



DATE: November 1, 2022

TO: Mayor and City Council

FROM: Director of Public Works
Director of Development Services

SUBJECT: Reach Code: Introduction of Reach Code Ordinance: 1) Addressing New Building Electrification; 2) Addressing Electric Vehicle Charging Requirements; and 3) Repealing Current Reach Code (Ordinance 20-05)

RECOMMENDATION

That Council adopts a resolution (Attachment II) and introduces the Reach Code ordinance (Attachment III) to modify the California Green Building Standards Code. The ordinance includes: 1) electrification requirements for new buildings; 2) amendments to the Off-Street Parking Regulations to add electric vehicle charging requirements; and 3) repeal of the current Reach Code (Ordinance 20-05).

SUMMARY

Hayward's current Reach Code will expire on December 31, 2022. To continue the current requirements that prohibit or limit the use of natural gas in new buildings and to continue to require electric vehicle charging infrastructure beyond what is required in the State building code, new ordinances will need to be adopted. The recommended ordinances, to be effective on January 1, 2023, would require:

- All new residential buildings, including mixed-use buildings, to be all electric.
- All new non-residential buildings for which natural gas infrastructure is installed, but must be "electric ready", meaning they have the wiring, electrical capacity and space needed to be converted to an all-electric building in the future.
- All new buildings and modifications to existing buildings resulting in new parking spaces must have electric vehicle (EV) charging infrastructure installed above and beyond that required by the California Green Building Standards Code.

On June 14, 2022¹, Council considered potential elements that may be included in a new Reach Code. On October 6, 2022, the two draft Reach Code ordinances were considered and recommended by the Council Sustainability Committee (CSC).

¹ <https://hayward.legistar.com/LegislationDetail.aspx?ID=5690621&GUID=8DFEFCAD-5955-417E-98E6-9FA859F8C2EF&Options=&Search=>

BACKGROUND

On March 3, 2020², Council adopted a local amendment to the 2019 California Building Code known as a Reach Code. The Reach Code ordinance as well as checklists for builders and developers are available on the City's website³. The Code requires all new single-family homes and new low-rise multi-family buildings (up to 3 stories) to be all-electric. Non-residential and high-rise residential buildings can be either all-electric or mixed fuel (both electric and natural gas equipment). The Code also includes requirements for Electric Vehicle (EV) charging infrastructure. When Hayward's Reach Code was adopted in March 2020, there were twenty-eight such codes adopted by local jurisdictions throughout California. In December 2021, Contra Costa County became the 54th local jurisdiction to adopt an electrification reach code.

The California Building Code is updated every three years. The 2019 California Building Code and Hayward's Reach Code will both expire on December 31, 2022. The 2022 CalGreen Code will take effect on January 1, 2023. In order to continue Hayward's current Reach Code requirements, a new Reach Code must be adopted this year to be effective along with the 2022 California Building Code in January 2023.

Staff is working closely with a Bay Area working group⁴ led by East Bay Community Energy (EBCE), Peninsula Clean Energy (PCE), Silicon Valley Clean Energy (SVCE), and their consultants to prepare Hayward's new Reach Code. The working group is developing model codes for local jurisdictions to consider. The draft model codes were used to develop preliminary considerations for Hayward's new reach code, which were presented to the CSC on March 14, 2022⁵. Following is a summary of the comments made by the CSC:

1. New Low Rise Residential Buildings – The CSC supported continuing the existing all-electric requirement for new Low Rise Residential Buildings.
2. New Non-residential & High-Rise Residential Buildings - The CSC supported staff's recommendation to remove the existing mixed-fuel pathway so that all new buildings would have to be all-electric. For new non-residential buildings, the CSC wants to allow some flexibility – especially for industrial uses.
3. New Accessory Dwelling Units – The CSC supported ending the current exemption for ADUs smaller than 400 square feet but asked about how it may impact the cost of building an ADU. (A cost-effectiveness study including an analysis for an all-electric ADUs should be available later this month.)
4. Existing Buildings – The CSC supported prohibiting gas extensions in older homes, however, doing so may make it difficult to build smaller attached ADUs. Regarding extensions of gas lines in older existing industrial buildings, the CSC asked staff to consult with the business community.
5. End of Flow – The CSC supported the concept of ending the flow of gas by 2045 but asked about the difficulty of enforcing such a policy and questioned community acceptance.

