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EAST PALO ALTO
CITY COUNCIL
STAFF REPORT

DATE: September 1, 2020

TO: Honorable Mayor and Members of the City Council

VIA: Jaime M. Fontes, City Manager

BY: Amy Chen, Community & Economic Development Director
Jose Martinez, Chief Building Official

SUBJECT: Building Electrification and Electric Vehicle Infrastructure Reach Codes

Recommendation

1. Receive the report and provide direction on key elements of a local Building Electrification and Electric Vehicle Infrastructure Reach Codes ("Reach Codes"); and
2. Direct staff to return to the City Council in October with a draft Reach Code Ordinance.

Alignment with City Council Strategic Plan

This recommendation is primarily aligned with:

Priority No. 3: Increase Organizational Effectiveness and Efficiency
Priority No. 6: Create a Healthy and Safe Community

Background

On December 3, 2019, the City Council unanimously adopted the 2019 California Building Standards Code (Ordinance No. 402). During that same meeting, staff presented potential amendments to the local Building Code that would exceed minimum State code standards (known as Reach Codes). The City Council asked staff to return and address some outstanding questions. The purpose of this staff report is: 1) to address outstanding questions related to the Electric Vehicle infrastructure, and 2) for the City Council to provide staff with direction on key elements to include in a potential Reach Code in East Palo Alto.

The City of East Palo has engaged with Peninsula Clean Energy ("PCE") to explore the adoption of a Reach Code that may limit the use of natural gas for space heating, water heating, and cooking; require solar installations on new multi-family and commercial developments; and require electric vehicle (EV) charging infrastructure in all new development. PCE awarded the City of East Palo Alto a $10,000 grant to compensate for City staff time and is also providing expert technical assistance to the City as it develops and implements its

Reach Code.

On August 17, 2020, staff hosted a virtual community meeting to solicit public input from developers, the community, and other stakeholders. In total fourteen people participated in the discussion and the meeting was recorded and posted on the City website. It was suggested shortly after the public meeting by a participant, for staff to research the status of Reach codes among other jurisdictions of similar size and socio-economics. A discussion guide summarizing the status of Reach among five other counties across the Bay Area has been included (Attachment 1).

The purpose of this staff report is to obtain further direction from the City Council to assist staff with drafting the draft Reach Code Ordinance for City Council consideration in October 2020.

Analysis

The following summarizes outstanding questions from City Council and provides responses:

- How does electric vehicle charging work in a residential multi-family development where the ownership units are spread out over multiple floors?
  EV charging stations will be shared and not specifically assigned to tenants; therefore, the electrical feed should not be coming from any dwelling unit; each user will have to pay similarly to a gas station pump.

- Describe the amps and wiring needed to power a multi-story residential development in order to be 75% electric vehicle.
  EV charging capacity for Level 1 & 2 can be summarized as follows:
  Level 1: Capable of charging at 120V, 20A. This is a equivalent to a standard home outlet, 12-gauge wire.
  Level 2: Capable of charging at 240V, 30A-40A. This is the service capacity typically used for larger appliance loads in homes, 8 (40A) - 10 (30A) gauge wire.

- In an office development, explain what is a “pinch point,” in the following;
  This detail is in the definition of EV Capable: “Raceways linking the electrical panel and parking space only need to be installed in spaces that will be inaccessible in the future, either trenched underground or where penetrations to walls, floors, or other partitions would otherwise be required for future installation of branch circuits.”

- In addition, when using a level 2 size conduit, does that mean there is no wire inside and you pull it through later?
  No wiring is required if the requirement will be for infrastructure to be “EV Capable.” However, if the requirement is for “EV Ready” or “EV Charging Station,” then this would mean wire is installed.

In addition, there have been several developments since the December 3rd meeting:

1. Peninsula Clean Energy (PCE) has made available generous electric vehicle infrastructure charging incentives available for new construction multi-unit dwellings. The base incentive is $1,000 per L1 port and $2,000 for L2, with an additional $500 for affordable housing multi-unit dwellings. PCE also has incentive amounts for retrofit ports ranging from $2,000 to $7,000 per port, depending on the scenario.
2. In addition, PCE is providing extensive technical assistance to architects, builders,

developers, design engineers, contractors, and energy consultants wishing to learn about all-electric building and electric vehicle design strategies to meet local and emerging state codes. To get assistance, free of charge, sign up through the following link: http://www.allelectricdesign.org.

3. The investor owned utilities have released a third cost effectiveness analysis focusing on mid-rise multifamily buildings. In alignment with the previously distributed low-rise residential and non-residential studies developed in 2019, the new study shows that it is cost-effective to build an all-electric multifamily building that complies with the energy code.
4. The California Energy Commission has developed an energy compliance pathway for all-electric central domestic hot water systems.

Recommendation

Based on Staff input, action by neighboring jurisdictions, guidance form PCE, and the City of East Palo Alto's greenhouse gas reduction goals, staff recommends that the City Council consider and discuss the PCE recommended Menlo Park model Reach Codes for building electrification and solar. The Reach Code recommendations are listed in Table 2 below.

Table 2. Recommended Reach Codes for Discussion

Proposed Reach Code	Building Electrification	Solar	EV Infrastructure
Single Family Homes and Townhouses with Private Garages	All electric; Exception for cooking and fireplaces with electrical pre-wiring. Exception for Accessory Dwelling Units (ADUs)	NA - Solar already required by the Residential Code.	• One Level 2 (dryer plug/220volt) + One Level 1 (110volt) • Single space garages to have one Level 2 charging. • Exception for ADUs
Multi-family Buildings	All electric; Exception for cooking and fireplaces with electrical pre-wiring. Exception if demonstrated to be infeasible. Exception for domestic water heating projects granted entitlements, with electrical	• 15 percent of roof area OR • < 10,000 sq. ft. - min. 3kW PV system. • >10,000 sq. ft. - min. 5 kW PV system Exceptions for buildings with limited	10% of units with Level 2 charging; 90% of units with Level 1 charging. Outlets may be shared between two units. Load management software allowed. Exception allowed if installation cost exceeds $4,500 /space.

	pre-wiring.	solar access or vegetative roofs.	
Commercial Buildings	All electric; Exception for restaurants, cafeterias, with pre-wiring. Exception for emergency operation centers, with pre-wiring Exception for Life Science buildings. Exception for projects granted entitlements, with electrical pre-wiring.	• 15 percent of roof area OR • < 10,000 sq. ft. - min. 3kW PV system. • >10,000 sq. ft. - min. 5 kW PV system Exceptions for buildings with limited solar access or vegetative roof.	Office: • 10 or more parking spaces - 10% of parking spaces with Level 2 charging; • Additional 10% with Level 1 ready. • Additional 30% EV capable; Exception for mechanical parking systems and locations without commercial power supply.
Other Nonresidential Buildings (non office)	Same as commercial	Same as commercial	• 10 or more parking spaces - 6% Level 2 Charging Station • Additional 5% Level 1 ready

Next Steps

If directed, staff intends to return to the City Council in October 2020 to present the City Council with a proposed Ordinance as well as a summary of the public comment received to date.

Fiscal Impact

There is no fiscal impact with the items described in this staff report.

Public Notice

The public was provided notice of this agenda item by posting the City Council agenda on the City's official bulletin board outside City Hall and making the agenda and report available at the City's website and at the San Mateo Co. Library located at 2415 University Avenue, East Palo Alto.

Environmental

The items described in this staff report are not considered a project under the provisions of the California Environmental Quality Act (CEQA).

Pursuant to Section 15061(b)(3) of the California Code of Regulations, this ordinance is exempt from the requirements of the California Environmental Quality Act (CEQA) in that it is not a Project which has the potential for causing a significant effect on the environment.

Attachments

1. Discussion Guide

Discussion Guide

I. General definitions:

- **Reach Code**
  Amendments to the State Building Codes which go beyond the State's minimum requirements to increase energy efficiency, reduce greenhouse gas (GHG) emissions, and meet climate action goals. Peninsula Clean Energy ("PCE") developed Reach Codes for jurisdictions to consider.

- **Peninsula Clean Energy**
  The initial proposed PCE model recommended a mixed-fuel option for new buildings, also known as the **electric-preferred** model. Under this model, new developments may choose to build all-electric; or they may use natural gas provided they meet 15% higher efficiency standards, and install wiring and circuits for electric appliances. This approach incentivizes builders to choose all-electric since meeting higher energy efficiency standards and pre-wiring for electric appliances adds considerable cost to projects. However, East Palo Alto is considering the Menlo Park model (also known as the **all-electric** required model) which is also endorsed by PCE, described further below.

- **Natural Gas**
  Reach codes can encourage new developments to reduce or eliminate natural gas in new construction have gained momentum over the past year. Natural gas usage in buildings represents one of the largest sources of Green House Gas emissions from buildings. In 2018, California adopted SB 100 mandating that all electricity in California be carbon free by 2045; Executive Order B-55-18 calls for California to be carbon neutral by 2045. These ambitious targets ignited efforts at the local level to implement policies that promote clean energy resources and a move away from fossil fuels. Local community choice aggregation programs have accelerated the use of renewable energy and commitments to source carbon-free electricity. Peninsula Clean Energy, East Palo Alto's local electricity provider, is on the path to 100% renewable energy for San Mateo County by 2025 and currently offers 90% carbon-free electricity.

- **Electric Vehicles**
  Reach codes encourage new developments to increase the number of electric vehicle charging stations. Electric Vehicle (EV) charging requirements in California can generally be broken into three categories:
  1. EV Charging Installed: all supply equipment is installed at a parking space, such that an EV can charge without additional equipment.
  2. EV Ready: Parking space is provided with all power supply and associated outlet, such that a charging station can be plugged in and a vehicle can charge.
  3. EV Capable: Conduit is installed to parking space only in areas that will be inaccessible after construction, and building electrical system has ample capacity to serve future load. An electrician would be required to complete the conduit and circuit before charging is possible.

EV charging capacity and speed can be summarized as three categories:

1. Level 1: Capable of charging at 120V, 20A. This is a equivalent to a standard home outlet.
2. Level 2: Capable of charging at 240V, 30A-40A. This is the service capacity typically used for larger appliance loads in homes.
3. Level 3 (DC Fast Charging): Capable of charging at 20-400kW. This is the type of charger used for Tesla Superchargers and DC Fast Chargers at some supermarkets.

The 2019 California Green Building Code Update (Title 24, Part 11) increases requirements for electric vehicle charging infrastructure in new construction; including:

1. New one- and two-family dwellings and townhouses with attached private garages: must be Level 2 EV-capable.
2. Multi-family dwellings: 10% of parking spaces must be Level 2 EV-capable.
3. Non-residential: 6% of parking spaces must be Level 2 EV-capable.

- **City of Menlo Park Example**
  The City of Menlo Park considered the PCE proposed code but decided to require low-rise residential (one-three stories) to use electric space and water heating (with some exceptions) and the option of natural gas for cooking; and new commercial and high rise multifamily building to be all electric (with some exceptions). Menlo Park took this route to simplify the permit process, achieve higher GHG emissions reductions, and benefit from the high cost savings of building electrification at the design phase rather than as a future retrofit. The exceptions in Menlo Park's code include:
  - Life science buildings may use natural gas for space heating.
  - Public agency owner and operated emergency operations centers (such as fire stations and police stations) may use natural gas.
  - Non-residential kitchens (such as for-profit restaurants and cafeterias) may appeal to use natural gas stoves.
  - For all exceptions that are granted, natural gas appliance locations must be electrically pre-wired for future electric appliance installation.

  Following Menlo Park's Reach Code adoption, local jurisdictions opted to consider what is known as the Menlo Park model, or all-electric with limited natural gas, in lieu of the PCE proposed Reach Code. The Menlo Park model, also known as the **all-electric required** model, is supported by PCE and is considered to be simpler and more effective to implement. PCE released a new proposed Reach Code based on the Menlo Park model in January, 2020.

- **Other Jurisdictions**
  32 out of 482 cities in California have adopted reach codes to limit, or eliminate, the use of natural gas, including the cities of Berkeley, San Jose, Menlo Park, Morgan Hill, and the University of California. Recently, the City of Berkeley, the Town of Windsor and the City of Santa Rosa have been sued following their adoption of Reach Codes. Berkeley was sued by the California Restaurant Association (CRA) in federal court after enacting a total ban on natural gas in new construction. Windsor

and Santa Rosa were sued in state court after adopting an all-electric mandate for certain low-rise residential development. The theory of the two cases is that Windsor and Santa Rosa's invocation of CEQA exemptions was inappropriate and that the town should have done a full environmental review. All cases are still pending. To date, local jurisdictions have adopted the following:

TABLE 1. Reach Code Status in Local Cities

City	Status	Reach Code		
		Electric Preferred	**All-Electric***	**Natural Gas Bans***
San Mateo				
Brisbane	Adopted		X	
Menlo Park	Adopted		X	
Millbrae	Evaluating			
Pacifica	Adopted		X	
Redwood City	Evaluating		X	
San Carlos	Adopted	Prewiring only		
San Mateo	Adopted	X	Evaluating	
San Mateo Co	Adopted		X	
Santa Clara				
Milpitas	Adopted	X		
Morgan Hill	Adopted			X
Mountain View	Adopted		X	
Palo Alto	Adopted	X (NonRes)	X (Res)	
San Jose	Adopted	X (NonRes)		X (Res)
Alameda				
Alameda	Adopted			X (Municipal)
Berkeley	Adopted	X		X
Hayward	Adopted	X (NonRes)	X (Res)	
Richmond	Adopted		X	
Other				
San Francisco	Adopted	X		Evaluating
Santa Rosa	Adopted		X (Res)	

II. <u>The following are questions, concerns, and comments specific to how the Reach Codes will apply in the City of East Palo Alto:</u>

- **How will Reach Codes align with State building codes?**
  The State has been progressively advancing building codes in support of decarbonization for some time. It is expected that the next code cycle (2022, which takes effect Jan 1, 2023) is expected to move significantly towards all-electric buildings and increase EV requirements. The State may issue a requirement for fully

electric buildings, perhaps for particular building types, or allow options but ones which more heavily favor all-electric design. Whether all-electric buildings are required in this code cycle or the following is not known with certainty at this time however, it is broadly recognized that the all-electric buildings will be necessary to meet the state's decarbonization targets.

