PT101 Scope. This section establishes criteria for demonstrating compliance with a performance target, and is required for new hotels (occupancy R-1), multifamily (occupancy R-2), offices, primary and secondary schools, and warehouses. All end use load components within and associated with the building and their building sites shall be modeled.

PT102 Mandatory requirements. The requirements in this section are mandatory requirements and shall be required in addition to the provisions of ASHRAE 90.1 Appendix G.

PT103 Performance target. Projects of the types listed in Table PT103 shall demonstrate that the proposed design reaches a fixed energy use intensity (EUI) less than or equal to the values in Table PT103, calculated utilizing the energy modeling procedures of Appendix G of ASHRAE 90.1. For *buildings* with multiple occupancy types, the modeled performance target shall be a weighted average of the floor area of each occupancy type.

Exception: Energy used for electric vehicle charging, data centers, and process loads shall be excluded from compliance modeling.

TABLE PT103
PERFORMANCE TARGETS

BUILDING TYPE	PERFORMANCE TARGET (kBTU/ft2)

Hotel (Occupancy R-1)	32
Multifamily (Occupancy R-2)	32
Office, small (≥ 0 - 5,000 ft2)	19
Office, medium (5,000 – 50,000 ft2)	23
Office, large (>50,000 ft2)	28
School, primary	34
School, secondary	31
Warehouse	11

PT104 Renewable Energy. On-site renewable energy generated by a system installed as part of this project that is used by the building shall be subtracted from the proposed design energy consumption prior to calculating the proposed building performance.

PT105 Performance documentation. Documentation to verify compliance with this section shall be provided to the code official.

PT105.1 Projected compliance report. Permit submittals shall include a report documenting the proposed design is projected to meet the EUI target. The compliance report shall include the following specific information beyond the information required in ASHRAE 90.1 Appendix G:

1. Address of the building.
2. An inspection checklist documenting the building component characteristics of the proposed design.
3. Name of individual completing the report.
4. Name and version of compliance software tool.
5. Documentation of the reduction in energy use associated with on-site energy.

PT105.2 Construction plan requirements. Construction plans shall depict all component characteristics of the proposed design utilized for the EUI in accordance with ASHRAE 90.1 Appendix G.

~~**PT105.3 Measured performance report.** Projects shall demonstrate compliance with this code by documenting that the building has achieved the EUI performance calculated based on 12 months of metered energy use after occupancy.~~

PT105.3.1 Demonstration of operating energy use. Metered energy data demonstrating compliance with the EUI target shall be reported to the building official using Energy Star Portfolio Manager and adjusted for the percentage of floor area occupied. While at least 75 percent occupied, the building shall operate at or below its assigned energy use target established in Section PT103 for any recording period of 12 consecutive months that is completed within three years of the date of the Certificate of Occupancy. The owner shall notify the building official when this 12-month period has been successfully completed.

PT106 Energy metering and monitoring. All projects must install submetering or monitoring capabilities to support building energy performance analysis. The project must include capabilities to store and access a 24-month continuous data set on an ongoing basis.

PT106.1 End-use monitoring. Measurement devices shall be installed in new *buildings* to monitor the electric energy use of each of the following separately:

1. Total electric energy.
2. HVAC systems energy use.
3. Interior lighting.
4. Exterior lighting.
5. Receptacle circuits.
6. Data centers representing over 10 percent of total building load or 5 percent of building floor area.
7. Other process loads that represent 10 percent or more of total building energy use based on building energy use modeling.

PT106.2 Independent metering. The following items shall be independently metered. Individual meters used to comply with this section may not serve multiple *buildings*.

1. All fuel sources serving the building.
2. Energy production from on-site renewable energy systems.
3. Electric vehicle (EV) supply equipment.
4. Data centers representing over 10 percent of total building load or 5 percent of building floor area.
5. Other process loads that represent 10 percent or more of total building energy use based on building energy use modeling.
6. Individual tenant energy loads.

45. *Section R101.1 Title,* is amended to insert "the City of Louisville" so the section will read:

R101.1 Title. These regulations shall be known as the Energy Conservation Code of the City of Louisville and shall be cited as such. It is referred to herein as "this code."

46. *Section R103.2 Information on construction documents,* is amended to read as follows:

R103.2 Information on construction documents. Construction documents shall be drawn to scale upon suitable material. Electronic media documented are permitted to be submitted when *approved* by the *code official*. Construction documents shall be of sufficient clarity to indicate the location, nature and extent of the work proposed, and show in sufficient detail pertinent data and features of the building, systems and equipment herein governed. Details shall include the following as applicable:

1. Energy compliance path.
2. Insulation materials and their *R*-values
3. Fenestration *U*-factor and solar heat gain coefficients (SHGCs).
4. Area-weighted *U*-factor and solar heat gain coefficient (SHGC) calculations.
5. Mechanical system design criteria.
6. Mechanical and service water heating systems and equipment types, sizes, fuel source and efficiencies.
7. Equipment and system controls.
8. Duct sealing, duct and pipe insulation and location.
9. Air sealing detail.
10. Location of pathways for routing of raceways or cable from the solar ready zone to the electrical service panel.

47. *Section R202 General Definitions*, is hereby amended by adding, in alphabetical order, the following definitions:

All-Electric Building: A building that contains no combustion equipment, or plumbing <u>or piping</u> for combustion equipment, installed within the building or building site.

Combustion Equipment: Any equipment or appliance used for space heating, service water heating, cooking, clothes drying and/or lighting that uses fuel gas or fuel oil.

~~*Electric Vehicle (EV):* A vehicle registered for on-road use, primarily powered by an electric motor that draws current from a rechargeable storage source that is charged by being plugged into an electrical current source.~~

~~*Electric Vehicle Supply Equipment (EVSE):* The electrical conductors and associated equipment external to the electric vehicle that provide a connection~~

~~between the premises wiring and the electric vehicle to provide electric vehicle charging.~~

~~*Electric Vehicle Capable Space:* A designated parking space that is provided with conduit sized and rated for a minimum 40-amp, 208/240-Volt dedicated branch circuit and shall be no less than 1" in size. Conduit must be continuous from the future or existing electrical panel board or switchboard location(s) and end at a junction box or receptacle located within close proximity of the parking space. The electrical panel serving the parking space shall have sufficient capacity and physical space for a dual-pole, 40-amp breaker. The conduit shall be sealed at the junction or outlet box that is capped off, with the conduit sealed and the cap labeled as "For future electric vehicle charging".~~

~~*Electric Vehicle Ready Space:* A designated parking space that is provided with a dedicated branch circuit with wiring capable of supporting a minimum 40-ampere, 208/240- Volt circuit that terminates at a receptacle, plug, junction box, or an installed electric vehicle supply equipment within close proximity of the parking space. There shall be adequate reserved space in an electrical panel board or switchboard to meet the electric vehicle requirements~~.

Residential Building. For this code, includes detached one- and two-family dwellings and multiple single-family dwellings (townhouses) and R-3 and R-4 buildings three stories or less in height above grade plane.

