

DOCKETED	
Docket Number:	22-BSTD-07
Project Title:	Local Ordinance Applications Exceeding the 2022 Energy Code
TN #:	248489-3
Document Title:	City of Menlo Park - 2022 Sustainable Reach Code Staff Report
Description:	Plain text of the sustainable reach code for the City of Menlo Park
Filer:	Danuta Drozdowicz
Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	1/20/2023 7:15:18 PM
Docketed Date:	1/23/2023



STAFF REPORT

City Council

Meeting Date:

10/18/2022

Staff Report Number:

22-206-CC

Informational Item:

Consideration of recommended sustainable reach codes for inclusion as part of the upcoming 2022 California Building Standards Code adoption process

Recommendation

Staff recommends that the City Council review this informational item containing proposed reach code measures to stay on a path toward carbon neutrality by 2030 and avoid time lapses in implementing Menlo Park's current reach codes. The proposed recommendations will carry forward Menlo Park's current reach code requirements for building electrification and electric vehicle (EV) charging with minor additions and modifications and will be incorporated into an ordinance presented to the City Council November 1 as part of the larger 2022 California Building Standards Code adoption process Menlo Park is required to undertake.

Policy Issues

Every three years, the state Building Standards Commission adopts triennial revisions to the statewide Building Standards Code, Title 24 of the California Code of Regulations, which under state law must be adopted by all local agencies and enforced by their building departments. Under state law, cities and counties may also choose to adopt local amendments to these statewide building codes, including changes to meet local climatic, topographic or geological conditions that are more advanced than those required by the state to meet local goals, such as public safety, environmental sustainability or Climate Action Plan (CAP) activities. The City Council declared a climate emergency (Resolution No. 6535) committing to accelerating actions to address climate change at a local level and adopted a 2030 CAP with the bold goal to be carbon neutral (zero emissions) by 2030.

Background

In recent years, the term reach code has been used to describe a local government's ability to exceed state building code regulations to support or implement its environmental goals, such as a CAP through the building permit process. Menlo Park has demonstrated leadership in adopting reach codes over the last few building code cycles. Examples include:

- In 2019, Menlo Park adopted a reach code that requires newly constructed buildings (residential and commercial) to be all-electric with very few exceptions to reduce greenhouse gas emission related to natural gas usage (fossil fuel) in buildings. Electricity consumed in Menlo Park is greenhouse gas or fossil fuel free, and procured through Peninsula Clean Energy. Since its adoption, many other communities with greenhouse gas free electricity have followed in Menlo Park's footsteps. These local codes must be re-adopted every three years when statewide building standards change.
- In 2018, the City Council also adopted progressive EV charging requirements for residential and commercial building permit projects.

Recommendations for this code cycle that would become effective January 1, 2023 (Phase 1 Reach Codes)

The recommendations reflect Menlo Park's current building electrification and EV charging requirements for newly constructed buildings. Minor modifications and additions are being proposed and are considered feasible, and in some instances decrease construction costs for EV charging requirements. The proposed modifications and additions include the following, and are described in greater detail in the analysis section:

- Readopt the current reach code requirements for all-electric buildings (including exceptions) for the 2022 building code cycle as they still exceed proposed state requirements.
- Include a measure that prohibits electric buildings from being converted to mixed fuel buildings that use natural gas (applies to residential and commercial buildings.)
- Adopt the Bay Area Reach Code (BARC) Initiative¹ EV charging recommendations for new multifamily permits as they closely mirror Menlo Park's current EV charging requirements, and can reduce construction costs using a combination of approaches that help "right size" EV charging needs for new multifamily developments.
- Adopt Tier 1 California Green Building Standards (CALGreen) EV charging requirements for new nonresidential (commercial) permits as it closely mirrors Menlo Park's current EV charging requirements and provides consistency with the state's method of EV charging requirements.
- Readopt Menlo Park's current EV charging requirements for existing commercial (nonresidential) addition and alteration building permit projects.

These recommendations will be included as part of the first reading of the ordinance adopting 2022 Building Standards Code and local amendments November 1 and a second reading November 15 with an effective date of January 1, 2023.