- **When would the reach codes go into effect?**
  Following Council direction, staff will propose a reach code ordinance for Council approval. If approved, staff will file the reach code with the California Energy Commission and await a 15-day comment period. Once approved by the CEC, the reach code would go into effect at the end of the CEC comment period, or later depending on the City's timeline. Staff is anticipating January 1, 2021, as the effective date of the Reach Codes.

- **How will the reach codes apply to projects in the pipeline?**
  Multifamily development projects that are already entitled are exempt from installing central electric water heating under these Reach codes. Since planning approvals are valid for two years, projects that have been granted planning entitlements within two years or less before the effective date of the ordinance are not required to comply. Although several examples of central electric water heating in multifamily buildings exist in California, it is more technically complex design than gas water heating that may require more building floor area. City staff will encourage these projects adhere to the intent of the reach codes as much as is feasible.

- **How does this align with EPA's Climate Action Plan?**
  The Reach code supports the City's Climate Action Plan ("CAP") goals, specifically in chapter 4.1.2 Goal E-2: Increase Renewable Energy. In 2011, when the City's CAP was developed, approximately 61% of the energy use in buildings was natural gas. At the same time, the combined energy use in residential and commercial buildings represented 33% of all emissions generated by in the City of East Palo Alto. With no changes in the building code requirements to reduce the installation of natural gas installations and no incentives for builders to utilize electricity for the installations, it is widely accepted that the ratios of fuels remains the same, although this statistic is not currently tracked by the City. Expanding the solar requirements to include all buildings will further expand the intent of this goal.

- On the transportation side, standard occupancy vehicles, also considered "residential," represented approximately 20% of all transportation emissions; at the time fuel was primarily hydrocarbon based with no statistics on electric fueled vehicles. Transportation by local traffic represented about 14% of the City's emissions. Many residents are shifting towards electric or hybrid vehicles for their standard occupancy vehicles, though it is presently a privilege available primarily to those who own and reside in single family residential homes, with some exception. Ensuring electric charging stations is available in all new homes, including multifamily housing, will extend the option to an increasing number of residents living in East Palo Alto, over time, furthering the impact of this goal.

- **How will the reach codes be implemented?**
  The reach codes will be enforced as part of the City's building code plan review, and building inspection requirements. Staff will integrate the reach code requirements into East Palo Alto's adopted building codes (California Green Building Standards Code and the California Energy Code). The Building Division will enhance upon resources created by PCE to inform applicants about the specifics of the reach code measures and be part of the Building Division's review process.

III. The following are questions, concerns, and comments typically raised by stakeholders and Council members regarding Reach Codes:

- **Electric water heating for large multi-family buildings can be costly and infeasible, especially for buildings located in a flood zone area.**
  Although demonstrations of this technology are increasing, staff agrees that this issue can pose challenges for new large multi-family developments and in response made an exemption for such circumstances.

- **Residents do not want to give up cooking with natural gas.**
  Many people are used to and comfortable with natural gas cooking and are most likely not aware of the benefits of cooking with electric stovetops, specifically induction ranges. Developers have indicated concerns with competitiveness in the market if they are not able to offer gas cooktops, at least until induction ranges receive greater market acceptance.

  Staff recommends that natural gas be allowed for cooking in response to strong preferences and following the example of other cities; however, installing natural gas for cooking eliminates significant cost savings possible from avoiding natural gas hook-ups and the health benefits of an all-electric home. Staff recommends that developers be required to share information on the benefits of an all-electric home with their clients. Staff can create outreach materials including flyers and online information. Information on all-electric buildings may also be integrated into the pre-application process for new developments.

- **Is an all-electric new building cost effective over a mixed-fuel new construction?**
  Building electrification reach codes make local amendments to the state's Energy Code, which is promulgated by the California Energy Commission (CEC); and the CEC requires such reach codes to demonstrate that the amendments are cost effective and do not cause unreasonable burden to builders. The California Statewide Codes and Standards Program (a statewide investor-owned utility (IOU) program) has been supporting the reach code effort and prepared cost-effectiveness studies analyzing all-electric and mixed-fuel new construction that jurisdictions can apply in their reach codes.

  The IOU's most recent study, 2019 Nonresidential New Construction Reach Cost Effectiveness Study, reports that avoiding the installation of natural gas infrastructure in nonresidential (office, retail, and hotels) buildings results in

significant cost savings, even with necessary increases in electricity capacity. The IOU's stated similar results for their Low-Rise Residential New Construction cost-effectiveness study. In particular, the report found that an all-electric single-family home has a cost savings of $5,349 over a new mixed-fuel home. The cost savings for multifamily was $2,337/apartment. The CEC has approved several electrification reach codes that rely on these cost effectiveness studies.

- **All-electric is fine for buildings less than 25,000 square feet. However, for large buildings it can be costly and infeasible.**
  There have been mixed responses on this issue. Some construction experts say that all-electric is more of a problem for buildings larger than 100,000 square feet. One construction expert noted that buildings less than 100,000 square feet may be built more cost effectively as all-electric than with natural gas. Other experts noted that all-electric is possible and cost-effective for buildings larger than 100,000 square feet. All-electric can be a challenge for life science buildings and hospitals due to high demands for sterilization and high hot water loads.

  The issue primarily revolves around central water heating, whether it is used for domestic hot water or space heating. A recent mid-rise multifamily cost-effectiveness study examined two types of central domestic water heating systems: a "clustered" system that has one residential water heater for every 2-3 dwelling units, and one central heat pump water heater serving the entire building. The report only presents results for the clustered system because of the enhanced cost-effectiveness of the clustered design (which is cost effective compared to the natural gas baseline).1 Peninsula Clean Energy is launching a technical assistance program to support the building industry in designing all sizes and types of buildings, including those well over 100,000 ft2. This program will connect knowledgeable industry leaders with the building industry to support the design of high performance all-electric buildings.

- **Can Peninsula Clean Energy keep up with the increased electricity demand of reach codes?**
  PCE anticipates a modest impact from reach codes on their electricity load. PCE has modeled the outcomes of the countywide reach code efforts and has high confidence that they will be able to meet the growth in demand.

- **Solar PV systems do not make sense on roofs that experience a lot of shade or are too steep.**
  Staff agrees and is allowing for exemptions for new development where solar is infeasible due to existing shading, roof slopes, and other limitations to rooftop solar zones.

- **EV infrastructure is difficult to install in parking lots that use automated mechanical parking systems.**
  Staff agrees and recommends that mechanical parking systems be exempt from the EV infrastructure requirements.

[1] https://peninsulareachcodes.org/wp-content/uploads/2020/07/2019-Mid-rise-NC-Cost-Eff-Report.pdf.

- **EV infrastructure costs increase dramatically if a new transformer is required to meet power needs.**
  New transformers are not always necessary with EV infrastructure additions, according to a study commissioned by PCE. PCE has also added an except that allows for Automated Load Management Systems that will mitigate the need to size electrical capacity to meet peak loads. Nonetheless, staff agrees and is following PCE's recommendation that an exception to the EV infrastructure requirements can be made if the cost per space for EV infrastructure exceeds $4,500.

- **Do the EV charging spaces have different size specifications?**
  No. Spaces must comply with regular planning and building code parking space specifications.

- **Are the EV Infrastructure requirements part of the reach code?**
  EV infrastructure is considered one reach code and building electrification a separate reach code. Building electrification codes reside in Title 24 Part 6 and require CEC approval for cost-effectiveness. EV infrastructure codes reside in Title 24 Part 11 and do not require CEC approval.

- **How will building electrification be impacted by power outages?**
  Power outages affect mixed fuel and all-electric buildings similarly because most natural gas appliances, other than gas stovetops, rely on electricity to operate. Also, reach codes do not affect back-up generators, whether they are diesel or batteries, used by buildings during power outages.

  PCE has started exploring how to minimize risks from power outages and is collaborating with other Bay Area community choice energy programs on resiliency projects. For example, PCE and its community choice partners issued a joint solicitation for the installation of battery storage for their customers. The program will provide reliable power to about 6,000 homes through the use of backup battery storage during power outages.

EAST PALO ALTO
CITY COUNCIL
STAFF REPORT

DATE: October 6, 2020

TO: Honorable Mayor and Members of the City Council

VIA: Jaime M. Fontes, City Manager

BY: Amy Chen, Community & Economic Development Director
Patrick Heisinger, Assistant City Manager

SUBJECT: Introduction of Building Electrification and Electric Vehicle Infrastructure Reach Codes

Recommendation

Waive the first reading and introduce a Building Electrification and Electric Vehicle Infrastructure Reach Codes ("Reach Codes") to be effective January 1, 2021.

Alignment with City Council Strategic Plan

This recommendation is primarily aligned with:

Priority No. 3: Increase Organizational Effectiveness and Efficiency
Priority No. 6: Create a Healthy and Safe Community

Background

On December 3, 2019, the City Council unanimously adopted the 2019 California Building Standards Code (Ordinance No. 402). During that same meeting, staff presented potential amendments to the local Building Code that would exceed minimum State code standards (known as Reach Codes). The City Council asked staff to return and address some outstanding questions.

On September 1, 2020, the City Council received a staff report and by motion directed staff to return to the City Council in October with a draft Reach Code Ordinance. This staff report includes minor modifications and exceptions to the Reach Code that have been developed since the last Council discussion. In addition to this staff report, a discussion guide has been provided (attachment 2) and the September 1, 2020 staff report (attachment 3) for reference.

Analysis

On September 1, 2020 staff provided a comprehensive report on the potential Reach Code Ordinance and received feedback and direction to introduce an ordinance that will amend portions of Title 15 of the East Palo Alto Municipal Code by adopting Reach Codes. Reach Codes are amendments to the State Building Codes which go beyond the State's minimum requirements to increase energy efficiency, reduce greenhouse gas (GHG) emissions, and meet climate action goals. This proposed ordinance will amend portions of the adopted California Building Standards Codes, Title 24, Part 6, and Part 11:

- 2019 California Green Building Standards Code (Part 11); and,
- 2019 California Energy Code (Part 6).

Below summarizes key elements of the proposed Reach Code:

- **Affordable Housing Exemption:** An added exception for 100% affordable housing developments from meeting the building electrification requirements, and from meeting the electric vehicle infrastructure requirements where utility side costs exceed $400/dwelling unit;
- **New Construction:** Ensure the distinction between new construction and existing buildings is clear, the Reach Code only applies to new construction;
- **All-Electric Required:** This Reach Code is encouraging electrification, it is not considered a full gas ban because there are proper exceptions included;
- **Not Applicable to Approved Projects:** Projects with their planning entitlements within the last two years are exempt from providing multifamily electric water heating and electric vehicle infrastructure (planning entitlements typically last two years); and
- **Solar Photovoltaics:** The solar PV requirement is based on a percentage of roof area; which includes exceptions that make room for mechanical items that might need to be on the roof, while still allowing the developer to optimize the right size of solar

Recommendation

Based on Staff input, action by neighboring jurisdictions, guidance from Peninsula Clean Energy (PCE), and the City of East Palo Alto's greenhouse gas reduction goals, staff recommends that the City Council consider the following Reach Codes for building electrification and solar. The Reach Code recommendations are listed in Table 2. Confirmed and revised items are listed in bold text.

Table 2. Summary of Recommended Reach Codes

Proposed Reach Code	**Building Electrification**	**Solar**	**EV Infrastructure**
Single Family Homes and Townhouses with Private Garages	All electric; Exception for Accessory Dwelling Units (ADUs) **Exception for 100% affordable housing**	NA - Solar already required by the Residential Code.	One Level 2 (dryer plug/220volt) + One Level 1 (110volt) Single space garages to have one Level 2 charging. Exception for ADUs **Exception allowed if utility infrastructure installation cost exceeds $400/dwelling for tax credit-financed**

			affordable housing
Multi-family Buildings	All electric; Exception if demonstrated to be infeasible. Exception for domestic water heating projects granted entitlements, with electrical pre-wiring. Exception for existing buildings with physical constraints. **Exception for 100% affordable housing**	**15 percent of roof area Exceptions for buildings with limited solar access or vegetative roofs.**	10% of units with Level 2 charging; 90% of units with Level 1 charging. Outlets may be shared between parking spaces. Load management software allowed. Exception allowed if utility infrastructure installation cost exceeds $4,500/dwelling for market rate, **$400/dwelling for tax credit-financed affordable housing Exception for projects granted entitlements.**
Commercial Buildings	All electric; Exception for restaurants, cafeterias, with pre-wiring. Exception for emergency operation centers, with pre-wiring Exception for Life Science buildings, with pre-wiring. Exception for existing buildings with physical constraints.	**15 percent of roof area Exceptions for buildings with limited solar access or vegetative roof.**	Office: • 10 or more parking spaces - 10% of parking spaces with Level 2 charging; • Additional 10% with Level 1 ready. • additional 30% EV capable; Exception for mechanical parking systems and locations without commercial power supply.
Other Nonresidential Buildings (non office)	Same as commercial	Same as commercial	• 10 or more parking spaces - 6% Level 2 Charging Station • Additional 5% Level 1 ready

Applicability

The Reach Code only applies to new development projects, as noted in Section 100 of the attached Ordinance, and to projects that have not yet received their approved planning entitlements. Multifamily projects with their planning entitlements would be exempt from all-electric domestic water heating, and would only need to meet the parking percentage requirements in the baseline code (CALGreen Part 11). All other portions of the Reach Code would still apply. Here is the language of the exceptions:

- Multifamily residential building projects that have been granted entitlements within two years or less, or have been submitted for entitlement, before the effective date of this ordinance are not required to install all-electric water heating systems. If the Building Official grants a modification pursuant to this Exception, the applicant shall comply with the pre-wiring provision noted above.
- Multifamily residential building projects that have been granted entitlements within two years or less before the effective date of this ordinance shall provide at least ten (10) percent of the total number of parking spaces on a building site, provided for all types of parking facilities, with Level 2 EV Ready Circuits. Calculations for the required number of EV spaces shall be rounded up to the nearest whole number

If adopted by City Council, the ordinance would then need to be submitted to the CEC for approval. If approved, the soonest it could take effect is on January 1, 2021.