² <https://hayward.legistar.com/LegislationDetail.aspx?ID=4345454&GUID=25134FC7-B7A3-4060-955A-F7A30A27567A&Options=&Search=>

³ <https://www.hayward-ca.gov/reach-code>

⁴ <https://bayareareachcodes.org/>

⁵ <https://hayward.legistar.com/LegislationDetail.aspx?ID=5523060&GUID=4A5988AD-D820-4426-9F53-9CC938F9C94F&Options=&Search=>

6. Existing Residential – The CSC agreed Hayward should wait for the California Air Resources Board (CARB) or the Bay Area Air Quality Management District (BAAQMD) to enact a ban on the sale of gas appliances.
7. EV Charging Requirements – The CSC would like to see robust requirements, but asked for more information about the costs of developing charging infrastructure.

On May 9, 2022⁶, the CSC considered a report with additional information regarding options for new non-residential buildings as well as alternatives and costs associated with EV charging requirements. Staff recommended that items 4, 5 and 6 in the list above be deferred to the next code cycle as more research is needed to evaluate costs and equity implications. CSC members provided the following comments:

- The Code should include limited exceptions that would allow gas for restaurants and life science-related industrial uses.
- EV charging is going to be in high demand in the future and the Code should require higher levels of charging capacity at multi-family properties.

On May 26, 2022, the Planning Commission considered a report⁷ about the Reach Code update and had the following comments:

- A community member in attendance asked for clarification regarding the EV charging requirement for single family homes. The speaker noted that families can program their cars to charge at certain times and that only one charger is needed for two EVs.
 - The community member was correct. Compliance with the requirement for two Level 2 EV Ready spaces can be achieved with one circuit that provides sufficient amperage. The two spaces could be served by one receptacle and one charger that can charge two vehicles simultaneously. Some chargers have integrated automatic load management so that when only one car is charging, it will receive more amperage.
- Cooking - One Commissioner noted that single family residents can use an outdoor barbeque to cook outdoors when the grid is out and asked about a solution for people living in a high-rise apartment building.
 - People living in large apartment buildings typically have limited options for cooking outdoors; however, the 2022 Energy Code requires some solar photovoltaic (PV) panels and battery storage for high-rise apartments, which should ameliorate power outages. It should also be noted that for people who are unable to cook outdoors, a gas range should not be lit manually and should never be used when there is no electricity to provide for mechanical ventilation.
- Can renewable natural gas be used for certain industrial uses?
 - Renewable natural gas (RNG) is typically captured methane from farms, landfills, or wastewater treatment plants. The estimated RNG production potential in the United States is a small fraction of the current natural gas

⁶ <https://hayward.legistar.com/LegislationDetail.aspx?ID=5644449&GUID=373D251F-6874-4DC3-AF7B-299444A3DA9A&Options=&Search=>

⁷ <https://hayward.legistar.com/LegislationDetail.aspx?ID=5658536&GUID=EF329D60-09D7-4B60-B855-E277BB29823F&Options=&Search=>

used by industry. Use of RNG should be prioritized for power generation or fueling stations at the site of the gas generators, as the distribution system to get renewable gas to buildings is extremely expensive.

