DOCKETED	
Docket Number:	19-BSTD-06
Project Title:	Local Ordinances Exceeding the 2019 Energy Code
TN #:	231834
Document Title:	City of Milpitas Agenda Report 2
Description:	Staff Report regarding Ordinance # 65.148 and Green Codes dated 12/3/19
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CITY OF MILPITAS
AGENDA REPORT
(AR)

Item Title:	Conduct a Public Hearing; Adopt Ordinance No. 65.148 Adopting by Reference the 2019 California Energy Code with Amendments; and Adopt Ordinance No. 65.149 Adopting by Reference the 2019 California Green Building Standards Code with Amendments
Category:	Public Hearings-Community Development
Meeting Date:	12/3/2019
Staff Contact:	Sharon Goei, Director of Building Safety and Housing, 408-586-3260 Bill Tott, Building Official, 408-586-3263
Recommendation:	1. Open the public hearing; hear testimony, then move to close the public hearing. 2. Waive the second reading and adopt Ordinance No. 65.148 amending Chapter 11 of Title II of the Milpitas Municipal Code adopting by reference the 2019 California Energy Code with amendments. 3. Waive the second reading and adopt Ordinance No. 65.149 amending Chapter 19 of Title II of the Milpitas Municipal Code adopting by reference the 2019 California Green Building Standards Code with amendments.

Background:

On November 5, 2019, the Council introduced Ordinances No. 65.148 and No. 65.149 and set a public hearing on December 3, 2019 for adoption of the ordinances pursuant to Government Code Section 50022.3. Notice of the public hearing was published on November 15 and 22, 2019 pursuant to Government Code Section 6066. There were no changes to the Ordinances from the first reading; the Ordinances have been updated and are now ready for their second reading and adoption.

The City of Milpitas is participating in the Silicon Valley Clean Energy reach code grant offering, which will provide $10,000 to the City for presenting reach codes to the City Council for consideration. After Council introduced the ordinances on November 5, 2019, staff submitted the request for the $10,000 grant. Please see Attachment H for the SVCE Letter of Interest and the City's request.

Analysis:

The Council introduced the reach code ordinances as proposed at the November 5, 2019 Council meeting. The agenda report and attachments from that meeting are included for reference.

As noted in the November 5 agenda report, staff conducted a series of outreach and engagement meetings on the proposed reach codes with stakeholders, including developers, design professionals, the Building Industry Association, and community members. Since November 5, staff provided an update at the Community Development Roundtable on November 14 on the proposed reach codes and the outcome of the November 5 Council discussion. Support was expressed for the current staff proposal as introduced by Council on November 5, which the participants felt was a reasonable approach to increase energy efficiency, electrification-readiness, and electric vehicle charging infrastructure.

Since November 5, 2019, the International Brotherhood of Electrical Workers Local Union No. 332 forwarded an e-mail letter (Attachment J) to the City stating its support to adopt reach codes and its commitment to provide training which will yield the workforce needed to deliver services and install innovative technologies.

As noted in the November 5, 2019 agenda report, the California Energy Code amendments become effective and enforceable by the City on the date of approval by the California Energy Commission (CEC). If adopted by

the City Council on December 3, 2019, staff projects that the Milpitas amendments to the Energy Code will become effective and enforceable in February or March 2020 given the 60-day public comment period required by the CEC review/approval process.

The California Green Building Standards Code (CALGreen) amendments pertaining to electric vehicle charging do not require submittal and approval by the CEC. If adopted by the City Council on December 3, 2019, these amendments will become effective on January 1, 2020 along with the 2019 CALGreen.

Fiscal Impact:
There is no cost to the City other than administrative staff time and expense. The City of Milpitas is participating in the Silicon Valley Clean Energy reach code grant offering, which will provide $10,000 to the City for presenting reach codes to the City Council for consideration.

Recommendations:
1. Open the public hearing; hear testimony, then move to close the public hearing.
2. Waive the second reading and adopt Ordinance No. 65.148 amending Chapter 11 of Title II of the Milpitas Municipal Code adopting by reference the 2019 California Energy Code with amendments.
3. Waive the second reading and adopt Ordinance No. 65.149 amending Chapter 19 of Title II of the Milpitas Municipal Code adopting by reference the 2019 California Green Building Standards Code with amendments.

Attachments:
A. Ordinance No. 65.148 – adopting by reference the 2019 California Energy Code with amendments
B. Ordinance No. 65.149 – adopting by reference the 2019 California Green Building Standards Code with amendments
C. Summary of proposed Energy reach codes (proposed amendments to the 2019 California Energy Code)
D. Summary of proposed Green Building reach codes (proposed amendments to the 2019 California Green Building Standards Code)
E. SummerHill comments, EV infrastructure proposal, Lyon Living comments, and The CORE Companies comments
F. PG&E letter
G. WPGA letter
H. SVCE Letter of Interest (LOI) and City's Request for $10,000 Reach Code Grant
I. Reach Code Efforts in Other Cities
J. IBEW letter
K. November 5, 2019 City Council Meeting Agenda Report

REGULAR

NUMBER: 65.148

TITLE: AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF MILPITAS AMENDING CHAPTER 11 OF TITLE II OF THE MILPITAS MUNICIPAL CODE ADOPTING BY REFERENCE THE 2019 CALIFORNIA ENERGY CODE WITH AMENDMENTS

HISTORY: This Ordinance was introduced (first reading) by the City Council at its meeting of November 5, 2019, upon motion by Councilmember Phan, and was adopted (second reading) by the City Council at its meeting of _____, upon motion by _____. The Ordinance was duly passed and ordered published in accordance with law by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

ATTEST:

_____
Mary Lavelle, City Clerk

APPROVED:

_____
Rich Tran, Mayor

APPROVED AS TO FORM:

_____
Christopher J. Diaz, City Attorney

RECITALS:

WHEREAS, the California Building Standards Commission has adopted and published an updated Title 24 of the California Code of Regulations, also referred to as the 2019 California Building Standards Code, that will become effective statewide on January 1, 2020; and

WHEREAS, California Health and Safety Code Sections 17958, 17958.5, 17958.7 and 18941.5 establish the authority for a city to adopt and make local amendments and modifications to the building standards in the California Building Standards Code to establish more restrictive building standards than those contained in the California Building Standards Code; and

WHEREAS, California Health and Safety Code Sections 17958, 17958.5, 17958.7 and 18941.5 permit a city to make such local amendments and modifications as the city determines are reasonably necessary because of local climatic, geological or topographical conditions; and

WHEREAS, California Health and Safety Code Sections 17958, 17958.5, 17958.7 and 18941.5 require a city, before making any amendments and modifications to the California Building Standards Code, make an express finding that such amendments and modifications are reasonably necessary because of local climatic, geological or topographical conditions; and

WHEREAS, the City of Milpitas has reviewed and intends to adopt the 2019 California Energy Code; and

WHEREAS, pursuant to Public Resources Code Section 25402.1(h)(2), Section 10-106 Locally Adopted Energy Standards of the California Administrative Code, Title 24 of the California Code of Regulations, Part I, and the California Energy Commission's submission and approval process, the City Council finds that the requirements below will save energy and are cost-effective within the City; and

WHEREAS, the City Council wishes to amend portions of the California Energy Code to better address local conditions and makes express findings that such amendments are reasonably necessary because of local climatic, geological or topographical conditions as set forth in this Ordinance; and

WHEREAS, the City Council affirms that such modifications will result in designs that consume no more energy than that permitted under the 2019 California Energy Code.

NOW, THEREFORE, the City Council of the City of Milpitas does ordain as follows:

SECTION 1. RECORD AND BASIS FOR ACTION

The City Council has duly considered the full record before it, which may include but is not limited to the staff report, testimony by staff and the public, and other materials and evidence submitted or provided to the City Council. Furthermore, the recitals set forth above are found to be true and correct and are incorporated herein by reference.

SECTION 2. CALIFORNIA ENVIRONMENTAL QUALITY ACT

The City Council hereby finds and determines that this Ordinance has been assessed in accordance with the California Environmental Quality Act (Cal. Pub. Res. Code, § 21000 et seq.) ("CEQA") and the State CEQA Guidelines (14 Cal. Code Regs. § 15000 et seq.) and is categorically exempt from CEQA under CEQA Guidelines, § 15061(b)(3), which exempts from CEQA any project where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment. Adoption of the proposed Ordinance would not be an activity with potential to cause significant effect on the environment

because the changes made to the California Energy Code within are enacted to provide more protection to the environment, and therefore is exempt from CEQA. It is also exempt from CEQA pursuant to CEQA Guidelines, § 15038 which exempts actions taken by regulatory agencies for the enhancement and protection of the environment. As such, the Ordinance is categorically exempt from CEQA.

SECTION 3. AMENDMENT OF MILPITAS MUNICIPAL CODE TITLE II, CHAPTER 11

Chapter 11 of Title II of the Milpitas Municipal Code is hereby repealed in its entirety and replaced with the text below to read as follows:

Chapter 11 ENERGY CODE

Sections:
Section 1 – Adoption of the Energy Code
Section 2 – Amendments to the Energy Code

Section 1 Adoption of the Energy Code

II-11-1.01
The 2019 California Energy Code, published and copyrighted by the International Code Council, Inc. and the California Building Standards Commission in Part 6 of Title 24 of the California Code of Regulations, is hereby adopted and referred to, and by this reference expressly incorporated and made a part of this Chapter as though fully set forth herein. The adoption includes Appendices 1-A and 1-B. The 2019 California Energy Code shall be designated and referred to as the "Energy Code" for the City of Milpitas. There is one copy of said Code on file in the office of the Building Official for use and examination by the public.

Section 2 Amendments to the Energy Code

II-11-2.01
Amend Section 100.1(b) of the Energy Code by adding the following definitions to read as follows:

ALL-ELECTRIC BUILDING is a building that has no natural gas or propane plumbing installed within the building and that uses electricity as the only source of energy for space heating, water heating (including pools and spas), cooking appliances, and clothes drying appliances.

CERTIFIED ENERGY ANALYST is a person registered as a Certified Energy Analyst with the California Association of Building Energy Consultants as of the date of submission of a Certificate of Compliance as required under Section 10.103.

ELECTRICALLY HEATED MIXED-FUEL BUILDING is a mixed-fuel building that uses electricity as the source of energy for space heating and water heating appliances, including pools and spas, but uses gas or propane as fuel for cooking appliances or clothes drying appliances or is plumbed for such equipment.

FREE STANDING ACCESSORY DWELLING UNIT is a detached building that is not intended for sale separate from the primary residence, on a lot in any zoning district where a single-family detached primary dwelling or two-family dwelling has been legally established or is proposed to be established in conjunction with construction of an accessory dwelling unit, and does not exceed 50% of the existing living area or 800 square feet of total living area in the Non-Hillside Combining District, or 50% of the existing living area or 1,200 square feet in the Hillside Combining District, whichever is smaller.

MIXED-FUEL BUILDING is a building that is plumbed for the use of natural gas or propane as fuel for space heating, water heating (including pools and spas), cooking appliances or clothes drying appliances.

II-11-2.02
Amend Section 140.0(b) of the Energy Code to read as follows:

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

1. **Electric Readiness.** Mixed-fuel buildings shall include the following components for each gas terminal or stub-out for the appliance it is designed to serve:

A. Water Heating
   i. A dedicated 208 / 240-volt 30 amp or greater electrical receptacle that is connected to the electrical panel with conductors of adequate ampacity, installed within 3 feet from the water heater and accessible with no obstructions;
   ii. The ends of the conductors for this branch circuit terminating inside the electrical panel shall be labeled with the words "For Future Water Heating" and be electrically isolated;
   iii. A reserved double pole circuit breaker space in the electrical panel for the branch circuit above and labeled with the words "For Future Heat Pump Water Heater";
   iv. All electrical components including conductors, receptacles, and other components related to this section shall be installed in accordance with the current California Electrical Code.

B. Clothes Drying

   i. A dedicated 208 / 240-volt, 40 amp or greater electrical receptacle that is connected to the electrical panel with conductors of adequate ampacity, installed within 3 feet of the appliance and accessible with no obstructions;
   ii. The ends of the conductors for this branch circuit terminating inside the electrical panel shall be labeled with the words "For Future Heat Pump Clothes Dryer" and be electrically isolated;
   iii. A reserved double pole circuit breaker space in the electrical panel for the branch circuit above and labeled with the words "For Future Heat Pump Clothes Dryer";
   iv. All electrical components including conductors, receptacles, and other components related to this section shall be installed in accordance with the current California Electrical Code.

C. Cooktop or Range
   i. A dedicated 208 / 240-volt, 50 amp or greater electrical receptacle that is connected to the electrical panel with conductors of adequate ampacity, installed within 3 feet of the appliance and accessible with no obstructions;
   ii. The ends of the conductors for this branch circuit terminating inside the electrical panel shall be labeled with the words "For Future Electric Range" and be electrically isolated;
   iii. A reserved double pole circuit breaker space in the electrical panel adjacent to the branch circuit conductors and labeled with the words "For Future Electric Range";

iv. All electrical components including conductors, receptacles, and other components related to this section shall be installed in accordance with the current California Electrical Code.

D. Stand-Alone Cooking Oven
   i. A dedicated 208 / 240-volt, 50 amp or greater electrical receptacle that is connected to the electrical panel with conductors of adequate ampacity installed within 3 feet of the appliance and accessible with no obstructions;
   ii. The ends of the conductors for this branch circuit terminating inside the electrical panel shall be labeled with the words "For Future Electric Oven" and be electrically isolated;
   iii. A reserved double pole circuit breaker space in the electrical panel adjacent to the branch circuit conductors and labeled with the words "For Future Electric Oven";
   iv. All electrical components including conductors, receptacles, and other components related to this section shall be installed in accordance with the current California Electrical Code.