The recommendations outlined above are considered the first phase (phase 1) of reach codes that would need to be adopted by the City Council before January 1, 2023 to avoid a lapse in implementing Menlo Park's current reach code requirements. Staff reviewed phase 1 recommendations with the City Council CAP goals 1-5 subcommittee (Mayor Nash and Vice Mayor Wolosin), and they are supportive of the recommendations and approach to continue to meet 2030 CAP goals.

A phase 2 reach code approach is outlined at the end of analysis section of this report, and is anticipated to commence in early 2023 as a City Council study session item. However, the most time sensitive matter for the City Council is to adopt phase 1 reach code amendments in November.

Analysis

The 2022 Building Standards Code will take effect January 1, 2023. To avoid any lapses in the ability to enforce Menlo Park's current reach code requirements that are more stringent, the City Council must adopt its local amendments to the 2022 Building Standards Code November 1 with a second reading November 15.

Phase 1 reach code recommendations are similar to Menlo Park's current requirements and are considered feasible and provide construction cost reductions for some of Menlo Park's EV charging requirements. The two reach code areas that will be renewed or modified are building electrification and EV charging requirements.

¹ Peninsula Clean Energy (PCE), Silicon Valley Clean Energy (SVCE), East Bay Community Energy (EBCE), Alameda County, Santa Clara County and the San Mateo County Office of Sustainability (OOS) joined together to reduce greenhouse gas (GHG) emissions within their service territories by developing forward-thinking building and transportation electrification reach codes recommendations.

Building electrification

The 2022 state building code focuses on the following key areas for building electrification in newly constructed homes and businesses²:

- Encouraging electric heat pump technology for space and water heating, which consumes less energy and produces fewer emissions than gas-powered units.
- Establishing electric-ready requirements for single-family homes to position owners to use cleaner electric heating, cooking and EV charging options whenever they choose to adopt those technologies.
- Expanding solar photovoltaic (PV) system and battery storage standards to make clean energy available onsite and complement the state's progress toward a 100 percent clean electricity grid.

Menlo Park adopted building electrification requirements in 2019, and these still exceed the 2022 state codes by requiring all new buildings to be electric with very few exceptions. Menlo Park's 2019 amendments are recommended for re-adoption and would not apply to existing buildings. Current exceptions allowed would remain unchanged. Menlo Park defines new single-family buildings as more than 75 percent of removal of interior and exterior walls in building within a two-year period. New buildings must also adhere to additional building code standards beyond electrification requirements.

Many cities have followed Menlo Park's example and have adopted all-electric requirements for new construction. The policy has been successful with some cities and counties offering even less exceptions for new buildings. To date, 79 single-family, one commercial, one multifamily and three mixed-use buildings have been subject to the provisions Menlo Park's electrification requirements. Although exceptions can be granted based on meeting certain criteria, no requests have been made to date by building permit applicants. However, there are upcoming larger projects that may be interested in seeking exceptions over the next year: one project may request to use gas stoves in its commercial kitchen and a life science building project may be considering a request to use natural gas for space heating (not water heating.) For both of these projects, certain criteria must be met in order for an exception to be granted.

In addition to readopting Menlo Park's current electrification requirements for newly constructed buildings, staff recommends the following additional requirements:

- Add a provision to ensure that electric buildings do not revert to using natural gas. This would safeguard Menlo Park's ability to be carbon neutral by 2030, and apply to both residential and commercial buildings.
- Provide further clarity that buildings defined as "Residential High Rise Buildings" that are four stories or higher must be all-electric, which includes all indoor equipment and devices to be electric (heating, cooking, clothes drying, fireplaces, etc.) as intended when adopted in 2019. High-rise residential buildings projects have been following this practice of building all-electric units.

