



CITY COUNCIL STAFF REPORT

ITEM NO. 6.1

DATE: October 24, 2022

TO: Honorable Mayor and City Council

FROM: Paul Spence, Community Development Director

SUBJECT: **Adoption of an ordinance** amending and revising the Building Code, Property Maintenance Code, Fire Code, Electrical Code, Mechanical Code, Plumbing Code, Residential Code, and the Green Building Standards Codes in the City's Municipal Code, to adopt by reference and amend the 2022 California Building Standards Code and the codes set forth therein.

RECOMMENDED ACTION

Staff recommends the City Council adopt an ordinance with an effective date of January 1, 2023:

1. Revising and amending Chapter 15.02 (Building Code), 15.04 (Property Maintenance Code), 15.06 (Fire Code), 15.08 (Electrical Code), 15.10 (Mechanical Code), 15.12 (Plumbing Code), 15.14 (Residential Code), and 15.26 (Green Building Standards Code) in The Livermore Municipal Code.
2. Adopting new Chapters 15.02 (Building Code), 15.06 (Fire Code), 15.08 (Electrical Code), 15.10 (Mechanical Code), 15.14 (Residential Code), and 15.26 (Green Building Standards Code) of the Livermore Municipal Code by adopting and amending the 2022 Editions of the California Building, Fire, Electrical, Mechanical, Plumbing, Residential, and Green Building Standards Codes.
3. Adopting new Chapter 15.04 (Property Maintenance Code) of the Livermore Municipal Code by adopting and amending the 2021 edition of the International Property Maintenance Code.

SUMMARY

State law mandates all local jurisdictions enforce the California State Building Standards (Title 24 of the California Code of Regulations) in the construction and maintenance of all buildings and structures. These standards include provisions of the nationally recognized model Building, Fire, Electrical, Mechanical and Plumbing Codes. These standards are updated on a tri-annual basis. The City currently enforces the 2019 California Building Standards Code. The State recently published the 2022 version of the Codes; per State law, local jurisdictions must enforce these codes with an effective date of January 1, 2023. Local amendments are permitted if they are no less restrictive than the State Code and are determined to be reasonably necessary in order to meet local climatic, geological, topographical, and

environmental conditions.

This proposed ordinance amends and revises the old codes and amends and adopts the new 2022 California Building Standards Code. In addition, staff has identified minor administrative amendments within the Building, Fire, and Residential codes that help to clarify the intent of pertinent code sections. These minor amendments are consistent with amendments made in previous code adoptions.

DISCUSSION

Under State law, various State agencies have statutory authority to develop building standards, also known as building codes. These standards are updated every three years and are adopted into Title 24 of the California Code of Regulations through the California Building Standards Commission. The California Building Standards are based primarily on model codes developed by national code development organizations known as the International Code Council (Building, Fire, Residential and Property Maintenance Codes), the National Fire Protection Association (Electrical Code), and the International Association of Plumbing and Mechanical Officials (Plumbing and Mechanical Codes). The one exception to this is the Green Building Standards Code, which is developed in its entirety by the State.

As with the State Building standards, the model codes are also updated every three years. Both the model codes and state standards are developed with extensive local government input. Livermore participates in these efforts by providing testimony on behalf of the city, region and state during national model code hearings. The City also represents local government through participation on statewide seismic design, disabled access, and code advisory committees.

Livermore is a founding member city of the Tri-Chapter Uniform Code Adoption committee, a committee comprised of Bay Area cities, whose goal is to promote regional consistency in the local amendment process. These efforts have helped to maintain regional consistency, promoting user-friendly and easily understood construction codes throughout the Bay Area.

In addition, local jurisdictions can adopt code amendments that establish requirements above the minimum State building code requirements. These amendments are called “reach codes” and must be filed with and approved by the California Building Standards Commission (CBSC). A jurisdiction can adopt a reach code at any time; however, the most streamlined approach is to adopt the reach code concurrently with the new state building code.

Reach codes are effective and flexible tools to achieve local energy and climate policy objectives. Over 50 local jurisdictions in California adopted amendments to the 2019 Building Standards Code (2019 Code) related to energy-efficiency, building electrification, electric vehicle (EV) charging infrastructure, and solar photovoltaics. These reach codes are intended to reduce energy costs and greenhouse gas emissions, improve indoor and outdoor air quality, and expand clean and renewable energy.