2. **Solar Photovoltaic Systems.** Solar photovoltaics shall be installed as follows:

A. New non-residential buildings with less than 10,000 square feet of gross floor area shall provide a minimum of a 3-kilowatt photovoltaic system.
B. New non-residential buildings greater than or equal to 10,000 square feet of gross floor area shall provide a minimum of a 5-kilowatt photovoltaic system.

EXCEPTION to Section 140.0(b)2: As an alternative to a solar photovoltaic system, all of the building types listed above may provide a solar hot water system (solar thermal) with a minimum collector area of 40 square feet, additional to any other solar equipment otherwise required for compliance with Part 6.

II-11-2.03
Amend Section 140.1 of the Energy Code to read as follows:

An addition to an existing building or a newly constructed All-Electric Building complies with the performance approach if the energy budget calculated for the Proposed Design Building under Subsection (b) is no greater than the energy budget calculated for the Standard Design Building under Subsection (a).

A newly constructed Mixed-Fuel Building complies with the performance approach if the energy budget calculated for the Proposed Design Building under Subsection (b) has a compliance margin, relative to the energy budget calculated for the Standard Design Building under Subsection (a), of at least the value specified for the corresponding occupancy type in Table 140.1 below.

Table 140.1 MIXED FUEL BUILDING COMPLIANCE MARGINS

Occupancy Type	Compliance Margins
Office / Mercantile	14%
All other occupancies	6%

(a) Energy Budget for the Standard Design Building. The energy budget for the Standard Design Building is determined by applying the mandatory and prescriptive requirements to the Proposed Design Building. The energy budget is the sum of the TDV energy for space-conditioning, indoor lighting, mechanical ventilation, service water heating, and covered process loads.

(b) Energy Budget for the Proposed Design Building. The energy budget for a Proposed Design Building is determined by calculating the TDV energy for the Proposed Design Building. The energy budget is the sum of the TDV energy for space-conditioning, indoor lighting, mechanical ventilation and service water heating and covered process loads.

(c) Calculation of Energy Budget. The TDV energy for both the Standard Design Building and the Proposed Design Building shall be computed by Compliance Software certified for this use by the Commission. The processes for Compliance Software approval by the Commission are documented in the ACM Approval Manual.

EXCEPTION to Section 140.1: For newly constructed buildings, if the Certificate of Compliance is prepared by a Certified Energy Analyst and the energy budget for the Proposed Design Building is no greater that the Standard design Building, the required compliance margin is reduced by 1%.

II-11-2.04

Amend Section 140.2 of the Energy Code to read as follows:

To comply using the prescriptive approach, a building shall be designed with and shall have constructed and installed systems and components meeting the applicable requirements of Sections 140.3 through 140.9 and additionally the following measures as applicable, intended to exceed the prescriptive requirements:

a) Mixed-Fuel Buildings of Hotel, Motel, and High-Rise Multifamily Occupancies
   1. Install fenestration with a solar heat gain coefficient no greater than 0.22.
   2. Design Variable Air Volume (VAV) box minimum airflows to be equal to the zone ventilation minimums.
   3. Include economizers and staged fan control in air handlers with a mechanical cooling capacity ≥ 33,000 Btu/h.
   4. Reduce the total lighting power density (Watts/ft^2) by ten percent (10%) from that required from Table 140.6-C.
   5. In common areas, without claiming any Power Adjustment Factor credits, do the following:
      A. Control to daylight dimming plus off per Section 140.6(a)2H; and
      B. Perform Institutional Tuning per Section 140.6(a)2J.
   6. Install one drain water heat recovery device per every three guest rooms that is field verified as specified in the Reference Appendix RA3.6.9.

b) All Other Mixed-Fuel Nonresidential Buildings
   1. Install fenestration with a solar heat gain coefficient no greater than 0.22.
   2. Limit the fenestration area on east-facing and west-facing walls to one-half of the average amount of north-facing and south-facing fenestration.
   3. Design Variable Air Volume (VAV) box minimum airflows to be equal to the zone ventilation minimums.
   4. Include economizers and staged fan control in air handlers with a mechanical cooling capacity ≥ 33,000 Btu/h.
   5. Reduce the total lighting power density (Watts/ft^2) by ten percent (10%) from that required from Table 140.6-C.
   6. Improve lighting without claiming any Power Adjustment Factor credits:
      A. In office spaces, control to daylight dimming plus off per Section 140.6(a)2H;
      B. Install Occupant Sensing Controls in Large Open Plan Offices per Section 140.6(a)2I;
      C. Perform Institutional Tuning per Section 140.6(a)2J.

II-11-2.05
Amend the first and second paragraph of Section 150.0 of the Energy Code to read as follows:

Low-rise residential buildings shall comply with the applicable requirements of Sections 150(a) through 150(s).

NOTE: The requirements of Sections 150.0(a) through 150.0(s) apply to newly constructed buildings, free standing accessory dwelling units, and additions. Sections 150.2(a) and 150.2(b) specify which requirements of Sections 150.0(a) through 150.0(s) also apply to additions or alterations.

II-11-2.06
Amend Section 150.0(h) of the Energy Code by adding item 5 to read as follows:

5. Systems using natural gas or propane space heating equipment shall include the following components:
   A. A designated exterior location for a future heat pump compressor unit with either a drain or natural drainage for condensate from possible future operation as cooling equipment.
   B. A dedicated 208/240 volt, 30 amp or greater electrical circuit that is connected to the electric panel with conductors of adequate capacity, terminating within 3 feet of the designated future location of the compressor unit, and accessible with no obstructions. In addition, all of the following:
      i. The ends of the conductors for the branch circuit terminating inside the electrical panel shall be labeled with the words "For Future Heat Pump Space Heater" and be electrically isolated;
      ii. A reserved double pole circuit breaker space in the electrical panel adjacent to the branch circuit conductors and labeled with the words "For Future Heat Pump Space Heater";
      iii. All electrical components including conductors, receptacles, and other components related to this section shall be installed in accordance with the current California Electrical Code.

EXCEPTION to Section 150.0(h)5. If a 240-volt 30 amp or greater electrical circuit and compressor unit location exists for space cooling equipment.

II-11-2.07
Amend Section 150.0(n) item 1.A. of the Energy Code to read as follows:

1. Systems using natural gas or propane water heaters to serve individual dwelling units shall include the following components:
   A. A dedicated 240-volt, 30 amp or greater electrical receptacle that is connected to the electric panel with a 240 volt 3 conductor, 10 AWG copper branch circuit, within 3 feet from the water heater and accessible to the water heater with no obstructions. In addition, all of the following:
      i. The ends of the conductors for the branch circuit that terminates inside the electrical panel shall be labeled with the words "For Future Heat Pump Water Heater" and be electrically isolated;
      ii. A reserved double pole circuit breaker space in the electrical panel adjacent to the circuit breaker for the branch circuit in A above and labeled with the words "For Future Heat Pump Water Heater";
      iii. All electrical components including conductors, receptacles, and other components related to this section shall be installed in accordance with the current California Electrical Code.

II-11-2.08

Amend Section 150.0(n) of the Energy Code by adding item 5 to read as follows:

5. Systems using natural gas or propane water heaters to serve multiple dwelling units and/or common areas shall:
   A. Be located in a space that can accommodate a heat pump water heating system of equivalent capacity and performance; and
   B. Have a condensate drain that is no more than 2 inches higher than the base of the installed water heater, and allows natural draining without pump assistance; and
   C. Include designated raceways and reserved capacity on the main electrical panel and subpanels, if applicable, sufficient to power a heat pump hot water heater of equivalent capacity and performance. Plans shall include calculations and installations for equivalent capacity and performance, electrical power, conductors, raceway sizes and panel capacities in accordance with the California Electrical Code.

II-11-2.09

Amend Section 150.0 of the Energy Code by adding Subsection (s) to read as follows:

s) **Clothes Drying and Cooking.** Buildings plumbed for natural gas or propane clothes drying or cooking equipment shall include the following components for each gas terminal or stub out:
   1. Clothes Drying
      A. A dedicated 208/240-volt, 40 amp or greater electrical receptacle that is connected to the electric panel with conductors of adequate capacity, within 3 feet of the appliance and accessible with no obstructions;
      B. The ends of the conductors for the branch circuit terminating inside the electrical panel shall be labeled with the words, "For Future Heat Pump Clothes Dryer" and be electrically isolated;
      C. A reserved double pole circuit breaker space in the electrical panel adjacent to the branch circuit conductors and labeled with the words, "For Future Heat Pump Clothes Dryer";
      D. All electrical components including conductors, receptacles, and other components related to this section shall be installed in accordance with the current California Electrical Code.
   2. Cooktop
      A. A dedicated 208/240-volt, 50 amp or greater electrical receptacle that is connected to the electric panel with conductors of adequate capacity, within 3 feet of the appliance and accessible with no obstructions;
      B. The ends of the conductors for the branch circuit terminating inside the electrical panel shall be labeled with the words, "For Future Electric Range" and be electrically isolated;
      C. A reserved double pole circuit breaker space in the electrical panel adjacent to the branch circuit conductors and labeled with the words, "For Future Electric Oven";
      D. All electrical components including conductors, receptacles, and other components related to this section shall be installed in accordance with the current California Electrical Code.
   3. Stand Alone Cooking Oven
      A. A dedicated 208/240-volt, 50 amp or greater receptacle within 3 feet of the appliance and accessible with no obstructions;
      B. The ends of the conductors for the branch circuit terminating inside the electrical panel shall be labeled with the words, "For Future Electric Oven" and be electrically isolated;

C. A reserved double pole circuit breaker space in the electrical panel adjacent to the branch circuit conductors and labeled with the words, "For Future Electric Oven";
D. All electrical components including conductors, receptacles, and other components related to this section shall be installed in accordance with the current California Electrical Code.

II-11-2.10
Amend Section 150.1(b) item 1 through item 2 of the Energy Code to read as follows:

b) **Performance Standards**. A building complies with the performance standards if the energy consumption calculated for the Proposed Design Building is no greater than the energy budget calculated for the Standard Design Building using Commission-certified compliance software as specified by the Alternative Calculation Methods Approval Manual. Additionally, Mixed-Fuel Buildings must reach an EDR margin above the Standard Design in order to comply with performance standards.

1. **Newly Constructed Buildings.** The Energy Budget for newly constructed buildings is expressed in terms of the Energy Design Rating, which is based on TDV energy. The Energy Design Rating (EDR) has two components, the Energy Efficiency Design Rating, and the Solar Electric Generation and Demand Flexibility Design Rating. The Solar Electric Generation and Demand Flexibility Design Rating shall be subtracted from the Energy Efficiency Design Rating to determine the Total Energy Design Rating. The Proposed Building shall separately comply with the Energy Efficiency Design Rating and the Total Energy Design Rating in the following ways:

   A. **All-Electric Building or a Free Standing Accessory Dwelling Unit.** All Electric Buildings or Free Standing Accessory Dwelling Units comply if both the Total Energy Design Rating and the Energy Efficiency Design Rating for the Proposed Design Building are no greater than the corresponding Energy Design Ratings for the Standard Design Building.
   B. **Electrically-Heated Mixed-Fuel Buildings.** Buildings with a permanent supply of electricity as the only source of energy for water-heating and space-heating comply if:
      a. **Single family.** The energy consumption calculated for the Proposed Design Building shall be at least 2 EDR points less than the Energy Efficiency Design Rating calculated for the Standard Design Building.
      b. **Multifamily.** The energy consumption calculated for the Proposed Design Building shall be at least 1 EDR point less than the Energy Efficiency Design Rating calculated for the Standard Design Building.
   C. **Mixed-Fuel Buildings**: A Mixed-fuel Building complies with the performance standards if the Energy Efficiency Design Rating of the Proposed Building is no greater than the Energy Efficiency Design Rating for the Standard Design Building and:
      a. **Single family**. The energy consumption calculated for the Proposed Design Building shall be at least 10 EDR points less than the Total Energy Design Rating calculated for the Standard Design Building.
      b. **Multifamily**. The energy consumption calculated for the Proposed Design Building shall be at least 11 EDR Points less than the Total Energy Design Rating calculated for the Standard Design Building.

   EXCEPTION to Section 150.1(b)1.C. Buildings with limited solar access are excepted if all of the following are true:

a. The Total Energy Design Rating for the Proposed Building is no greater than the Standard Design Building; and
b. A photovoltaic (PV) system(s) meeting the minimum qualification requirements as specified in Joint Appendix JA11 is installed on all available areas of 80 contiguous square feet or more with effective annual solar access. Effective annual solar access shall be 70 percent or greater of the output of an unshaded PV array on an annual basis, wherein shade is due to existing permanent natural or manmade barriers external to the dwelling, including but not limited to trees, hills, and adjacent structures; and
c. The Energy Efficiency Energy Design Rating for the Proposed Building is no greater than the respective value for the Standard Design Building by the EDR margin in Table 150.1(b)1 below.

Table 150(b)1

Building Type	Energy Efficiency EDR Margin
Single Family	2
Multifamily	1

EXCEPTION to Section 150.1(b)1. A community shared solar electric generation system, or other renewable electric generation system, and/or community shared battery storage system, which provides dedicated power, utility energy reduction credits, or payments for energy bill reductions, to the permitted building and is approved by the Energy Commission as specified in Title 24, Part 1, Section 10-115, may offset part or all of the solar electric generation system Energy Design Rating required to comply with the Standards, as calculated according to methods established by the Commission in the Residential ACM Reference Manual.

2. **Additions and Alterations to Existing Buildings**. The Energy Budget for additions and alterations is expressed in terms of TDV energy. A building complies with the performance standards if the energy consumption calculated for the Proposed Design Building is no greater than the energy budget calculated for the Standard Design Building.