- The EV charging requirements can add a significant electrical load to a building. When considering the necessary capacity of the electrical panel, does the Electrical Code consider the presence of an automatic load management system (ALMS)?
 - Yes, accounting for ALMS is a best electrical engineering practice, and is assumed in cost models.
- Regulations can be very complex. Reach Code should be simple.
- Are different chargers needed for low versus high power Level 2 charging? What is the cost of each type of charger?
 - The cost of a low power (20-amp) Level 2 charger with one plug is approximately \$500.
 - The cost of a high power (40-amp) Level 2 charger with one plug is approximately \$700
 - The cost of a high power (40-amp) Level 2 charger with two plugs is approximately \$1,600
- During a power outage, many people try to cook with gas indoors or in other poorly ventilated areas, which is very dangerous and can be deadly. Training should be provided so that people know what to do and not do during an outage.
- Perhaps the cost savings associated with not installing gas in a new building can offset the cost of the EV charging required.
- More charging should be required for new commercial buildings.
- Some housing developments have EV Ready infrastructure and years after the people move in, there are still no chargers. Perhaps there should be a condition of approval to require installation of chargers.

On June 14, 2022, Council held a work session⁸ to review the components of the new Reach Code and staff made the following recommendations:

- Residential Buildings – All new residential buildings, including mixed-use buildings, must be all electric.
- Non-Residential Buildings – New non-residential buildings may be all electric or may have gas. If the building has gas installed, it must be “electric ready”, meaning they have the wiring, electrical capacity and space needed to be converted to an all-electric building in the future.
- EV Charging – Increased requirements for new multifamily development and continuing the current charging requirements for other land use types with minor changes.

⁸ <https://hayward.legistar.com/LegislationDetail.aspx?ID=5690621&GUID=8DFFECAD-5955-417E-98E6-9FA859F8C2EF&Options=&Search=>

Staff also requested Council comments regarding the possibility of lesser EV charging requirements or exemptions for affordable housing and noted the following pros and cons:

Arguments in Favor of Exemption	Arguments Against Exemption
If charging is not required, it can be incentivized for projects receiving City funding.	Equity. All residents should have same amenities.
All projects would still need to meet state code (charging for 40% of parking spaces).	Many more people will be driving EVs in coming years.
Affordable Housing is exempted from TIF, Park Fees, and sometimes CEQA.	Charging is an amenity that benefits residents.
HCD will be reviewing Housing Element for policies that facilitate housing.	Much cheaper to install at time of initial construction compared to retrofit.

There was one public comment from a person representing the Sierra Club who expressed support for the reach code and requested the most proactive approach possible.

Council made the following comments:

- The recommendations are a thoughtful and balanced approach.
- EV charging is needed for affordable housing, especially to promote equity among residents of different housing types.
- Requirements for more EV charging would be preferred.
- We can target non-residential construction during the next code cycle.
- Staff should continue engagement with the Sierra Club and affordable housing developers.

On October 6, 2022⁹, the two draft Reach Code ordinances were considered and recommended by the CSC. The CSC also supported the idea of a complete ban on new natural gas infrastructure in new buildings as of January 2026 and asked staff to do more promotion of existing rebates for electric appliances.

DISCUSSION

Hayward’s current Reach Code requirements are included in Chapter 9, Article 1, of the Hayward Municipal Code. Staff recommends that the current requirements be repealed and that the new requirements (Attachment III) be addressed in two articles of the Municipal Code. The building electrification requirements would be Article 8 of Chapter 9 and the electric vehicle requirements would be amendments to the City’s Off-Street Parking Regulations (Chapter 10, Article 2) . Both articles would modify Part 11 (California Green Building Standards Code, aka CALGreen) of the California Building Code (Title 24 of the California Code of Regulations).

Listed below are the recommendations staff made to the CSC on October 6, 2022, with changes from those presented at the June 14 Council meeting shown with underlined text:

- Residential Buildings – All new residential buildings, including mixed-use buildings, must be all electric, including all ADUs. (Please see discussion below.)

⁹ <https://hayward.legistar.com/LegislationDetail.aspx?ID=5860958&GUID=9B05DD9B-0286-4EBE-9667-911D613EF054&Options=&Search=>

- Non-Residential Buildings – New non-residential buildings may have gas, but must be “electric ready”, meaning they have the wiring, electrical capacity and space needed to be converted to an all-electric building in the future.
- EV Charging –
 - Increased requirements for new multifamily properties.
 - In response to Council comments at the June 14 meeting, the same charging requirements would apply to both market rate and affordable developments.
 - Continue current charging requirements for other land use types with minor changes.
 - Apply EV charging requirements when new parking spaces are added due to a change of use or addition to an existing building. (Staff added this provision partially in response to Council comments at the June 14 meeting and also because the development of new parking areas associated with a significant addition or change of use is an opportunity similar to new construction that should not be missed.)
 - A new requirement for hotels and motels. The state code requires a total of 40% of spaces to have charging readiness. The recommended percentage of spaces required to have EV charging presented to the CSC on October 6 was 35%. The recommended total has been revised to be 55%.