48. *Section R401.2 Application,* is hereby deleted and replaced with the following:

R401.2 Application. New ~~R~~residential buildings shall be built using appendix RB and RC and shall be built all-electric unless the fuel gas options of R403.7 and additional electric infrastructure requirements of R404.5 are met. ~~All residential buildings shall comply with the R401.2.1 City of Louisville's Prescriptive Compliance or R406 Energy Rating Index with a maximum rating index of 50 before the installation of solar panels~~

Exceptions:

1. New residential buildings certified through the Passive House Institute US, Inc. (PHIUS) program
2. Additions shall comply with R401.2.1 and Chapter 5
3. ~~Additions,~~ ~~a~~Alterations, repairs and changes of occupancy to existing buildings complying with Chapter 5.

49. *Section R401.2.1 Prescriptive Compliance Option,* is hereby deleted and replaced with the following:

R401.2.1 City of Louisville's Prescriptive Compliance. The City of Louisville's Prescriptive compliance requires compliance with Sections R401 through R404.

50. *Section R401.2.2 Total Building Performance Option,* is hereby deleted in its entirety.

51. *Section R401.2.4 Tropical Climate Region*, is hereby deleted in its entirety.

52. *Section R401.2.5 Additional Energy Efficiency*, is hereby amended to read as follows:

Section R401.2.5 Additional Energy Efficiency. Building shall comply with one of the additional efficiency options and shall be installed in according to Section R408.2.

53. A new *Section R401.4 Mandatory requirements for residential buildings*, is hereby added to read as follows:

R401.4 Mandatory requirements for residential buildings. Residential building must comply with the following sections from the 2021 International Energy Conservation Code found in Table R401.4 and Section R401.2.

Table R401.~~3~~4
Mandatory requirements for residential buildings

Title	IECC Section
Vapor retarder	R402.1.1
Eave baffle	R402.2.3
Access hatches and doors	R402.2.4.1
Crawl space wall insulation	R402.4.1.2
Maximum fenestration U-factor and SHGC	R402.5
Mechanical Controls	R403.1
Ducts	R403.3 except R403.3.2, R403.3.3, and R403.6
Mechanical system piping insulation	R403.4
Heated water circulation and temperature maintenance systems	R403.5.1
Drain Water heat recovery units	R403.5.3
Mechanical ventilation	R403.6 including E403.6.1
Equipment sizing and efficiency rating	R403.7
Systems serving multiple dwelling units	R403.8
Snow melt and ice systems	R403.9
Energy consumption of pools and spas	R403.10
Portable spas	R403.11
Residential pools and permanent residential spas	R403.12
Lighting equipment	R404.1
Interior lighting controls	R404.2

54. *Section R402.1 General,* is hereby amended to read as follows:

R402.1 General. The building thermal envelope shall comply with the requirements of Section R402.1.1 and R402.1.2.

55. *Section R402.1.2 Insulation ~~and fenestration~~*, is hereby deleted and replaced with the following:

R402.1.2 Insulation ~~and fenestration~~. New and replacement ~~A~~assemblies shall have R-value of insulation materials equal to or greater than that specified in Table R402.1.2 ~~unless an alternative path is specified while using HERS energy rating index of 50.~~

Exception: New Construction complying with R401.2 or exception 1

56. *Section R402.1.2.1 Fenestration* is hereby added to read as following:

R402.1.2.1 Fenestration. New and replacement assemblies shall not exceed the value specified in Table R402.1.2.

Exception: New Construction complying with R401.2 or exception 1

Table R402.1.2
Average Insulation and Fenestration Requirements by Component

Roof	R-60
Above grade walls	R-21
Below grade walls	R-21
Floors	R-38
Non heated slab on grade	R-10 for 4ft
Heated slab on grade	R-15 for 4 ft + R-5 under full slab
Fenestration U-Factor	.30
Fenestration SHGC	.33
Skylight U-Factor	.50
Skylight SHGC	.40
Hot Water Pipes	R-5
Warm Air Ducts	R-8

55. Section R402.1.5 Total UA alternative, is hereby deleted in its entirety.

56. Section R402.3.3 Glazed fenestration exemption, is hereby amended to read as follows:

R402.3.3 Glazed fenestration exemption. Not greater than 15 square feet (1.4 m^2) of glazed fenestration per dwelling unit shall be exempt from the U-factor and SHGC requirements in Section R402.1.2.

57. *Section R402.4.1.2 Testing*, is hereby deleted and replaced to read as follows:

Section R402.4.1.2 Testing. All new buildings or dwelling units that are heated or cooled, and additions over 500 square feet shall be tested for air leakage.

58. *Section R402.5 Maximum fenestration U-factor and SHGC*, is hereby deleted and replaced with the following:

Section R402.5 Maximum fenestration U-factor and SHGC. The maximum U-factor and solar heat gain coefficient (SHGC) for fenestration shall not be required in storm shelters complying with ICC 500.

59. *Section R403.3.1 Ducts located outside conditioned space*, is hereby deleted and replaced with the following:

R403.3.1 *Ducts located outside conditioned space.* All supply and return ducts shall be insulated to a minimum R-8 if located outside a conditioned space.

60. *Section R403.5.2 Hot water pipe insulation*, is hereby deleted and replaced with the following:

R403.5.2 Hot water pipe insulation. All service hot water piping shall be insulated to a minimum R-5.

61. *Section R403.6.1 Heat and recovery ventilation*, is hereby deleted and replaced in its entirety and the following is hereby added in lieu thereof:

R403.5.2 Heat and recovery ventilation. All new buildings and additions over 500 square feet shall be provided with a heat recovery or energy recovery ventilation system. The system shall be balanced with a minimum sensible heat recovery efficiency of 65 percent at 32°F (0°C) at a flow greater than or equal to the design airflow.

62. *Section R403.7 Equipment sizing and efficiency rating*, is hereby deleted and replaced with the following:

R403.7 Equipment sizing and efficiency rating. All new buildings and additions greater than 500 square feet with heating and cooling equipment shall be sized in accordance with ACCA Manual S based on building loads calculated in accordance with ACCA Manual J or other approved heating and cooling calculation methodologies. In addition to complying with Sec. R404.6 Additional Electric Infrastructure, new and replacement electrical heating and cooling

equipment shall have an efficiency rating equal to or greater than the minimum required by federal law for the geographic location where the equipment is installed. New gas heating equipment shall comply with the following efficiencies:

1. Gas furnaces shall have a minimum of 96% efficiency.
2. Gas boilers shall have a minimum of 90% AFUE.
3. On demand water heaters shall have a greater than .92 uniform energy factor.
4. Heat pump efficiencies:
   a. Ductless System
      1. 14.3 SEER2;
      2. 7.5 HSPF2; or
      3. EnergyStar Cold Climate certified
   b. Ducted System
      1. 15.2 SEER2;
      2. 9 HSPF2; or
      3. EnergyStar Cold Climate certified

Exception: Solid fuel stoves/gas fireplaces, outdoor fire pits, gas stoves and ovens.