II-11-2.11
Amend Section 150.1(b) item 3A of the Energy Code to read as follows (note that Exception remains):

3. **Compliance Demonstration Requirements for Performance Standards.**
   A. **Certificate of Compliance and Application for a Building Permit.** The application for a building permit shall include documentation pursuant to Sections 10-103(a)1 and 10-103(a)2 which demonstrates, using an approved calculation method, that the building has been designed so that its Energy Efficiency Design Rating and the total EDR meets or exceeds the Standard design EDR for the applicable Climate Zone. The Certificate of Compliance must be prepared and signed by a Certified Energy Analyst.

II-11-2.12
Amend Section 150.1(c) of the Energy Code by adding item 15 to read as follows:

15. Additional Prescriptive Requirements for Mixed-Fuel Buildings.
   A. Mixed-Fuel Single Family
      a. Ducts shall comply with 2019 Reference Appendices RA3.1.4.1.3, which requires that all ductwork shall be located entirely in conditioned space and shall be confirmed to have less than or equal to 25 cfm leakage to outside when measured as specified by Section RA3.1.4.3.8.

b. Slab floor perimeter insulation shall be installed with an R-value equal to or greater than R10. The minimum depth of concrete-slab floor perimeter insulation shall be 16 inches or the depth of the footing of the building, whichever is less.
c. Design the hot water distribution system to meet minimum requirements for the basic compact hot water distribution credit according to the procedures outlined in the 2019 Reference Appendices RA4.4.6.
d. Central Fan Integrated Ventilation Systems. The duct distribution system shall be designed reduce external static pressure to meet a maximum fan efficacy equal to:
Gas Furnaces: 0.35 Watts per cfm
Heat Pumps: 0.45 Watts per cfm,
according to the procedures outlined in the 2019 Reference Appendices RA 3.3.
e. Include either:
i. 5 kWh battery of battery storage, OR
ii. A solar water heating system with a minimum solar savings fraction of 0.20.

EXCEPTION to 150.1(c)15.A.e. Electrically-Heated Mixed-Fuel buildings do not need to include battery or solar water heating.

B. Mixed-Fuel Multifamily
a. Slab floor perimeter insulation shall be installed with an R-value of equal to or greater than R10. The minimum depth of concrete-slab floor perimeter insulation shall be 16 inches or the depth of the footing of the building, whichever is less.
b. Design the hot water distribution system to meet minimum requirements for the basic compact hot water distribution credit according to the procedures outlined in the 2019 Reference Appendices RA4.4.6.
c. Central Fan Integrated Ventilation Systems. Central forced air system fans used to provide outside air, shall have an air-handling unit fan efficacy less than or equal to 0.35 W/CFM. The airflow rate and fan efficacy requirements in this section shall be confirmed through field verification and diagnostic testing in accordance with all applicable procedures specified in Reference Residential Appendix RA3.3. Central Fan Integrated Ventilation Systems shall be certified to the Energy Commission as Intermittent Ventilation Systems as specified in Reference Residential Appendix RA3.7.4.2.
d. Include either:
i. 2.75 kWh of battery storage per dwelling unit, OR
ii. A solar water heating system with a minimum solar savings fraction of 0.20.

EXCEPTION to 150.1(c)15.B.d. Electrically Heated Mixed-Fuel buildings do not need to include battery or solar water heating.

e. All ductwork shall be located entirely in conditioned space with ducts tested to have less than or equal to 25 cfm leakage to outside. Ductwork shall meet the requirements of Verified Low Leakage Ducts in Conditioned Space (VLLDCS) in the 2019 Reference Appendices RA3.1.4.3.8.
f. Buildings with steep-sloped roofs shall have a minimum aged solar reflectance of 0.25.

II-11-2.13
Amend the first paragraph of Section 150.2 of the Energy Code to read as follows (note that Exceptions 1 through 7 remain):

a) **Additions.** Additions to existing low-rise residential buildings shall meet the requirements of Sections 110.0 through 110.9, Sections 150.0(a) through (q) and 150.0(s), and either Section 150.2(a) 1 or 2.

SECTION 4. EXPRESS FINDINGS

Pursuant to California Health and Safety Code Sections 17958.7 and 18941.5, the City Council hereby finds that the above amendments are necessary due to local climatic, geological or topographical conditions as set forth in **Exhibit A**.

SECTION 5. REPEAL OF CONFLICTING ORDINANCES

Upon adoption of each new California Building Standards Code, the Ordinance adopting the previously adopted California Building Standards Code is superseded in its entirety. This Ordinance does not repeal Ordinance No. 65.147, which adopts by reference and amends parts of the 2019 California Building Standards Code, Ordinance No. 65.149, which adopts by reference and amends the 2019 California Green Building Standards Code, nor Ordinance No. 113.25, which adopts by reference and amends the 2019 California Fire Code.

SECTION 6. SEVERABILITY

The provisions of this Ordinance are separable, and the invalidity of any phrase, clause, provision or part shall not affect the validity of the remainder.

SECTION 7. EFFECTIVE DATE AND POSTING

In accordance with Section 36937 of the Government Code of the State of California, this Ordinance shall take effect thirty (30) days from and after the date of its final adoption by the City Council, and after approval of the City of Milpitas application to enforce its locally adopted energy standards by the California Energy Commission, but no sooner than January 1, 2020. The City Clerk of the City of Milpitas shall cause this Ordinance or a summary thereof to be published in accordance with Section 36933 of the Government Code of the State of California.

EXHIBIT A

FINDINGS IN SUPPORT OF AMENDMENTS TO TITLE 24 OF THE CALIFORNIA CODE OF REGULATIONS: LOCAL CLIMATIC, GEOLOGICAL OR TOPOGRAPHICAL CONDITIONS

Amendments to the Energy Code:

II-11-2.01	Section 100.1(b)	Definitions
II-11-2.02	Section 140.0(b)	1. Electric readiness; 2. Solar photovoltaic systems
II-11-2.03	Section 140.1	Energy budget calculations
II-11-2.04	Section 140.2	Prescriptive approach requirements for High-Rise buildings
II-11-2.05	Section 150.0	Prescriptive requirements for Low-Rise residential buildings
II-11-2.06	Section 150.0(h)	Space heating requirements
II-11-2.07	Section 150.0(n)1.A.	Water heater requirements
II-11-2.08	Section 150.0(n)	Water heater requirements
II-11-2.09	Section 150.0	Clothes drying and cooking
II-11-2.10	Section 150.1(b)	Performance standards for Low-Rise residential buildings
II-11-2.11	Section 150.1(b)3.A	Compliance demonstration requirements for performance standards
II-11-2.12	Section 150.1(c)	Additional prescriptive requirements for mixed-fuel buildings
II-11-2.13	Section 150.2	Additions

The following findings support that the above amendments and modifications are reasonably necessary because of local climatic, geological or topographical conditions:

Express Findings – Climatic

The effects of climate change caused by Green House Gas (GHG) emissions are increasingly self-evident, and very costly. Higher temperatures are contributing to record heat waves and droughts, rising sea levels, more intense storms, wildfires and floods.

Climate change is the fundamental design problem of our time. The threat that climate change poses is existential, and buildings together with transportation are large contributors.

Amending all of the above referenced code sections is necessary to combat the ever-increasing harmful effects of climate change. Implementation of the proposed code amendments will provide an accelerated path to reduce Green House Gas (GHG) emissions and carbonization in an effort to stem the tide of GHG emissions and the effects of global warming and climate change.

REGULAR

NUMBER: 65.149

TITLE: AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF MILPITAS AMENDING CHAPTER 19 OF TITLE II OF THE MILPITAS MUNICIPAL CODE ADOPTING BY REFERENCE THE 2019 CALIFORNIA GREEN BUILDING STANDARDS CODE WITH AMENDMENTS

HISTORY: This Ordinance was introduced (first reading) by the City Council at its meeting of November 5, 2019, upon motion by Councilmember Phan, and was adopted (second reading) by the City Council at its meeting of _____, upon motion by _____. The Ordinance was duly passed and ordered published in accordance with law by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

ATTEST:

_____
Mary Lavelle, City Clerk

APPROVED:

_____
Rich Tran, Mayor

APPROVED AS TO FORM:

_____
Christopher J. Diaz, City Attorney

RECITALS:

WHEREAS, the California Building Standards Commission has adopted and published an updated Title 24 of the California Code of Regulations, also referred to as the 2019 California Building Standards Code, that will become effective statewide on January 1, 2020; and

WHEREAS, California Health and Safety Code Sections 17958, 17958.5, 17958.7 and 18941.5 establish the authority for a city to adopt and make local amendments and modifications to the building standards in the California Building Standards Code to establish more restrictive building standards than those contained in the California Building Standards Code; and

WHEREAS, California Health and Safety Code Sections 17958, 17958.5, 17958.7 and 18941.5 permit a city to make such local amendments and modifications as the city determines are reasonably necessary because of local climatic, geological or topographical conditions; and

WHEREAS, California Health and Safety Code Sections 17958, 17958.5, 17958.7 and 18941.5 require a city, before making any amendments and modifications to the California Building Standards Code, make an express finding that such amendments and modifications are reasonably necessary because of local climatic, geological or topographical conditions; and

WHEREAS, the City of Milpitas has reviewed and intends to adopt the 2019 California Green Building Standards Code; and

WHEREAS, the City Council wishes to amend portions of the California Green Building Standards Code to better address local conditions and makes express findings that such amendments are reasonably necessary because of local climatic, geological or topographical conditions as set forth in this Ordinance.

NOW, THEREFORE, the City Council of the City of Milpitas does ordain as follows:

SECTION 1. RECORD AND BASIS FOR ACTION

The City Council has duly considered the full record before it, which may include but is not limited to the staff report, testimony by staff and the public, and other materials and evidence submitted or provided to the City Council. Furthermore, the recitals set forth above are found to be true and correct and are incorporated herein by reference.

SECTION 2. CALIFORNIA ENVIRONMENTAL QUALITY ACT

The City Council hereby finds and determines that this Ordinance has been assessed in accordance with the California Environmental Quality Act (Cal. Pub. Res. Code, § 21000 et seq.) ("CEQA") and the State CEQA Guidelines (14 Cal. Code Regs. § 15000 et seq.) and is categorically exempt from CEQA under CEQA Guidelines, § 15061(b)(3), which exempts from CEQA any project where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment. Adoption of the proposed Ordinance would not be an activity with potential to cause significant effect on the environment because the changes made to the California Green Building Standards Code are enacted to provide more protection to the environment, and therefore is exempt from CEQA. Therefore, it can be seen with certainty that there is no possibility that the Ordinance in question may have a significant effect on the environment; accordingly, the Ordinance is categorically exempt from CEQA.

SECTION 3. AMENDMENT OF MILPITAS MUNICIPAL CODE TITLE II, CHAPTER 19

Chapter 19 of Title II of the Milpitas Municipal Code is hereby repealed in its entirety and replaced with the text below to read as follows:

Chapter 19 GREEN BUILDING STANDARDS CODE

Sections:
Section 1 – Adoption of the Green Building Standards Code
Section 2 – Amendments to the Green Building Standards Code

Section 1 Adoption of the Green Building Standards Code

II-19-1.01
The 2019 Edition of the California Green Building Standards Code, published and copyrighted by the International Code Council, Inc. and the California Building Standards Commission in Part 11 of Title 24 of the California Code of Regulations, also known as the CALGreen Code is hereby adopted and referred to, and by this reference expressly incorporated and made a part of this Chapter as though fully set forth herein. The adoption includes Appendices A4, A5, and A6.1. The 2019 California Green Building Standards Code shall be designated and referred to as the "Green Building Standards Code" for the City of Milpitas. There is one copy of said Code on file in the office of the Building Official for use and examination by the public.

Section 2 Amendments to the Green Building Standards Code

II-19-2.01
Amend Section 202 of the Green Building Standards Code by adding the following definitions to read as follows:

EV Capable. A parking space that is to be served by a designated electrical panel with sufficient capacity to provide 110/120 volts at 20 amperes to the parking space, with raceways connecting the electrical panel and parking space that are installed in areas that will be inaccessible in the future, such as trenched underground or where penetrations to walls, floors, or other construction 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 the raceway from the panel to the parking space, using the installed raceway sections in the inaccessible areas.

Level 1 EV Ready Circuit: 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, properly sized conductors, grounding and bonding, and either a) a receptacle labelled "Electric Vehicle Outlet" with at least a ½" font adjacent to the parking space, or b) labelled Electric Vehicle Supply Equipment (EVSE).

Level 2 EV Ready Circuit: A parking space served by a complete 208/240 volt 40 ampere electric circuit including the required electrical panel capacity, overcurrent protection device, a minimum 1" diameter raceway that may include multiple circuits as allowed by the California Electrical Code, properly sized conductors, grounding, bonding and either a) a receptacle labelled "Electric Vehicle Outlet" with a minimum ½" font, adjacent to the parking space, or b) a blank labelled Electric Vehicle Supply Equipment (EVSE) with a minimum output of 30 amperes.

II-19-2.02

Amend Section 4.106.4 through Section 4.106.4.2.3 of the Green Building Standards Code to read as follows:

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.

Exceptions:

1. Where there is no commercial power supply.
2. Accessory Dwelling Units (ADU) and Junior Accessory Dwelling Units (JADU) without additional parking spaces.

4.106.4.1 New one- and two-family dwellings and townhouses with attached private garages. For each dwelling unit, install a Level 2 EV Ready Circuit and Level 1 EV Ready Circuit.

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

4.106.4.2 New multifamily dwellings. The following requirements apply to all new multifamily dwellings:

1. When 20 or less multifamily dwelling units are constructed on a building site:
   a. 15% of dwelling unit parking spaces shall be provided with access to at least one Level 2 EV Ready circuit.
   b. 35% of dwelling unit parking spaces shall be provided with access to at least one Level 1 Capable circuit.
2. When more than 20 multifamily dwelling units are constructed on a building site:
   a. 20% of dwelling unit parking spaces shall be provided with access to at least one Level 2 EV Ready Circuit.
   b. 35% of dwelling unit with parking spaces shall be provided with access to at least one Level 1 Capable circuit.