New Accessory Dwelling Units – The current reach code exempts ADUs less than 400 square feet, which means they can include natural gas appliances for water heating, space heating, etc. Smaller ADUs were exempt primarily due to the extra space required for an electric heat pump water heater, which has a tank compared to gas-fired tankless water heater. However, the new California Energy Code, effective in January 2023, specifically allows electric tankless water heaters (using electric resistance technology) in homes of 500 square feet or less. All requirements of the California Energy Code must be found to be cost effective before they become part of the Code. Given that an electric tankless water heater is a cost effective and space-saving option, staff recommend requiring all ADUs to be all electric.

New Non-Residential and High-Rise Residential Buildings – The current Reach Code allows non-residential and high-rise residential buildings to be either all-electric or mixed-fuel. The mixed fuel option includes a complex set of solar and energy efficiency requirements and no building permit applicants have opted to pursue this path. While staff previously recommended eliminating the mixed-fuel option and considering a gas ban, non-residential builders, Economic Development staff, and the CSC had all requested that there be exceptions to a gas ban – particularly for certain industrial uses and restaurants.

As noted in the June 14 Council report, exceptions that apply in limited cases would be difficult to articulate in an ordinance and would be time-consuming for Building Division staff to administer. Additionally, most new commercial and industrial buildings are speculative and are built without knowing the tenant(s) in advance. After many conversations with stakeholders, including City Building Division staff, staff recommended a simpler approach for new non-residential buildings.

The proposed requirements would allow gas in new non-residential buildings. For new buildings that do include gas, the draft code requires “electric-readiness”. This means that

wiring, panel capacity, electrical receptacles and physical space must be provided for future conversion to electric equipment. The Code adopted this year will be in place for calendar years 2023 through 2025. In 2025, the Reach Code can be re-evaluated and could include new requirements to take effect in January 2026.

Air District California Environmental Quality Act (CEQA) Thresholds of Significance – While Hayward’s code can allow the use of gas in new non-residential buildings, the Bay Area Air Quality Management District (BAAQMD) has a new standard that makes it more difficult to include natural gas infrastructure. On April 20, 2022, the BAAQMD’s Board of Directors adopted new thresholds of significance for use in environmental analyses prepared pursuant to the CEQA.

The thresholds are used to determine when an environmental impact is considered “significant”. If an impact is considered significant and it cannot be mitigated, then the project is required to have an environmental impact report prepared. While the previous thresholds were quantitative, such as a certain number of metric tons of carbon dioxide equivalent per year, the new thresholds are qualitative due to the state’s goal to be carbon neutral by 2045. The new thresholds are that any new building must either:

1. not include natural gas; or
2. be consistent with a local approved, *qualified* climate action plan (CAP).

Hayward’s CAP is not *qualified* because it only identifies the actions necessary to meet the 2020 greenhouse gas (GHG) reduction target; it does not include the required actions to meet specified targets. The CAP is currently being updated to include the actions needed to meet the 2030 target. In order for a project to avoid having a significant impact, Hayward’s CAP would need to identify a means for reducing or eliminating the GHG emissions from the gas use by 2045. Staff is currently working with a consultant team on an update of the CAP and anticipates including a provision that would allow the use of gas through 2025 while still maintaining a path toward carbon neutrality by 2045. The recommended CAP will likely call for a complete ban on new gas infrastructure effective in January 2026. Staff is seeking Council comments on this potential gas ban. A presentation to Council detailing the of the draft policies and programs for the updated CAP is tentatively scheduled for January 2023.