63. *Section R404.1.1 Fuel gas lighting equipment, is hereby amended to read as follows:*

R404.1.1 Fuel gas lighting equipment. Fuel gas lighting systems shall not be installed.

64. A new *Section R404.4 Electric vehicle charging infrastructure for new construction and building addition of 50% or more of original square footage*, is hereby added to read as follows:

Section R404.4 Electric vehicle charging infrastructure for new construction and building addition of 50% or more of original square footage. Electric infrastructure for the current and future charging of *electric vehicles* shall be installed in accordance with this section per Section 17.20.170 of the Louisville Municipal Code. *EV ready spaces and EV capable spaces* are permitted to be counted toward meeting minimum parking requirements.

R404.4.1 One- and two- family dwellings and townhouses. One- and two-family dwellings and townhouses with a dedicated attached or detached garage or on-site parking spaces shall be provided with electric vehicle charging in accordance with Section 17.20.170 of the Louisville Municipal Code.

R404.4.1.1 Minimum EV Ready infrastructure. Minimum EV Ready Space infrastructure shall require the following:
1. Installation of conductors:

a. Conductors shall be installed of sufficient size to accommodate a minimum 240VAC 40Amp branch circuit to each parking space where required.
b. Conductors shall terminate in either a receptacle, plug, junction or outlet box, or an *EVSE* installed in the parking space.

2. The electrical panel directory shall designate the branch circuit as "EV Ready" and the junction box or receptacle shall be labelled "EV Ready."

R404.4.1.2 Construction documents. Construction documents shall graphically indicate and label all EV ready spaces and associated termination locations. For all Townhouses and one- and two-family dwellings with an electrical utility service of 200 Amps or greater, a panelboard schedule shall be provided indicating the EV Ready circuit breaker space(s) and the circuit designation(s).

R404.4.2 Group R occupancies. Group-R occupancies (~~R-2,~~ R-3, and R-4 buildings three stories and less) with three or more dwelling units and/or sleeping units shall be provided with electric vehicle charging in accordance with Section 17.20.170 of the Louisville Municipal Code.

Electric vehicle charging shall be provided and installed in accordance with this section and the National Electrical Code (NFPA 70). When parking spaces are added or modified without an increase in building floor area, only the new parking spaces are subject to this requirement.

65. A new *Section R404.5 Additional electric infrastructure*, is hereby added to read as follows:

R404.5 Additional electric infrastructure. *Combustion equipment* shall be installed in accordance with this section.

R404.5.1 Combustion equipment and end-uses. *Combustion equipment* shall be provided with a dedicated, appropriately phased circuit that shall have a minimum amperage requirement for a comparable electric appliance, equipment or end use, an electrical receptacle or junction box that is connected to the electric panel, and conductors of adequate capacity within 6 feet (1829 mm) of the appliance or equipment.

Each such circuit shall be accessible with no obstructions. A reserved circuit breaker space shall be installed in the electrical panel adjacent to the circuit breaker for the branch circuit and labeled for each circuit. Both ends of the unused conductor or conduit shall be labeled "For Future Electric Equipment" and be electrically isolated.

66. *Section R405 Total building performance*, is deleted in its entirety.

67. *Section R406.3 Building thermal envelope*, is hereby deleted in its entirety and replaced with the following:

R406.3 Building thermal envelope. ~~Building and portions thereof shall comply with Table R406.3.~~ The building thermal envelope shall be greater or equal to the levels of efficiency and SHGC in Table R406.3.

Table R406.3
Average of the Minimum Insulation and Maximum Fenestration Requirements by Component

Roof	R-60
Above grade walls	R-21
Below grade walls	R-21
Floors	R-38
Non heated slab on grade	R-10 for 4ft
Heated slab on grade	R-15 for 4 ft + R-5 under full slab
Fenestration U-Factor	.30
Fenestration SHGC	.33
Skylight U-Factor	.50
Skylight SHGC	.40
Heated Water Pipes	R-5
Heated air Ducts	R-8

68. *Section R406.3.1 On-site renewables are not included,* is deleted in its entirety.

69. *Section R406.3.2 On-site renewables are included,* is deleted in its entirety.

70. *Section ~~406.3.2~~* R407 *Tropical Climate Region Compliance Path,* is deleted in its entirety.

71. *Section R502.1.1 General,* is hereby amended to read as follows:

Additions to an existing building, building system or portion thereof shall conform to the provisions of R401.2.1 as those provisions relate to new construction without requiring the unaltered portion of the existing building or building system to comply with this code. Additions shall not create unsafe or hazardous condition or overload existing building systems. An addition shall be deemed to comply with this code where the addition alone complies, where the existing building and addition comply with this code as a single building, or where

the building with the addition does not use more energy than the existing building. Additions shall be in accordance with Section R502.2 or R502.3.

72. *Section R503.1.1 Building Envelope* is amended to read as follows:
Building envelope assemblies that are part of the alteration shall comply with Section R401.2.1

Section R503.1.1 Building envelope Exception 2 is deleted in its entirety and replaced with the following.

2. Section R402.4.1.2 Testing

73. *Section R505.1 General* is hereby amended to remove the exception.

74. *Section R505.1.1 Unconditioned space,* is hereby deleted and replaced with the following:

R505.1.1 Unconditioned space. Any unconditioned or low-energy space that is altered to become a conditioned space shall comply with Section R503.

75. RC102.1 General is amended to read as follows.

RC102.1 General. New residential buildings shall comply with Sections RC102.2 through RC102.9.

76. RC102.2 Energy Rating Index zero energy score is amended to read as follows.

RC102.2 Energy Rating Index zero energy score.
Compliance with this section requires that the rated design be shown to have a Home Energy Rating System (HERS) score of 47 before solar and 0 with solar when compared to the Energy Rating Index (ERI) reference design determined in accordance with RESNET/ICC 301 for both of the following:

1. ERI value not including on-site power production (OPP) calculated in accordance with RESNET/ICC 301.
2. ERI value including on-site power production calculated in accordance with RESNET/ICC 301 with the OPP in Equation 4.1.2 of RESNET/ICC 301 adjusted in accordance with Equation RC-1.

Adjusted OPP = OPP + CREF + REPC (Equation RC-1)

where:
CREF = Community Renewable Energy Facility power production—the yearly energy, in kilowatt hour equivalent (kWheq), contracted from a community renewable energy facility that is qualified under applicable state and local utility statutes and rules, and that allocates bill credits to the rated home.

REPC = Renewable Energy Purchase Contract power production—the yearly energy, in kilowatt hour equivalent (kWheq), contracted from an energy facility that generates energy with photovoltaic, solar thermal, geothermal energy or wind systems, and that is demonstrated by an energy purchase contract or lease with a duration of not less than 15 years.

RC102.2.1 HERS Score. Buildings shall comply with the scores in Table RC102.2.1.