Exception: For multifamily affordable housing projects:

For projects of $\leq$ 20 units, 5% of dwelling unit parking spaces shall be provided access to at least one Level 2 EV Ready circuit, and an additional 35% of dwelling unit parking spaces shall have access to at least one Level 1 EV Capable circuit.

For projects >20 units of multifamily affordable housing, 10% % of dwelling unit parking spaces shall be provided with access to at least one Level 2 EV Ready circuit and an additional 15% of dwelling unit parking spaces shall have access to at least one Level 1 EV Capable circuit.

Notes:

1. Load balancing systems may be installed to increase the number of EV chargers or the amperage or voltage beyond the minimum required. Load balancing does not allow installing less electrical panel capacity than would be required without load balancing.
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. The Building Official may consider allowing exceptions, on a case by case basis, to the requirements for EV infrastructure under this code section, if a building permit applicant submits documentation demonstrating that the increased cost of utility service and / 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 an average cost of $4,500 per parking space for utility service, on-site transformer capacity, or a combination of both.

4.106.4.2.1 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 and Section 4.106.4.2.2, Item 3.

Note: The Division of the State Architect provides guidance on exemptions from Chapter 11B EV infrastructure accessibility requirements, such as buildings that are not subject to Chapter 11B and assigned parking spaces at buildings that are subject to Chapter 11B.

4.106.4.2.2 Electric Vehicle Charging Space (EV space) dimensions. 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). Surface slope for this EV space and the aisle shall not exceed 1 unit vertical in 48 units (2.083 percent slope).

4.106.4.2.3 Design Requirements. For all projects subject to California Code of Regulations Title 24, Part 2, Chapter 11B, construction documents shall indicate how many accessible EVCS would be required as per Title 24, Chapter 11B to convert all Level 2 EV Ready Circuits required under section 4.106.4 to EVCS. Construction documents shall also demonstrate that the facility is designed such that compliance with accessibility standards, including Chapter 11B accessible routes, will be feasible for the required accessible EVCS at the time of EVCS installation. Surface slope for any area designated for accessible EVCS shall meet slope requirements in Chapter 11B and vertical clearance requirements in Chapter 11B at the time of original building construction.[1]

Note: Section11B-812 of the 2016 California Building Code requires that a facility providing EVCS for public and common use also provides 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 (2.083 percent slope) in any direction at the time of new building construction or renovation. Section 11B-812.5 contains accessible route requirements. In addition, Title 24 Part 11 Section 4.106.4.2 requires that developers meet certain aspects of accessibility requirements at the time of new construction for a limited number of parking spaces.

II-19-2.03

Amend Section 5.106.5.3 through Section 5.106.5.3.3 of the Green Building Standards Code to read as follows:

5.106.5.3 Electric Vehicle (EV) Charging. 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.

Exception: Where there is no commercial power supply.

Notes:

1. Load balancing systems 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 load balancing.

5.106.5.3.1 Office Buildings. In nonresidential new construction buildings designated primarily for office use, when 10 or more parking spaces are constructed:

1. 5% 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 20% shall be at least EV Capable or EV Ready.

Calculations for the required minimum number of spaces equipped with Level 2 EVCS, Level 2 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.

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, when 10 or more parking spaces are constructed:

1. 4% of the available parking spaces on site shall be equipped with Level 2 EVCS;
2. An additional 3% shall be at least Level 1 EV Capable.
3. Over 100 spaces: option for one 80kW Fast Charger per 100 spaces.

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 Capable spaces are installed.

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

5.106.5.3.3 Design Requirements. For all projects subject to Title 24, Part 2, Chapter 11B, construction documents shall indicate how many accessible EVCS would be required under the California Code of Regulations Title 24, Chapter 11B, if applicable, in order to convert Level 1 EV Ready infrastructure to EVCS. Construction documents shall also demonstrate that the facility is designed such that compliance with accessibility standards, including Chapter 11B accessible routes, will be feasible for the required accessible EVCS at the time of EVCS installation. Surface slope for any area designated for accessible EVCS shall meet slope requirements in Chapter 11B and vertical clearance requirements in Chapter 11B at the time of original building construction.

II-19-2.04
Amend Section 5.106.5.3.5 of the Green Building Standards Code to read as follows:

5.106.5.3.5 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 2016 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 (2.083 percent slope) in any direction at the time of new building construction or renovation. Section 11B-812.5 contains accessible route requirements.

SECTION 4. EXPRESS FINDINGS

Pursuant to California Health and Safety Code Sections 17958.7 and 18941.5, the City Council hereby finds that the above amendments are necessary due to local climatic, geological or topographical conditions as set forth in **Exhibit A**.

SECTION 5. REPEAL OF CONFLICTING ORDINANCES

Upon adoption of each new California Building Standards Code, the Ordinance adopting the previously adopted California Building Standards Code is superseded in its entirety. This Ordinance does not repeal Ordinance No. 65.147, which adopts by reference and amends parts of the 2019 California Building Standards Code, Ordinance No. 65.148, which adopts by reference and amends the 2019 California Energy Code, nor Ordinance No. 113.25, which adopts by reference and amends the 2019 California Fire Code.

SECTION 6. SEVERABILITY

The provisions of this Ordinance are separable, and the invalidity of any phrase, clause, provision or part shall not affect the validity of the remainder.

SECTION 7. EFFECTIVE DATE AND POSTING

In accordance with Section 36937 of the Government Code of the State of California, this Ordinance shall take effect thirty (30) days from and after the date of its final adoption by the City Council, but no sooner than January 1, 2020. The City Clerk of the City of Milpitas shall cause this Ordinance or a summary thereof to be published in accordance with Section 36933 of the Government Code of the State of California.

EXHIBIT A

FINDINGS IN SUPPORT OF AMENDMENTS TO TITLE 24 OF THE CALIFORNIA CODE OF REGULATIONS: LOCAL CLIMATIC, GEOLOGICAL OR TOPOGRAPHICAL CONDITIONS

Amendments to the Green Building Standards Code:

II-19-2.01	Section 202	Definitions
II-19-2.02	Section 4.106.4 through 4.106.4.2.3	EV charging for single family, duplex, townhouse, and multi-family
II-19-2.03	Section 5.106.5.3 through 5.106.5.3.3	EV charging for new office, and other non-residential buildings
II-19-2.04	Section 5.106.5.3.5	Clean air vehicle parking

The following findings support that the above amendments and modifications are reasonably necessary because of local climatic, geological or topographical conditions:

Express Findings – Climatic

The effects of climate change caused by Green House Gas (GHG) emissions are increasingly self-evident, and very costly. Higher temperatures are contributing to record heat waves and droughts, rising sea levels, more intense storms, wildfires and floods.

Climate change is the fundamental design problem of our time. The threat that climate change poses is existential, and buildings together with transportation are large contributors.

Amending all of the above referenced code sections is necessary to combat the ever-increasing harmful effects of climate change. Implementation of the proposed reach code amendments will provide an accelerated path to reduce Green House Gas (GHG) emissions and carbonization in an effort to stem the tide of GHG emissions and the effects of global warming and climate change.

Attachment C

Milpitas 2019 Energy Reach Codes

SUMMARY

ALL CONSTRUCTION MANDATORY

To provide for future electrification, all newly constructed mixed-fuel buildings and additions must comply with the following mandatory requirements:

- Water heating: 240V/30A circuit, condensate drain
  2019 California Energy Code (base code) requirement is for a 125V/20A circuit which would not be sufficient as currently available higher efficiency heat pump water heaters require a 240V/30A circuit.
- Clothes Drying: 240V/40A circuit
  No requirement in 2019 California Energy Code (base code).
- Cooking: 240V/50A circuit
  No requirement in 2019 California Energy Code (base code).
- Space-conditioning Equipment: Heat pump operation capability and / or 30Acircuit if only space heating provided
  No requirement in 2019 California Energy Code (base code).

RESIDENTIAL PERFORMANCE AND PRESCRIPTIVE COMPLIANCE APPROACHES

Explanatory Notes

1. The All-Electric Performance Paths given under item #1 below for all project types are not reach codes but new pathways for Energy Efficiency that have been made available per the 2019 California Energy Code.
2. Regarding Single, Two-Family, and Multi-Family construction of 3 stories or less, the Performance Path requirements for an energy budget are expressed as the EDR (Energy Design Rating) for the Proposed Design Building. All of the reach code EDR index numbers for the projects named below that are expressed in the following table represent higher efficiencies than the 2019 Energy Code Standard Design Building. These higher efficiency requirements were provided in the model reach code that Silicon Valley Clean Energy (SVCE) made available to local jurisdictions. These efficiency levels conform to requirements in the 2019 Cost-Effectiveness Study for Low-Rise Residential New Construction. Cost-effectiveness is one of two main criteria with which the California Energy Commission (CEC) uses to evaluate and approve reach codes. The other criteria that the CEC uses is that the reach codes must demonstrate higher levels of energy efficiency than the base 2019 California Energy Code.
3. Regarding Nonresidential construction, the Performance Path requirements are expressed as percentages of efficiency that are more than the base 2019 California Energy Code, instead of as an EDR. EDR is the required metric only for residential compliance starting Jan 1, 2020. So, to reflect that, the new code has to use EDR (as a number) rather than compliance margin (as a percentage) for residential requirements. Non-residential still uses compliance margin (in percentages).

Project Type and Size	Performance Path Requirements	Prescriptive Path Requirements
Single and Two-family New Construction	1. **All Electric.** Demonstrate that the proposed home will be all-electric, OR	**Build All Electric** and Meet 2019 California Energy Code.

	2. **Electrically Heated Mixed Fuel Building (electric space and water heating).** Proposed Design Building shall be at least 2 EDR points less than the Energy Efficiency Design Rating calculated for the Standard Design Building	**Electrically Heated Mixed Fuel Building** a. Low leakage ducts in conditioned space PER 2019 Reference Appendices RA3.1.4.3.8. b. Install R-10 perimeter slab insulation at a depth of 16-inches. c. Compact hot water distribution per 2019 Reference Appendices RA4.4.6. d. Maximum fan efficacy of 0.35 Watts/cfm and verification by a HERS rater according to 2019 Reference Appendices RA3.3.
	3. **Mixed Fuel Building.** Proposed Design Building shall be at least 10 EDR points less than the Total Energy Design Rating calculated for the Standard Design Building, OR	**Mixed Fuel Building** a. Low leakage ducts in conditioned space PER 2019 Reference Appendices RA3.1.4.3.8. b. Install R-10 perimeter slab insulation at a depth of 16-inches. c. Compact hot water distribution per 2019 Reference Appendices RA4.4.6. d. Maximum fan efficacy of 0.35 Watts/cfm and verification by a HERS rater according to 2019 Reference Appendices RA3.3. e. Either 1) 5 kWh battery OR 2) A solar water heating system with a minimum solar savings fraction of 0.20.
Multifamily New Construction **3 stories or less**	1. **All Electric.** Demonstrate that the proposed building will be all-electric, OR	**Build All Electric** and Meet 2019 California Energy Code.
	2. **Electrically Heated Mixed Fuel Building (electric space and water heating).** Proposed Design Building be at least 1 EDR point less than the Energy Efficiency Design Rating calculated for the Standard Design Building,	**Electrically Heated Mixed Fuel Building** a. Install R-10 perimeter slab insulation at a depth of 16-inches. b. Compact hot water distribution per 2019 Reference Appendices RA4.4.6. c. Maximum fan efficacy of 0.35 Watts/cfm and verification by a HERS rater according to 2019 Reference Appendices RA3.3. d. Meet the requirements of Verified Low Leakage Ducts in Conditioned Space (VLLDCS) in the 2019 Reference Appendices RA3.1.4.3.8, with less than or equal to 25 cfm leakage to outside. e. Install a roofing product that's rated by the Cool Roof Rating Council to have an aged solar reflectance (ASR) of greater than or equal to 0.25.

	3. **Mixed Fuel Buildings.** Proposed Design Building shall be at least 11 EDR points less than the Total Energy Design Rating calculated for the Standard Design Building, OR	**Mixed Fuel Building** a. Install R-10 perimeter slab insulation at a depth of 16-inches. b. Compact hot water distribution per 2019 Reference Appendices RA4.4.6. c. Maximum fan efficacy of 0.35 Watts/cfm and verification by a HERS rater according to 2019 Reference Appendices RA3.3. d. Either 1) 2.75 kWh battery per dwelling unit OR 2) A solar water heating system with a minimum solar savings fraction of 0.20. e. Meet the requirements of Verified Low Leakage Ducts in Conditioned Space (VLLDCS) in the 2019 Reference Appendices RA3.1.4.3.8, with less than or equal to 25 cfm leakage to outside. f. Install a roofing product that's rated by the Cool Roof Rating Council to have an aged solar reflectance (ASR) of greater than or equal to 0.25.
Low Rise Res Alterations	Meet 2019 California Energy Code.	Meet 2019 California Energy Code.
Low Rise Res Additions	Meet 2019 California Energy Code.	Meet 2019 California Energy Code, **including** shall meet the requirements of Sections 110.0 through 110.9, Sections 150.0(a) through (q) and 150.0(s), and either Section 150.2(a) 1 or 2.