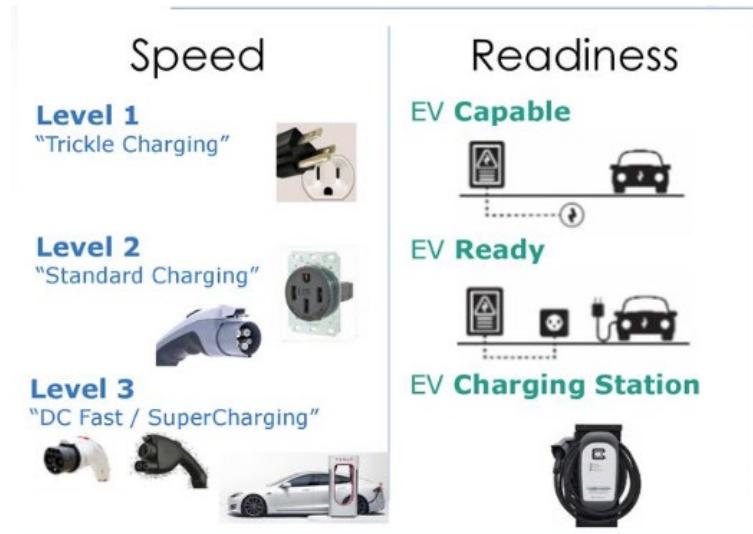
Proposed EV charging requirements

The California Green Code (CALGreen) now includes new electrical vehicle (EV) charging station requirements and definitions. Most notable changes include increases to charging requirements for new commercial and residential buildings and requirements for existing multifamily building permit projects.

It is important to understand EV charging definitions and speed levels to evaluate proposed EV charging requirements. The figure below provides a basic understanding of EV charging definitions.

² <https://www.energy.ca.gov/news/2021-08/energy-commissionadopts-updated-building-standards-improve-efficiency-reduce-0>

Figure 1: EV Charging Definitions³



While CALGreen has increased its EV requirements, the City's current standards still exceed CALGreen and supports Menlo Park's 2030 CAP strategy goals No. 2 (increase EV sales) and No. 3 (provide EV charging infrastructure.) While high-powered faster charging infrastructure is on the horizon, at-home charging will remain essential to providing equity, convenience, and affordability for an EV driver. Workplace charging comes in second with public charging reserved for long distance travel and commercial operations.

Proposed single family, multifamily, and commercial EV charging requirements for new buildings

The BARC⁴ Initiative has provided EV charging recommendations for Bay Area local governments to consider for consistency across the region, clarity and ease of implementation. Staff and the City Council CAP goals 1-5 subcommittee are in agreement with most of BARC's recommendations. The proposed new requirements would apply only to newly constructed buildings (not existing) as defined in the state building code or local ordinance.

Given the amount of incentives that are currently available and will likely be available for new construction EV charging, these recommendations are feasible and consistent with current Menlo Park standards and CAP goals.

In considering the hierarchy of EV charging needs and BARC Initiative recommendations, staff recommends the following modifications for inclusion as part of the 2022 local building code amendments:

1. Clarification and addition of definitions to support EV charging implementation (BARC Initiative recommendations.) See Attachment A.
2. EV charging signage requirements to let EV drivers know access points for charging (BARC Initiative recommendation.)
3. Addition of cost thresholds that would allow exemptions to EV charging requirements if market rate development cost for EV charging exceed \$4,500 per parking space or \$400 per parking space for

³ California Building Inspection Group – ICC Local Chapter #1934 Building & Electric Vehicle Reach Codes Advancing safer, healthier and more affordable buildings January 8, 2020: <https://slideplayer.com/slide/17922480/>

⁴ Peninsula Clean Energy (PCE), Silicon Valley Clean Energy (SVCE), East Bay Community Energy (EBCE), Alameda County, Santa Clara County and the San Mateo County Office of Sustainability (OOS) joined together to reduce greenhouse gas (GHG) emissions within their service territories by developing forward-thinking building and transportation electrification reach codes recommendations.

affordable housing (BARC Initiative recommendation.) CALGreen's threshold was \$400 for all projects, but was removed in the 2022 state code. However, staff believes a cost threshold is important to implement exemptions objectively, fairly and consistently for all applicants. To date, applicants have generally not requested an exemption.

