



Memorandum

TO: HONORABLE MAYOR
AND CITY COUNCIL

FROM: Kerrie Romanow
Chris Burton

SUBJECT: SAN JOSÉ BUILDING REACH CODE ADMINISTRATIVE UPDATE **DATE:** August 21, 2023

Approved

Date

8/30/23

RECOMMENDATION

- (a) Make findings related to the local geographical, topographical, climatic conditions, and cost effectiveness, which are necessary to make modifications to the State of California's Building Energy Efficiency Standards.
- (b) Approve an ordinance amending various sections of Chapter 24.12 of Title 24 of the San José Municipal Code to modify provisions of the 2022 California Building Energy Efficiency Standards with certain exceptions, modifications, and additions which serve as a reach code to increase building efficiency, mandate electric- and solar-readiness, and incentivize all-electric development.
- (c) Authorize the City Manager or designee to submit a reach code submittal package to the California Energy Commission for its approval as required by law.

SUMMARY AND OUTCOME

Adoption of the proposed reach code ordinance (proposed ordinance) will serve as a “reach code” setting building energy efficiency standards higher than that what is required by the State's Building Energy Efficiency Standards (Efficiency Standards). Increased standards help reduce community-wide greenhouse gas emissions in line with the City's Climate Smart San José plan and carbon neutrality by 2030 goals; provide financial benefits related to lower-cost electric construction; and support public health by decreasing air pollution emissions and exposure. As drafted, the proposed ordinance, if approved by City Council, becomes effective on October 1, 2023.

The California Energy Commission (CEC) updates the Efficiency Standards every three years, most recently in 2022, effective January 1, 2023. In October 2022, City Council adopted the new CEC Efficiency Standards along with amendments to the State's California Green Building Standards Code to increase electric vehicle charging requirements effective January 1, 2023. When the City makes local amendments to the State Building Code, it must adopt findings that the changes are necessary for the local geological, topographical, and climatic conditions. In addition, when the City amends Efficiency Standards, it must show that the amendments are cost effective. In October 2022, when City Council considered other updates to the State Code, the cost-effectiveness studies for the Energy Standards for new single-family, multifamily, and non-

residential developments, which are required for a City to support adoption of a reach code under the Efficiency Standards, were not final. The studies are now available, and the proposed ordinance amends the CEC Efficiency Standards to readopt its solar photovoltaic, energy efficiency, and electrification-ready standards to maintain its 2019 reach code requirements with minor modifications. These changes are to align the 2019 reach code with the already adopted 2022 Efficiency Standards and the 2025 draft Efficiency Standards proposals. The proposed ordinance would need to be approved by City Council to be submitted to the CEC in time for an effective date of October 1, 2023.

BACKGROUND

The CEC updates the Efficiency Standards every three years, in alignment with the California Code of Regulations. Local jurisdictions have the authority to adopt reach codes that require development projects to exceed minimum requirements established in the 2022 Efficiency Standards. To be approved by the CEC, a reach code must: 1) be at least as stringent as the statewide code; 2) be cost effective as defined by the CEC standards 3) be submitted to and approved by the CEC; and 4) not preempt federal appliance regulations.

The City is a national leader in mitigating the impacts of climate change. In 2019, City Council adopted a reach code for new residential and non-residential construction, aligned with Climate Smart San José goals, encouraging building electrification and energy efficiency via increased energy efficiency compliance margins, requiring solar-readiness in non-residential buildings, and requiring electric vehicle readiness and electric vehicle equipment installation. Compliance margins refer to the difference between the energy budget for a proposed building and a design that meets the Efficiency Standards for all building systems and features. The difference is expressed either as a percentage or as an integer, and in both cases, a positive number indicates better energy performance (lower energy use) than what the code requires. In October 2019, City Council approved an ordinance prohibiting natural gas infrastructure in new detached accessory dwelling units, single-family, and low-rise multifamily buildings that supplements the City's reach code by requiring all-electric new construction. On December 1, 2020, City Council approved an updated ordinance prohibiting natural gas infrastructure in all types of new construction in San José starting on August 1, 2021.

As part of the 2022 Efficiency Standards, the CEC included additional metrics for buildings to use to show compliance with the Efficiency Standards. One such metric included Source Energy, which represents the energy consumption of a building including losses incurred during production and delivery to the meter located at the building. Other metrics include Efficiency and Demand Flexibility, but these are not used in the proposed ordinance.