NONRESIDENTIAL PERFORMANCE AND PRESCRIPTIVE COMPLIANCE APPROACHES

Nonresidential New Construction	**All Electric.** Demonstrate that the proposed building will be all-electric, OR	**Build All Electric** and Meet 2019 California Energy Code.
	Mixed Fuel Buildings, All Occupancies Except Group B (office) and M (mercantile). Demonstrate that the energy use of the proposed building is 6% more efficient than the 2019 California Energy Code.	**Mixed Fuel Building, All Occupancies Except Office and Mercantile, as applicable:** a. Install fenestration with a solar heat gain coefficient no greater than 0.22. b. Design Variable Air Volume (VAV) box minimum airflows to be equal to the zone ventilation minimums. c. Include economizers and staged fan control in air handlers with a mechanical cooling capacity ≥ 33,000 Btu/h. d. Reduce the lighting power density (Watts/ft2) by ten percent (10%) from that required from Table 140.6-C. e. In common areas, improve lighting: 1) Control to daylight dimming plus off per Section 140.6(a)2H 2) Perform Institutional Tuning per Section 140.6(a)2J f. Install one drain water heat recovery device per every three guest rooms that is field verified as specified in the Reference Appendix RA3.6.9.

	Group B (office) and M (mercantile). Demonstrate that the energy use of the proposed building is 14% more efficient than the 2019 California Energy Code.	**Mixed Fuel Buildings, Office and Mercantile, as applicable:** a. Install fenestration with a solar heat gain coefficient no greater than 0.22. b. Limit the fenestration area on east-facing and west-facing walls to one-half of the average amount of north-facing and south-facing fenestration. c. Design Variable Air Volume (VAV) box minimum airflows to be equal to the zone ventilation minimums. d. Include economizers and staged fan control in air handlers with a mechanical cooling capacity ≥ 33,000 Btu/h. e. Reduce the lighting power density (Watts/ft2) by ten percent (10%) from that required from Table 140.6-C. f. Improve lighting: 1) Control to daylight dimming plus off per Section 140.6(a)2H 2) Install Occupant Sensing Controls in Large Open Plan Offices per Section 140.6(a)2I 3) Perform Institutional Tuning per Section 140.6(a)2J
Mixed Occupancy	For buildings that do not fall under the exceptions of 100.0(f) of the 2019 California Energy Code, the building must meet the performance requirements under the residential and nonresidential sections in this table based on a weighted-average by floor area.	Meet the appropriate prescriptive requirements under the residential and nonresidential elsewhere in this table, as applicable.
Nonresidential Additions and Alterations	Meet 2019 California Energy Code.	Meet 2019 California Energy Code.

Attachment D

Milpitas 2019 Green Building Reach Codes

SUMMARY

EV Charging Proposed Reach Code for the 2019 California Green Building Standards Code

Unlike amendments to the California Energy Code, a cost-effectiveness study is not required for amendments to the California Green Building Standards Code (CALGreen), which covers items such as electric vehicle charging infrastructure. Staff worked closely with SVCE and the Statewide Program's team to establish new construction EV requirements which are more in line with local EV adoption trends, while providing flexibility for the developer and keeping construction costs as low as possible.

Electric Vehicle Charging Infrastructure Categories and 2019 CALGreen EV Requirements

Electric Vehicle charging requirements in California can generally be broken into three categories:

- EV Charging Installed: all supply equipment is installed at a parking space, such that an EV can charge without additional equipment.
- 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.
- EV Capable: Conduit is installed to parking space, and building electrical system has ample capacity to serve future load. An electrician would be required to complete the circuit before charging is possible.

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

- Level 1: Capable of charging at 120V, 20A. This is the equivalent to a standard home outlet.
- Level 2: Capable of charging at 240V, 30-40A. This is the service capacity typically used for larger appliance loads in homes.
- 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 Standards Code increases requirements for electric vehicle charging infrastructure in new construction, including the following:

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

Milpitas Proposed Reach Code for EV infrastructure for New Buildings in 2019 CALGreen

While the code amendment language can be found in the proposed ordinance, proposed reach code for EV infrastructure for new buildings is summarized below:

Residential Buildings

- Single Family Dwelling: One Level 1 EV Ready circuit, and one Level 2 EV Ready circuit.
- Multi-Family Dwelling: ≤20 units: 15% of dwelling unit parking spaces provided with access to at least one Level 2 EV Ready circuit and an additional 35% provided with access to at least one Level 1 Capable circuit
    - Exception: Not required for units without parking.
- Multi-Family Dwelling: >20 units: 20% of dwelling unit parking spaces provided with access to at least one Level 2 Ready circuit and an additional 35% of dwelling unit parking spaces provided with access to at least one Level 1 Capable circuit
    - Exception: Not required for units without parking.

- Exception: For multi-family affordable housing projects:
  ≤ 20 units, 5% of parking spaces to be provided access to at least one Level 2 Ready circuit and an additional 35% of spaces shall have access to one Level 1 Capable circuit
  < 20 units, 10% of parking spaces to be provided access to at least one Level 2 Ready circuit and an additional 15% of parking spaces shall have access to at least one Level 1 Capable circuit

Office Buildings

- 5% of the parking spaces, Level 2 Electric Vehicle Supply Equipment (EVSE) (complete charging infrastructure installed).
- 10% of the parking spaces, Level 1 EV Ready circuits.
- 20% of the parking spaces EV Capable at the "pinch points" utilizing at least Level 2-sized conduit with panel capacity for 2kW per EV capable parking space.

Other Nonresidential Buildings

- When 10 or more parking spaces are provided, 4% of the spaces shall be equipped with Level 2 Electric Vehicle Charging Stations (EVCS).
- An additional 3% shall be at least Level 1 Capable.
- Over 100 spaces: option for one 80kW Fast Charger per 100 spaces
  - NOTE: Installation of each DC 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.

Attachment E

From: Aaron Barger <AaronBarger@lyonliving.com>
Sent: Thursday, October 10, 2019 16:47
To: Hansen, Eric <EHansen@shapartments.com>; Jason Earl <jearl@ci.milpitas.ca.gov>; Bill Tott <btott@ci.milpitas.ca.gov>; Sharon Goei <sgoei@ci.milpitas.ca.gov>
Cc: Richardson, Bracken <brichardson@shapartments.com>; Cole, Donovan <DCole@shapartments.com>
Subject: RE: Reminder - Stakeholder Engagement on Proposed Reach Codes to Promote Green Development SUMMERHILL RESPONSE

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links.

Eric and Bill

Thank you for putting forth this proposed alternative to the City of Milpitas' Reach Code to Promote Green Development. Based on the information gained at the Stakeholder meetings and the subsequent conversations about the impact the proposed Reach Codes will have, finding an alternative that has less impact on new project development is of the utmost importance.

Our belief is that the intent should be to develop a reach strategy that could handle the load requirements and design changes that either the City's proposal or your alternative would require without negatively affecting our residential unit count. Although we do not currently have a project that is either entitled, or in Plan Check, I believe that your proposal and methodology make sense as an alternative compromise to the City's Reach Code proposal. I believe this meets the intent of the Reach Code, and fits within a framework of the near term EV usage in the Bay Area.

Lyon Living would support the City's Reach Code proposal if it followed the SummerHill proposal as outlined in Eric's email below. Lyon also looks forward to continuing the working relationship with the City and the other stakeholders, such as SummerHill, on this matter.

Respectfully,

Aaron Barger | Development Director

4901 Birch St | Newport Beach CA 92660
T 408-640-1100
E aaronbarger@lyonliving.com
W www.lyonliving.com

Attachment E

From: Hansen, Eric [mailto:EHansen@shapartments.com]
Sent: Thursday, October 10, 2019 12:03 PM
To: Jason Earl <jearl@ci.milpitas.ca.gov>; Bill Tott <btott@ci.milpitas.ca.gov>; Sharon Goei <sgoei@ci.milpitas.ca.gov>
Cc: Richardson, Bracken <brichardson@shapartments.com>; Cole, Donovan <DCole@shapartments.com>; Aaron Barger <AaronBarger@lyonliving.com>
Subject: RE: Reminder - Stakeholder Engagement on Proposed Reach Codes to Promote Green Development SUMMERHILL RESPONSE

Good Morning Bill,

I have been directing my correspondence on this matter primarily to the City because I recognize all the final decisions will be made by the City so I figured that you should decide how to engage your consultants. It is my understanding from our meeting on Monday that the City is looking for SummerHill to make a proposal for reasonable upgrades on EV Charging. I discussed this with our COO and VP of Asset Management who are actively leasing up our apartment projects and touring others throughout the SF Bay Area. Below is what we came up with in an effort to meet current EV charging demands and provide additional capacity for future demand in the market. I'm hopeful that the various stakeholders can see that 100% EV charging is not feasible and this is a good faith effort to provide a compromise solution.

LEVEL 2 (40 Amp circuit that provides about 25 miles of range per hour)
2019 CALGreen Code – 10% "Capable" (conduit and load capacity to add wire and receptacles later)
SUMMERHILL RECOMMENDATION – 10% "Ready" fully built ready to charge. This is essentially what we are trying to provide now as we think the demand is there or will be there in the near future. We are also willing to provide an additional 10% "Capable" which we would build out later if the demand is there. This would provide a total Level 2 EV charging capacity of 20%.

LEVEL 1 (20 Amp circuit that provides only 5 miles of range per hour)
2019 CALGreen Code – 0% Required but the City indicated from their research this will satisfy the needs of many SF Bay area's commuters.
SHAC RECOMMENDATION – 20% "Capable" to match the overall Level 2 capacity proposed above. The Level 1 chargers are common for single family development but new for apartment projects so we would like to provide the capacity but hold off on building them out as "ready" until we can verify the demand.

I would like to make it clear that even these recommendations will significantly increase the electrical capacity and costs for EV charging on a project. Below is a summary of these upgrades applied to Building A project at 1500 Centre Pointe (637 stalls) beyond the 10% Level 2 "capable" stalls required by the 2019 CALGreen code.

- Added load for 10% additional Level 2 chargers (64 stalls X 18.3 Amps/stall = 1,171.2 Amps). Added load for 20% additional Level 1 chargers (128 stalls X 6.7 Amps/stall = 857.6 Amps). **Total load added is 2,029 Amps.** This will result in one additional transformer with some load absorbed by transformers that were already planned. This could result in a unit being deleted from the project or at least reducing a 2 bedroom to a studio or 1 bedroom.
- The added transformer will cost about $125K. Building out 10% Level 2 chargers will cost about $192K (64 stalls X $3,000 = $192,000). Providing conduit for an additional 10% Level 2 chargers

as capable will cost $32K (64 stalls X $500 = $32,000). Providing conduit for an additional 20% Level 1 chargers as capable will cost $51K (128 stalls X $400 = $51,200). **This is a total added cost of $400K**

We appreciate the dialogue with the City on this matter and are hopeful that this proposal meets with your approval.

Thanks,
Eric

ERIC HANSEN
VICE PRESIDENT OF CONSTRUCTION
SummerHill Apartment Communities
777 S. California Avenue, Palo Alto, CA 94304
Tel (650) 842-2284 • Mobile (415) 420-5623 • Fax (650) 887-1077
ehansen@shapartments.com
shapartments.com

Connect With Us:

From: Kyle Zaylor <kzaylor@thecorecompanies.com>
Sent: Thursday, September 12, 2019 4:36 PM
To: Sharon Goei <sgoei@ci.milpitas.ca.gov>; Bill Tott <btott@ci.milpitas.ca.gov>
Cc: Aaron Barger <AaronBarger@lyonliving.com>
Subject: Thanks

Sharon and Bill,

Thank you for holding the reach code meeting this morning. It was very informative and a healthy dialogue with the group. I'll speak on behalf of the developers in the group by saying thank you for the open dialogue.

Best,
Kyle

Kyle Zaylor
Senior Project Manager

470 South Market Street, San Jose, CA 95113
Office: 408.292.7841 x31 Cell: 440.725.9239
www.thecorecompanies.com

Attachment F

Pacific Gas and Electric Company

Robert S. Kenney
Vice President
State and Regulatory Affairs

P. O. Box 77000
San Francisco, CA 94177-00001
Mail Code B23A
(415) 973-2500
Robert.Kenney@pge.com

September 23, 2019

VIA EMAIL TO: c/o CityClerk@ci.milpitas.ca.gov

Honorable Mayor Rich Tran and City Council
City Council Chambers
455 E. Calaveras Blvd.
Milpitas, CA 95035

Dear Honorable Mayor Tran and City Council:

Pacific Gas and Electric Company (PG&E) is proud to provide electric and natural gas service to the City of Milpitas. And we are committed to helping customers and the community achieve their energy goals. As part of this commitment, PG&E welcomes the opportunity to support the City of Milpitas's efforts to promote efficient, all-electric new construction, when it is cost-effective.

PG&E strongly supports California's climate and clean air goals. We recognize that achieving these goals requires a range of approaches and tools, including increasing the use of energy-efficient electric appliances in buildings when cost-effective. PG&E welcomes the opportunity to avoid investments in new gas assets that might later prove underutilized as local governments and the state work together to realize long-term decarbonization objectives. With all this in mind, PG&E supports local government policies that promote all-electric new construction when cost effective.

PG&E recognizes the need for a multi-faceted approach to address climate change, including electrification, as well as opportunities to decarbonize the gas system with renewable natural gas and hydrogen. As electrification policies are implemented and as large scale renewable gas options develop, PG&E will continue to ensure the safe and reliable operation of the existing gas system to continue supporting the customers that depend on it.

PG&E appreciates the partnership with the City of Milpitas during its policy development process, which allows us to prepare for the future and continue providing the best service possible to customers. PG&E remains ready to engage with our customers, local government, businesses, and community members to meet their needs safely, reliably, affordably, and with clean energy.

PG&E looks forward to continuing to work with the City of Milpitas to accomplish its policy goals.

Thank you, and have a safe day.