Table RC102.2.1.

HERS SCORE NOT INCLUDING OPP	HERS SCORE INCLUDING OPP
47	0

76. RC102.3 through RC102.9 are added to Appendix RC to read as follows.

RC102.3 Mandatory Sections. All projects shall comply with all sections within Table RC102.3.

Table RC102.3
Mandatory requirements for residential buildings

Title	IECC Section
Vapor retarder	R402.1.1
Eave baffle	R402.2.3
Access hatches and doors	R402.2.4.1
Crawl space wall insulation	R402.4.1.2
Maximum fenestration U-factor and SHGC	R402.5
Mechanical Controls	R403.1
Ducts	R403.3 except R403.3.2, R403.3.3, and R403.6
Mechanical system piping insulation	R403.4
Heated water circulation and temperature maintenance systems	R403.5.1
Drain Water heat recovery units	R403.5.3
Mechanical ventilation	R403.6 including E403.6.1
Equipment sizing and efficiency rating	R403.7
Systems serving multiple dwelling units	R403.8
Snow melt and ice systems	R403.9
Energy consumption of pools and spas	R403.10

Portable spas	R403.11
Residential pools and permanent residential spas	R403.12
Lighting equipment	R404.1
Interior lighting controls	R404.2

RC102.4 Building Envelope. The building thermal envelope shall be greater or equal to the levels of efficiency and SHGC in Table RC102.4.

Table RC102.4
Average of the Minimum Insulation and Maximum Fenestration Requirements by Component

Roof	R-60
Above grade walls	R-21
Below grade walls	R-21
Floors	R-38
Non heated slab on grade	R-10 for 4ft
Heated slab on grade	R-15 for 4 ft + R-5 under full slab
Fenestration U-Factor	.30
Fenestration SHGC	.33
Skylight U-Factor	.50
Skylight SHGC	.40

RC102.5 Verification by approved agency.
Verification of compliance with Section R102.4 as outlined in Sections of this appendix shall be completed by an approved third party. Verification of compliance with Section R102.3 shall be completed by the authority having jurisdiction or an approved third-party inspection agency in accordance with Section R105.4.

RC102.6 Documentation.
Documentation of the software used to determine the ERI and the parameters for the residential building shall be in accordance with Sections RC102.6.1 through RC102.6.4

RC102.6.1 Compliance software tools.
Software tools used for determining HERS shall be Approved Software Rating Tools in accordance with RESNET/ICC 301.

RC102.6.2 Compliance report.
Compliance software tools shall generate a report that documents that the home and the HERS score of the rated design complies with RC102. Compliance

documentation shall be created for the proposed design and shall be submitted with the application for the building permit. Confirmed compliance documents of the built dwelling unit shall be created and submitted to the code official for review before a certificate of occupancy is issued. Compliance reports shall include information in accordance with Sections RC102.6.3 and RC102.6.4.

RC102.7 Additional documentation.
The code official shall be permitted to require the following documents:

1. Documentation of the building component characteristics of the ERI reference design.

2. A certification signed by the builder providing the building component characteristics of the rated design.

3. Documentation of the actual values used in the software calculations for the rated design.

RC102.8 Specific approval.
Performance analysis tools meeting the applicable subsections of Section RC102 shall be approved. Documentation demonstrating the approval of performance analysis tools in accordance with Section RC102shall be provided.

RC102.9 Input values.
Where calculations require input values not specified by Sections RC 102, those input values shall be taken from RESNET/ICC 301.

INTRODUCED, READ, PASSED ON FIRST READING, AND ORDERED PUBLISHED this _____ day of _____, 2024.

_____
Christopher M. Leh, Mayor

ATTEST:

_____
Meredyth Muth, City Clerk

APPROVED AS TO FORM:

_____
Kelly PC, City Attorney

PASSED AND ADOPTED ON SECOND AND FINAL READING, this _____ day of _____, 2024.

_____
Christopher M. Leh, Mayor

ATTEST:

_____
Meredyth Muth, City Clerk

City of Louisville
COLORADO • SINCE 1878

Memorandum

To: **Louisville City Council Members**

From: **Louisville Sustainability Advisory Board**

Date: **April 2, 2024**

Re: **Community Decarbonization Plan**

Dear members of the Louisville City Council,

At the City Council meeting on Tuesday, April 2, City staff will present Louisville's Community Decarbonization Plan. A community stakeholder group, City staff, and Xcel's Partners in Energy developed the Community Decarbonization Plan over the past several months. The Louisville Sustainability Advisory Board reviewed the Community Decarbonization Plan at its February meeting.

The Board understands that City staff will advise City Council to update the City's climate action goals to reflect the Community Decarbonization Plan's recommendations, specifically, a 60% reduction in community-wide greenhouse gas emissions by 2035 (relative to the City's 2016 emissions) and net-zero community-wide greenhouse gas emissions by 2050. The Board supports the Community Decarbonization Plan's recommendations as well as related updates to the City's climate action goals. The Board would also support more aggressive climate action goals should City Council choose to pursue them.

The Board cannot sufficiently stress the importance of implementing the Community Decarbonization Plan and while the City has committed to implementation of its Internal Decarbonization Plan, community-wide greenhouse gas emissions dwarf municipal greenhouse

gas emissions. While this may seem daunting, the Board gets inspiration from Ithaca New York, a similarly sized and much less affluent community, which is executing on their implementation plan for community-wide decarbonization by 2030.

The Board understands that City staff and Partners in Energy staff will devote some time to implementation of the Community Decarbonization Plan. Based on the enormity of the project, our current staff will likely struggle to sufficiently support the implementation. While the Board will also assist, the Board recommends that City Council prioritize additional funding and/or staffing to further implementation. For instance, the rebates that the City currently offers for home efficiency upgrades and home electrification (administered by EnergySmart) incentivize aspects of the Community Decarbonization Plan's implementation. The Board also recommends that City staff employ and report metrics to track and gauge implementation.

Looking forward, the Board advises City Council to monitor continued implementation of the Community Decarbonization Plan after the eighteen month period supported by Partners in Energy, and the Board encourages City Council to work to continue implementation independently of Partners in Energy. The Board also advises that City Council continue to support and advance sustainability initiatives that complement and supplement the Community Decarbonization Plan.

Sincerely,

The Louisville Sustainability Advisory Board

City of Louisville
COLORADO • SINCE 1878

Memorandum

To: **Louisville City Council Members**

From: **Louisville Sustainability Advisory Board**

Date: **XX**

Re: **Front Range Passenger Rail**

Dear members of the Louisville City Council,

As elected leaders of our respective cities, we hereby request that the Service Development Plan for Front Range Passenger Rail be codified to include a designated Rail Stop at Louisville, CO.

We feel it is important for this designation to be included formally in your process. This will insure that this exciting opportunity for rail service will be available to serve our three adjacent cities. Many people are not aware that Louisville, Lafayette, and Superior, located south and east of Boulder, have a combined population of about 65,000. This catchment area totals about 60% of the city of Boulder's.

