



City Council

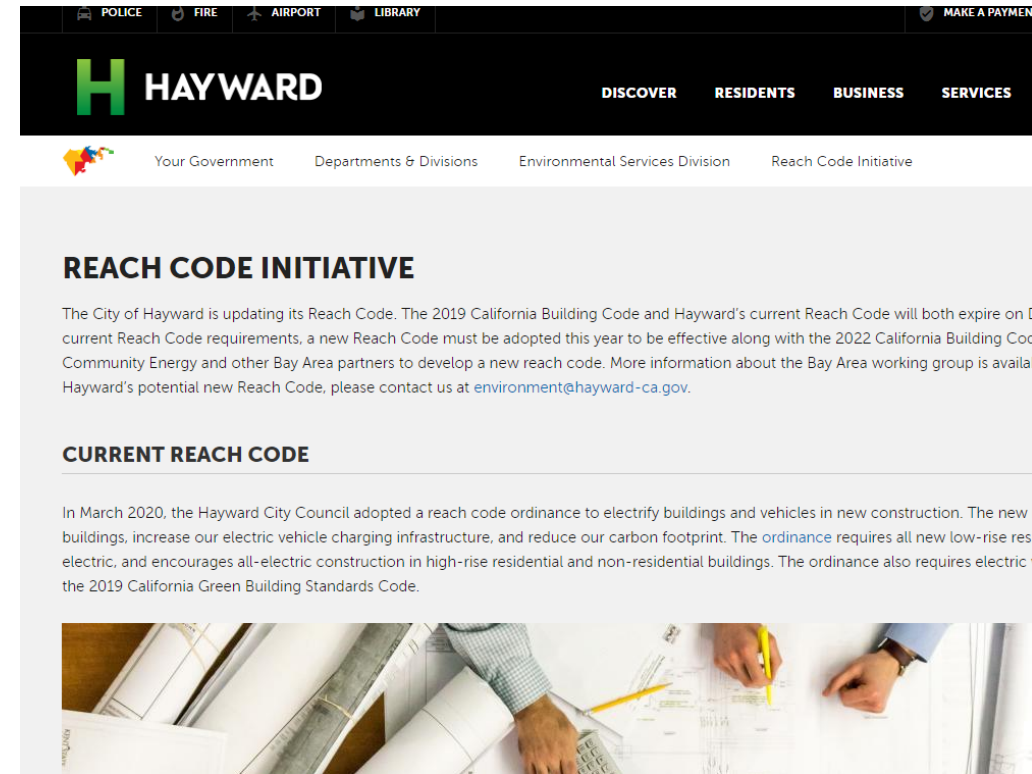
2023 Electrification Reach Code

Amendments to CA Building Code

June 14, 2022

Hayward's Current Reach Code

- Modifies the California Building Code
- Adopted by Council March 3, 2020
- Approved by California Energy Commission on June 10, 2020



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

Hayward Reach Code – Requirements

Single-family and Multi-family Residential (up to 3 stories)

- Must be all-electric

Non-residential and High-rise Residential (4+ stories)

- Can be all-electric or mixed-fuel. Mixed-fuel buildings must have additional solar and energy efficiency.

Enhanced EV Charging required for all Building Types.

Current Reach Code Expiring

The 2022 California Building Code has been approved and will take effect January 1, 2023.

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.

Strategic Roadmap – Climate Change Projects

Reduce GHGs & Dependency on Fossil Fuels.

- C1 – Ban natural gas in new residential buildings
- C2 – Require EV charging infrastructure in new construction
- C10 – Explore feasibility of banning natural gas in non-residential (commercial) buildings



Regional Working Group

The screenshot displays the website for the Bay Area Reach Codes initiative. At the top, there are five logos: East Bay Community Energy (with wind turbines and a sun), Peninsula Clean Energy (with a leaf and lightbulb), Silicon Valley Clean Energy (with a leaf), Office of Sustainability County of San Mateo (with a circular arrow logo), and The County of Santa Clara (with a bridge and sun). Below the logos is a navigation menu with links: City Participation, Recommended Reach Codes, About Reach Codes, Process & Timeline, Resources, FAQ, Events, and Stay in Touch. The main content area features the heading "2022 Building Electrification & EV Infrastructure Reach Code Initiative" in bold black text. Below the heading is a photograph of a modern building with large glass windows and palm trees in the foreground.

<https://bayareareachcodes.org/>

Potential Reach Code Components – Initial List

1. New Low-Rise Residential Buildings
2. New Non-residential & High-Rise Residential Buildings
3. New Accessory Dwelling Units
4. Existing Buildings (not addressed in Hayward's current code)
5. End of Flow (e.g. cap all gas lines by certain year)
6. Existing Residential (not addressed in Hayward's current code)
7. EV Charging Requirements

Recommended Reach Code Components

	Current Reach Code (2020 – 2022)	2022 State Code (Effective Jan. 2023)	Recommended Reach Code (Effective Jan. 2023)
Low Rise Residential (≤ 3 stories)	All-electric	Allows gas	All-electric
Accessory Dwelling Units (ADUs)	All-electric <ul style="list-style-type: none"> Exempt if detached & less than 400 sq. ft. 	Allows gas	All-electric <ul style="list-style-type: none"> Detached ADUs <400sf TBD
High Rise Residential (> 3 stories)	Electric Preferred	Allows gas	All-electric
Mixed Use (Non-Residential & Residential)	Not addressed	Allows gas	All-electric
Non-Residential	Electric Preferred	Allows gas	<ul style="list-style-type: none"> Allow gas. Require electric readiness.