Sincerely,

Robert S. Kenney
Vice President

cc: Elaine Marshall, Deputy Public Works Director at City of Milpitas (emarshall@ci.milpitas.ca.gov)
Sharon Goei, Director of Building and Housing (sgoei@ci.milpitas.ca.gov)
Bill Tott, Building Official (btott@ci.milpitas.ca.gov)
Anna Brooks, Sr. Manager, Public Affairs, PG&E (anna.brooks@pge.com)
Darin Cline, Sr. Manager, Government Relations, PG&E (Darin.Cline@pge.com)

Attachment G

WPGA
WESTERN PROPANE GAS ASSOCIATION

October 15, 2019

SUBMITTED VIA EMAIL

Rich Tran, Mayor
City of Milpitas
Attn: Milpitas City Council
455 E. Calaveras Blvd.
Milpitas, CA 95035
rtran@ci.milpitas.ca.gov

RE: City of Milpitas Development of Reach Codes

Dear Mayor Rich Tran:

Thank you for the opportunity to comment on the City of Milpitas proposed Reach Codes aimed at reducing greenhouse gas emissions in the building sector. The Western Propane Gas Association (WPGA) seeks to be a valuable contributor in both the development of these codes and the policies and procedures that may emerge as a result of these discussions.

While we applaud efforts for building decarbonization, WPGA believes that Reach Codes disincentivizing propane as a complementary fuel source to electric are fundamentally misguided. WPGA hopes that regulators will look to the example that the City of San Luis Obispo is setting with the development of their Reach Codes and recognize the value that propane provides on a number of levels.

Propane provides affordable, clean energy for low income communities as well as a vital back-up power for solar powered homes when battery power is low. Disincentivizing propane as a complementary power to solar has an unintended consequence to make solar homes more expensive and less reliable when power generation is not at peak levels.

Furthermore, there has been numerous discussions throughout California regarding planned power outages and safety black-outs. In a recent article published by Politico (PG&E begins massive power shut-off in California to avoid wildfires) it is noted that the Public Safety Power Shutoff could affect 2.4 million electricity users. Propane delivers energy resiliency for communities facing safety black-outs which can be critical for those powering life-sustaining equipment. Vulnerable citizens such as people on dialysis or simply the many individuals using electric powered wheelchairs can use propane energy for reliable power.

When looking towards the future, our industry is investing in renewable propane, derived from sustainable sources like beef tallow or vegetable oil. We hope that regulators take a more holistic view of the complementary role propane plays alongside decarbonization efforts including solar, wind and other renewable fuels.

The Western Propane Gas Association appreciates your work in this area and looks forward to working with you as the City of Milpitas and the State strive to reduce greenhouse gas emissions through comprehensive clean energy solutions.

Sincerely,

Ben Granholm
Regulatory Affairs Specialist

cc: Steven McHarris, City Manager

Attachment H

SILICON VALLEY CLEAN ENERGY

333 W El Camino Real, Ste. 290 | Sunnyvale, CA 94087 | SVCleanEnergy.org | 1-844-474-SVCE

SVCE Letter of Interest (LOI) for $10,000 Reach Code Grant

Our organization requests this letter indicating your likely interest in receiving $10,000 from SVCE to help defray costs associated with developing a local amendment to the energy code section of Title 24.

Background

With SVCE Board Approval, our organization partnered with Peninsula Clean Energy (PCE) and San Mateo County Office of Sustainability (OOS) to facilitate the adoption of an energy code in the 2019 Building Code (to be adopted as of January 1, 2020) supportive of all-electric buildings and/or electric vehicle (EV) infrastructure during the new construction process. SVCE has hired a consultant to provide technical support, draft model language and facilitate stakeholder engagement. SVCE recognizes additional staff time will be necessary during the pursuit of these amendments beyond the high level of support provided by our consultants.

Method for receipt of Grant

- Signed LOI returned to SVCE prior to July 2019
- City staff will present a valid amendment to Title 24 regarding buildings and/or EV infrastructure for a vote of their respective city council
- Regardless of outcome of the council vote, complete the Payment Request (to be released shortly) document and return to SVCE by November 30, 2019

We understand this letter is nonbinding and constitutes an indication of interest only.

Signed: _____ Printed Name: BILL TOTT Date: 4.26.19

Organization: BLDG & HOUSING CITY OF MILPITAS Job Title: BUILDING OFFICIAL Email Address: btott@ci.milpitas.ca.gov

Please complete and sign a copy of this Letter, and send a scanned copy via email to john.supp@svcleanenergy.org or via [postal mail] to:

John Supp, SVCE Manager – Account Services
333 W. El Camino Real, Suite 290
Sunnyvale, CA 94087

Upon receipt, an email confirmation will be sent to the email address entered on the Letter of Interest. Please contact John at (408) 721-5301 x1014 with questions.

CITY OF MILPITAS
Building Safety & Housing Department
455 E. Calaveras Blvd.
Milpitas, CA 95035
408-586-3240
www.ci.milpitas.ca.gov

Payment Request
Reach Code Grant
$10,000

Date: Nov. 8, 2019

To: Silicon Valley Clean Energy
From: City (Town) of MILPITAS

Re: $10,000 Payment for Reach Code

Dear SVCE Staff,

We have introduced to our council an amendment to exceed the state provided requirements within Title 24, Part 6 of the energy code and/or electric vehicle infrastructure code. This letter confirms our request for payment from SVCE on behalf of that effort. We have attached a copy of the minutes from the associated council meeting and a copy of the amendment proposed at that meeting.

Type of reach code (circle one): Buildings only EV Charging only (Both Buildings and EV Charging)

Date of the council vote: 11-5-19

Project Contact name	BILL TOTT
Project Contact title	BUILDING OFFICIAL
Project Contact phone number	408 586-3263
Project Contact email	btott@ci.milpitas.ca.gov

Payment will be made to the General Fund unless otherwise specified in writing hereafter.

I acknowledge the above to be true and accurate.

Sincerely,

BILL TOTT
Name

BUILDING OFFICIAL
Title

BILL TOTT
Signature

Attachment I

Reach Code Efforts in Other Cities

City	Building Electrification Requirement	Electric Vehicle Charging Infrastructure	Solar Requirements	Council Date (if known)
Fremont	TBD – Process ongoing, target Reach Code development for Spring 2020. Considering the following recommendations. **Low Rise Residential:** all-electric required, electric preferred. **Non-residential:** all-electric required, electric preferred (exemptions for industrial manufacturing, biotech, and commercial kitchens).	TBD – Process ongoing, target Reach Code development for Spring 2020. Considering the following. **Single-Family/Duplex:** meet 2019 California Energy code. **Multi-family:** 10% of all new parking spaces to be EV Ready. **Non-residential:** 10 – 20% of new parking spaces to be EV Ready.	TBD – Process ongoing, target Reach Code development for Spring 2020. Considering the following recommendations. **Low Rise Residential:** PV and battery required, meet 2019 California Energy code. **Multi-family** (4-6 stories): Mandatory PV sizing TBD based on cost-effectiveness. **Non-residential:** Mandatory PV sized to the Solar Zone, approximately 15% of roof space. *all building types that do not have PV batteries, must be battery ready.	Potentially in January or February of 2020, date not set.
Hayward	**Low Rise Residential:** all-electric required **Non-residential:** Favors all-electric, and has extra requirements for mixed-fuel buildings.	**Single-Family/Duplex:** Two Level 2 EV Ready (each dwelling unit with only one parking space install one Level 2 EV Ready ADU's). **Multi-Unit:** 0-20 Spaces 1 EV2 Ready, 20 or more Spaces, 75% EV2 Ready, remaining dwelling units with parking spaces shall be provided with at least a Level 2 EV Capable. **Office Buildings:** 10 or more parking spaces, 20% of parking shall have Level 2 EVCS, an additional 30% shall be at least level 2 EV Capable. **Non-residential:** 10 or more parking spaces, 15% Level 2 EV Ready,	**Low Rise Residential:** meet 2019 California Energy code. **Non-residential:** When using mixed-fuel must have solar panels on the entire Solar Zone (if this exceeds the annual electric load for the building, it may be reduced to meet the annual load).	Nov. 19, 2019

City	Building Electrification Requirement	Electric Vehicle Charging Infrastructure	Solar Requirements	Council Date (if known)
		(exception a Level 3 DC Fast charger with 80kW or greater output may substitute for 15 Level 2 EV Spaces after at least 15 Level 2 EV Ready spaces are installed.		
Mountain View	**Low Rise Residential:** All-electric required. **Non-Residential:** For-Profit Kitchens may appeal to use natural gas for cooking equipment (must prewire for electric appliances). **Commercial:** Natural Gas allowed in Factory, Hazardous Materials, and Laboratories (must prewire for electric appliances).	**Single-Family/Duplex:** One Level 1 EV Capable, One Level 2 EV Ready (excludes ADU's). **Multi-Unit & Mixed-Use:** 0-9 Spaces 1 EV2 Ready, 10 or more Spaces, 15% EV2 CS, 85% EV Ready, 1 Level 3 DC Fast Charger per every 100 spaces.	**Single-Family/ Duplex:** PV must accommodate annual all-electric building kWh offset. **Multi-Family, Mixed-Use, Hotel/Motel, Commercial:** PV installed on 50% of Roof Area, and meet Energy Code (**low rise residential** buildings are excluded from the 50% PV requirement).	1st Reading Oct. 22, 2019 2nd Reading Nov. 12, 2019
Oakland	TBD – Process ongoing, target Reach Code development for Spring 2020. Discussion on the following. **Low Rise Residential:** All-electric required. **Non-Residential:** Mixed fuel must be 10% more efficient. Or all-electric.	TBD – Process ongoing, target Reach Code development for Spring 2020. Discussion on the following **Multi-family:** 10% EV Ready, 10% EV Capable, rest of spaces with Conduit for future EV installation.	TBD – Process ongoing, target Reach Code development for Spring 2020.	Expected in 2020, no date set
Palo Alto	**Single-Family/Duplex:** Mixed fuel must be 14% more efficient and be electrification ready. Or all-electric. **Multi-family low-rise:** Mixed fuel 8% more efficient. Or all-electric. **Office/Retail:** Mixed fuel 14% more efficient. Or all-electric.	**Single-Family/Duplex:** Provide Conduit Only, EVSE Ready Level 2, or EVSE Installed Level 2 for each residence. **Multi-Unit & Mixed-Use:** Provide Conduit Only, EVSE Ready Level 2, or EVSE Installed Level 2 for each residential unit in the structure. **Guest parking:** Provide Conduit Only, EVSE Ready Level 2, or EVSE Installed	**Single-family Residential*:** At least 500 square feet of PV. **Multi-family residential*:** Install enough PV to at least result in 12% energy efficiency savings. **Non-residential*:** Install at least 5kW of PV.	Nov. 4, 2019

City	Building Electrification Requirement	Electric Vehicle Charging Infrastructure	Solar Requirements	Council Date (if known)
	Hotel low-rise: Mixed fuel 6% more efficient. Or all-electric.	Level 2 for at least 25% of guest parking spaces, and at least 5% (at least one) EVSE Level 2 Installed. **Hotels (new):** Provide Conduit Only, EVSE Ready Level 2, or EVSE Installed Level 2 for at least 30% of parking spaces, and at least 10% (at least one) EVSE Level 2 Installed. **Non-residential:** Provide Conduit Only, EVSE Ready Level 2, or EVSE Installed Level 2 for at least 25% of parking spaces, and at least 5% (at least one) EVSE Level 2 Installed.	*All electric construction is exempt from PV requirements. (this info is as of 2017 Palo Alto hasn't yet published new solar requirements.)	
San Jose	**Single-Family/Duplex:** Mixed fuel must be at least a 10 point EDR reduction and be electrification ready. Or all-electric. **Multi-family low-rise:** Mixed fuel must be at least a 10 point EDR reduction and be electrification ready. Or all-electric. **High-rise Multi-family, Hotel/Motel:** Mixed fuel 6% more efficient. Or all-electric. **Non-residential:** Office & Retail: Mixed fuel 14% more efficient. Or all-electric, all electrification ready. Industrial /Manufacturing: Mixed fuel 0% more efficient. Or all-electric, all electrification ready.	**Single-Family/Duplex:** One Level 2 EV Ready space (includes ADU if there is a parking space). **Low-rise Multi-family:** 10% EVSE, 20% EV Ready, 70% EV Capable. **High-rise Multi-family:** 10% EVSE, 20% EV Ready, 70% EV Capable. **Hotel:** 10% EVSE, 0% EV Ready, 50% EV Capable. **Non-residential:** 10% EVSE, 0% EV Ready, 40% EV Capable. (all EV is at least Level 2)	**Low Rise Residential:** PV to meet 2019 California Energy code. Battery with at least 5kWh shall be installed. **Multi-family:** PV sized to offset 100% of the estimated site electricity load. Battery storage with capacity equivalent to the PV system shall be installed.	Oct. 1, 2019

City	Building Electrification Requirement	Electric Vehicle Charging Infrastructure	Solar Requirements	Council Date (if known)
	All others: Mixed fuel 6% more efficient. Or all-electric, all electrification ready.			
San Mateo	**Single-Family/Duplex:** Mixed fuel must be at least 15% more efficient than the Energy code minimum efficiency. Or be all-electric. **Office:** Mixed fuel must be at least 10% more efficient than the Energy code minimum efficiency. Or all-electric. **Multi-family:** TBD likely mid-code cycle.	**Single-Family/Duplex:** One Level 2 EV Outlet installed. **Multi-family:** 15% Level 2 EV Capable spaces. **Non-residential:** 10% Level 2 EV Capable spaces, 5% Level 2 EVSE Installed spaces.	**Single-family/Duplex & Multifamily (3 stories or less):** Meet 2019 Energy Code. **Multi-family (4 stories or more)*:** Minimum 3kW PV system or solar thermal. **Non-residential (<10,000 SF)*:** Minimum 3kW PV system or solar thermal. **Non-residential (>10,000 SF)*:** Minimum 5kW PV system or solar thermal. ***Exception:** May provide a solar hot water system with a minimum collector area of 40 square feet.	1st Reading Aug. 19, 2019 2nd Reading Sept. 3, 2019
Santa Clara	**Single-Family/Duplex:** Mixed fuel must be at least a (TBD) point EDR reduction and be electrification ready. Or all-electric. **Non-residential:** Mixed fuel must be at least 5% more efficient and be electrification ready. Or all-electric.	**Single-Family/Duplex:** Considering 2 EV Ready spaces **Multi-family (40 units or less):** An EV Ready space per unit **Multi-family (40 + units):** 100% EV Ready (w/ load management) **Non-residential:** 10% EVSE, 10% EV Ready, 50% EV Capable.	Meet 2019 California Energy code.	TBD – estimated November 2019.
Sunnyvale	TBD – Process ongoing, target Reach Code development target date not set.	TBD – Process ongoing, target Reach Code development target date not set.	TBD – Process ongoing, target Reach Code development target date not set.	TBD – no target date set, anticipated in 2020