As you certainly appreciate, a local passenger rail stop will provide a valuable service to our communities. It will allow our many residents a way to reduce the burdens of their commutes as well as prevent many thousands of pounds of pollution emissions.

The travel time to a Louisville station would be within about 15 minutes from most areas of our three cities. In contrast, travel to and parking at a Boulder station, followed by the rail trip, would not be likely to discourage driving directly to Denver.

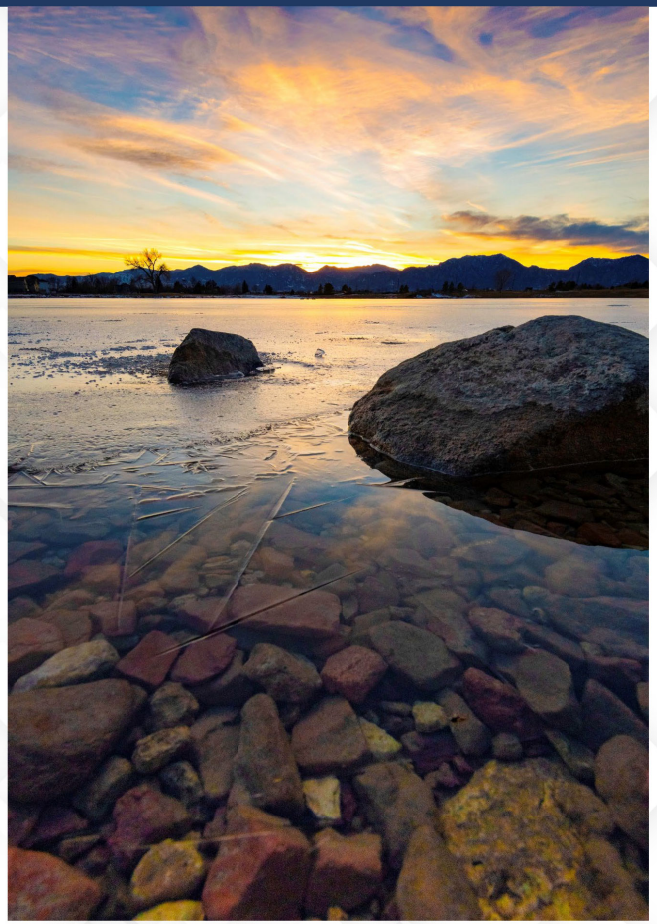
City of Louisville
COLORADO • SINCE 1878

Louisville is currently developing its 10-year Comprehensive Plan. With assurances of a rail stop in Louisville, the City would be able to include appropriate infrastructure in this Plan.

For these reasons, we request that a rail stop in Louisville be formally added to your Service Development Plan. We look forward to learning of your decision in this matter.

Sincerely,

The Louisville Sustainability Advisory Board



City of Louisville

Sustainability Advisory Board

March 2024

Kayla Betzold, Sustainability Manager

Discussion Item: Residential/Neighborhood Engagement

- Staff/Partner Presentations
  - City Communications & Engagement – Grace Johnson, Communications Manager and Samma Fox, Deputy City Manager
  - Neighborhood Engagement Programs – Hannah Miller, Sustainability Specialist
  - Sustainable Neighborhood Network – Jonathan Wachtel, Chair of Sustainable Neighborhood Network and Sustainability Manager, City of Lakewood
- Public Comment (3 minutes per comment)
- LSAB Discussion
  - How do you want to be engaged?
  - How do you access information?
  - What ideas do you have to improve engagement throughout the City?
  - What program(s) is the board interested in recommending the City consider for the 2025/26 budget? (Official budget recommendations in April LSAB meeting)

Discussion Item: Residential/Neighborhood Engagement

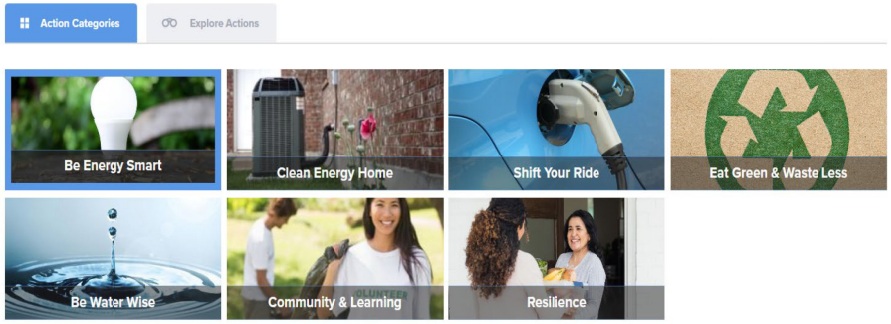
- City Communications & Engagement
  - Current State - Brief overview of the City's tools
    - Website
    - Email & Text Alerts
    - Engage Louisville
    - Social Media
    - Quarterly Newsletters
    - Monthly E-newsletters
    - Mailers
    - Channel 8
  - Future State - We are working on refining our tools and what communications/engagement/marketing should look like for Louisville going forward.

Discussion Item: Residential/Neighborhood Engagement

Shift FoCo

A dashboard provided by the non-profit Climate Community Connections aims to increase sustainability actions. The dashboard allows homeowners and renters to engage on the online platform and select different sustainability actions. With selected actions, individuals can see cost savings from their actions, compile points, and track progress. After completing an online profile, the dashboard will show your household carbon emissions and ways to reduce them.

The platform offers the option to chat with other individuals in your neighborhood and launch coordinated efforts.



Longmont Neighborhood Group Leaders Associations

The partnership between the City and a network of 50 registered community groups aims to foster relationships and communication between neighborhoods and the City. It serves as a forum for community leaders to collectively identify concerns, discuss issues, resolve conflicts, and implement solutions to create healthy neighborhoods with a strong sense of community.

Benefits of joining include-

- Access to informational monthly meetings and regular updates from various city departments or relevant organizations about current topics and issues affecting neighborhoods.
- Access to funding for community building activities and use of free resources.
- Access to funding for large-scale neighborhood improvement projects.
- Assistance with creating, printing, and distributing outreach materials and newsletters.
- Community leader skills training and development tailored to neighborhood improvement.
- Networking opportunities with other community leaders.



Sustainable Neighborhoods Program

Implementing Sustainability at the Neighborhood Level

Sustainable Neighborhood Network

Harnessing the passion of neighbors for climate action and community resilience

11 years

32 neighborhoods

90,000+ participants

2,000+ projects, events and workshops

Sustainable Neighborhood Network

This is happening...

Sustainable Neighborhood Network

This is Happening | *Leaf collections & composting*





Sustainable Neighborhood Network

This is Happening | *Tree planting*

Help Keep Morse Park Green!