Although Reach Codes apply to the building phase of a development project, it is important for development projects to build in these improvements early on in their design and in the planning phase. The next building code update is anticipated to begin in 2022 and to take effect on January 1, 2023. Thus this Reach Code ordinance will further help development projects prepare their projects for further changes to the building code over the next few years.

Public Input

On August 17, 2020, a virtual public meeting was held to discuss the potential development of a Reach Code ordinance. The public meeting was posted on the City website, promoted through the City's email newsletter (4,400 recipients) and social media, including the City's Facebook page (2,300 subscribers), NextDoor (4,600 recipients), and EPA Neighbors (4,800 recipients). A total of 14 developers and community stakeholders participated and the following key topics were discussed:

- *Overview of Reach Codes:* A presentation by Farhad Farahmand, from TRC Companies, a consultant brought on by PCE.
- *Applicability and timing:* Clarifications that portions of the Reach Codes would only apply to new developments that are not yet entitled, and would take effect in 2021.
- *Benefits to tenants:* If solar photovoltaics are installed on multifamily rentals (at least 15% of the roof area), although there are upfront costs incorporated into the development, the long-term benefits may be passed onto tenants and help lower utility bills.

Next Steps

The second reading of this recommended ordinance would occur in November 2020.

Fiscal Impact

There is no fiscal impact with the items described in this staff report.

Public Notice

The public was provided notice of this agenda item by posting the City Council agenda on the City's official bulletin board outside City Hall and making the agenda and report available at the City's website and at the San Mateo County Library located at 2415 University Avenue, East Palo Alto. Notice of the public hearing, along with supporting documentation, was given in the September 25, 2020 edition of the Palo Alto Daily News.

Environmental

The items described in this staff report are not considered a project under the provisions of the California Environmental Quality Act (CEQA).

Pursuant to Section 15061(b)(3) of the California Code of Regulations, this ordinance is exempt from the requirements of the California Environmental Quality Act (CEQA) in that it is not a Project which has the potential for causing a significant effect on the environment.

Attachments

1. Ordinance
2. Discussion Guide
3. September 1 Staff Report

ORDINANCE NO. _____

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF EAST PALO ALTO

AMENDING MUNICIPAL CODE CHAPTER 15.25 OF TITLE 15 (BUILDINGS AND CONSTRUCTION) OF THE EAST PALO ALTO MUNICIPAL CODE TO ADOPT A LOCAL "REACH" CODEAND ADOPTING FINDINGS JUSTIFYING THE AMENDMENTS TO THE 2019 CALIFORNIA GREEN BUILDING CODE AND THE 2019 CALIFORNIA ENERGY CODE

WHEREAS, the City of East Palo Alto ("City") wishes to adopt a building code in accordance with law and to use the most updated regulations in the processing of development in the City;

WHEREAS, California Health and Safety Code section 17958 requires that cities adopt building regulations that are substantially the same as those adopted by the California Building Standards Commission and contained in the California Building Standards;

WHEREAS, the California Energy Code is a part of the California Building Standards which implements minimum energy efficiency standards in buildings through mandatory requirements, prescriptive standards, and performances standards;

WHEREAS, California Health and Safety Code Sections 17958.5, 17958.7 and 18941.5 provide that the City may make changes or modifications to the building standards contained in the California Building Standards based upon express findings that such changes or modifications are reasonably necessary because of local climatic, geological or topographical conditions;

WHEREAS, the City Council of the City of East Palo Alto finds that each of the amendments, additions and deletions to the California Energy Code contained in this ordinance are reasonably necessary because of local climatic, geological or topographical conditions described in Section 1;

WHEREAS, Public Resources Code Section 25402.l(h)2 and Section 10-106. of the Building Energy Efficiency Standards (Standards) establish a process which allows local adoption of energy standards that are more stringent than the statewide Standards, provided that such local standards are cost effective and the California Energy Commission finds that the standards will require buildings to be designed to consume no more energy than permitted by the California Energy Code;

WHEREAS, that such modifications will result in designs that consume less energy than they would under the 2019 State Energy Code through the California Codes and Standards Reach Code Program, has performed cost effectiveness analyses as required by the California Energy Commission for the local amendments to the California Energy Code contained in this ordinance which is hereby incorporated by reference;

WHEREAS, based upon these analyses, the City Council of the City of East Palo Alto finds that the local amendments to the California Energy Code contained in this ordinance are cost effective and will require buildings to be designed to consume no more energy than permitted by the California Energy Code;

WHEREAS, because of the City's unique local climatic, geologic and topographic conditions, the City desires to make amendments and additions to the code.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF EAST PALO ALTO DOES ORDAIN AS FOLLOWS:

SECTION 1: FINDINGS AND DETERMINATIONS

The following local climatic, conditions justify modifications to the California Building Standards Code:

A. Climatic: The City is located in Climate Zones 3 and 4 as established in the 2019 California Energy Code. Climate Zones 3 and 4 incorporate mostly coastal communities from Marin County to southern Monterey County including San Francisco. The City experiences precipitation ranging from 13 to 20 inches per year with an average of approximately 15 inches per year. Ninety-five percent of precipitation falls during the months of November through April, leaving a dry period of approximately six months each year. Relative humidity remains moderate most of the time. Temperatures in the summer average around 80 degrees Fahrenheit and in the winter in the mid 50 degrees Fahrenheit. Prevailing winds in the area come from the west with velocities generally in the 12 miles per hour range, gusting from 25 to 35 miles per hour. These climatic conditions along with the greenhouse emissions generated from structures in both the residential and nonresidential sectors requires exceeding the energy standards for building construction established in the 2019 California Buildings Standards Code. The City Council also adopted a Climate Action Plan that has a goal of reducing greenhouse gas emissions. In order to achieve and maintain this goal, the City needs to adopt policies and regulations that reduce the use of fossil fuels that contribute to climate change, such as natural gas in buildings, in new development. Human activities, such as burning natural gas to heat buildings, releases greenhouse gases into the atmosphere and causes an overall increase in global average temperature. This causes sea levels to rise, affecting the City's shoreline and infrastructure.

   Roughly 49% of the City remains in a regulatory flood inundation zone associated with the 100-year sea level rise FEMA maps adopted April, 2019. San Francisquito Creek also runs through the City, which creates an increasing potential flooding risk with climate change as a result of human generated greenhouse gas emissions. East Palo Alto is vulnerable to sea level rise where new development is proposed in this code cycle. New buildings that are directly vulnerable to sea level rise should avoid generating additional greenhouse gas emissions. The proposed Reach Code would ensure that new buildings use cleaner sources of energy that are greenhouse gas free.

   Vehicular traffic through East Palo Alto is significant, and it continues to increase as East Palo Alto, and it's neighboring cities, become an employment center as well as the location of residential projects. Moreover, the observed increase in plug-in electric vehicle adoption reduces the climate impact of vehicular greenhouse gas emissions.

B. Geologic: The City of East Palo Alto is subject to earthquake hazard caused by its proximity to San Andreas fault. This fault runs from Hollister, through the Santa Cruz Mountains, epicenter of the 1989 Loma Prieta earthquake, then on up the San Francisco Peninsula, then offshore at Daly City near Mussel Rock. This is the approximate location of the epicenter of the 1906 San Francisco earthquake. The other fault is Hayward Fault. This fault is about 74 miles long, situated mainly along the western base of the hills on the east side of San Francisco Bay. Both of these faults are considered major Northern California earthquake faults which may experience rupture at any time. Thus, because the City is within a seismic area which includes these earthquake faults, the modifications and changes cited

herein are designed to better limit property damage as a result of seismic activity and to establish criteria for repair of damaged properties following a local emergency.

In the event of a natural disaster such as an earthquake or fire, the natural gas infrastructure in and around the City of East Palo Alto presents a risk to the life and safety of residents and first responders. Moreover, the electric grid system can be brought back online more swiftly than the natural gas pipeline when the community is recovering from such an event.

C. Topographic: The City of East Palo Alto is contiguous with the San Francisco Bay, resulting in a natural receptor for storm and waste water run-off. Also, the City is located in an area that is relatively high liquefaction potential given its proximity to the Bay. The surface condition consists mostly of stiff to dense sandy clay, which is highly plastic and expansive in nature. The aforementioned conditions within the City create hazardous conditions for which departure from California Building Standards Code is warranted.

SECTION 2: CHAPTER 15.25 OF THE EAST PALO ALTO MUNICIPAL CODE

The City Council hereby amends the following section of Chapter 15.25 of the East Palo Alto Municipal Code to read as follows (with text in ~~strikeout~~ indicating deletion and underlined text indicating addition). Sections and subsections that are not amended by this Ordinance are not included below and shall remain in full force and effect.

SECTION 100.0 – Scope.

(e) Sections applicable to particular buildings. TABLE 100.0-A and this subsection list the provisions of Part 6 that are applicable to different types of buildings covered by Section 100.0(a).

1. All buildings. Sections 100.0 through 110.12 apply to all buildings.
   EXCEPTION to Section 100.0(e) 1: Spaces or requirements not listed in TABLE 100.0-A.

2. Newly constructed buildings.
   A. All newly constructed buildings. Sections 110.0 through 110.12 apply to all newly constructed buildings within the scope of Section 100.0(a). In addition, newly constructed buildings shall meet the requirements of Subsections B, C, D or E, as applicable~~;~~ and shall be an All-Electric Building as defined in Section 100.1(b). For the purposes of All-Electric Building requirements, newly constructed buildings as defined in Section 100.1 shall include a construction project where an alteration includes replacement of over 50% of the existing foundation for purposes other than a repair or reinforcement as defined in California Existing Building Code Section 202; or when over 50% of the existing framing above the sill plate is removed or replaced for purposes other than repair. If either of these criteria are met within a 3-year period, measured from the date of the most recent previously obtained permit final date, that structure is considered new construction and shall be subject to the All-Electric Building requirements. The final determination whether a project meets the definition of substantial reconstruction/alteration shall be made by a designated building official.

      Exception 1: Non-Residential Buildings containing a Scientific Laboratory Building, such area may contain a non-electric Space Conditioning System.

      Exception 2: All-Electric Building requirements shall not apply to new residential structures

that entirely consist of either affordable rental units, defined as units rented at an amount consistent with the maximum rent levels for a housing development that receives an allocation of state or federal low-income housing tax credits from the California Tax Credit Allocation Committee. Residential developments meeting the above definition must have an Inclusionary Housing Plan that is approved by the Housing Division pursuant to Section 18.37.090.

Exception 3: Exemption for public agency owned and operated emergency centers. To take advantage of this exception applicant shall provide third party verification that All-Electric space heating requirement is not cost effective and feasible.

Exception 4: Multifamily residential building projects that have been granted planning entitlements within two years or less, or have been approved , before the effective date of this ordinance are not required to install all-electric water heating systems. If the Building Official grants a modification pursuant to this Exception, the applicant shall comply with the pre-wiring provision of Note 1 below.

Exception 5: If the applicant establishes that there is not an all-electric prescriptive compliance pathway for the building under the Energy Code, and that the building is not able to achieve the performance compliance standard applicable to the building under the Energy Code using commercially available technology and an approved calculation method, then the Building Official may grant a modification. If the Building Official grants a modification pursuant to this Exception, the applicant shall comply with the pre-wiring provision of Note 1 below.

Exception 6: Accessory Dwelling Units and Junior Accessory Dwelling Units shall be exempt from the all-electric building provisions of this section. For purposes of this exception, “Accessory Dwelling Unit” and “Junior Accessory Dwelling Unit” have the same definitions as set out in Government Code Sections 65852.2 and 65852.22, respectively.

Exception 7: Non-residential buildings containing a for-profit restaurant open to the public or an employee kitchen may apply to the Building Official for an exception to install gas-fueled cooking appliances. This request must be based on a business-related reason to cook with a flame that cannot be reasonably achieved with an electric fuel source. Examples include barbeque-themed restaurants and pizza ovens. The Building Official may grant this exception if they find the following:

1. There is a business-related reason to cook with a flame;
2. This need cannot be reasonably achieved with an electric fuel source;
3. The applicant has employed reasonable methods to mitigate the greenhouse gas impacts of the gas-fueled appliance;
4. The applicant shall comply with the pre-wiring provision of Note 1 below.

The Building Official’s decision shall be final unless the applicant appeals to the City Council within 15 days of the appointed body’s decision. The City Council’s decision on the appeal shall be final.