Attachment I

City	Building Electrification Requirement	Electric Vehicle Charging Infrastructure	Solar Requirements	Council Date (if known)
Milpitas	***Single and two-family:*** *Mixed fuel energy consumption must be at least a 10 point EDR reduction. Or electrically heated mixed-fuel shall be at least 2 EDR points less. Or all-electric.* ***Multi-family low-rise:*** *Mixed fuel must be at least a 11 point EDR reduction. Or electrically heated mixed-fuel shall be at least 1 EDR point less. Or all-electric.* ***Non-residential except office and mercantile:*** *Mixed fuel 6% more efficient. Or all-electric.* ***Non-residential office and mercantile:*** *Mixed fuel 14% more efficient. Or all-electric.*	***Single and two-family:*** *install one Level 2 EV Ready circuit, and one Level 1 EV Ready circuit.* ***Multi-family (20 units or less):*** *15% access to Level 2 EV Ready circuit.* *35% access to Level 1 Capable circuit.* ***Multi-family (20 + units):*** *20% access to Level 2 EV Ready circuit.* *35% access to Level 1 Capable circuit.* ***Office:*** *5% access to Level 2 EV Charger System installed. 10% access to Level 1 EV Ready. 20% access to Level 1 EV Capable or EV Ready.* ***Other Non-residential:*** *4% access to Level 2 EV Charger System installed. 3% access to Level 1 EV Capable. Over 100 spaces, one 80kW Level 3 DC Fast charger per 100 spaces.* ***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 Capable spaces are installed.*	***Residential:*** *Meet 2019 California Energy code.* ***Non-residential (<10,000 SF)*:*** *Minimum 3kW PV system or solar thermal.* ***Non-residential (≥10,000 SF)*:*** *Minimum 5kW PV system or solar thermal.* ****Exception:*** *May provide a solar hot water system with a minimum collector area of 40 square feet.*	*1st Reading Nov. 5, 2019* *2nd Reading Dec. 3, 2019*

Attachment J

International Brotherhood of Electrical Workers

AFL-CIO
Local Union No. 332
2125 CANOAS GARDEN AVENUE, SUITE 100
SAN JOSE, CALIFORNIA 95125
Telephone: (408) 269-4332
Fax: (408) 979-5500

November 7, 2019

Re: 2019 California Energy Code - Local Amendments (Reach Codes)

Dear City Council Member:

Each local government is required by law to adopt new changes to the California Building Standards Code every three years (known as code cycles) proposed by the State. The next code cycle will take effect January 1, 2020. This creates an opportunity to simultaneously adopt optional local building code amendments (known as Reach Codes) that exceed state code standards.

Historically, cities/counties sometimes adopt amendments to the Energy (Title 24, Part 6) and California Green Building Standards - CAL Green (Title 24, Part 11) codes to meet local environmental goals or aspirations.

This creates a significant Reach Code opportunity to reduce future GHG in new buildings by discouraging or eliminating the use of natural gas. This can be accomplished by incentivizing and/or requiring new buildings to use more electric appliances to utilize the clean renewable electricity available rather than natural gas.

Cities across the region are recognizing that all-electric homes and EVs reduce production of greenhouse gases (CHG) and provide healthier and safer homes and transportation at reduced cost.

Moving to all-electric homes is an important step for our economy and IBEW Local 332 is taking aggressive steps to ensure that we have trained workforce to address this need.

The IBEW Local 332 has been training men and women as electricians for over 100 years in Santa Clara County. The training requirements to become a journeyman electrician is based on a five (5) year apprenticeship program that focuses on installation, safety, compliance with Federal, State and County Codes and design of all electrical systems. As the future unfolds, IBEW Local 332 is transforming training objectives to meet with the innovations for electrification of homes with a conscious focus on controlling cost and energy. How is this being done? Through training in smarter, controlled based devices in lighting, which consumes 48% of the energy in a home. Through training and installation of advance designs and control of HYAC systems and home appliance, which are the highest consumers of energy in homes. Through training on the installation and maintenance of solar panels that can now be integrated into the roof designs of homes. Finally, through the installation of electric vehicle charging stations, since the growth of electric cars is predicted to increase from the current 3 million to 125 million cars by 2030 according to the International Energy Agency.

Each one of these areas represent only a small portion of the training each electrician receives as an apprentice and through journeymen upgrade courses. Additionally, IBEW Local 332 journeymen meet the State of California requirements for certification to work on homes, industrial/commercial buildings, and public transportation sites and receive added certifications for specialized training on lighting controls, electric vehicle charging stations, building automations, and the list goes on.

We are pleased to be at the forefront of the effort to ensure that Santa Clara County will have the workforce needed to deliver high quality electrical service and installation of innovative technologies such as heat-pump water heaters, induction stoves, and electric vehicle charging to meet these needs.

We encourage the City Council to adopt building reach codes to accelerate cleaner, safer and lower cost homes and transportation.

Thank you for your consideration of this request. If there is any way that IBEW 332 can be of assistance on this or other matters, please do not hesitate to call.

Thank you,

Dan Rodriguez
Business Manager
IBEW Local 332

CITY OF MILPITAS
AGENDA REPORT
(AR)

Item Title:	Introduce Ordinance No. 65.148 Adopting by Reference the 2019 California Energy Code with Amendments; introduce Ordinance No. 65.149 Adopting by Reference the 2019 California Green Building Standards Code with Amendments; and Set a Public Hearing on December 3, 2019 for Adoption of the Ordinances
Category:	Community Development
Meeting Date:	11/5/2019
Staff Contact:	Sharon Goei, 408-586-3260; Bill Tott, 408-586-3263
Recommendation:	1. Following the City Attorney's reading of the title, move to waive the first reading beyond the title and introduce Ordinance No. 65.148 amending Chapter 11 of Title II of the Milpitas Municipal Code adopting by reference the 2019 California Energy Code with amendments. 2. Following the City Attorney's reading of the title, move to waive the first reading beyond the title and introduce Ordinance No. 65.149 amending Chapter 19 of Title II of the Milpitas Municipal Code adopting by reference the 2019 California Green Building Standards Code with amendments. 3. Set a public hearing on December 3, 2019, pursuant to California Government Code Section 50022.3, for adoption of the Ordinances.

Executive Summary:

Staff recommends adopting local amendments to the 2019 California Energy Code pertaining to building electrification, mixed fuel construction, and solar photovoltaic systems, and the 2019 California Green Building Standards Code pertaining to electric vehicle (EV) charging for new residential and non-residential construction. These local amendments, referred to as reach codes, would exceed the requirements in the 2019 state codes to more effectively combat climate change and meet established state targets for reducing greenhouse gas emissions (GHG). The proposed reach codes for Milpitas provide pathways/options and offer a balanced approach to new residential and non-residential construction. They were largely based on the model code amendment initiated by Silicon Valley Clean Energy and incorporate adjustments as a result of outreach and stakeholder input from the Milpitas community. Adopting the proposed reach codes will help reduce GHG emissions for new construction, improve indoor air quality and the safety of our building stock, support affordable housing, and stimulate the use of electric vehicles in the Milpitas community.

In order to make amendments to the California Building Standards Code, the City must make express findings that the amendments and modifications are reasonably necessary because of local climatic, geological or topographical conditions. These findings are contained in the proposed ordinance.

This report provides an overview of: 1) the reach code adoption process; 2) statewide cost-effectiveness studies for electrification reach codes for new residential and nonresidential buildings; 3) regional reach code focus and local engagement efforts; 4) benefits to low-income communities; and 5) proposed Milpitas reach code amendments to the California Energy Code and Green Building Standards Code (CALGreen) for the 2019 triennial code adoption cycle.

Background:

The City of Milpitas has demonstrated leadership in sustainability, especially over the past seven years in which the City installed 895 kW of solar photovoltaic panels at three City facilities including the Sports Center, adopted its first Climate Action Plan (CAP) for reducing greenhouse gas emissions (GHG) through 2020 (an

update is planned for 2020), and launched a community scale carbon-free electricity endeavor through participation in the Silicon Valley Clean Energy (SVCE) program.

Through the SVCE community choice energy provider of carbon-free electricity (with opt-up to 100% renewable electricity), almost 97% of Milpitas resident and businesses now enjoy receiving carbon-free electricity and over $1.2 million savings in on-bill charges while significantly reducing GHG. While these savings and reductions in GHG represent significant actions, more needs to be done to minimize climate change and meet State established GHG reduction targets.

The most recent State target was set by Governor Brown's Executive Order EO B-55-18, signed on September 10, 2018, which establishes the goal for the state to be carbon neutral as soon as possible, and no later than 2045.

Based on the City and state goals to reduce GHG emissions, electrification retrofits will be necessary and ultimately required for renovation of existing buildings and new buildings constructed under current standards. Addressing electrification now in new buildings avoids hardships for tenants and retrofit costs for building owners in the future and acknowledges the GHG impacts under current construction practices, especially when considering the benefits of building and transportation electrification when paired with carbon-free electricity that is provided by SVCE.

Every three years, the State of California adopts new building standards that are organized in Title 24 of the California Code of Regulations, referred to as the California Building Standards Code. This regular update is referred to as a "code cycle." The last code cycle was adopted in 2016 and was effective on January 1, 2017. The next code cycle will be adopted in 2019 and will be effective January 1, 2020. Cities and counties have the authority to adopt local amendments ("reach codes") that require new development projects to exceed minimum requirements in the California Energy Code and California Green Building Standards Code (also known as CALGreen).

The City of Milpitas is participating in the Silicon Valley Clean Energy reach code grant offering, which will provide $10,000 to the City for presenting reach codes to the City Council for consideration. Please see Attachment H for the SVCE Letter of Interest for the $10,000 grant.

Analysis:

Proposed Code Amendments

A. Energy Code

New to the 2019 California Energy Code is an all-electric pathway for energy efficiency compliance. This all-electric pathway is NOT a reach code amendment but one of two general paths that developers and builders can choose from to provide enhanced electrification and GHG reduction. The other pathway is where reach codes can be provided, and utilizes mixed fuel construction in new buildings, with some paths using more electrification and some using less. Please see the proposed ordinance Attachment A for the Energy Code amendment language regarding the various mixed fuel options that can be found in the proposed ordinance. Staff has also prepared a summary of the reach code technical information in an easier-to-digest format in Attachment C. The summary shows the various performance and prescriptive pathways that are available under the proposed reach code amendments to the Energy Code.

Regarding solar photovoltaic mandatory requirements for non-residential buildings, new buildings with less than 10,000 square feet floor area need to provide a minimum 3-kW solar photovoltaic system. New buildings with 10,000 square feet floor area or more need to provide a minimum 5-kW solar photovoltaic system. The reach code also provides an alternative to the solar photovoltaic system by providing a solar hot water system (solar thermal) for non-residential buildings. These requirements were adapted as part of the model reach code to provide the ability for projects to offset added electrical load on the utility grid.

The proposed reach code is largely based on the model code amendment developed by Silicon Valley Clean Energy, which has been vetted through considerable research and public review. Staff also incorporated adjustments in the proposed reach code as a result of stakeholder input from the Milpitas community. The proposed reach codes for Milpitas provide pathways/options and offer a balanced approach to new residential and non-residential construction.

B. Green Building Standards Code (CALGreen)

It is widely known that availability of electric vehicle (EV) charging infrastructure is a critical component to EV adoption. Retrofitting existing buildings with EV charging infrastructure is significantly more expensive than it is during new construction.

EV reach codes will ensure that newly constructed buildings have ample EV charging capability to reduce long term costs of EV infrastructure installation while helping to increase EV adoption and decrease transportation related GHG emissions which account for approximately 50% of total GHG emissions.

The proposed reach code amendments will provide a higher percentage of charging infrastructure in new construction through a combination of Level 1 and Level 2 circuits with varying readiness. Please see Attachment B for the code amendment language and Attachment D - Summary of proposed Green Building reach codes for more details on the proposed EV charging reach code amendments.

Costs/Benefits of Proposed Amendments

A. Statewide Cost-Effectiveness Study

Funded by the California Investor-Owned Utilities (IOUs) such as Pacific Gas and Electric (PG&E), the California Statewide Codes and Standards Program (Statewide Program) completed cost-effectiveness studies for new residential and non-residential construction, for use statewide in the current building code cycle. The reach code cost-effectiveness study for nonresidential new construction is posted at https://peninsulareachcodes.org/wp-content/uploads/2019/09/2019-NR-NC-Cost-Effectiveness-Study-2019-07-25.pdf. The residential cost-effectiveness study is posted at https://peninsulareachcodes.org/wp-content/uploads/2019/09/2019-Res-NC-Reach-Codes.pdf. The proposed Milpitas reach codes are based on data in these studies, specific to Climate Zone 4. These studies are required for California Energy Commission (CEC) review and approval of amendments to the California Energy Code.