Tree Planting Initiative

We planted 32 new trees in our first year in the program.
Now, we've set a bigger goal:

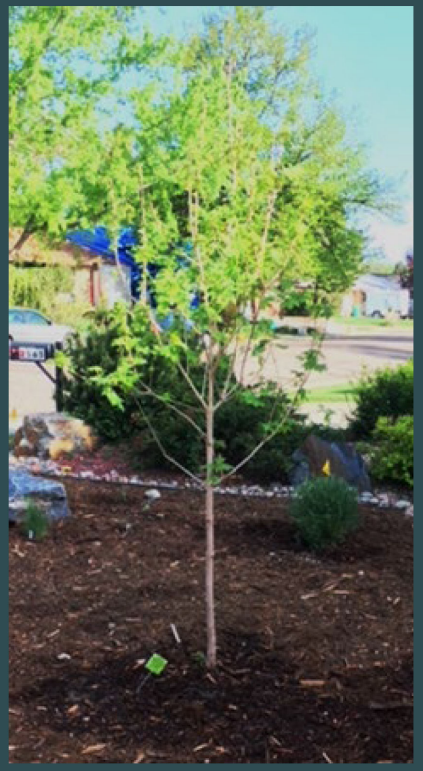
200 new trees in Morse Park by the end of 2020!

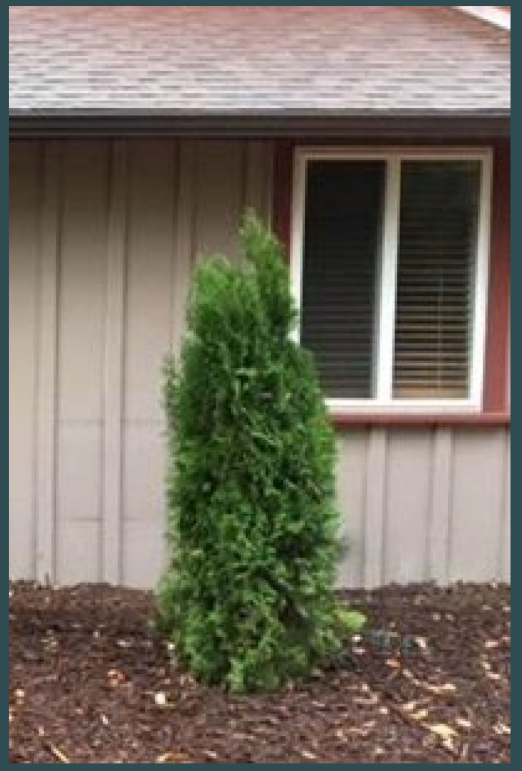
If you plant a new tree (or planted one) in the Morse Park neighborhood between June 1, 2018 and December 31, 2020, please send a photo of the planted tree, the name of the tree, and which street you live on to

sustainable@morsepark.org

Single stem fruit trees, deciduous shade trees, & evergreen trees only
No shrubs, please

Only 168 trees to go to meet our goal!





Sustainable Neighborhood Network

This is Happening | *Paint recycling & special collections*







Sustainable Neighborhood Network

This is Happening | *Coat drives & fundraisers*

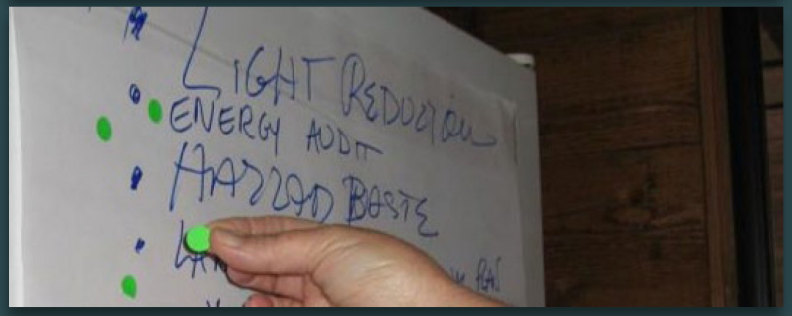




Sustainable Neighborhood Network

This is Happening | *Energy & Water Conservation*







Sustainable Neighborhood Network

This is Happening | *Sustainable living workshops*







Sustainable Neighborhood Network

This is Happening | *Community gardens*





Sustainable Neighborhood Network

This is Happening | *Community gardens*







Sustainable Neighborhood Network

This is Happening | *Walk-Bike-Run Clubs*



Sustainable Neighborhood Network

This is Happening | *Bee Safe neighborhoods*

Bee Safe Neighborhoods - Lakewood, CO

Environmental Conservation Organization

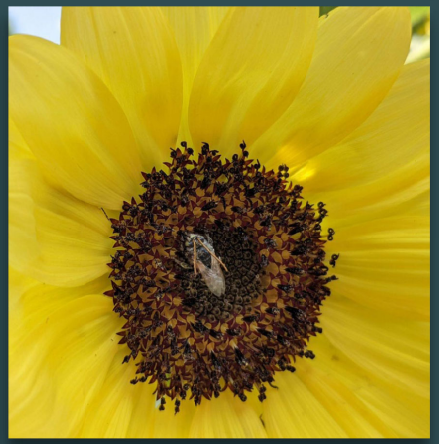
LET'S MAKE EIBER SAFE FOR BEES!

Bees and other pollinators are essential for over one-third of the food crops humans eat every day – and bees are dying in unprecedented numbers.