In October 2022, City Council adopted the 2022 Efficiency Standards and amendments to the State's California Green Building Standards Code, including the City's increased electric vehicle charging infrastructure requirements from the 2019 reach code. However, in order to increase Efficiency Standards, the amendments must be cost effective. The Statewide Investor Owned Utility Codes and Standards Team recently released the cost-effectiveness studies to support the remaining local amendments, meaning local amendments are now appropriate for City Council's

consideration. The electric vehicle charging-related local amendments to the reach code were originally scheduled to be discussed by City Council on March 28, 2023, but was deferred for additional public input. Staff is continuing to coordinate with the development community to understand the implications of these future amendments. This item will be discussed at a future City Council meeting and are separate changes from the recommendations in this reach code update.

ANALYSIS

The proposed ordinance readopts the majority of the City's 2019 reach code components to incentivize greenhouse gas emissions reductions by decreasing source energy consumption and to require solar- and electrification-ready requirements, not already covered by the 2022 Efficiency Standards, for all new construction in San José. The differences between the proposed ordinance and the 2019 reach code include:

1. Reference to updated code compliance metrics (e.g., Source Energy compliance margin) rather than total compliance margin, in alignment with state codes and standards;
2. Updated compliance margin requirements to the maximum values found to be cost-effective or the thresholds under the 2019 San José reach code, whichever is lower; and
3. Updated electric-readiness language that is a) more flexible for design engineers for non-residential buildings, and b) more specific for central domestic hot water applications in multifamily buildings.

The proposed ordinance components are supported by the available cost-effectiveness studies (Attachment) as the studies show that the proposed requirement of source energy margin can be met cost-effectively in San José.

The proposed ordinance would specifically require the following:

1. **Solar-Readiness for New Non-residential Four Stories or Greater and High-Rise Multifamily/Hotel/Motel 10 Stories or Greater:** Solar-readiness refers to providing reserved roof space (known as solar zone) for the future installation of solar panels for new buildings that do not plan to install solar photovoltaics. The 2019 San José reach code extended solar-ready requirements to all buildings irrespective of number of habitable stories, and the proposed ordinance maintains the same requirement.
2. **Electric-Readiness:** Electric-readiness refers to the installation of an electrical circuit that is capable of powering an electric appliance when a gas appliance is installed. The proposed ordinance requires the following additional requirements for systems using gas or propane:
 - **Single-family:** 2022 Efficiency Standards already requires electric-readiness for single-family buildings and accessory dwelling units. The proposed ordinance will require a designated exterior location for a future heat pump compressor unit with either a drain or natural drainage for condensate to ensure heat pump readiness, in alignment with the draft 2025 Efficiency Standards.
 - **Multifamily:** The proposed ordinance will require water heating systems using gas or propane and serving multiple units to meet requirements that allow for future central heat pump water heater installation. The minimum space reserved will include space

- for service clearances, air flow clearances, and keep outs and the space reserves should be the space required for a heat pump water system that meets the total building hot water demand, in alignment with the draft 2025 Efficiency Standards.
- **Non-residential:** There are no electric-readiness requirements in the 2022 Efficiency Standards for non-residential and hotel/motel buildings. Similar to 2019, the proposed ordinance will add a new section on electric-readiness requirements for fossil fuel systems, but allow designer discretion regarding the specific power requirements, considering the wide variety of non-residential systems that must be accommodated.

3. Electrification: Additional Emissions Reduction Measures for New Development

The proposed ordinance requires higher performance buildings to achieve emissions reductions through higher Source Energy compliance margins compared to the state Efficiency Standards. These higher compliance margins are more easily achieved by specifying all-electric appliances, in accordance with San José's Natural Gas Infrastructure Prohibition Ordinance.