B. Project Feasibility

While the environmental benefits of reach codes for building electrification and EV charging have been well-documented, there have been concerns expressed by the development community on the financial impact on project feasibility due to increased construction costs associated with reach codes.

According to the statewide cost-effectiveness studies noted in the previous section, all-electric buildings offer savings on “first” construction costs for all building types when compared to mixed fuel buildings in all climate zones.

These same studies do account for the increased “first” construction costs for mixed fuel construction, but the Nonresidential and Low Rise Residential New Construction cost-effectiveness studies above found all mixed fuel building prototypes in Climate Zone 4 to be cost-effective when using the time dependent valuation of energy (TDV) methodology. This methodology intends to capture the “societal value” or cost of energy use including long term projected costs such as the cost of providing energy during peak periods of demand, projected costs for carbon emissions, and grid transmission impacts. Energy use is valued differently depending on the fuel (natural gas, electricity), time of day, and season. Electricity used (or saved) during peak periods has a much higher value than electricity used (or saved) during off-peak periods. This is the methodology used by the Energy Commission in evaluating cost-effectiveness for efficiency measures in reach codes.

C. Building Electrification

The interest in building electrification and renewable energy is partially derived from the impetus provided by Silicon Valley Clean Energy (SVCE) which has been providing 100% carbon-free electricity for the City of Milpitas since June 2018. Greenhouse gas emissions (GHG) has been reduced by 59.3 million pounds from June to September 2018. Further elimination of natural gas usage through building electrification would greatly reduce greenhouse gas emissions. Building emissions of GHG account for approximately 35% of total GHG emissions.

Other benefits of electrification and renewable energy include on-bill savings for SVCE customers, cleaner, heathier indoor air quality, and greater safety due to the elimination of toxic and potentially lethal products of gas combustion such as carbon monoxide. For these reasons, there is considerable interest in promoting higher levels of all-electric new construction, or "building electrification," which is now available for the first time through the pathway provided by the 2019 Energy Code.

SVCE has taken the lead in Santa Clara County for researching and developing prototype standards for the reach codes, Staff have worked closely with SVCE and its consultants to interpret and apply the 2019 cost-effectiveness studies for low-rise residential and nonresidential new construction to the Milpitas reach code. The proposed electrification reach code for Milpitas is in alignment with the requirements of the California Energy Commission (CEC) for cost-effectiveness in terms of both construction costs and on-bill costs of consumers. In addition, the cost-effectiveness analysis show that all-electric buildings are usually less expensive to construct than mixed-fuel buildings.

D. Electric Vehicle Charging Infrastructure (EVCI)

Based on an analysis by consultants at the New Buildings Institute, of additional costs of implementing various EV infrastructure measures for a 92,000 square foot multi-family building and a 100,000 square foot office (nonresidential) building, each with 100 parking spaces, staff developed the table below for proposed EV infrastructure reach code requirements for Milpitas.

The table illustrates how additional EV infrastructure requirements could impact first construction costs as compared to the base 2019 CALGreen code using the proposed EV infrastructure reach code requirements for Milpitas. It also shows what the additional cost of the Milpitas EV infrastructure reach code would add to the project cost, expressed as a percentage of the total project cost. The result is a very low percentage.

EV Infrastructure Additional Construction Costs for a Multi-Family and a Non-Residential Office Building

	Multi-family 2019 CALGreen	Multi-family Reach Code	Non-Residential Office 2019 CALGreen	Non-Residential Office Reach Code
EV Capable Spaces[1]	10	35	6	20
EV Ready Spaces[1]	0	20	0	10
EV Installed Spaces[1]	0	0	0	5
Total Cost of EV Capable (w/ 8A capacity)	$ 9,900	$ 34,650	$ 5,940	$ 19,800
Total Cost of EV Ready	-	$ 26,600	-	$ 13,300
Total Cost of EV Installed	-	-	-	$ 24,750
Total EVCI Cost	$ 9,900	$ 61,250	$ 5,940	$ 57,850
Total Cost less CALGreen		$ 51,350		$ 51,910
Total Project Cost[2]		$ 23,000,000		$ 30,000,000
Additional Cost of reach code over 2019 CALGreen as a percentage of Total Project Cost[3]		0.22%		0.17%

Notes:

[1]Costs per space: Capable $990; Ready $1330; Installed $4950.

[2]Assumed $250/sf for a 92,000 sf MF development and $300/sf for a 100,000 sf NR office building.

[3]Additional utility infrastructure costs may be incurred (transformer, switch gear) but are not included.

Note that while construction costs will be incurred, there are numerous state and federal incentive and rebate programs available to offset or reduce the "first" costs. One such program is posted at the Bay Area Air Quality Management District website http://www.baaqmd.gov/funding-and-incentives/businesses-and-fleets/charge.

Staff have worked closely with SVCE and the Statewide Program's team to establish new construction EV requirements which are more in-line with local EV adoption trends, while providing flexibility for the developer and keeping construction costs as low as possible.

Documentation provided by SVCE indicates that transportation emissions of GHG are approximately 50% of total GHG emissions.

Local residents are showing a significant interest in electric vehicles. For example, the number of registered plug-in vehicles in Santa Clara County increased by 31% in 2018. By comparison, registrations for vehicles powered by fossil fuels shrank in 2018.

Recent data compiled through surveys of potential electric vehicle customers and other sources indicates that the availability of EV charging infrastructure is a critical component to EV adoption. It is significantly more expensive to install charging infrastructure as a retrofit than during new construction. As such, ensuring that newly constructed residential and non-residential parking has ample EV charging capability will reduce long-term costs of EV infrastructure installation, while helping to increase EV adoption and decrease transportation-related greenhouse gas emissions.

While California's new minimum requirements are a step forward, it is unlikely that the requirements for multi-family dwellings and non-residential buildings are enough to keep pace with expected EV growth looking towards 2030. The Statewide Program's team reviewed approaches to increase the amount of EV infrastructure in new construction, while keeping construction costs as low as possible.

E. Low-Income Communities

A recent study by U.S. Environmental Protection Agency (EPA) scientists shows that low-income communities are disproportionally affected by air pollution. It is imperative that clean fuel options such as electricity produced using solar, wind and hydro power are incorporated into Milpitas' low-income housing community to promote reduction of indoor and outdoor air pollution.

EV charging requirements have been perceived by some to be incongruent with low-income housing needs; however, recent studies suggest otherwise. EVs and hybrids are becoming more affordable and their fuel costs are considerably lower than fossil fuel powered vehicles. Recent market research suggests that prices are falling at a dramatic rate due to lowering battery costs and government rebate programs. According to a CB Insights Report, the general industry consensus is that EVs will reach price analogy with fossil fuels, possibly as early as 2021. The report can be found at https://www.cbinsights.com/research/report/electric-car-race/#8.

Further lowering upfront costs, the California Clean Vehicle Rebate Project offers rebates of up to $4,500 with additional rebates for low-income buyers for purchase or lease of new eligible battery electric vehicles. Compared with $2,550 per year for fossil fuel vehicles, a similar EV will save the average user an estimated $10,000 in fuel costs over 10 years at current fuel and PG&E utility rates.

For these reasons, accelerating the rate of EV charging access infrastructure through the proposed Milpitas reach codes is just as relevant if not more critical to low-income below market rate housing as market-based or commercial projects.

Reach Code Efforts in Other Jurisdictions

Current regional reach code efforts are focused on residential and non-residential new construction and electric vehicle infrastructure (EVCI), to incentivize or require the following:

- All-electric buildings for new construction
- Mixed fuel (e.g. natural gas and electric) buildings, including electrification readiness
- Additional EVCI requirements for all building types to further prepare for current and future anticipated electric vehicle (EV) uptake

Nineteen cities, including eight in the Bay Area including San Francisco, Oakland, and Fremont, adopted reach codes in the current 2016 code cycle for electrification, solar photovoltaic, and electric vehicle infrastructure.

According to the CEC, over 45 Bay Area cities have adopted or are considering reach codes, with a focus on encouraging or requiring building and/or transportation electrification for implementation in the 2019 building code cycle. Bay area cities include the following:

- 8 in Alameda County
- 19 in San Mateo County
- 14 in Santa Clara County
- 5 in Sonoma County

Please refer to Attachment I for a list and comparison of reach code efforts in other cities.

Milpitas Public Outreach

A. Comments at Community Meetings

Staff conducted a series of outreach and engagement meetings with stakeholders and community members on the proposed reach codes. These include the August 15 Community Development Roundtable initial discussion, August 21 presentation to the Energy and Environmental Sustainability Commission, and September 12 and October 7 in-depth discussions with Milpitas staff, SVCE representatives, developers, and community members.

The feedback from the outreach meetings was generally supportive, with most support garnered from design professionals who have done all-electric buildings, Milpitas residents who acknowledged the growing climate change crisis and applauded our reach code efforts. Support was expressed by others to promote electrification in construction practices.

However, larger developer/builders voiced general concerns over the possibility of increased construction costs and market forces that they felt are more favorable toward the use of natural gas appliances, particularly cooking appliances. Heightened concerns were expressed over the proposed EV charging infrastructure reach code initially proposed by City staff. In response, SummerHill Apartment Communities presented an alternative proposed EV reach code that was endorsed by Lyon Living. This proposal was reviewed by staff and the current version represents a blend of the initial staff proposal and the alternative developer proposal. These adjustments were felt to be a reasonable compromise given the real-world specific calculations and information provided by SummerHill and endorsed by Lyon Living.

See Attachment E for SummerHill's comments, their EV infrastructure proposal, and Lyon Living's comments.

B. Other Stakeholder Comments

Pacific Gas and Electric (PG&E) forwarded an e-mail letter (Attachment F) to the City stating its commitment to helping communities achieve their energy goals and welcomed the opportunity to support the City of Milpitas' efforts to promote efficient and cost-effective electrification in new construction.

The Western Propane Gas Association (WPGA) forwarded an e-mail letter (Attachment G) to the City stating the belief that reach codes disincentivize propane as a complementary fuel source to electric. The letter elaborates on the reasons why the WPGA holds this belief. In response, the proposed Milpitas Energy reach code includes mixed-fuel buildings, which includes propane and natural gas. The all-electric pathway is certainly there, but it is not mandated to use this option for any of the various buildings and occupancy types.

Effective Date of Code Amendments

The Energy Code amendments pertaining to building electrification and mixed fuel construction are required to be approved by the California Energy Commission (CEC). For these amendments to be approved by the CEC, they must: 1) be at least as stringent as the statewide code; 2) be cost effective as defined by standards set by the CEC; 3) be submitted and approved by the CEC; and 4) not preempt federal appliance regulations. Upon approval by the CEC, the Energy Code amendments are filed with the California Building Standards Commission (BSC). This portion is a ministerial review and documentation process only.

The Energy Code amendments become effective and enforceable by the City on the date of approval by the CEC. If adopted by the City Council on December 3, 2019, staff projects that the Milpitas amendments to the Energy Code will become effective and enforceable in February or March 2020 given the 60-day public comment period required by the CEC review/approval process.

The CALGreen amendments pertaining to EV charging do not require submittal and approval by the CEC. If adopted by the City Council on December 3, 2019, these amendments will become effective on January 1, 2020 along with the 2019 CALGreen.

Policy Alternative:

Alternative 1: Adopt the 2019 California Energy Code and/or Green Building Standards Code as written without local amendments (reach codes).

Pros: No additional work is needed. The section for amendments would be removed from each Ordinance.

Cons: Without reach codes, it would be increasingly difficult to achieve some of the established goals in the Milpitas Climate Action Plan that is slated to be upgraded in 2020. Also, the opportunity to participate with other local jurisdictions in the efforts to accelerate Energy and Green Building Code requirements to achieve the state mandated goals for greenhouse gas emission reductions by 2020, 2030, and 2050, would be lost.

Instituting accelerated levels of building electrification and electric vehicle charging requirements with this code cycle will have lasting impacts as buildings constructed under this code cycle will have significant carbon reductions for the 30-40-year life span of the buildings. An added benefit to enacting the reach codes now is the avoidance of the higher costs to retrofit buildings later, and the inconvenience to tenants.

Reason for Not Recommending: This alternative is not recommended because of the loss of opportunity to increase the City's efforts toward achieving a higher, earlier use of renewable energy, and the reduction of GHG emissions.

Fiscal Impact:

There is no cost to the City other than administrative staff time and expense.

California Environmental Quality Act:

The action being considered has no potential for causing a significant effect on the environment and is exempt from the California Environmental Quality Act (CEQA) pursuant to CEQA Guidelines Section 15061(b)(3).

Recommendations:

1. Following the City Attorney's reading of the title, move to waive the first reading beyond the title and introduce Ordinance No. 65.148 amending Chapter 11 of Title II of the Milpitas Municipal Code adopting by reference the 2019 California Energy Code with amendments.
2. Following the City Attorney's reading of the title, move to waive the first reading beyond the title and introduce Ordinance No. 65.149 amending Chapter 19 of Title II of the Milpitas Municipal Code adopting by reference the 2019 California Green Building Standards Code with amendments.
3. Set a public hearing on December 3, 2019, pursuant to California Government Code Section 50022.3, for adoption of the Ordinances.

Attachments:

A. Ordinance No. 65.148 – adopting by reference the 2019 California Energy Code with amendments
B. Ordinance No. 65.149 – adopting by reference the 2019 California Green Building Standards Code with amendments
C. Summary of proposed Energy reach codes (proposed amendments to the 2019 California Energy Code)
D. Summary of proposed Green Building reach codes (proposed amendments to the 2019 California Green Building Standards Code)
E. SummerHill comments, EV infrastructure proposal, and Lyon Living comments
F. PG&E letter
G. WPGA letter
H. SVCE Letter of Interest (LOI) for $10,000 Reach Code Grant
I. Reach Code Efforts in Other Cities