Exception 8: When improvements to existing buildings contain physical constraints that prevent conformance to the All-Electric Building requirements, the applicant may request an exception. In applying for an exception, the burden is on the applicant to identify the size requirements to comply with an All-Electric Building.

Note 1: If natural gas appliances are used in any of the above exceptions 1-8, natural gas appliance locations must also be electrically pre-wired for future electric appliance installation. They shall include the following:

1. A dedicated circuit, phased appropriately, for each appliance, with a minimum amperage requirement for a comparable electric appliance (see manufacturer's recommendations) with an electrical receptacle or junction box that is connected to the electric panel with conductors of adequate capacity, extending to within 3 feet of the appliance and accessible with no obstructions. Appropriately sized conduit may be installed in lieu of conductors;

2. Both ends of the conductor or conduit shall be labeled with the words "For Future Electric appliance" and be electrically isolated;

3. A circuit breaker shall be installed in the electrical panel for the branch circuit and labeled, an example is as follows (i.e "For Future Electric Range;") and

4. All electrical components, including conductors, receptacles, junction boxes, or blank covers, related to this section shall be installed in accordance with the California Electrical Code.

Note 2: If any of the exceptions 1-8 are granted, the Building Official shall have the authority to approve alternative materials, designs and methods of construction per CBC 104,

Section 100.1(b) is modified by adding the following definitions:

ALL ELECTRIC BUILDING: is a building that has no natural gas or propane plumbing installed within the building, and that uses electricity as the source of energy for its space heating, water heating (including pools and spas), cooking appliances, and clothes drying appliances. All Electric Buildings may include solar thermal pool heating.

Scientific Laboratory Building: is a building or area where research, experiments, and measurement in medical, and life sciences are performed and/or stored requiring examination of fine details. The building may include workbenches, countertops, scientific instruments, and supporting offices.

Section 110.2 is modified as follows:

SECTION 110.2 – MANDATORY REQUIREMENTS FOR SPACE-CONDITIONING EQUIPMENT

Certification by Manufacturers. Any space-conditioning equipment listed in this section, meeting the requirements of section 100.0 (e)2A, may be installed only if the manufacturer has certified to the Commission that the equipment complies with all the applicable requirements of this section.

Section 110.3 is modified as follows:

SECTION 110.3 – MANDATORY REQUIREMENTS FOR SERVICE WATER-HEATING SYSTEMS AND EQUIPMENT

(a) Certification by manufacturers. Any service water-heating system or equipment, meeting the requirements of section 100.0 (e)2A, may be installed only if the manufacturer has certified that the system or equipment complies with all of the requirements of this subsection for that system or

equipment.

Section 110.4 is modified as follows:
SECTION 110.4 – MANDATORY REQUIREMENTS FOR POOL AND SPA SYSTEMS AND EQUIPMENT
(a) Certification by Manufacturers. Any pool or spa heating system or equipment, meeting the requirements of section 100.0 (e)2A, may be installed only if the manufacturer has certified that the system or equipment has all of the following:

Section 110.5 is modified as follows:
SECTION 110.5 – NATURAL GAS CENTRAL FURNACES, COOKING EQUIPMENT, POOL AND SPA HEATERS, AND FIREPLACES: PILOT LIGHTS PROHIBITED
Any natural gas system or equipment, meeting the requirements of *Section 100.0 (e)2A,* listed below may be installed only if it does not have a continuously burning pilot light:

SECTION 140.0(b) is modified as follows:

(b) The requirements of Sections 120.0 through 130.5 (mandatory measures for nonresidential, high-rise residential and hotel/motel buildings), and for all newly constructed buildings:

1. The entire solar zone, as specified in Section 110.10, shall have a solar photovoltaic system installed.

Exception 1 to 140.0(b)1: The building official may grant a modification if the applicant demonstrates that the required percentage of PV installation will over-generate the annual kWh required to operate the proposed building;

Exception 2 to 140.0(b)1: If the applicant demonstrates that conditions exist where excessive shading occurs, a performance equivalency approved by the Building Official may be used as an alternative.

Exception 3 to 140.0(b)1: Vegetative roofs covering 35 percent of the roof area or greater, meeting all relevant code requirements including considerations for wind, fire, and structural loads.

SECTION 3: CHAPTER 15.11 OF THE EAST PALO ALTO MUNICIPAL CODE

The City Council hereby amends the following section of Chapter 15.11 of the East Palo Alto Municipal Code to read as follows (with text in ~~strikeout~~ indicating deletion and underlined text indicating addition). Sections and subsections that are not amended by this Ordinance are not included below, and shall remain in full force and effect.

SECTION 2
DEFINITIONS

EV Capable: A parking space linked to a listed electrical panel with sufficient capacity to provide at least 110/120 volts and 20 amperes to the parking space. Raceways linking the electrical panel and parking space only need to be installed in spaces that will be inaccessible in the future, either trenched underground or where penetrations to walls, floors, or other partitions would otherwise be required for future installation of branch circuits. Raceways must be at least 1" in diameter and may be sized for multiple circuits as allowed by the California Electrical Code. The panel circuit directory shall identify the overcurrent protective device space(s) reserved for EV charging as "EV CAPABLE." Construction

documents shall indicate future completion of raceway from the panel to the parking space, via the installed inaccessible raceways.

Level 1 EV Ready Space: A parking space served by a complete electric circuit with a minimum of 110/120 volt, 20-ampere capacity including electrical panel capacity, overprotection device, a minimum 1" diameter raceway that may include multiple circuits as allowed by the California Electrical Code, wiring, and either;
a) a receptacle labelled "Electric Vehicle Outlet" with at least a ½" font adjacent to the parking space; or,
b) electric vehicle supply equipment (EVSE).

Level 2 EV Ready Space: A parking space served by a complete electric circuit with 208/240 volt, 40-ampere capacity including electrical panel capacity, overprotection device, a minimum 1" diameter raceway that may include multiple circuits as allowed by the California Electrical Code, wiring, and either;
a) a receptacle labelled "Electric Vehicle Outlet" with at least a ½" font adjacent to the parking space; or,
b) electric vehicle supply equipment (EVSE) with a minimum output of 30 amperes.

Electric Vehicle Charging Station (EVCS): A parking space that includes installation of electric vehicle supply equipment (EVSE) with a minimum output of 30 amperes connected to a Level 2 EV Ready Circuit. EVCS installation may be used to satisfy a Level 2 EV Ready Circuit requirement.

Automatic Load Management Systems (ALMS): (ALMS) A control system which allows multiple Level 2 EV chargers to share a circuit or panel and automatically reduce power at each charger, providing the opportunity to reduce electrical infrastructure costs and/or provide demand response capability. ALMS is only allowed for Level 2 EVCS, Level 2 EV Ready, and Level 1 EV Ready Circuits. ALMS systems must be designed to deliver at least 1.4kW per charger. The connected amperage on-site shall not be lower than the required connected amperage per Part 11, 2019 California Green Building Code for the relevant building types.

SECTION 4
RESIDENTIAL MANDATORY MEASURES

4.106.4 Electric vehicle (EV) charging for new construction. New construction shall comply with Sections 4.106.4.1 and 4.106.4.2 to facilitate future installation and use of EV chargers. ~~Electric vehicle supply equipment (EVSE) shall be installed in accordance with the California Electrical Code, Article 625.~~

Exceptions:

~~1. On a case-by-case basis, where the local enforcing agency has determined EV charging and infra- structure are not feasible based upon one or more of the following conditions:~~

~~1.1. Where there is evidence substantiating that meeting the requirements will alter the local utility infra- structure design requirements on the utility side of the meter so as to increase the utility side cost to the homeowner or the developer by more than $400.00 per dwelling unit.~~

1. Where there is no commercial power supply.
2. Accessory Dwelling Units (ADU) and Junior Accessory Dwelling Units (JADU) without additional parking facilities.
3. Spaces accessible only by automated mechanical car parking systems are excepted from providing EV charging infrastructure.

4. Multifamily residential building projects that have been granted entitlements within two years or less before the effective date of this ordinance shall provide at least ten (10) percent of the total number of parking spaces on a building site, provided for all types of parking facilities, with Level 2 EV Ready Circuits. Calculations for the required number of EV spaces shall be rounded up to the nearest whole number.
5. East Palo Alto may consider allowing exceptions through their local process, on a case by case basis, if a building permit applicant provides documentation detailing that the increased cost of utility service or on-site transformer capacity would exceed an average of $4,500 among parking spaces with Level 2 EV Ready Circuits and Level 1 EV Ready Circuits. If costs are found to exceed this level, the applicant shall provide EV infrastructure up to a level that would not exceed this cost for utility service or on-site transformer capacity.
6. Where there is evidence substantiating that meeting the requirements will alter the local utility infrastructure design requirements on the utility side of the meter so as to increase the utility side cost by more than $400 per dwelling unit for residential buildings that entirely consist of either affordable rental units, defined as units rented at an amount consistent with the maximum rent levels for a housing development that receives an allocation of state or federal low-income housing tax credits from the California Tax Credit Allocation Committee. Residential developments meeting the above definition must have an Inclusionary Housing Plan that is approved by the Housing Division pursuant to Section 18.37.090. If costs are found to exceed this level, the applicant shall provide EV infrastructure up to a level that would not exceed this cost for utility service or on-site transformer capacity.

4.106.4.1 New one- and two-family dwellings and town- houses with attached private garages.

For each dwelling unit, install a Level 2 EV Ready Circuit and Level 1 EV Ready Circuit. ~~listed raceway to accommodate a dedicated 208/240-volt branch circuit. The raceway shall not be less than trade size 1 (nominal 1-inch inside diameter). The raceway shall originate at the main service or subpanel and shall terminate into a listed cabinet, box or other enclosure in close proximity to the proposed location of an EV char- ger. Raceways are required to be continuous at enclosed, inaccessible or concealed areas and spaces. The service panel and/or subpanel shall provide capacity to install a 40-ampere minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent protective device.~~

Exception: For each dwelling unit with only one parking space, install a Level 2 EV Ready Circuit.

4.106.4.1.1 Identification. ~~The service panel or sub- panel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging as "Level 2 EV CAPABLE".~~ The raceway termination location shall be permanently and visibly marked as ~~"EV CAPABLE".~~ "Level 2 EV-Ready".

4.106.4.2 New multifamily dwellings. ~~If residential parking is available, ten (10) percent in total number of parking spaces on a building site, provided for all types of parking facilities, shall be electric vehicle charging spaces (EV spaces) capable of supporting future EVSE. Calculations for the required number of EV spaces shall be rounded up to the nearest whole number.~~ The following requirements apply to all new multifamily dwellings:

1. For multifamily buildings with less than or equal to 20 dwelling units, each dwelling unit with parking shall be provided with access to a parking space with a Level 2 EV Ready Circuit.
2. When more than 20 multifamily dwelling units are constructed on a building site

a. 10% of the dwelling units with parking space(s) shall be provided with access to at least one Level 2 EV Ready Circuit. Calculations for the required minimum number of Level 2 EV Ready spaces shall be rounded up to the nearest whole number.
b. In addition, each remaining dwelling unit with parking space(s) shall be provided with access to at least a Level 1 EV Ready Circuit.

Notes:

1. ~~Construction documents are intended to demonstrate the project's capability and capacity for facilitating future EV charging.~~
2. ~~There is no requirement for EV spaces to be constructed or available until EV chargers are installed for use.~~

1. ALMS may be installed to decrease electrical service and transformer costs associated with EV Charging Equipment subject to review of the East Palo Alto Planning and Building Divisions.
2. Installation of Level 2 EV Ready Circuits above the minimum number required level may offset the minimum number Level 1 EV Ready Circuits required on a 1:1 basis.
3. The requirements apply to multifamily buildings with parking spaces including: a) assigned or leased to individual dwelling units, and b) unassigned residential parking.
4. In order to adhere to accessibility requirements in accordance with California Building Code Chapters 11A and/or 11B, it is recommended that all accessible parking spaces for covered newly constructed multifamily dwellings are provided with Level 1 or Level 2 EV Ready Circuits.

4.106.4.2.1.1 Electric vehicle charging stations (EVCS). When EV chargers are installed, EV spaces required by Section 4.106.4.2.2, Item 3, shall comply with at least one of the following options:

1. The EV space shall be located adjacent to an accessible parking space meeting the requirements of the *California Building Code*, Chapter 11A, to allow use of the EV charger from the accessible parking space.
2. The EV space shall be located on an accessible route, as defined in the *California Building Code*, Chapter 2, to the building.

Exception: Electric vehicle charging stations designed and constructed in compliance with the California Building Code, Chapter 11B, are not required to comply with Section 4.106.4.2.1.1 and Section 4.106.4.2.2, Item 3.

Note: Electric vehicle charging stations serving public housing are required to comply with the *California Building Code*, Chapter 11 B.