EV Charging – The recommended requirements for EV charging infrastructure are listed in Attachment III and are summarized below. In addition to requirements for new construction, the regulations have been amended so that the EV charging requirements would apply to new parking spaces that are required by the parking regulations as a result of a change in use or an addition to an existing building. The development of EV charging infrastructure does add cost to the new development and those costs have been detailed in the previous reports referenced above. It has also been recognized that installing charging at the time of new development is significantly less expensive than that doing so as a retrofit. Given the regulations recently adopted by the California Air Resources Board requiring that all new passenger vehicles be zero emission by 2035, there will be

significant demand for EV charging in the near future. Definitions for key terms are below¹⁰.

Land Use Type	Current Requirements	Recommended Requirements
Single Family & Townhome	Two Level 2 EV Ready spaces per dwelling unit	Two Level 2 EV Ready spaces per dwelling unit
Multi-Family Residential	25% Level 2 EV Capable; and 75% Level 2 EV Ready	20% of units with parking spaces, Level 2 EVCS; and 80% of units with parking spaces, Low Power Level 2 EV Ready.
Non-Res Office	20% Level 2 EVSE; and 30% Level 2 EV Capable	20% Level 2 EVCS; and 30% Level 2 EV Capable
Non-Res Non-Office	15% Level 2 EVSE	10% Level 2 EVCS; and 10% Level 2 EV Capable
Hotel/Motel	NA	5% Level 2 EVSE; and 25% Low Power Level 2 EV Ready

Environmental Review

Adoption of the proposed Reach Codes is not a project under the requirements of the California Environmental Quality Act, together with related State CEQA Guidelines (collectively, “CEQA”), because it has no potential for resulting in a physical change to the environment. In the event that this Ordinance is found to be a project under CEQA, it is subject to the CEQA exemption contained in CEQA Guidelines section 15061(b)(3) because it can be seen with certainty to have no possibility that the action approved may have a significant effect on the environment. CEQA applies only to actions that have the potential for causing a significant effect on the environment. Where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment, the activity is not subject to CEQA. In this circumstance, the proposed action would have no or only a de minimis effect on the environment. The Ordinance is also exempt from CEQA under CEQA Guidelines section 15308, because it is a regulatory action for the protection of the environment.

¹⁰ Definitions:

- **EV Capable** means the electric panel has necessary capacity and conduit is installed to parking spaces.
- **EV Ready** means EV Capable and wiring and outlet are installed.
- **EVCS** means Electric Vehicle Charging Station (charger) is installed.
- **Level 1:** 15-20 Amp, 120 Volt (standard household outlet). Driving distance provided: 3-4 miles per hour of charge. (Not recommended.)
- **Low Power Level 2:** 20 Amp, 208/240 Volt. Driving Distance provided: 10-15 miles per hour of charge.
- **Level 2:** 40+ Amp, 208/240 Volt. Driving Distance provided: 25-30 miles per hour of charge.
- **Level 3 (Direct Current or DC Fast Charging):** 80-400 Amp, 200-600 Volt DC. Driving Distance provided: 100+ miles per hour of charge. (Not recommended.)

FISCAL IMPACT

Development of this year's Reach Code will not impact the City's General Fund. Time spent on research and writing of the Code will be completed by existing, budgeted staff. Enforcement of Hayward's current Reach Code has resulted in some impacts to staff as developers often have questions about compliance. Staff's recommendations for the new Reach Code, including allowing gas in non-residential buildings and eliminating the mixed-fuel pathway with additional solar and energy efficiency requirements, are expected to result in a Code that is simpler and easier to enforce. The current requirements are included over several pages in the municipal code and the proposed ordinance for building electrification is less than two pages.

ECONOMIC IMPACT

The requirements for EV charging infrastructure will increase the cost of construction; however, future residents or employees can benefit from the cost savings of operating an EV compared to a gasoline vehicle. In addition, significant savings can be realized when installing EV Capable and EV Ready circuits at the time of new construction as compared with the retrofit of an existing building or existing parking lot. Previous reports to the CSC and Council included much more detail about the costs of EV charging infrastructure and are available on the City's website¹¹.