New Low-Rise Residential Buildings

Staff recommends maintaining the current requirements:

- All new single-family homes and low-rise multi-family buildings (up to 3 stories) must be designed and constructed as all-electric.

New Detached Accessory Dwelling Units

Current reach code exempts ADUs less than 400 square feet.

- Can include natural gas appliances for water heating, space heating, etc.

Staff still evaluating options for new Reach Code.

New Nonresidential & High-Rise Residential Buildings

Currently, new non-residential and high-rise residential buildings can be either all-electric or mixed-fuel.

Staff recommends:

1. Non-Residential
 - a) Allow gas and
 - b) Require electric readiness.
2. High Rise Residential & Mixed Use
 - a) Ban the use of gas.





CEQA Thresholds of Significance

- Adopted by Bay Area Air Quality District on April 20, 2022
- To meet state's goal of Carbon Neutrality by 2045, new buildings must either:
 1. not include natural gas; or
 2. be consistent with a local climate action plan (CAP).

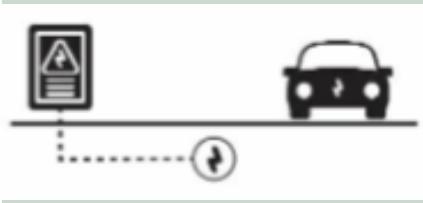
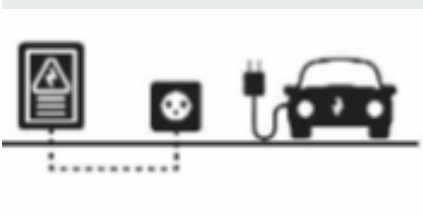