4. Modification for new single-family and duplexes: For each dwelling unit, one parking space provided shall be a Level 2 EV Ready space. Level 2 EV Ready can be met by installing a 240-volt receptacle/outlet, which are the same types of outlets used for plugging in a dryer or an electric stove. If a second parking space is provided, it shall be provided with a Level 1 EV Ready space, which are the same types of outlets used for plugging in household devices, such as a toaster, laptop or lamp. (BARC Initiative recommendations)
 - A. Currently Menlo Park requires each space to be EV capable, which would not allow the driver to plug in without making further minor upgrades to their home. Most new home construction now includes a Level 2 EV ready space to charge. This action would provide further assurance that at-home charging is provided to all new homes.
5. Modification for new multifamily developments: Fifteen percent (15 percent) of dwelling units with parking spaces shall have Level 2 EVCS (charging stations); Automatic Load Management System⁵ shall be permitted to reduce load when multiple vehicles are charging. Eighty-five percent (85 percent) of dwelling units with parking spaces shall be provided with a minimum of Low Power Level 2 EV Ready space, which can be met by installing a 240-volt receptacle/outlet at minimum. (BARC Initiative recommendations)
 - A. Menlo Park's current requirements are similar to this recommendation as 15 percent of the units require charging stations installed, and 85 percent of units need to be *partially* EV Ready. This modification ensures 85 percent of the spaces will be EV Ready by including a receptacle/outlet that allows an EV driver to plug in without making minor building upgrades.
 - B. The modification also allows permit applicants to use low power Level 2 charging for 85 percent of dwelling units if desired and an automatic load management system. This is not available under Menlo Park's current requirements, but is a recommendation of the BARC Initiative for the following reasons:
 - Low power Level 2 can deliver 130 miles per night, compared to 270 miles for status quo Level 2 power. 130 miles per night is sufficient for a large majority of commutes.
 - Low power Level 2 requires half the service capacity of status quo Level 2 power resulting in fewer/smaller transformers.
 - About \$1,000 less in behind the meter costs for low power (\$2.3k) versus status quo Level 2 power (\$3.2k.)
6. Modification for new nonresidential (commercial): Adopt 2022 CALGreen Tier 1 EV charging requirements for consistency with the state's method of allocating EV charging requirements and they closely match Menlo Park's current requirements. The table below provides an overview of 2022 CALGreen mandatory EV charging requirements, CALGreen Tier 1 (offered as an option for local governments to adopt), and Menlo Park's current requirements.

⁵ A control system designed to manage load across one or more electric vehicle supply equipment (EVSE), circuits, panels and to share electrical capacity and/or automatically manage power at each connection point.

Table 1: Nonresidential (Commercial) EV charging requirements

2022 CALGreen mandatory requirements	CALGreen Tier 1 proposed for adoption in November	Current Menlo Park requirements
<ul style="list-style-type: none"> • 20% of total required spaces shall be EV capable • 25% EVCS (charging stations and/or supply equipment) of the EV capable spaces (or 5% of the total parking spaces) • Table with specific numbers provided <p>One DCFC (fast charger) may be substituted for up to 5 EV capable spaces</p>	<ul style="list-style-type: none"> • 30% of total required spaces shall be EV capable (no wiring and conduit) • 33% EVSC of EV capable spaces (or 10% of total parking spaces) • Table with specific numbers provided <p>One DCFC (fast charger) may be substituted for up to 5 EV capable spaces</p>	<p>9,999 sf or less:</p> <ul style="list-style-type: none"> • Followed CALGreen requirements <p>Greater than 9,999 sf:</p> <ul style="list-style-type: none"> • 15% of total spaces partially EV Ready (wiring and conduit, but no receptacle) <p>• 10% of total required parking spaces EVSC</p>

Existing buildings EV charging requirements

As mentioned, 2022 CALGreen includes EV charging requirements for existing multifamily building permit projects that involve additions and alterations to the parking lot. Menlo Park does not have EV charging requirements for existing residential building permit projects at this time.