Local amendments to the California Energy Code require documentation to ensure the proposed requirements are cost-effective, however, the recommended Reach Code is not an amendment to the Energy Code because it does not address energy efficiency. This approach does not require a cost-effectiveness study; however, the Statewide Codes & Standards Reach Codes team has prepared studies that may be used by local jurisdictions. Generally, the studies completed to date show that all-electric buildings are less costly to construct due to the avoided cost of installing gas infrastructure, but operational costs are higher compared to mixed-fuel buildings. However, if additional solar photovoltaic (PV) panels and/or energy efficiency measures are included, then an all-electric building is typically cost-effective over a 30-year period. All-electric buildings and those with EV charging will also be more marketable, and produce more returns, especially as the public learns more about the harmful impacts of natural gas inside the home. The most significant exception is that a new stand-alone restaurant is often found to be not cost-effective.

STRATEGIC ROADMAP

This agenda item supports the Strategic Priority to *Confront Climate Crisis & Champion Environmental Justice* as included in the Strategic Roadmap adopted by Council on May 3, 2022. Specifically, this item is related to implementation of the following projects:

Project C1: Ban natural gas in new residential buildings (Completed with the March 2020 adoption of the Reach Code.)

¹¹ <https://www.hayward-ca.gov/reach-code>

- Project C2: Require EV charging infrastructure in new construction (Completed with the March 2020 adoption of the Reach Code.)
- Project C10: Explore feasibility of banning natural gas in non-residential (commercial) buildings.

SUSTAINABILITY FEATURES

The use of electric appliances in homes and businesses avoids indoor air pollution associated with the burning of natural gas. Ending the use of natural gas and providing the infrastructure needed for a transition to electric vehicles are both necessary to meet the City's long term GHG reduction goals, which include:

- 30% below 2005 levels by 2025
- 55% below 2005 levels by 2030
- work with the community to develop a plan that may result in the reduction of community based GHG emissions to achieve carbon neutrality by 2045

PUBLIC CONTACT

The Bay Area working group hosted two workshops for building industry stakeholders and community members on February 15 and 16, 2022. Staff sent an email to 658 builders and developers to let them know about these workshops and the March 14 CSC meeting. At the February workshops, attendees were generally supportive of reach codes. Specific comments included:

- Automatic Load Management (for EV charging) is critical and still new, and more education is needed.
- Multi-family property owners said they do not want to be in the EV charging business. They requested that EV charging be required such that it is on the utility's side of the electric meter.

In addition, in early 2022, staff reached out to six representatives of affordable housing developers and had phone conversations with three to review existing and potential EV charging requirements.

On May 6, 2022, staff presented to the Hayward Chamber of Commerce's Government Relations Council. The Chamber members' comments included:

- Questions about the capacity of the electrical grid and its ability to accommodate the increased load that will result from electrification.
- People still love to cook with gas.
- More direct outreach is needed to get the word out to business owners and multi-family property owners.

In May and June, staff had conversations with four large commercial/industrial developers who indicated that most new buildings are developed on speculation and that they prefer to maximize flexibility to help with marketing the buildings to potential tenants.

In September, staff reached out to a variety of developers, including affordable housing developers, and the Sierra Club. No comments were received in response to the September communication and no public comments were made at the October 6 CSC meeting.

NEXT STEPS

If Council approves the attached resolution and introduces the ordinance, a second reading of the ordinance will be scheduled for a subsequent meeting. If the ordinances are adopted, they will be filed with the California Building Standards Commission and then would become effective on January 1, 2023. The ordinances would apply to new building permits that are submitted after the effective date. Staff will work with EBCE to provide educational materials about the reach codes to contractors, developers, and building designers.

Prepared by: Erik Pearson, Environmental Services Manager

Recommended by: Alex Ameri, Director of Public Works
Jennifer Ott, Assistant City Manager/Development Services Director

Approved by:



Kelly McAdoo, City Manager