EV Charging Requirements

1. Single-Family
2. Multi-Family
3. Non-Residential
 - Office
 - Non-Office

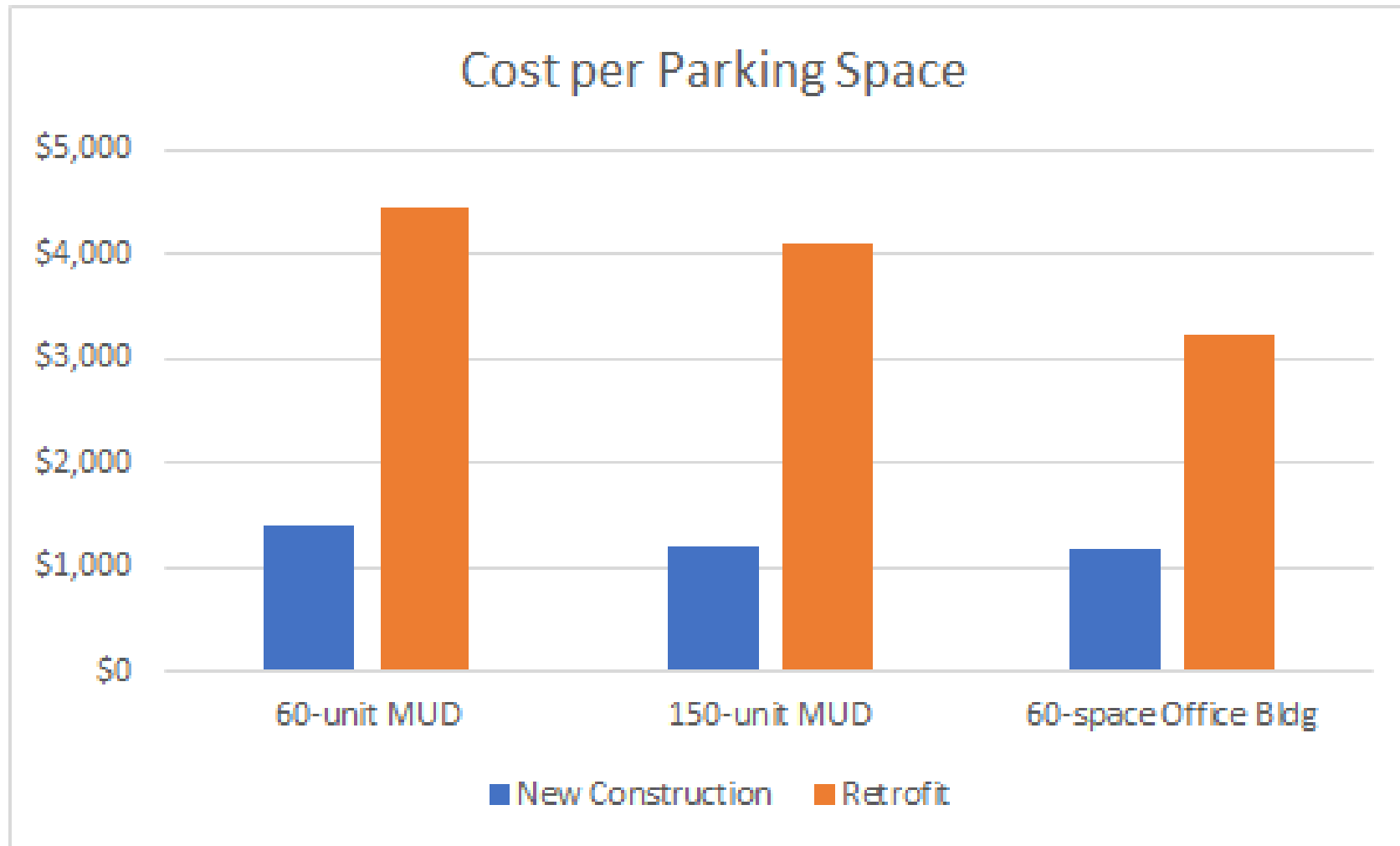
Electric Vehicle Charger Types

Level 1		15-20 Amp, 120 Volt (standard household outlet) Driving Distance provided: 3-4 miles/hour
Low Power Level 2		20 Amp, 208/240 Volt Driving Distance provided: 10-15 miles/hour
High Power Level 2		40+ Amp, 208/240 Volt Driving Distance provided: 25-30 miles/hour
DC Fast Charge		80-400 Amp, 200-600 Volt DC (direct current) Driving Distance provided: 125-1000 miles/hour

EV Charging Readiness

EV Capable		Raceway (conduit), electrical capacity (breaker space)
EV Ready		EV Capable + overcurrent protection devices, wiring and outlet (i.e. full circuit)
EVCI or EVSE		All equipment to deliver electricity to EV EVCI = Electric Vehicle Charger Installed EVSE = Electric Vehicle Supply Equipment

Electric Vehicle Charging - Cost of New vs. Retrofit



Electric Vehicle Infrastructure Cost Analysis Report for PCE and SVCE
Pacific Gas and Electric Company EV Charge Network Quarterly Report, Q1 2019

EV Charging – Non-Residential

	2019 CalGreen	Hayward's Current Reach Code	2022 CalGreen	<i>Recommended</i>
Non-Res Office	6% Level 2 EV Capable	20% Level 2 EVSE 30% EV Capable	5% Level 2 EVSE; 10% Level 2 EV Capable	20% Level 2 EVSE 30% EV Capable
Non-Res Non-Office		15% Level 2 EV EVSE		10% Level 2 EVSE; 10% Level 2 EV Capable

EV Charging – Single-Family

	2019 CalGreen	Hayward's Current Reach Code	2022 CalGreen	Recommended
Single Family & Townhome	One Level 2 EV Capable for one parking space per dwelling unit	Two Level 2 EV Ready spaces per dwelling unit	No changes	Two Level 2 EV Ready spaces per dwelling unit

EV Charging – Multi-Family

	Hayward's Current Reach Code	2022 CalGreen	Model Code	Option A	Option B (Recommended)
L1 Ready			60		
L2 Capable	25	10			
L2 Low Power Ready		25			80
L2 High Power Ready	75			60	
L2 High Power EVSE		5	40	40	20

CalGreen – based on percentage of parking spaces

Reach Code – based on percentage of units that have parking

Costs for Multi-Family Charging

Costs for a 100-unit Multi-Family Project (with 1.5 parking spaces per unit)

	Hayward's Current Reach Code	2022 CalGreen	Model Code	Option A	Option B
L1 Ready			60		
L2 Capable	25	15			
L2 Low Power Ready		38			80
L2 High Power Ready	75			60	
L2 High Power EVSE		8	40	40	20
Total Ports	100	61	100	100	100
Total Cost		\$146,421	\$194,185	\$397,801	\$273,079
Cost/Port		\$2,400	\$1,942	\$3,978	\$2,731
% of dwellings w/access	100%	40-60%	100%	100%	100%
% of total const. cost		0.3%	0.4%	0.8%	0.6%

EV Charging for Affordable Housing

Arguments in Favor of Exemption	Arguments Against Exemption
Charging can be incentivized for projects receiving City funding.	Equity. All residents should have same amenities.
All projects would still need to provide 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.

Public Outreach

- Email to 658 builders and developers
- Regional Workshops on February 15 and 16
- Conversations with Affordable Housing Developers
- Conversations with Business Owners and Commercial/Industrial Developers

Next Steps

July 11, 2022	Present draft Ordinance to CSC
October 2022	Council considers adoption of Ordinance
November 2022	File with CA Building Standards Commission
January 2023	Reach Code takes effect

Staff Recommendation

That Council reviews and comments on this report.