However, Menlo Park does have EV charging requirements for existing commercial (nonresidential) projects that involve additions or alterations, and these requirements still exceed CALGreen. Staff recommends readopting these requirements with no modifications or additions as part of the 2022 state code adoption process. See attachment D noting that it is only the addition and alteration requirements that will be readopted. New construction recommendations are proposed above.

Environmental Quality Commission (EQC) advice and overview of Phase 2 Reach Codes approach

In March 2022, staff presented reach code recommendations that included additional requirements for new buildings beyond those proposed in this report (e.g., removing exceptions, increasing EV charging) and requirements for existing buildings. See attachment B. The Commission was in agreement with the proposed staff recommendations, but provided further advice and recommendations to the City Council. See Attachment C for full advice to the City Council.

The EQC also requested the City Council consider additional existing building electrification requirements after the BARC Initiative⁶ released its existing building options. In addition, the EQC requested delaying consideration of existing building requirements until support service packages were made available, such as financial programs and/or a public private partnership with BlocPower.

The City Council adopted a resolution June 14, 2022, for BlocPower to provide building electrification services in the community that also includes financial services. The BARC Initiative also released its existing building recommendations in late June 2022. Given the EQC's established advice to the City Council on the proposed reach codes, staff began working with the City Council CAP goals 1-5 subcommittee to review the various recommendations of staff, EQC, and the BARC Initiative in July 2022.

⁶ Peninsula Clean Energy (PCE), Silicon Valley Clean Energy (SVCE), East Bay Community Energy (EBCE), Alameda County, Santa Clara County and the San Mateo County Office of Sustainability (OOS) joined together to reduce greenhouse gas (GHG) emissions within their service territories by developing forward-thinking building and transportation electrification reach codes recommendations.

Staff and the City Council CAP goals 1-5 subcommittee are still working through these recommendations and consulting with other cities/counties in the area to determine the best approach. It is anticipated that a future City Council study session will be held in early 2023 to request direction on moving forward with specific measures for new and existing building requirements (known as Phase 2 Reach Codes.) Staff will also provide an overview of proposed public outreach to inform the community on measures City Council is considering adopting to identify any exceptions that may be needed as result or hardships that may be experienced.

In addition, foundational work is currently underway to explore modifications to Menlo Park's garage space and setback requirements in the zoning ordinance to evaluate whether there is flexibility to allow electric equipment in these spaces, such as heat pumps or battery storage. This would apply only to existing buildings. Converting water-heating equipment from gas to electric may require equipment be relocated to a setback area or garage, which would help existing buildings owners that want to voluntarily electrify their buildings now.

Impact on City Resources

The adoption of the current State codes and proposed local amendments will not result in any direct costs to the City. Public informational materials, such as City webpages and/or handouts, will need to be updated to reflect minor modifications. Sustainability staff will support education efforts and update public informational materials.

Environmental Review

This informational item is not a project within the meaning of the California Environmental Quality Act (CEQA) Guidelines § 15378 and 15061(b) (3) as it will not result in any direct or indirect physical change in the environment.

Public Notice

Public notification was achieved by posting the agenda, with the agenda items being listed, at least 72 hours prior to the meeting.

Attachments

- A. Proposed EV charging station definitions
- B. March 2022 EQC report on Reach Codes: menlopark.org/files/sharedassets/public/agendas-and-minutes/environmental-quality-commission/2022-meetings/agendas/20220316-environmental-quality-commission-agenda-packet.pdf#page=32
- C. Hyperlink – ECQ advice on Reach Codes:
<https://beta.menlopark.org/files/sharedassets/public/agendas-and-minutes/environmental-quality-commission/2022-meetings/minutes/20220316-environmental-quality-commission-minutes.pdf>
- D. Hyperlink – Menlo Park's current commercial (nonresidential) EV charging requirements:
menlopark.org/files/sharedassets/public/community-development/documents/nonresidential-ev-charging-requirements-final.pdf

Report prepared by:
Rebecca Lucky, Sustainability Manager

Reviewed by:
Chuck Andrews, Assistant Community Development Director
Deanna Chow, Assistant Community Development Director
Sergio Rudin, Deputy City Attorney