The following compliance margin requirements in the proposed ordinance represent the maximum Source Energy compliance margin values found to be cost-effective or the existing compliance margin thresholds under the 2019 San José reach code, whichever is lower:

- **Single-family:** A newly constructed building complies with the proposed ordinance if the Source Energy (referred to as Energy Design Rating 1 for single family specifically) calculated for the proposed design building has a compliance margin of at least eight.
- **Multifamily:** A building complies with the proposed ordinance if the Source Energy consumption calculated for the proposed design building has a compliance margin of at least 6%.
- **Non-residential:** A building complies with the proposed ordinance if the Source Energy consumption calculated for the proposed design building has a compliance margin per Table 1, below. As part of this administrative update, retail buildings and similar (e.g., banks, groceries, and schools) are exempted from the proposed reach code because these buildings are prescriptively required to install heat pump space heating per the 2022 Efficiency Standards. Industrial/manufacturing is not included in cost-effectiveness studies and reach code because of highly variable process loads.

Table 1. Compliance Margins for Non-Residential Construction

Occupancy Type	Source Energy Compliance Margins
Office/Mercantile	10%
Hotel/motel	6%
Industrial/Manufacturing	0%
All other Non-residential occupancies	6%

4. Administrative Updates to 2019 Reach Code Requirements

In addition to readopting 2019 reach code components where not already covered by the 2022 Efficiency Standards, the following administrative updates are also included to clarify and align the proposed ordinance with the 2022 Efficiency Standards:

- a. Adding definitions for “Electric Heating Appliance” and “Net Free Area” to support added electric-readiness reach code language. The proposed ordinance keeps the “Certified Energy Analyst” definition and removed the “Mixed Fuel Buildings” and “All-Electric Building” definitions since they are no longer referenced in the proposed ordinance.
- b. Not including prescriptive requirements for mixed fuel buildings from the 2019 San José reach code for simplification and to allow flexibility. Most buildings choose the performance approach for compliance and additional prescriptive requirements shows a very limited pathway to meet reach code compliance.
- c. Including revised electric-readiness requirements from the 2019 San José reach code to allow more design flexibility when working with the highly variable non-residential building market. For both single-family and multifamily residential, heat pump water heater readiness language has been modified to align with proposed changes in the draft 2025 Efficiency Standards.

The proposed ordinance will continue to provide many benefits including:

- significant greenhouse gas emissions reductions;
- financial benefits related to cost-effective electric construction (as demonstrated by the results sections of the cost effectiveness studies in the Attachment); and
- public health benefits by reducing both indoor and outdoor air pollution associated with natural gas usage in buildings.

The proposed ordinance is in alignment with 2019 San José reach code, with some minor adjustments pertaining to the 2022 Efficiency Standards changes and the 2025 draft Efficiency Standards proposals. As long as it remains in effect, the Natural Gas Infrastructure Prohibition Ordinance will continue to require all-electric construction, but the reach code will apply where applicable (e.g., requiring electrification-readiness if the project is exempted from that ordinance and is therefore mixed fuel).

Climate Smart San José Analysis

The proposed ordinance will facilitate the energy efficiency of homes and commercial buildings in alignment with Climate Smart San José goals.

EVALUATION AND FOLLOW-UP

Staff will provide progress updates to City Council on Climate Smart San José activities, including the reach code, on a semi-annual basis.

COORDINATION

This memorandum has been coordinated with the City Attorney's Office and the City Manager's Budget Office.

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PUBLIC OUTREACH

This memorandum will be posted on the City's Council Agenda website for the September 12, 2023 City Council meeting. In addition to the agenda posting, staff held two public webinars in July 2023 to present the proposed ordinance.

COMMISSION RECOMMENDATION AND INPUT

No commission recommendation or input is associated with this action.

CEQA

Categorically Exempt, File No. ER23-175, CEQA Guidelines Section 15308, Actions by Regulatory Agencies for Protection of the Environment.

PUBLIC SUBSIDY REPORTING

This item does not include a public subsidy as defined in section 53083 or 53083.1 of the California Government Code or the City's Open Government Resolution.

/s/

CHRIS BURTON

Director, Planning, Building, and Code Enforcement

/s/

KERRIE ROMANOW

Director, Environmental Services

For questions, please contact Julie Benabente, Deputy Director, Environmental Services Department, at Julie.benabente@sanjoseca.gov or (408) 975-2537.

ATTACHMENT: 2022 Cost Effectiveness Studies: (February 23, 2023, 2022 Cost-Effectiveness Study: Multifamily New Construction, pp. 1-73; March 24, 2023 Non-residential New Construction Reach Code Cost Effectiveness Study, pp. 74-159; September 12, 2022 Cost-Effectiveness Study: Single Family New Construction, pp. 160-240)