4.106.4.2.2 Electric vehicle charging space (EV space) dimensions. Refer to East Palo Alto Development Code for parking dimension requirements. ~~The EV spaces shall be designed to comply with the following:~~

~~The EV spaces shall be designed to comply with the following:~~

~~1. The minimum length of each EV space shall be 18 feet (5486 mm).~~

~~2. The minimum width of each EV space shall be 9 feet (2743 mm).~~

3. ~~One in every 25 EV spaces, but not less than one, shall also have an 8-foot (2438 mm) wide minimum aisle. A 5-foot (1524 mm) wide minimum aisle shall be permitted provided the minimum width of the EV space is 12 feet (3658 mm).~~

    1. ~~Surface slope for this EV space and the aisle shall not exceed 1 unit vertical in 48 units horizontal (2.083 percent slope) in any direction.~~

~~**4.106.4.2.3**~~

~~**Single EV space required.** Install a listed raceway capable of accommodating a 208/240-volt dedicated branch circuit. The raceway shall not be less than trade size 1 (nominal 1-inch inside diameter). The raceway shall originate at the main service or subpanel and shall terminate into a listed cabinet, box or enclosure in close proximity to the proposed location of the EV spaces. Construction documents shall identify the raceway termination point. The service panel and/or subpanel shall provide capacity to install a 40-ampere minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit over-current protective device.~~

~~**4.106.4.2.4 Multiple EV spaces required**. Construction raceway termination point and proposed location of future EV spaces and EV chargers Construction documents shall also pro- vide information on amperage of future EVSE, raceway method(s), wiring schematics and electrical load calculations to verify that the electrical panel service capacity and electrical system, including any on-site distribution transformer(s), have sufficient capacity to simultaneously charge all EVs at all required EV spaces at the full rated amperage of the EVSE. Plan design shall be based upon a 40-ampere minimum branch circuit. Raceways and related components that are planned to be installed underground, enclosed, inaccessible or in concealed areas and spaces shall be installed at the time of original construction.~~

~~**4.106.4.2.5 Identification.** The service panel or sub- panel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging purposes as "EV CAPABLE" in accordance with the California Electrical Code.~~

SECTION 5
NONRESIDENTIAL MANDATORY MEASURES

…

5.106.5.3 Electric vehicle (EV) charging. [N] <u>New</u> construction shall comply with Section 5.106.5.3.1 or Section 5.106.5.3.2 to facilitate future installation and <u>use of EV chargers</u> ~~of electric vehicle supply equipment (EVSE). When EVSE(s) is/are installed, it shall be in accordance with the *California Building Code*, the *California Electrical Code* and as follows:~~

<u>Exception</u>:

1. Where there is no commercial power supply.
2. <u>Spaces accessible only by automated mechanical car parking systems are excepted from providing EV charging infrastructure.</u>

<u>5.106.5.3.1 Office buildings</u>: <u>In nonresidential new construction buildings designated primarily for office use with parking:</u>

1. When 10 or more parking spaces are constructed, 10% of the available parking spaces on site shall be equipped with Level 2 EVCS;
2. An additional 10% shall be provided with at least Level 1 EV Ready Circuits; and
3. An additional 30% shall be at least EV Capable.

Calculations for the required minimum number of spaces equipped with Level 2 EVCS, Level 1 EV Ready spaces and EV Capable spaces shall all be rounded up to the nearest whole number.

Construction plans and specifications shall demonstrate that all raceways shall be a minimum of 1" and sufficient for installation of EVCS at all required Level 1 EV Ready and EV Capable spaces; Electrical calculations shall substantiate the design of the electrical system to include the rating of equipment and any on-site distribution transformers, and have sufficient capacity to simultaneously charge EVs at all required EV spaces including Level 1 EV Ready and EV Capable spaces; and service panel or subpanel(s) shall have sufficient capacity to accommodate the required number of dedicated branch circuit(s) for the future installation of the EVSE.

Notes:

1. ALMS may be installed to increase the number of EV chargers or the amperage or voltage beyond the minimum requirements in this code. The option does not allow for installing less electrical panel capacity than would be required without ALMS.

5.106.5.3.2 Other nonresidential buildings: In nonresidential new construction buildings that are not designated primarily for office use, such as retail or institutional uses:

1. When 10 or more parking spaces are constructed, 6% of the available parking spaces on site shall be equipped with Level 2 EVCS;
2. An additional 5% shall be at least Level 1 EV Ready.
   Calculations for the required minimum number of spaces equipped with Level 2 EVCS and Level 1 EV Ready spaces shall be rounded up to the nearest whole number

   Exception: Installation of each Direct Current Fast Charger with the capacity to provide at least 80 kW output may substitute for 6 Level 2 EVCS and 5 EV Ready spaces after a minimum of 6 Level 2 EVCS and 5 Level 1 EV Ready spaces are installed.

5.106.5.3.3 Clean Air Vehicle Parking Designation. EVCS qualify as designated parking as described in Section 5.106.5.2 Designated parking for clean air vehicles.

Notes:

1. The California Department of Transportation adopts and publishes the California Manual on Uniform Traffic Control Devices (California MUTCD) to provide uniform standards and specifications for all official traffic control devices in California. Zero Emission Vehicle Signs and Pavement Markings can be found in the New Policies & Directives number 13-01. www.dot.ca.gov/hq/traffops/policy/13-01.pdf.
2. See Vehicle Code Section 22511 for EV charging spaces signage in off-street parking facilities and for use of EV charging spaces.
3. The Governor's Office of Planning and Research published a Zero-Emission Vehicle Community Readiness Guidebook which provides helpful information for

local governments, residents and businesses. www.opr.ca.gov/docs/ZEV_Guidebook.pdf.

4. Section 11B-812 of the 2019 California Building Code requires that a facility providing EVCS for public and common use also provide one or more accessible EVCS as specified in Table 11B-228.3.2.1. Chapter 11B applies to certain facilities including, but not limited to, public accommodations and publicly funded housing (see section 1.9 of Part 2 of the California Building Code). Section 11B-812 requires that "Parking spaces, access aisles and vehicular routes serving them shall provide a vertical clearance of 98 inches (2489 mm) minimum." It also requires that parking spaces and access aisles meet maximum slope requirements of 1 unit vertical in 48 units horizontal (2 percent slope) in any direction at the time of new building construction or renovation. Section 11B-812.5 contains accessible route requirements.
5. It is encouraged that shared parking, EV Ready are designated as "EV preferred."

~~**5.106.5.3.1 Single charging space requirements. [**N] When only a single charging space is required per Table 5.106.5.3.3, a raceway is required to be installed at the time of construction and shall be installed in accordance with the California Electrical Code. Construction plans and specifications shall include, but are not limited to, the following:~~

~~1. The type and location of the EVSE.~~
~~2. A listed raceway capable of accommodating a 208/240-volt dedicated branch circuit.~~
~~3. The raceway shall not be less than trade size 1."~~
~~4. The raceway shall originate at a service panel or a subpanel serving the area, and shall terminate in close proximity to the proposed location of the charging equipment and into a listed suitable cabinet, box, enclosure or equivalent.~~
~~**5.** The service panel or subpanel shall have sufficient capacity to accommodate a minimum 40-ampere dedicated branch circuit for the future installation of the EVSE.~~

~~**5.106.5.3.2 Multiple charging space requirements.**~~
~~When multiple charging spaces are required per Table 5.106.5.3.3 raceway(s) is/are required to be installed at the time of construction and shall be installed in accordance with the California Electrical Code. Construction plans and specifications shall include, but are not limited to, the following:~~

~~1. The type and location of the EVSE.~~
~~2. The raceway(s) shall originate at a service panel or a subpanel(s) serving the area, and shall terminate in close proximity to the proposed location of the charging equipment and into listed suitable cabinet(s), box(es), enclosure(s) or equivalent.~~
~~3. Plan design shall be based upon 40-ampere mini- mum branch circuits.~~
~~4. Electrical calculations shall substantiate the design of the electrical system, to include the rating of equipment and any on-site distribution~~
~~5. transformers and have sufficient capacity to simultaneously charge all required EVs at its full rated amperage.~~
~~6. The service panel or subpanel(s) shall have sufficient capacity to accommodate the required number of dedicated branch circuit(s) for the future installation of the EVSE.~~

~~**5.106.5.3.3 EV charging space calculation.** [N] Table 5.106.5.3.3 shall be used to determine if single or multiple charging space requirements apply for the future installation of EVSE.~~
~~Exceptions: On a case-by-case basis where the local enforcing agency has determined EV charging and infrastructure is not feasible based upon one or more of the following conditions:~~

~~1. Where there is insufficient electrical supply~~

2. Where there is evidence suitable to the local enforcing agency substantiating that additional local utility infrastructure design requirements, directly related to the implementation of Section 5.106.5.3, may adversely impact the construction cost of the project.

TABLE 5.106.5.3.3

TOTAL NUMBER OF ACTUAL PARKING SPACES	NUMBER OF REQUIRED EV CHARGING SPACES
0-9	0
10-25	1
26-50	2
51-75	4
76-100	5
101-150	7
151-200	10
201 and over	6 percent of total[1]

1. Calculation for spaces shall be rounded up to the nearest whole number.

5.106.5.3.4 [N] Identification. The service panel or subpanel(s) circuit directory shall identify the reserved overcurrent protective device space(s) for future EV charging as "EV CAPABLE". The raceway termination location shall be permanently and visibly marked as "EV CAPABLE Ready".

5.106.5.3.5 [N] Future charging spaces qualify as designated parking as described in Section 5.106.5.2 Designated parking for clean air vehicles.

SECTION 3: EXEMPTION FROM CEQA

The City Council finds, pursuant to Title 14 of the California Administrative Code, Section 15061(b)(3) that this Ordinance is exempt from the requirements of the California Environmental Quality Act ("CEQA") on the grounds that these standards are more stringent than the State energy standards, there are no reasonably foreseeable adverse impacts and there is no possibility that the activity in question may have a significant effect on the environment.

SECTION 4: SEVERABILITY

If any part of this Ordinance is held to be invalid or inapplicable to any situation by a court of competent jurisdiction, such decision shall not affect the validity of the remaining portions of this Ordinance or the applicability of this Ordinance to other situations.

SECTION 5: EFFECTIVE DATE

This Ordinance shall become effective following approval by the California Energy Commission, but in no event before January 1, 2021.

SECTION 6: POSTING

Within fifteen (15) days of its adoption, the Ordinance shall be posted in three (3) public places within the City of East Palo Alto, and the Ordinance, or a summary of the Ordinance prepared by the City Attorney, shall be published in a local newspaper used to publish official notices for the City of East

Palo Alto prior to the effective date.

INTRODUCED on the 6th of October, 2020.

PASSED AND ADOPTED as an ordinance of the City of East Palo Alto at a regular meeting of said City Council on the _____ of October 2020, by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

Regina Wallace-Jones, Mayor

ATTEST:

Walfred Solorzano, City Clerk

APPROVED AS TO FORM:

Rafael E. Alvarado Jr., City Attorney

Discussion Guide

To provide further context to the City Council in considering the adoption of a Reach Code Ordinance, the following items were discussed at the September 1, 2020 Council session and is included here for consideration:

1. *Types of Reach Codes*
2. *Outstanding Discussion Items*
3. *Affordable Housing Exemption*

1. Types of Reach Codes

There are three types of reach codes that have recently been adopted that encourage building electrification:

- The **electric preferred** model allows a mixed-fuel option for new buildings. Under this model, new developments may choose to build all-electric; or they may use natural gas provided they meet 15% higher efficiency standards, and install raceway and/or circuits for future electric appliances. This approach incentivizes builders to choose all-electric since installing gas infrastructure, meeting higher energy efficiency standards, and pre-wiring for electric appliances adds cost.
- The **all-electric required** model prohibits gas plumbing from being installed to specific appliances, but does allow for some exceptions (see Menlo Park model below). When an appliance is exempted, builders are still required to install raceway and/or circuits for future electric appliances.
- The **natural gas ban** model prohibits a natural gas lateral to the building and has very limited exceptions. The ban is adopted as a municipal code ordinance, rather than an energy code amendment like the electric-preferred or all-electric required models.

Staff is recommending the **all-electric required** model as a moderate approach designed to require the major sources of greenhouse gas emissions, gas space heating and gas water heating, be all-electric, while allowing for flexibility for specific circumstances that are challenging to electrify.

2. Outstanding Discussion Items

The following summarizes one outstanding item that was discussed on September 1, 2020 with City Council:

- **Should we require residential cooking and fireplaces to be all-electric, or exempt it?**
  Staff recommends requiring that cooking and fireplaces be all-electric. While there are several pros and cons associated with this decision, the pros of all-electric cooking and fireplaces are more impactful to public and environmental health, as shown by the table below:

Table 1: Pros and Cons of Requiring All-Electric Residential Cooking

Pros	Cons
Cost savings -- Developments gain a significant construction cost savings from avoiding gas service to the building.	No gas choice -- Removes the option from developers that believe gas appliances may have marketing value.
Improved health -- Gas stoves can be a large source of toxic pollutants indoors, and indoor pollution from gas stoves has been shown to reach levels that would be illegal outdoors.[1]	Unique cuisines -- Residents may have challenges cooking particular cuisines, such as those requiring a wok. Conversion kits exist but cost more.
Consumer satisfaction -- Induction ranges are among the highest-ranking ranges on Consumer Reports. Residents likely to appreciate induction cooking once they've tried it.	Unfamiliarity -- Some residents are accustomed to natural gas flames and reticent to try a new cooking method.