Livermore’s Draft Climate Action Plan (CAP) calls for the City to adopt reach codes for all-electric buildings and electric vehicle charging in new construction. Conversations with the community during outreach for the CAP revealed overall support for these requirements in new construction. The community expressed concern about applying these requirements to additions or renovations in existing buildings due to costly upgrades that may be required, particularly in older homes with limited electrical capacity. Requiring new construction to be all-electric and to install electrical infrastructure for EV

charging upfront is a more cost-effective approach.

Reach codes for the 2019 Code amended the Energy Code (Title 24, Part 6), which required review and approval by the California Energy Commission (CEC) in addition to the CBSC. For the 2022 Building Standards Code (2022 Code), local jurisdictions have been directed to include all-electric construction and EV charging reach codes in the Green Building Standards Code also known as CALGreen Code (Title 24, Part 11). Amendments to the CALGreen Code do not require CEC review.

To further expand on the proposed Reach Code, the following sections outline proposed amendments to the 2022 CALGreen Code to require new buildings in Livermore to be all-electric and to install additional electric vehicle charging infrastructure. The reach codes do not apply to renovations or additions to existing buildings, including accessory dwelling units (ADUs) that are constructed on a lot with an existing residence. The reach codes amend the following sections of the 2022 CALGreen Code:

Chapter 2 - Definitions; Section 202 Definitions

Chapter 4 - Residential Mandatory Measures; Section 4.106 Site Development

Chapter 5 - Nonresidential Mandatory Measures; Section 5.106 Site Development

The amendments were prepared based on recommendations from the City Council Climate Change Subcommittee, Rincon Consultants, and East Bay Community Energy. They were also prepared in coordination with the Cities of Pleasanton and Dublin, which plan to adopt similar reach codes. If approved by the City Council, staff will submit the proposed amendments to the CBSC for review. If the CBSC approves the amendments, the requirements would take effect with the 2022 Code on January 1, 2023.

All-Electric Buildings in New Construction

All-electric buildings improve indoor and outdoor air quality and reduce greenhouse gas emissions when electricity is sourced from carbon-free and renewable energy. In most cases, all-electric construction is cheaper than construction with natural gas because it eliminates the need to install natural gas infrastructure. The all-electric reach code would require most new buildings in Livermore to be constructed without natural gas or other fossil fuels. The reach code requirements would not apply to renovations or additions to existing buildings.

An all-electric building is defined as:

A building that contains no combustion equipment or plumbing for combustion equipment serving space heating (including fireplaces), water heating (including pools and spas), cooking appliances (including barbecues), and clothes drying, within the building or building property lines, and instead use electric heating appliances for service.

Minimizing exceptions to the requirements is important to prevent expensive expansion of natural gas lines that serve only a few end users and to maximize the public health and environmental benefits of all-electric buildings. However, the reach code includes exceptions in the following cases:

- Multifamily residential projects that received entitlements before the effective date of the code and have water heating systems serving multiple units.
- Accessory Dwelling Units (ADUs) that are constructed on a parcel with an existing residence that

utilizes fuel gas.

- Commercial kitchens with a business-related need to cook with combustion equipment.
- Laboratories with a business, research, or educational-related need to use combustion equipment.
- Hotels and motels with 80 or more guestrooms may utilize fuel gas in on-site commercial clothes drying equipment.
- Projects that can demonstrate that it is infeasible to construct all-electric according to the California Energy Code or Building Energy Efficiency Standards.

All buildings that are granted an exception must meet requirements for combustion equipment, including having the pre-wiring and physical space needed to accommodate a future transition to all-electric. Overall, this reach code will reduce construction costs, minimize natural gas usage, and open a pathway to utilizing 100% renewable energy in new construction.

Electric Vehicle Charging Infrastructure in New Construction

Electric vehicle charging infrastructure at homes, workplaces, and commercial centers is necessary to support a transition from combustion to electric vehicles. The proposed reach code for EV charging establishes more ambitious requirements for EV charging infrastructure in new construction compared to the 2022 CALGreen Code. The reach code requirements would not apply to renovations or additions to existing buildings. Electric vehicle charging readiness requirements generally fall into three categories:

1. EV Charging Station (EVCS): An EV charger installed at a parking space, such that an EV can charge without additional equipment.
2. EV Ready Space: A parking space that has the power supply and associated outlet to readily plug in an EV charger and a vehicle can charge.
3. EV Capable Space: A parking space with electrical conduit installed and adequate capacity in the building's electrical panel and transformers to serve a future EV charger. Electrical work to complete the circuit and/or increase the gauge of upstream wiring would be required to accommodate an EV charger.