Sustainable Neighborhood Network

This is Happening | *Neighborhood Resiliency*









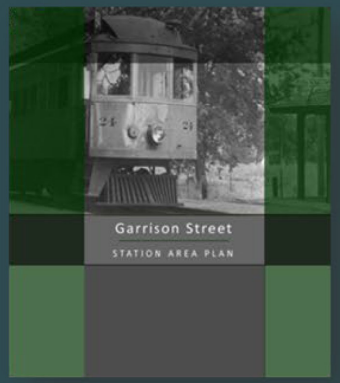




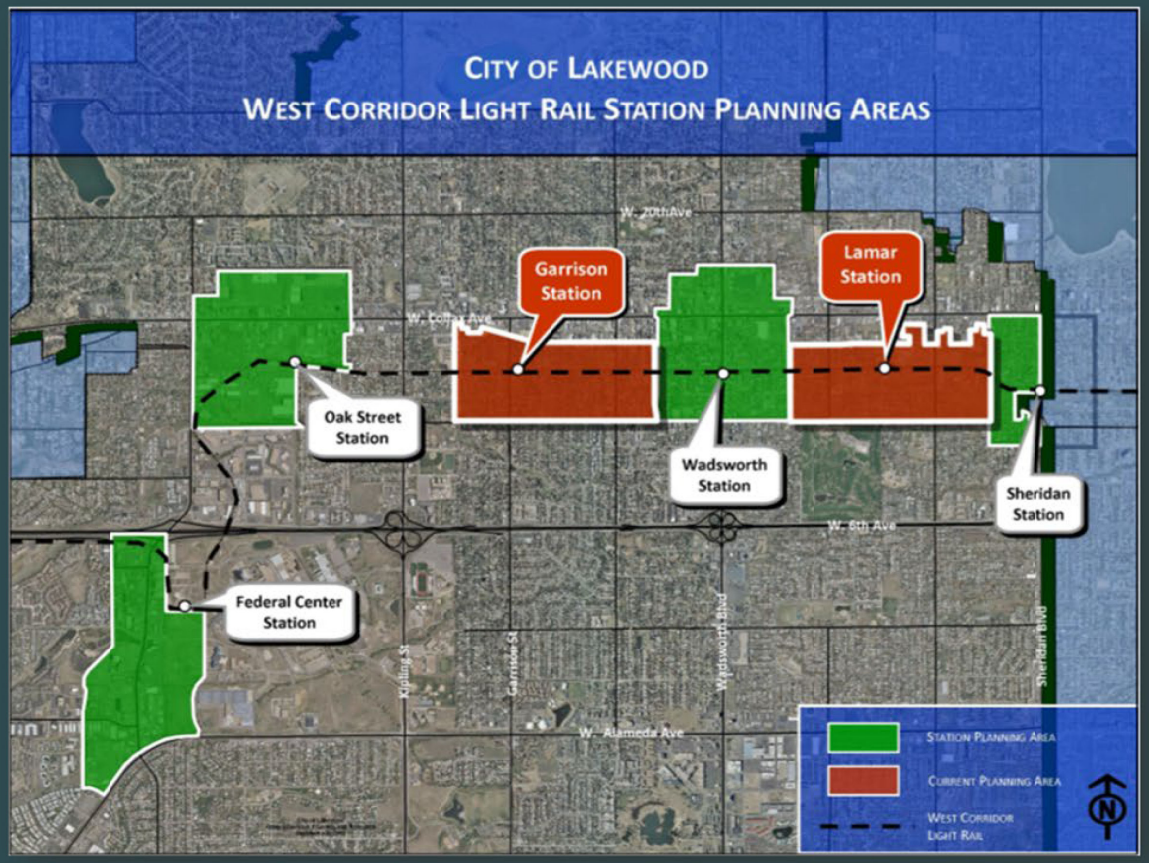
Sustainable Neighborhood Network

Why is this happening?

A few years into the job and I'm learning…







…to build trust, find common ground, and develop a shared vision for the future with residents

Community Sustainability:

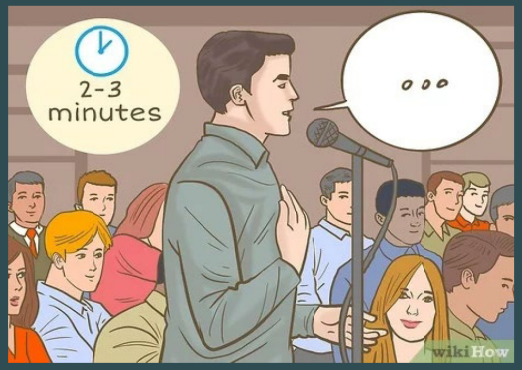
The Garrison Street Station Area should be a model for community sustainability and should enhance the goals in the Community Sustainability section of the Lakewood Comprehensive Plan. Building on the neighborhood's agricultural heritage, multi-modal transportation options, and proximity to services and amenities, the Garrison Street Station Area Plan promotes community sustainability through:

- Integration of land use and multi-modal transportation;
- Development of a vibrant neighborhood economic and social environment;
- Preservation of the neighborhood heritage;
- Stewardship and protection of the natural environment;
- Sustainable building practices and design; and
- Support for an inclusive community that encourages communication and cooperation.



I’m also realizing…







…that we have deficiencies (maybe even fear?) when it comes to empowering residents to continue the work

What if…

We foster a different kind of relationship with our neighborhoods…built on trust and support for neighborhood priorities?

We leverage resident skills and expertise to implement community plans, problem solve at the neighborhood scale, and close our “expertise” gap?

We had teams of volunteers on the ground in our neighborhoods that knew how to leverage our city’s existing resources and programs?

We could safely test new ideas because of neighborhood (i.e., political) support?

Sustainable Neighborhoods Program

Framework for Success…

- Leverages resident skills and expertise
- Creates unique, customized projects for neighborhood specific needs
- Integrates programming and catalyzes participation into existing programs
- Advances community goals and plans by creating a safe space to test new ideas

Sustainable Neighborhood Network

How is this happening?



The Basics | *Implementation*

- Residents host workshops, create resources, and complete projects that advance sustainability & resilience
- Projects are initiated by residents and/or leverage existing programs and services, but are **always voluntary**
- Staff provides guidance and serves as the connector to resources and partners
- Staff tracks neighborhood projects and awards credits that go earning the neighborhood formal program certification and recognition by City leadership and the community

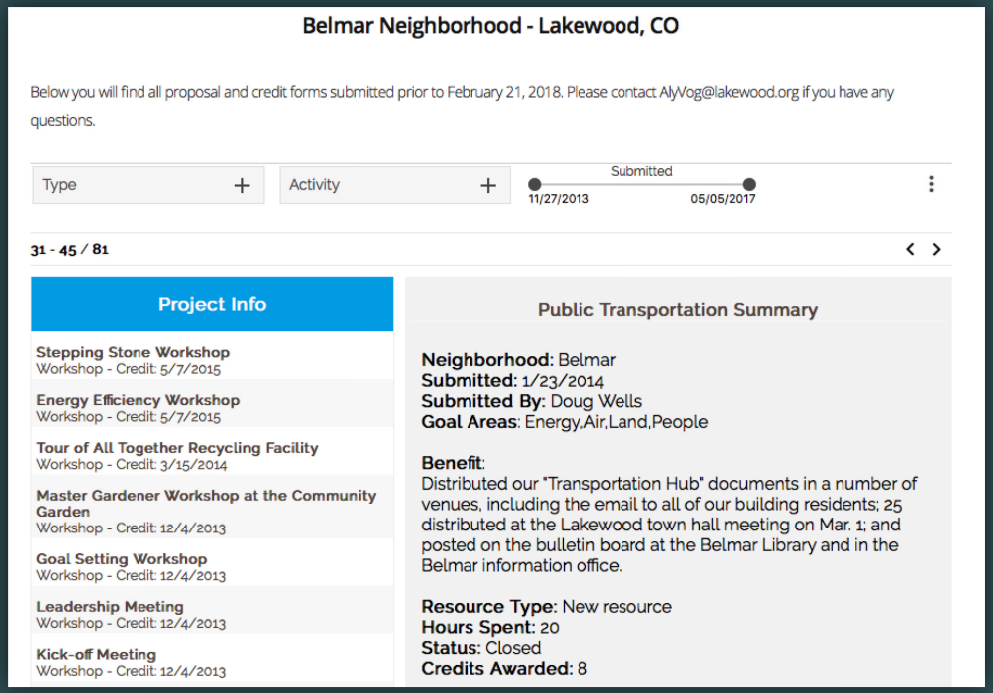


The Basics | *Project Selection*

Program Goal Areas provide a framework for organizing projects & initiatives

The **Goals & Target Areas Brochure** is a community-specific guide that can help neighborhoods generate project ideas and **leverages existing local programs and resources**

