RD:CDW:CER
8/22/2019

ORDINANCE NO.

AN ORDINANCE OF THE CITY OF SAN JOSE AMENDING VARIOUS SECTIONS OF TITLE 24 (TECHNICAL CODES) OF THE SAN JOSE MUNICIPAL CODE TO ADOPT PROVISIONS OF THE 2019 CALIFORNIA GREEN BUILDING STANDARDS CODE AND CALIFORNIA BUILDING ENERGY EFFICIENCY STANDARDS WITH CERTAIN EXCEPTIONS, MODIFICATIONS AND ADDITIONS WHICH SERVE AS A REACH CODE TO INCREASE BUILDING EFFICIENCY, MANDATE SOLAR READINESS AND INCREASE REQUIREMENTS RELATED TO ELECTRIC VEHICLE CHARGING STATIONS

WHEREAS, pursuant to Sections 17922, 17958, 17958.5 and 17958.7 of the California Health and Safety Code, the City may adopt the provisions of the Green Building Standards Code and Building Efficiency Energy Standards with certain amendments to those provisions which are reasonably necessary to protect the health, welfare and safety of the citizens of San José because of local climatic, geological and topographical conditions; and

WHEREAS, the City Council hereby makes the following findings with respect to local geological, topographical and climatic conditions relating to the amendments to the California Codes for which such findings are required:

A. The San Francisco Bay area region is densely populated and located in an area of high seismic activities. The City is bounded by the Hayward and San Andreas faults capable of producing major earthquakes; and

B. Concern for fire-life safety associated with gas appliances and associated piping located in the ground and in the buildings increase the risk of explosion or fire if there is a structural failure due to a seismic event considering the increasing number of buildings in the region; and

C. Severe seismic events could disrupt communications, damage gas mains, cause extensive electrical hazards, and place extreme demands on the limited and widely dispersed resources of the Fire Department resulting to meet the fire and life safety needs of the community; and

D. Solar infrastructure on buildings reduces the need for pipelines and electrical transmission lines; and

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E. The local geographic, topographic, and climatic conditions pose an increase hazard in acceleration, spread, magnitude, and severity of potential fires in the City, and may cause a delayed response from emergency responders, allowing further growth of the fire; and

F. Over the next century, increasing levels of atmospheric greenhouse gas concentrates are expected to result in global temperature increases, causing a variety of local changes, including extreme weather conditions, sea level rise, more frequent heat waves and extended period of drought. Local geographic, topographic, and climatic conditions include increase risk of the following:

a. Fires: In addition to the increased risk as a result of earthquakes, the City is surrounded by hills both within City limits or adjacent to them. The dry brush and steep terrain are particularly susceptible to wildfires. The City, through its Fire Department, has designated approximately 54.5 square miles of the City's 180 square miles of incorporated area as Wildland Urban Interface (WUI). These areas in in the southwestern and southeastern areas of the City known as the Almaden Valley and East Foothills which allows for heightened construction and regulatory standards to mitigate the spread of wildfires. In addition, wildfires located outside of the area in 2018 created a blanket of toxic smoke over the City, causing the worse air quality on record by the Bay Area Air Quality Management District for two consecutive weeks; and

b. Landslides: Extreme storms as a result of climate change increases the chance of rainfall-induced landslide; fire and drought may kill vegetation on the City's WUI increasing runoff and potential for landslide; and

c. Drought: Prolonged period of drought as a result of climate change may deplete reservoirs and the groundwater basin serving San Jose; and

d. Flooding: Extreme weather conditions such as sudden, prolonged rainfall as result of climate change could also result in a spillover from local dams, including the Anderson Dam, which can result in flooding of local creeks which run through San Jose, such as the Coyote Creek; as the City experienced in 2017; and

e. Sea Level Rise: Sea level rise as a result of climate change will have a dramatic local impact on the City. The City's Alvsio area boarders the southern end of the San Francisco Bay and is particularly vulnerable to sea level rise and is at an increased risk of flooding; and

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f. Heat: Increased heat as a result of climate change can have a local impact on the health, safety, and welfare of the City's population, especially those without resources to purchase air conditioning, the elderly, disabled, or those with children; and

G. Increasing and encouraging the use of electric vehicles will help the City meets its goals under Climate Smart San Jose to reduce greenhouse gas emission; and

a. Electric vehicles depend upon convenient access to charging; and
b. The most cost-effective time to prepare electrical infrastructure for elective vehicle charging is when the electric service is installed or upgraded for construction; and

H. Failure to address and substantially reduce Greenhouse Gas creates an increased risk to the health, safety and welfare of the City residents, Council considers and adopts as findings the analysis contained in the staff report; and

I. Amendments to the California Codes have been adopted in the past by the City Council based on specific findings of local geographic, topographic and climatic conditions; and the Council hereby reaffirms such findings and confirms that the facts on which such findings were based continue to exist; and

J. The provisions of this Ordinance establishing certain more restrictive standards than the California Codes will better serve to prevent or minimize structural damage resulting from local conditions; and

WHEREAS, the City Council hereby makes the additional following findings with respect to cost effectiveness of any amendments to the California Codes for which such findings are required:

A. An August 1, 2019 Low Rise Residential Reach Code Cost Effectiveness Study prepared by Frontier Energy, Inc. and Misti Bruceri & Associates, LLC, funded by California utility ratepayers, and submitted to the California Energy Commission used two different metrics to assess cost-effectiveness and found the proposed changes to the Building Energy Efficiency Standards to be cost-effective; and