Additionally, EV charging speed is generally summarized into three categories:

- Level 1: Includes a 110/120V, 20-amp circuit. This is equivalent to a standard home outlet that would charge an electric vehicle approximately 3-4 miles per charging hour.
- Level 2: Includes a 208/240V, 40-amp circuit. This service capacity is typically used for larger appliance loads in homes and would charge an electric vehicle approximately 10-20 miles per charging hour.
- Level 3: A minimum of 480V, 100-amp circuit. This level is used for Tesla Superchargers and other Direct Current Fast Chargers. An electric vehicle can charge 150+ miles per charging hour at this level.

The 2022 CALGreen Code includes the following requirements for EV charging infrastructure in new construction:

- New one- and two-family dwellings and townhouses with attached private garages:
 - One Level 2 EV capable space
- Multi-family dwellings and hotels with less than 20 units:
 - 25% Level 2 EV ready spaces
 - 10% Level 2 EV capable spaces

- Multi-family dwellings and hotels with more than 20 units:
 - 5% Level 2 EV charging stations
 - 25% Level 2 EV ready spaces
 - 10% Level 2 EV capable spaces
- Non-residential uses:
 - 5% Level 2 EV charging stations
 - 15% Level 2 EV capable spaces

While California's new minimum requirements are a step forward, it is unlikely that the requirements for multi-family dwellings and non-residential buildings are enough to keep pace with expected electric vehicle growth looking towards 2030. The proposed reach code allows Livermore to prepare for a higher volume of electric vehicles in the future. The amendments include the following requirements for EV charging in new construction:

- One- and two-family dwellings and townhouses with attached private garages:
 - Two Level 2 EV Ready spaces
- Multi-family dwellings:
 - 15% Level 2 EV Charging Stations
 - 85% Level 2 EV Ready spaces
- Non-residential uses:
 - Offices
 - 20% Level 2 EV Charging Stations
 - 30% Level 2 EV Capable spaces
 - Hotels:
 - 5% Level 2 EV Charging Stations
 - 25% Level 2 EV Ready spaces
 - 10% Level 2 EV Capable spaces
 - All other:
 - 10% Level 2 EV Charging Stations
 - 10% Level 2 EV Capable spaces

Similar to the all-electric reach code, the EV charging reach code grants exceptions in certain cases, including:

- Where local utility power supply is inadequate
- If construction costs would increase by an average of:
 - \$400 per parking space for affordable housing and non-profit organizations serving low-income and underserved communities; or
 - \$4,500 per parking space for all other uses
- Accessory Dwelling Units
- Multifamily residential projects that received entitlements before the effective date of the code
- Spaces in automated mechanical car parking systems

Ensuring that newly constructed residential and non-residential parking has ample EV charging capability will reduce long-term retrofit costs of EV infrastructure installation, while supporting EV adoption and decreasing transportation-related greenhouse gas emissions.

Each of these efforts contribute to a set of construction codes that remain current with evolving industry practice, ensuring broad stakeholder input, building safety, construction consistency, protection of the environment, and economic vitality. The latest codes, as adopted by the State and proposed amendments have been updated to better reflect current technology and standards for construction, including seismic safety, fire protection, environmental protection, and maintenance of buildings.

FISCAL AND ADMINSTRATIVE IMPACTS

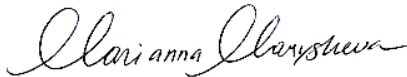
None.

ATTACHMENTS

1. Ordinance
2. Exhibit A - Chapter 15.02 Building Code
3. Exhibit B - Chapter 15.04 Property Maintenance Code
4. Exhibit C- Chapter 15.06 Fire Code
5. Exhibit D - Chapter 15.08 Electrical Code
6. Exhibit E - Chapter 15.10 Mechanical Code
7. Exhibit F - Chapter 15.12 Plumbing Code
8. Exhibit G - Chapter 15.14 Residential Code
9. Exhibit H - Chapter 15.26 Green Code

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