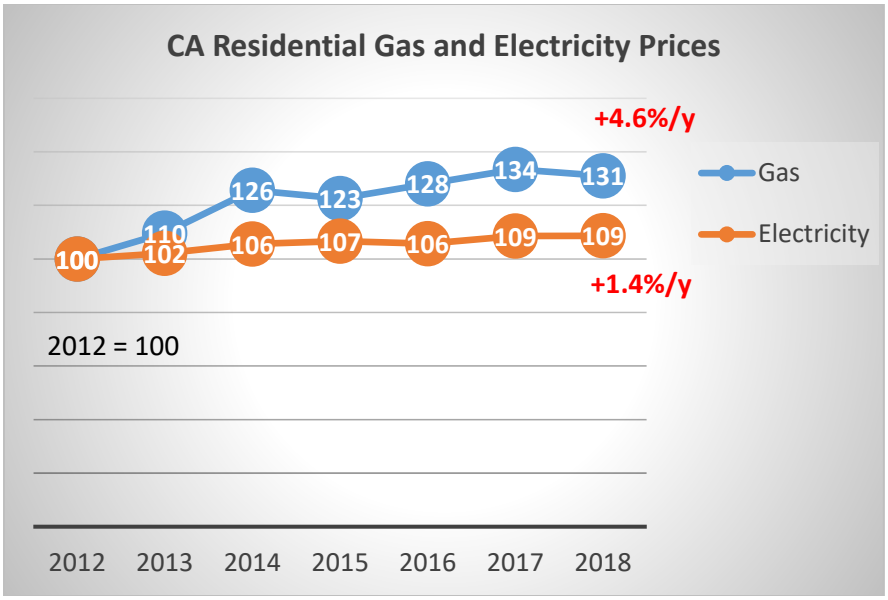
- **When should a major renovation constitute as new construction?**

Staff is recommending a definition that an existing building be required to meet the reach code if 50% or more of the existing foundation or 50% or more of the existing framing above the sill plate is replaced. At these significant thresholds, major upgrades to electrical infrastructure and appliances are likely to take place. Nonetheless, staff has allowed an exception for existing buildings with physical constraints, such as lack of space for transformers, that prevent conforming to the All-Electric Building requirements.

Representatives from PCE explained that natural gas prices in California increased 3x faster than electricity prices from 2012 to 2018. See the following figure from the U.S. Energy Information Administration (EIA).

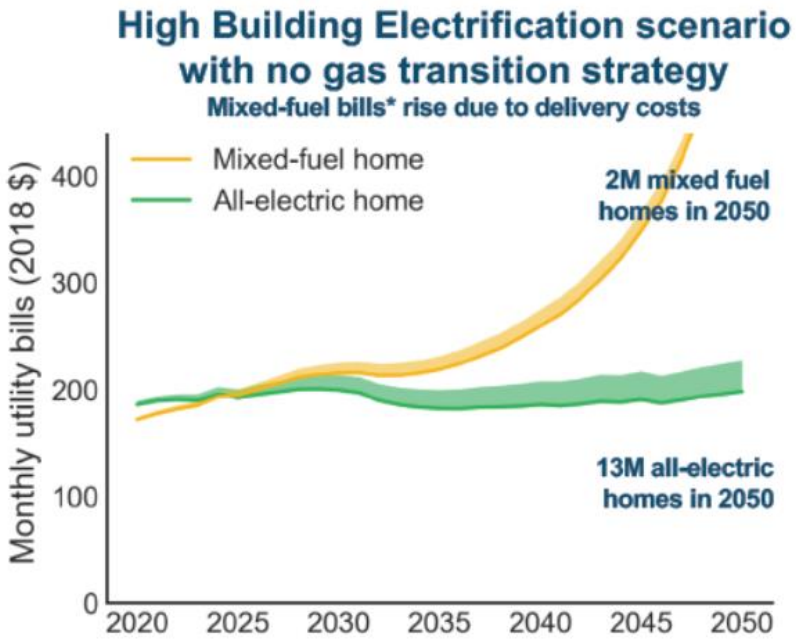
Figure 1: California Residential Gas and Electricity Prices

[1] Mothers OutFront, Physicians for Social Responsibility, Sierra Club, Rocky Mountain Institute. (2020) Health Effects from Gas Stove Pollution. https://www.psr.org/wp-content/uploads/2020/05/health-effects-from-gas-stove-pollution.pdf



In a high electrification future, which the state of California is strongly investigating and enabling, gas prices would be expected to exponentially rise. See the following figure from the California Energy Commission (CEC)

Figure 2: E3 study on the Future of Natural Gas Distribution in California



In addition, staff explained that recently investor owned utilities have released a third cost effectiveness analysis focusing on mid-rise multifamily buildings. In alignment with the previously distributed low-rise residential and non-residential studies developed in 2019, the new study shows that it is cost-effective to build an all-electric multifamily building that complies with the energy code.

3. Affordable Housing Exemption

The Ordinance exempts multifamily affordable housing projects that are financed with tax credits from the building electrification requirement and allows for exemption from the EV infrastructure requirement where the utility infrastructure installation cost exceeds $400 per unit. These exemptions are intended to reduce the added costs for affordable projects that are already subject to strict regulation and requirements specific to the financing source.

Additionally, the Ordinance requires that an affordable project must be found to be in compliance with the City's Inclusionary Housing Ordinance through staff approval of an Inclusionary Housing Plan. This step in the Planning approval process adds certainty that a project's exemption from the Ordinance's requirements is based on its status as a multifamily rental seeking tax credit financing.

EAST PALO ALTO
CITY COUNCIL
STAFF REPORT

DATE: October 20, 2020

TO: Honorable Mayor and Members of the City Council

VIA: Jaime M. Fontes, City Manager

BY: Amy Chen, Community & Economic Development Director
Patrick Heisinger, Assistant City Manager

SUBJECT: Adoption of Building Electrification and Electric Vehicle Infrastructure Reach Codes

Recommendation

Waive the second reading and Adopt an Ordinance for Building Electrification and Electric Vehicle Infrastructure Reach Codes.

Alignment with City Council Strategic Plan

This recommendation is primarily aligned with:

Priority No. 3: Increase Organizational Effectiveness and Efficiency
Priority No. 6: Create a Healthy and Safe Community

Executive Summary

On October 6, 2020, the City Council waived the first reading and introduced a Building Electrification and Electric Vehicle Infrastructure Reach Codes ("Reach Codes") to be effective January 1, 2021 (Attachment 1). Prior to introduction, the Council directed City staff to make the following change to the proposed ordinance, as set forth in Attachment 1 and highlighted below in double underlined text:

> Exception 2: All-Electric **domestic water heating** requirements shall not apply to new residential structures that **have central water heating and** entirely consist of affordable rental units, defined as units rented at an amount consistent with the maximum rent levels for a housing development that receives an allocation of state or federal low-income housing tax credits from the California Tax Credit Allocation Committee. Residential developments meeting the above definition must have an Inclusionary Housing Plan that is approved by the Housing Division pursuant to Section 18.37.090.

The City Council introduced the attached ordinance with the following vote:

AYES: Mayor Wallace-Jones, Vice-Mayor Romero, Councilmembers Gauthier, Abrica, and Moody
NOES:
ABSENT:
ABSTAIN:

Fiscal Impact

There is no fiscal impact with the items described in this staff report.

Public Notice

The public was provided notice of this agenda item by posting the City Council agenda on the City's official bulletin board outside City Hall and making the agenda and report available at the City's website and at the San Mateo Co. Library located at 2415 University Avenue, East Palo Alto.

Environmental

The items described in this staff report are not considered a project under the provisions of the California Environmental Quality Act (CEQA)

Pursuant to Section 15061(b)(3) of the California Code of Regulations, this ordinance is exempt from the requirements of the California Environmental Quality Act (CEQA) in that it is not a Project which has the potential for causing a significant effect on the environment.

Attachments

1. Ordinance

ORDINANCE NO. _____

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF EAST PALO ALTO

AMENDING MUNICIPAL CODE CHAPTER 15.25 OF TITLE 15 (BUILDINGS AND CONSTRUCTION) OF THE EAST PALO ALTO MUNICIPAL CODE TO ADOPT A LOCAL "REACH" CODEAND ADOPTING FINDINGS JUSTIFYING THE AMENDMENTS TO THE 2019 CALIFORNIA GREEN BUILDING CODE AND THE 2019 CALIFORNIA ENERGY CODE

WHEREAS, the City of East Palo Alto ("City") wishes to adopt a building code in accordance with law and to use the most updated regulations in the processing of development in the City;

WHEREAS, California Health and Safety Code section 17958 requires that cities adopt building regulations that are substantially the same as those adopted by the California Building Standards Commission and contained in the California Building Standards;

WHEREAS, the California Energy Code is a part of the California Building Standards which implements minimum energy efficiency standards in buildings through mandatory requirements, prescriptive standards, and performances standards;

WHEREAS, California Health and Safety Code Sections 17958.5, 17958.7 and 18941.5 provide that the City may make changes or modifications to the building standards contained in the California Building Standards based upon express findings that such changes or modifications are reasonably necessary because of local climatic, geological or topographical conditions;

WHEREAS, the City Council of the City of East Palo Alto finds that each of the amendments, additions and deletions to the California Energy Code contained in this ordinance are reasonably necessary because of local climatic, geological or topographical conditions described in Section 1;

WHEREAS, Public Resources Code Section 25402.l(h)2 and Section 10-106. of the Building Energy Efficiency Standards (Standards) establish a process which allows local adoption of energy standards that are more stringent than the statewide Standards, provided that such local standards are cost effective and the California Energy Commission finds that the standards will require buildings to be designed to consume no more energy than permitted by the California Energy Code;

WHEREAS, that such modifications will result in designs that consume less energy than they would under the 2019 State Energy Code through the California Codes and Standards Reach Code Program, has performed cost effectiveness analyses as required by the California Energy Commission for the local amendments to the California Energy Code contained in this ordinance which is hereby incorporated by reference;

WHEREAS, based upon these analyses, the City Council of the City of East Palo Alto finds that the local amendments to the California Energy Code contained in this ordinance are cost effective and will require buildings to be designed to consume no more energy than permitted by the California Energy Code;

WHEREAS, because of the City's unique local climatic, geologic and topographic conditions, the City desires to make amendments and additions to the code.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF EAST PALO ALTO DOES ORDAIN AS FOLLOWS:

SECTION 1: FINDINGS AND DETERMINATIONS

The following local climatic, conditions justify modifications to the California Building Standards Code:

A. Climatic: The City is located in Climate Zones 3 and 4 as established in the 2019 California Energy Code. Climate Zones 3 and 4 incorporate mostly coastal communities from Marin County to southern Monterey County including San Francisco. The City experiences precipitation ranging from 13 to 20 inches per year with an average of approximately 15 inches per year. Ninety-five percent of precipitation falls during the months of November through April, leaving a dry period of approximately six months each year. Relative humidity remains moderate most of the time. Temperatures in the summer average around 80 degrees Fahrenheit and in the winter in the mid 50 degrees Fahrenheit. Prevailing winds in the area come from the west with velocities generally in the 12 miles per hour range, gusting from 25 to 35 miles per hour. These climatic conditions along with the greenhouse emissions generated from structures in both the residential and nonresidential sectors requires exceeding the energy standards for building construction established in the 2019 California Buildings Standards Code. The City Council also adopted a Climate Action Plan that has a goal of reducing greenhouse gas emissions. In order to achieve and maintain this goal, the City needs to adopt policies and regulations that reduce the use of fossil fuels that contribute to climate change, such as natural gas in buildings, in new development. Human activities, such as burning natural gas to heat buildings, releases greenhouse gases into the atmosphere and causes an overall increase in global average temperature. This causes sea levels to rise, affecting the City's shoreline and infrastructure.

   Roughly 49% of the City remains in a regulatory flood inundation zone associated with the 100-year sea level rise FEMA maps adopted April, 2019. San Francisquito Creek also runs through the City, which creates an increasing potential flooding risk with climate change as a result of human generated greenhouse gas emissions. East Palo Alto is vulnerable to sea level rise where new development is proposed in this code cycle. New buildings that are directly vulnerable to sea level rise should avoid generating additional greenhouse gas emissions. The proposed Reach Code would ensure that new buildings use cleaner sources of energy that are greenhouse gas free.

   Vehicular traffic through East Palo Alto is significant, and it continues to increase as East Palo Alto, and it's neighboring cities, become an employment center as well as the location of residential projects. Moreover, the observed increase in plug-in electric vehicle adoption reduces the climate impact of vehicular greenhouse gas emissions.

B. Geologic: The City of East Palo Alto is subject to earthquake hazard caused by its proximity to San Andreas fault. This fault runs from Hollister, through the Santa Cruz Mountains, epicenter of the 1989 Loma Prieta earthquake, then on up the San Francisco Peninsula, then offshore at Daly City near Mussel Rock. This is the approximate location of the epicenter of the 1906 San Francisco earthquake. The other fault is Hayward Fault. This fault is about 74 miles long, situated mainly along the western base of the hills on the east side of San Francisco Bay. Both of these faults are considered major Northern California earthquake faults which may experience rupture at any time. Thus, because the City is within a seismic area which includes these earthquake faults, the modifications and changes cited herein are designed to better limit property damage as a result of seismic activity and to

establish criteria for repair of damaged properties following a local emergency.

In the event of a natural disaster such as an earthquake or fire, the natural gas infrastructure in and around the City of East Palo Alto presents a risk to the life and safety of residents and first responders. Moreover, the electric grid system can be brought back online more swiftly than the natural gas pipeline when the community is recovering from such an event.

C. Topographic: The City of East Palo Alto is contiguous with the San Francisco Bay, resulting in a natural receptor for storm and waste water run-off. Also, the City is located in an area that is relatively high liquefaction potential given its proximity to the Bay. The surface condition consists mostly of stiff to dense sandy clay, which is highly plastic and expansive in nature. The aforementioned conditions within the City create hazardous conditions for which departure from California Building Standards Code is warranted.

SECTION 2: CHAPTER 15.25 OF THE EAST PALO ALTO MUNICIPAL CODE

The City Council hereby amends the following section of Chapter 15.25 of the East Palo Alto Municipal Code to read as follows (with text in ~~strikeout~~ indicating deletion and underlined text indicating addition). Sections and subsections that are not amended by this Ordinance are not included below and shall remain in full force and effect.

SECTION 100.0 – Scope.

(e) Sections applicable to particular buildings. TABLE 100.0-A and this subsection list the provisions of Part 6 that are applicable to different types of buildings covered by Section 100.0(a).