Program website provides tools to support neighborhoods and staff



- Neighborhood pages
- Project planning tools
- Database of projects/outcomes
- Certification status
- Tools and widgets



Neighborhood Benefits

- Customized, meaningful, & relevant
- Household savings & improvements
- Neighborhood enhancements & env. protection
- Safe space to share & contribute
- Personal connections & resilience
- Neighborhood pride & sense of place
- Leadership development



Staff Benefits

- Plan implementation tool
- Leverages existing resources and programs
- Crowdsourced knowledge, skills, time
- Instead of saying no, we ask, what will it take?
- Positive interactions and relationships
- Laboratory for trying new projects
- Provides a base of support for complex problem solving



City Leadership Benefits

- Positive outcomes, positive talking points, positive press
- Lots of outcomes, not much cost
- Enhanced civic participation – not just Inform or Consult…but **Empower**
- Friendly competition between districts/wards
- Leadership development

Sustainable Neighborhood Network

Resource needs?



Resources Needed

Staff

- Part-time staff (0.25-0.75 FTE to start)

Organizational support

- Cross-departmental buy-in
- Ability to leverage existing programs

Operating Budget

- ~$10,000 per year (SNN membership, project supplies, mailings, meeting supplies, etc.)

Licensing Fee

	2022/23 Licensing Fees	
Tier	**New Member**	**Annual**
I (<75,000 ppl)	$5,000.00	$3,000.00
II (75-200,000 ppl)	$6,500.00	$4,000.00
III (200,000 - 500,000)	$7,500.00	$5,000.00
IV (500,000+)	$10,000.00	$6,000.00

Licensing Fee

The Sustainable Neighborhood Network Licensing Fee covers the Network's cost of program administration and digital resources in addition to providing local governments with:

- License to utilize the Sustainable Neighborhood Program design, credit system, collateral and trademark
- Guidance on effective program management and decision-making
- Access to the SNN project reporting and tracking platform
- Technical assistance for programs and projects
- Proven community engagement and implementation frameworks, best practices, and leadership development opportunities for both government staff and residents of member communities
- Connection and engagement with the expanding network of member communities



Sustainable Neighborhoods Program

Jonathan Wachtel, Sustainability Manager
City of Lakewood
jonwac@lakewood.org

Discussion Item: Residential/Neighborhood Engagement

- Public Comment (3 minutes per comment)

- LSAB Discussion
  - How do you want to be engaged?
  - How do you access information?
  - What ideas do you have to improve engagement throughout the City?
  - What program(s) is the board interested in recommending the City consider for the 2025/26 budget? (Official budget recommendations in April LSAB meeting)

Discussion Item: Energy Code Amendments

- Staff Presentation
  - Overview of energy code amendments
- Public Comment (3 minutes per comment)
- LSAB Discussion and Direction
  - What does LSAB want to include in a Council memo for April 16 meeting?
    - Draft memo outline and appoint member to draft memo
      - Motion
      - Seconded motion
      - LSAB vote
      - Record vote

Discussion Item: Energy Code Amendments – EV Charging

Use	EV Installed	EV-Ready	EV-Capable	EV-Capable Light
Residential, Single Family	0 (no change)	1 (no change)	1 (no change)	0
Multi-family (10 or less parking)	1 (10% of spaces)	1 (10% of spaces)	1 (50% of spaces)	1
Multi-family (10+)	5% (10%)	15% (10%)	10% (10%)	
Commercial (10 or less parking)	0 (5-7%)	2 (10%)	0 (10-15%)	0
Commercial (10+)	2% (5-7%)	8% (10%)	10% (10-15%)	10%

- Proposal to align Louisville EV charging standards with State of Colorado Model Electric and Solar Ready Code.
- Could provide more consistency and predictability for property developers

Discussion Item: Energy Code Amendments

- Specifies that the commercial all-electric space and water heating requirement only applies to all new construction and removes any standards for additions and alternations to existing commercial buildings.
- Allows gas backup space heating equipment for the commercial all-electric space heating standards.
- Adds minimum heat pump standards for both commercial and residential development to ensure that they are climate appropriate.
- Removes post-construction documentation, one-year compliance check, monitoring and metering requirements for new commercial construction subject to Appendix PT, Energy Use Intensity (EUI) modeling standards.
- Clarifications/Corrections: EUI standards applicable to small office development between 0-5,000 sq. ft.; missing commercial R-values for insulation of metal buildings, and for piping and ducting; R-1 and R-2 occupancies shall be subject to Appendix PT, the EUI modeling standards, rather than Appendix RC, Zero Energy Residential Building Provisions.
- Product availability: Commercial door U-value, commercial furnace efficiency standards
- Changes the minimum glazing standards for industrial and warehouse development to be measured by wall area rather than floor area.
- Allows an exception to meeting Appendix RC, Zero Energy Residential Building Provisions if a home is certified through the Passive House Institute US, Inc. (PHIUS) program.
- Allows a Home Energy Rating System (HERS) in lieu of the Energy Rating Index (ERI) specified in the code.
- Removes the requirement to install electric vehicle charging infrastructure for commercial development when parking spaces are added or reconfigured if not part of a new building or building addition.

Discussion Item: Energy Code Amendments

- Public Comment (3 minutes per comment)

- LSAB Discussion and Direction
  - What does LSAB want to include in a Council memo for April 16 meeting?
    - Draft memo outline and appoint member to draft memo
      - Motion
      - Seconded motion
      - LSAB vote
      - Record vote

Discussion Item: Community Decarbonization Plan Memo

- Chair update
  - Present memo
- Public Comment (3 minutes per comment)
- LSAB Discussion and Direction
  - Formal approval of memo
    - Motion
    - Seconded motion
    - LSAB vote
    - Record vote

Discussion Item: Front Range Passenger Rail Memo

- Board member update (John)
  - Overview of topic and memo
  - Memo is currently written in POV of elected officials – would need to be updated with LSAB POV, written to City Council, could include current draft as suggestion if Council would like to pursue a memo to FRPRD
- Public Comment (3 minutes per comment)
- LSAB Discussion and Direction
  - Does the board support the draft memo? Appoint member to draft memo with LSAB POV.
    - Motion
    - Seconded motion
    - LSAB vote
    - Record vote

LSAB March 2024 Meeting

Sub-Committee and Board Member Updates

Administrative Tasks

- Staff to write next Sustainability Spotlight, due April 15

Discussion Items for Next Meeting

- 2025/2026 Sustainability Division budget recommendations. Come to the meeting prepared to 'pitch' your recommendation and include:
  - Overview of topic/idea
  - Alignment with Sustainability Action Plan and Climate Action Goals
  - Potential GHG reduction
  - Total budget recommended
- Bag tax programs
- Internal Decarbonization Plan

Adjourn