1. All buildings. Sections 100.0 through 110.12 apply to all buildings.
   EXCEPTION to Section 100.0(e) 1: Spaces or requirements not listed in TABLE 100.0-A.

2. Newly constructed buildings.
   A. All newly constructed buildings. Sections 110.0 through 110.12 apply to all newly constructed buildings within the scope of Section 100.0(a). In addition, newly constructed buildings shall meet the requirements of Subsections B, C, D or E, as applicable~~;~~ and shall be an All-Electric Building as defined in Section 100.1(b). For the purposes of All-Electric Building requirements, newly constructed buildings as defined in Section 100.1 shall include a construction project where an alteration includes replacement of over 50% of the existing foundation for purposes other than a repair or reinforcement as defined in California Existing Building Code Section 202; or when over 50% of the existing framing above the sill plate is removed or replaced for purposes other than repair. If either of these criteria are met within a 3-year period, measured from the date of the most recent previously obtained permit final date, that structure is considered new construction and shall be subject to the All-Electric Building requirements. The final determination whether a project meets the definition of substantial reconstruction/alteration shall be made by a designated building official.

   Exception 1: Non-Residential Buildings containing a Scientific Laboratory Building, such area may contain a non-electric Space Conditioning System.

   Exception 2: All-Electric **domestic water heating** requirements shall not apply to new residential structures that **have central water heating and** entirely consist of affordable

rental units, defined as units rented at an amount consistent with the maximum rent levels for a housing development that receives an allocation of state or federal low-income housing tax credits from the California Tax Credit Allocation Committee. Residential developments meeting the above definition must have an Inclusionary Housing Plan that is approved by the Housing Division pursuant to Section 18.37.090.

Exception 3: Exemption for public agency owned and operated emergency centers. To take advantage of this exception applicant shall provide third party verification that All-Electric space heating requirement is not cost effective and feasible.

Exception 4: Multifamily residential building projects that have been granted planning entitlements within two years or less, or have been approved , before the effective date of this ordinance are not required to install all-electric water heating systems. If the Building Official grants a modification pursuant to this Exception, the applicant shall comply with the pre-wiring provision of Note 1 below.

Exception 5: If the applicant establishes that there is not an all-electric prescriptive compliance pathway for the building under the Energy Code, and that the building is not able to achieve the performance compliance standard applicable to the building under the Energy Code using commercially available technology and an approved calculation method, then the Building Official may grant a modification. If the Building Official grants a modification pursuant to this Exception, the applicant shall comply with the pre-wiring provision of Note 1 below.

Exception 6: Accessory Dwelling Units and Junior Accessory Dwelling Units shall be exempt from the all-electric building provisions of this section. For purposes of this exception, “Accessory Dwelling Unit” and “Junior Accessory Dwelling Unit” have the same definitions as set out in Government Code Sections 65852.2 and 65852.22, respectively.

Exception 7: Non-residential buildings containing a for-profit restaurant open to the public or an employee kitchen may apply to the Building Official for an exception to install gas-fueled cooking appliances. This request must be based on a business-related reason to cook with a flame that cannot be reasonably achieved with an electric fuel source. Examples include barbeque-themed restaurants and pizza ovens. The Building Official may grant this exception if they find the following:

1. There is a business-related reason to cook with a flame;
2. This need cannot be reasonably achieved with an electric fuel source;
3. The applicant has employed reasonable methods to mitigate the greenhouse gas impacts of the gas-fueled appliance;
4. The applicant shall comply with the pre-wiring provision of Note 1 below.

The Building Official’s decision shall be final unless the applicant appeals to the City Council within 15 days of the appointed body’s decision. The City Council’s decision on the appeal shall be final.

Exception 8: When improvements to existing buildings contain physical constraints that prevent conformance to the All-Electric Building requirements, the applicant may request an exception. In applying for an exception, the burden is on the applicant to identify the size requirements to comply with an All-Electric Building.

Note 1: If natural gas appliances are used in any of the above exceptions 1-8, natural gas appliance locations must also be electrically pre-wired for future electric appliance installation. They shall include the following:

1. A dedicated circuit, phased appropriately, for each appliance, with a minimum amperage requirement for a comparable electric appliance (see manufacturer's recommendations) with an electrical receptacle or junction box that is connected to the electric panel with conductors of adequate capacity, extending to within 3 feet of the appliance and accessible with no obstructions. Appropriately sized conduit may be installed in lieu of conductors;

2. Both ends of the conductor or conduit shall be labeled with the words "For Future Electric appliance" and be electrically isolated;

3. A circuit breaker shall be installed in the electrical panel for the branch circuit and labeled, an example is as follows (i.e "For Future Electric Range;") and

4. All electrical components, including conductors, receptacles, junction boxes, or blank covers, related to this section shall be installed in accordance with the California Electrical Code.

Note 2: If any of the exceptions 1-8 are granted, the Building Official shall have the authority to approve alternative materials, designs and methods of construction per CBC 104,

Section 100.1(b) is modified by adding the following definitions:

ALL ELECTRIC BUILDING: is a building that has no natural gas or propane plumbing installed within the building, and that uses electricity as the source of energy for its space heating, water heating (including pools and spas), cooking appliances, and clothes drying appliances. All Electric Buildings may include solar thermal pool heating.

Scientific Laboratory Building: is a building or area where research, experiments, and measurement in medical, and life sciences are performed and/or stored requiring examination of fine details. The building may include workbenches, countertops, scientific instruments, and supporting offices.

Section 110.2 is modified as follows:

SECTION 110.2 – MANDATORY REQUIREMENTS FOR SPACE-CONDITIONING EQUIPMENT

Certification by Manufacturers. Any space-conditioning equipment listed in this section, meeting the requirements of section 100.0 (e)2A, may be installed only if the manufacturer has certified to the Commission that the equipment complies with all the applicable requirements of this section.

Section 110.3 is modified as follows:

SECTION 110.3 – MANDATORY REQUIREMENTS FOR SERVICE WATER-HEATING SYSTEMS AND EQUIPMENT

(a) Certification by manufacturers. Any service water-heating system or equipment, meeting the requirements of section 100.0 (e)2A, may be installed only if the manufacturer has certified that the system or equipment complies with all of the requirements of this subsection for that system or equipment.

Section 110.4 is modified as follows:

SECTION 110.4 – MANDATORY REQUIREMENTS FOR POOL AND SPA SYSTEMS AND EQUIPMENT

(a) Certification by Manufacturers. Any pool or spa heating system or equipment, meeting the requirements of section 100.0 (e)2A, may be installed only if the manufacturer has certified that the system or equipment has all of the following:

Section 110.5 is modified as follows:

SECTION 110.5 – NATURAL GAS CENTRAL FURNACES, COOKING EQUIPMENT, POOL AND SPA HEATERS, AND FIREPLACES: PILOT LIGHTS PROHIBITED

Any natural gas system or equipment, meeting the requirements of *Section 100.0 (e)2A,* listed below may be installed only if it does not have a continuously burning pilot light:

SECTION 140.0(b) is modified as follows:

(b) The requirements of Sections 120.0 through 130.5 (mandatory measures for nonresidential, high-rise residential and hotel/motel buildings), and for all newly constructed buildings:

1. The entire solar zone, as specified in Section 110.10, shall have a solar photovoltaic system installed.

Exception 1 to 140.0(b)1: The building official may grant a modification if the applicant demonstrates that the required percentage of PV installation will over-generate the annual kWh required to operate the proposed building;

Exception 2 to 140.0(b)1: If the applicant demonstrates that conditions exist where excessive shading occurs, a performance equivalency approved by the Building Official may be used as an alternative.

Exception 3 to 140.0(b)1: Vegetative roofs covering 35 percent of the roof area or greater, meeting all relevant code requirements including considerations for wind, fire, and structural loads.

SECTION 3: CHAPTER 15.11 OF THE EAST PALO ALTO MUNICIPAL CODE

The City Council hereby amends the following section of Chapter 15.11 of the East Palo Alto Municipal Code to read as follows (with text in ~~strikeout~~ indicating deletion and underlined text indicating addition). Sections and subsections that are not amended by this Ordinance are not included below, and shall remain in full force and effect.

SECTION 2
DEFINITIONS

EV Capable: A parking space linked to a listed electrical panel with sufficient capacity to provide at least 110/120 volts and 20 amperes to the parking space. Raceways linking the electrical panel and parking space only need to be installed in spaces that will be inaccessible in the future, either trenched underground or where penetrations to walls, floors, or other partitions would otherwise be required for future installation of branch circuits. Raceways must be at least 1" in diameter and may be sized for multiple circuits as allowed by the California Electrical Code. The panel circuit directory shall identify the overcurrent protective device space(s) reserved for EV charging as "EV CAPABLE." Construction documents shall indicate future completion of raceway from the panel to the parking space, via the installed inaccessible raceways.

Level 1 EV Ready Space: A parking space served by a complete electric circuit with a minimum of 110/120 volt, 20-ampere capacity including electrical panel capacity, overprotection device, a minimum 1" diameter raceway that may include multiple circuits as allowed by the California Electrical Code, wiring, and either;
a) a receptacle labelled "Electric Vehicle Outlet" with at least a ½" font adjacent to the parking space; or,
b) electric vehicle supply equipment (EVSE).

Level 2 EV Ready Space: A parking space served by a complete electric circuit with 208/240 volt, 40-ampere capacity including electrical panel capacity, overprotection device, a minimum 1" diameter raceway that may include multiple circuits as allowed by the California Electrical Code, wiring, and either;
a) a receptacle labelled "Electric Vehicle Outlet" with at least a ½" font adjacent to the parking space; or,
b) electric vehicle supply equipment (EVSE) with a minimum output of 30 amperes.

Electric Vehicle Charging Station (EVCS): A parking space that includes installation of electric vehicle supply equipment (EVSE) with a minimum output of 30 amperes connected to a Level 2 EV Ready Circuit. EVCS installation may be used to satisfy a Level 2 EV Ready Circuit requirement.

Automatic Load Management Systems (ALMS): (ALMS) A control system which allows multiple Level 2 EV chargers to share a circuit or panel and automatically reduce power at each charger, providing the opportunity to reduce electrical infrastructure costs and/or provide demand response capability. ALMS is only allowed for Level 2 EVCS, Level 2 EV Ready, and Level 1 EV Ready Circuits. ALMS systems must be designed to deliver at least 1.4kW per charger. The connected amperage on-site shall not be lower than the required connected amperage per Part 11, 2019 California Green Building Code for the relevant building types.

SECTION 4
RESIDENTIAL MANDATORY MEASURES

4.106.4 Electric vehicle (EV) charging for new construction. New construction shall comply with Sections 4.106.4.1 and 4.106.4.2 to facilitate future installation and use of EV chargers. ~~Electric vehicle supply equipment (EVSE) shall be installed in accordance with the California Electrical Code, Article 625.~~

Exceptions:

~~1. On a case-by-case basis, where the local enforcing agency has determined EV charging and infra- structure are not feasible based upon one or more of the following conditions:~~

~~1.1. Where there is evidence substantiating that meeting the requirements will alter the local utility infra- structure design requirements on the utility side of the meter so as to increase the utility side cost to the homeowner or the developer by more than $400.00 per dwelling unit.~~

1. Where there is no commercial power supply.
2. Accessory Dwelling Units (ADU) and Junior Accessory Dwelling Units (JADU) without additional parking facilities.
3. Spaces accessible only by automated mechanical car parking systems are excepted from providing EV charging infrastructure.
4. Multifamily residential building projects that have been granted entitlements within two years or less before the effective date of this ordinance shall provide at least ten (10) percent of the total number of parking spaces on a building site, provided for all types of parking facilities, with Level 2 EV Ready

Circuits. Calculations for the required number of EV spaces shall be rounded up to the nearest whole number.

5. East Palo Alto may consider allowing exceptions through their local process, on a case by case basis, if a building permit applicant provides documentation detailing that the increased cost of utility service or on-site transformer capacity would exceed an average of $4,500 among parking spaces with Level 2 EV Ready Circuits and Level 1 EV Ready Circuits. If costs are found to exceed this level, the applicant shall provide EV infrastructure up to a level that would not exceed this cost for utility service or on-site transformer capacity.
6. Where there is evidence substantiating that meeting the requirements will alter the local utility infrastructure design requirements on the utility side of the meter so as to increase the utility side cost by more than $400 per dwelling unit for residential buildings that entirely consist of either affordable rental units, defined as units rented at an amount consistent with the maximum rent levels for a housing development that receives an allocation of state or federal low-income housing tax credits from the California Tax Credit Allocation Committee. Residential developments meeting the above definition must have an Inclusionary Housing Plan that is approved by the Housing Division pursuant to Section 18.37.090. If costs are found to exceed this level, the applicant shall provide EV infrastructure up to a level that would not exceed this cost for utility service or on-site transformer capacity.

4.106.4.1 New one- and two-family dwellings and town- houses with attached private garages.

For each dwelling unit, install a Level 2 EV Ready Circuit and Level 1 EV Ready Circuit. ~~listed raceway to accommodate a dedicated 208/240-volt branch circuit. The raceway shall not be less than trade size 1 (nominal 1-inch inside diameter). The raceway shall originate at the main service or subpanel and shall terminate into a listed cabinet, box or other enclosure in close proximity to the proposed location of an EV char- ger. Raceways are required to be continuous at enclosed, inaccessible or concealed areas and spaces. The service panel and/or subpanel shall provide capacity to install a 40-ampere minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent protective device.~~

Exception: For each dwelling unit with only one parking space, install a Level 2 EV Ready Circuit.

4.106.4.1.1 Identification. ~~The service panel or sub- panel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging as "Level 2 EV CAPABLE".~~ The raceway termination location shall be permanently and visibly marked as ~~"EV CAPABLE".~~ "Level 2 EV-Ready".

4.106.4.2 New multifamily dwellings. ~~If residential parking is available, ten (10) percent in total number of parking spaces on a building site, provided for all types of parking facilities, shall be electric vehicle charging spaces (EV spaces) capable of supporting future EVSE. Calculations for the required number of EV spaces shall be rounded up to the nearest whole number.~~ The following requirements apply to all new multifamily dwellings:

1. For multifamily buildings with less than or equal to 20 dwelling units, each dwelling unit with parking shall be provided with access to a parking space with a Level 2 EV Ready Circuit.
2. When more than 20 multifamily dwelling units are constructed on a building site
    a. 10% of the dwelling units with parking space(s) shall be provided with access to at least one Level 2 EV Ready Circuit. Calculations for the required minimum number of Level 2 EV Ready spaces shall be rounded up to the nearest whole number.

b. In addition, each remaining dwelling unit with parking space(s) shall be provided with access to at least a Level 1 EV Ready Circuit.

Notes:

1. ~~Construction documents are intended to demonstrate the project's capability and capacity for facilitating future EV charging.~~
2. ~~There is no requirement for EV spaces to be constructed or available until EV chargers are installed for use.~~

1. ALMS may be installed to decrease electrical service and transformer costs associated with EV Charging Equipment subject to review of the East Palo Alto Planning and Building Divisions.
2. Installation of Level 2 EV Ready Circuits above the minimum number required level may offset the minimum number Level 1 EV Ready Circuits required on a 1:1 basis.
3. The requirements apply to multifamily buildings with parking spaces including: a) assigned or leased to individual dwelling units, and b) unassigned residential parking.
4. In order to adhere to accessibility requirements in accordance with California Building Code Chapters 11A and/or 11B, it is recommended that all accessible parking spaces for covered newly constructed multifamily dwellings are provided with Level 1 or Level 2 EV Ready Circuits.

4.106.4.2.1.1 Electric vehicle charging stations (EVCS). When EV chargers are installed, EV spaces required by Section 4.106.4.2.2, Item 3, shall comply with at least one of the following options:

1. The EV space shall be located adjacent to an accessible parking space meeting the requirements of the *California Building Code*, Chapter 11A, to allow use of the EV charger from the accessible parking space.
2. The EV space shall be located on an accessible route, as defined in the *California Building Code*, Chapter 2, to the building.

Exception: Electric vehicle charging stations designed and constructed in compliance with the California Building Code, Chapter 11B, are not required to comply with Section 4.106.4.2.1.1 and Section 4.106.4.2.2, Item 3.

Note: Electric vehicle charging stations serving public housing are required to comply with the *California Building Code*, Chapter 11 B.

4.106.4.2.2 Electric vehicle charging space (EV space) dimensions. Refer to East Palo Alto Development Code for parking dimension requirements. ~~The EV spaces shall be designed to comply with the following:~~

~~The EV spaces shall be designed to comply with the following:~~

~~1. The minimum length of each EV space shall be 18 feet (5486 mm).~~

~~2. The minimum width of each EV space shall be 9 feet (2743 mm).~~

~~3. One in every 25 EV spaces, but not less than one, shall also have an 8-foot (2438 mm) wide minimum aisle. A 5-foot (1524 mm) wide minimum aisle shall be permitted provided the minimum width of the EV space is 12 feet (3658 mm).~~

~~1. Surface slope for this EV space and the aisle shall not exceed 1 unit vertical in 48 units horizontal (2.083 percent slope) in any direction.~~

~~**4.106.4.2.3**~~

~~**Single EV space required.** Install a listed raceway capable of accommodating a 208/240-~~

~~volt dedicated branch circuit. The raceway shall not be less than trade size 1 (nominal 1-inch inside diameter). The raceway shall originate at the main service or subpanel and shall terminate into a listed cabinet, box or enclosure in close proximity to the proposed location of the EV spaces. Construction documents shall identify the raceway termination point. The service panel and/or subpanel shall provide capacity to install a 40-ampere minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit over-current protective device.~~

~~**4.106.4.2.4 Multiple EV spaces required**. Construction raceway termination point and proposed location of future EV spaces and EV chargers Construction documents shall also pro- vide information on amperage of future EVSE, raceway method(s), wiring schematics and electrical load calculations to verify that the electrical panel service capacity and electrical system, including any on-site distribution transformer(s), have sufficient capacity to simultaneously charge all EVs at all required EV spaces at the full rated amperage of the EVSE. Plan design shall be based upon a 40-ampere minimum branch circuit. Raceways and related components that are planned to be installed underground, enclosed, inaccessible or in concealed areas and spaces shall be installed at the time of original construction.~~

~~**4.106.4.2.5 Identification.** The service panel or sub- panel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging purposes as "EV CAPABLE" in accordance with the California Electrical Code.~~

SECTION 5
NONRESIDENTIAL MANDATORY MEASURES

…

5.106.5.3 Electric vehicle (EV) charging. [N] New construction shall comply with Section 5.106.5.3.1 or Section 5.106.5.3.2 to facilitate future installation and use of EV chargers ~~of electric vehicle supply equipment (EVSE). When EVSE(s) is/are installed, it shall be in accordance with the *California Building Code*, the *California Electrical Code* and as follows:~~

Exception:

1. Where there is no commercial power supply.
2. Spaces accessible only by automated mechanical car parking systems are excepted from providing EV charging infrastructure.

5.106.5.3.1 Office buildings: In nonresidential new construction buildings designated primarily for office use with parking:

1. When 10 or more parking spaces are constructed, 10% of the available parking spaces on site shall be equipped with Level 2 EVCS;
2. An additional 10% shall be provided with at least Level 1 EV Ready Circuits; and
3. An additional 30% shall be at least EV Capable.

Calculations for the required minimum number of spaces equipped with Level 2 EVCS, Level 1 EV Ready spaces and EV Capable spaces shall all be rounded up to the nearest whole number.

Construction plans and specifications shall demonstrate that all raceways shall be a minimum of 1" and sufficient for installation of EVCS at all required Level 1 EV Ready and EV Capable spaces; Electrical calculations shall substantiate the design of the electrical system to include the rating of equipment and any on-site distribution transformers, and have sufficient capacity

to simultaneously charge EVs at all required EV spaces including Level 1 EV Ready and EV Capable spaces; and service panel or subpanel(s) shall have sufficient capacity to accommodate the required number of dedicated branch circuit(s) for the future installation of the EVSE.

Notes:

1. ALMS may be installed to increase the number of EV chargers or the amperage or voltage beyond the minimum requirements in this code. The option does not allow for installing less electrical panel capacity than would be required without ALMS.

5.106.5.3.2 Other nonresidential buildings: In nonresidential new construction buildings that are not designated primarily for office use, such as retail or institutional uses:

1. When 10 or more parking spaces are constructed, 6% of the available parking spaces on site shall be equipped with Level 2 EVCS;
2. An additional 5% shall be at least Level 1 EV Ready.
   Calculations for the required minimum number of spaces equipped with Level 2 EVCS and Level 1 EV Ready spaces shall be rounded up to the nearest whole number

   Exception: Installation of each Direct Current Fast Charger with the capacity to provide at least 80 kW output may substitute for 6 Level 2 EVCS and 5 EV Ready spaces after a minimum of 6 Level 2 EVCS and 5 Level 1 EV Ready spaces are installed.

5.106.5.3.3 Clean Air Vehicle Parking Designation. EVCS qualify as designated parking as described in Section 5.106.5.2 Designated parking for clean air vehicles.

Notes:

1. The California Department of Transportation adopts and publishes the California Manual on Uniform Traffic Control Devices (California MUTCD) to provide uniform standards and specifications for all official traffic control devices in California. Zero Emission Vehicle Signs and Pavement Markings can be found in the New Policies & Directives number 13-01. www.dot.ca.gov/hq/traffops/policy/13-01.pdf.
2. See Vehicle Code Section 22511 for EV charging spaces signage in off-street parking facilities and for use of EV charging spaces.
3. The Governor's Office of Planning and Research published a Zero-Emission Vehicle Community Readiness Guidebook which provides helpful information for local governments, residents and businesses. www.opr.ca.gov/docs/ZEV_Guidebook.pdf.
4. Section 11B-812 of the 2019 California Building Code requires that a facility providing EVCS for public and common use also provide one or more accessible EVCS as specified in Table 11B-228.3.2.1. Chapter 11B applies to certain facilities including, but not limited to, public accommodations and publicly funded housing (see section 1.9 of Part 2 of the California Building Code). Section 11B-812 requires that "Parking spaces, access aisles and vehicular routes serving them shall provide a vertical clearance of 98 inches (2489 mm) minimum." It also requires that parking spaces and access aisles meet maximum slope requirements of 1 unit vertical in 48 units horizontal (2 percent slope) in any direction at the time of new building construction or renovation. Section 11B-812.5 contains accessible route requirements.

5. It is encouraged that shared parking, EV Ready are designated as “EV preferred.”

~~**5.106.5.3.1 Single charging space requirements. [**N] When only a single charging space is required per Table 5.106.5.3.3, a raceway is required to be installed at the time of construction and shall be installed in accordance with the California Electrical Code. Construction plans and specifications shall include, but are not limited to, the following:~~

~~1. The type and location of the EVSE.~~
~~2. A listed raceway capable of accommodating a 208/240-volt dedicated branch circuit.~~
~~3. The raceway shall not be less than trade size 1.”~~
~~4. The raceway shall originate at a service panel or a subpanel serving the area, and shall terminate in close proximity to the proposed location of the charging equipment and into a listed suitable cabinet, box, enclosure or equivalent.~~
~~**5.** The service panel or subpanel shall have sufficient capacity to accommodate a minimum 40-ampere dedicated branch circuit for the future installation of the EVSE.~~

~~**5.106.5.3.2 Multiple charging space requirements.**~~
~~When multiple charging spaces are required per Table 5.106.5.3.3 raceway(s) is/are required to be installed at the time of construction and shall be installed in accordance with the California Electrical Code. Construction plans and specifications shall include, but are not limited to, the following:~~

~~1. The type and location of the EVSE.~~
~~2. The raceway(s) shall originate at a service panel or a subpanel(s) serving the area, and shall terminate in close proximity to the proposed location of the charging equipment and into listed suitable cabinet(s), box(es), enclosure(s) or equivalent.~~
~~3. Plan design shall be based upon 40-ampere mini- mum branch circuits.~~
~~4. Electrical calculations shall substantiate the design of the electrical system, to include the rating of equipment and any on-site distribution~~
~~5. transformers and have sufficient capacity to simultaneously charge all required EVs at its full rated amperage.~~
~~6. The service panel or subpanel(s) shall have sufficient capacity to accommodate the required number of dedicated branch circuit(s) for the future installation of the EVSE.~~

~~**5.106.5.3.3 EV charging space calculation.** [N] Table 5.106.5.3.3 shall be used to determine if single or multiple charging space requirements apply for the future installation of EVSE.~~
~~Exceptions: On a case-by-case basis where the local enforcing agency has determined EV charging and infrastructure is not feasible based upon one or more of the following conditions:~~

~~1. Where there is insufficient electrical supply~~
~~2. Where there is evidence suitable to the local enforcing agency substantiating that additional local utility infrastructure design requirements, directly related to the implementation of Section 5.106.5.3, may adversely impact the construction cost of the project.~~

~~TABLE 5.106.5.3.3~~

TOTAL NUMBER OF ACTUAL PARKING SPACES	NUMBER OF REQUIRED EV CHARGING SPACES
0-9	0
10-25	1
26-50	2
51-75	4
76-100	5
101-150	7
151-200	10
201 and over	6 percent of total[1]

~~1. Calculation for spaces shall be rounded up to the nearest whole number.~~

5.106.5.3.4 [N] Identification. ~~The service panel or subpanel(s) circuit directory shall identify the reserved overcurrent protective device space(s) for future EV charging as "EV CAPABLE".~~ The raceway termination location shall be permanently and visibly marked as "EV ~~CAPABLE~~ Ready".

~~**5.106.5.3.5 [N]** Future charging spaces qualify as designated parking as described in Section 5.106.5.2 Designated parking for clean air vehicles.~~

SECTION 3: EXEMPTION FROM CEQA

The City Council finds, pursuant to Title 14 of the California Administrative Code, Section 15061(b)(3) that this Ordinance is exempt from the requirements of the California Environmental Quality Act ("CEQA") on the grounds that these standards are more stringent than the State energy standards, there are no reasonably foreseeable adverse impacts and there is no possibility that the activity in question may have a significant effect on the environment.

SECTION 4: SEVERABILITY

If any part of this Ordinance is held to be invalid or inapplicable to any situation by a court of competent jurisdiction, such decision shall not affect the validity of the remaining portions of this Ordinance or the applicability of this Ordinance to other situations.

SECTION 5: EFFECTIVE DATE

This Ordinance shall become effective following approval by the California Energy Commission, but in no event before January 1, 2021.

SECTION 6: POSTING

Within fifteen (15) days of its adoption, the Ordinance shall be posted in three (3) public places within the City of East Palo Alto, and the Ordinance, or a summary of the Ordinance prepared by the City Attorney, shall be published in a local newspaper used to publish official notices for the City of East Palo Alto prior to the effective date.

INTRODUCED on the 6th of October 2020.

PASSED AND ADOPTED as an ordinance of the City of East Palo Alto at a regular meeting of said City Council on the 20th of October 2020, by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

Regina Wallace-Jones, Mayor

ATTEST:

Walfred Solorzano, City Clerk

APPROVED AS TO FORM:

Rafael E. Alvarado Jr., City Attorney