B. A July 25, 2019 Non-residential New Construction Reach Code Cost Effectiveness Study prepared by TRC Advanced Energy and Energy Soft, funded by California utility ratepayers, and submitted to the California Energy Commission further documents the cost-effective combinations of measures that exceed the state's minimum requirements and this Ordinance adopts a cost-effective combination; and

C. This Ordinance's amendments to the Building Energy Efficiency Standards are cost-effective; and

D. The Department of Energy sets the minimum efficiency standards for equipment and appliances; none of the provisions of this Ordinance change minimum efficiency standards, and therefore this Ordinance is not preempted by federal appliance regulations; and

E. This Ordinance's amendments to the Building Energy Efficiency Standards require buildings to achieve increased energy reductions; and

WHEREAS, this Ordinance was found to be categorically exempt from environmental review, per the provisions of the California Environmental Quality Act (CEQA) of 1970, as amended, 14 California Code of Regulations Section 15308, and Title 21 of the San José Municipal Code, under File Number PP19-067; and

WHEREAS, the City Council of the City of San José is the decision-making body for this Ordinance; and

WHEREAS, this Council has reviewed, considered, and approves the Statement of Exemption determination under CEQA prior to taking any approval actions on this Ordinance;

NOW THEREFORE, BE IT ORDAINED BY THE COUNCIL OF THE CITY OF SAN JOSE:

SECTION 1. Section 24.01.239 of Chapter 24.01 of Title 24 of the San José Municipal Code is hereby amended to read as follows:

24.01.239 Green Building Standards Code

"Green Building Standards Code" means the California Green Building Standards Code, or CAL Green, ~~2016~~2019 edition, including the appendix thereto, together with those omissions, amendments, exceptions and additions thereto as amended in Title 24 of the California Code of Regulations and in this Title.

SECTION 2. Section 24.01.243 of Chapter 24.01 of Title 24 of the San José Municipal Code is hereby amended to read as follows:

24.01.243 Building Energy Efficiency Standards

Building Energy Efficiency Standards, ~~2016~~2019 edition, promulgated by the California Energy Commission, including appendix thereto, together with those omissions, amendments, exceptions and additions thereto as amended in this Title.

SECTION 3. Section 24.10.100 of Part 1 of Chapter 24.10 of Title 24 of the San José Municipal Code is hereby amended to read as follows:

24.10.100 Adoption of Technical Provisions of the California Green Building Standard Code

A. Except as otherwise provided for in this chapter, the residential mandatory measures and nonresidential mandatory measures of the California Green Building Standards (CALGreen) 2019 ~~2016~~ edition, together with those omissions, amendments, exceptions and additions thereto as amended in Title 24 of the California Code of Regulations are approved and adopted, and are hereby incorporated in this chapter by reference and made a part hereof the same as if fully set forth herein.

B. One copy of the CALGreen Code has been filed for use and examination of the public in the office of the city clerk of the City of San José.

SECTION 4. A new Section 24.10.200 is added to Chapter 24.10 of Title 24 of the San José Municipal Code to be numbered, entitled, and to read as follows:

24.10.110 Definitions (Amending CALGreen §202)

CALGreen Code Section 202 is amended to include the additional following definitions:

ELECTRIC VEHICLE SUPPLY EQUIPMENT (EVSE). The electrical conductors and equipment external to the electric vehicle that provide a connection between an electric vehicle and a power source to provide electric vehicle charging.

ELECTRIC VEHICLE FAST CHARGER. Electric vehicle supply equipment with a minimum power output of 20kW.

ELECTRIC VEHICLE LOAD MANAGEMENT SYSTEM. A system designed to allocate charging capacity among multiple electric vehicle supply equipment.

ELECTRIC VEHICLE CAPABLE SPACE. A designated parking space that is provided with conduit sized for a 40-amp, 208/240-Volt dedicated branch circuit from a building electrical service panel to the parking space and sufficient physical space in the same building electrical service panel to accommodate a 40 amp dual-pole circuit breaker.

ELECTRIC VEHICLE READY SPACE. A parking space that is provided with one 40 amp, 208/240 volt dedicated branch circuit for electric vehicle supply equipment that is terminated at a receptacle, junction box or electric vehicle supply equipment within the parking space.

ELECTRIC VEHICLE SUPPLY EQUIPMENT (EVSE) SPACE. A parking space with electric vehicle supply equipment capable of supplying current at 32 amps at 208/240 volts and a minimum of 8 amps at 208/240volts when connected to an electric vehicle load management system.

SECTION 5. A new section 24.10.120 is added to Part 1 of Chapter 24.10 of Title 24 of the San José Municipal Code to be numbered, entitled, and to read as follows:

24.10.120 Cross-References to CALGreen

The provisions of this Chapter contain cross-refences to the 2019 CALGreen Code to facilitate references and comparison to those provisions.

SECTION 6. A new section 24.10.130 is added to Part 1 of Chapter 24.12 of Title 24 of the San José Municipal Code to be numbered, entitled, and to read as follows:

24.10.130 Local Amendments

The provisions of this Chapter shall constitute local amendments to the cross-referenced CALGreen Code and modifies, repeals, or replaces the relevant section.

SECTION 7. Chapter 24.10 of Title 24 of the San José Municipal Code is hereby amended by adding a Part to be numbered, entitled, and to read as follows:

Part 2
Residential Mandatory Measures (CALGreen, Ch. 4)

24.10.200 Electrical Vehicle (EV) Charging Stations for new construction (CALGreen, Ch. 4, §§4.106.4 – 4.106.4.2.5)

CALGreen, Chapter 4, Sections 4.106.4 through 4.106.4.3.1 are amended to read as follows:

4.106.4 Electric vehicle (EV) charging for new construction. New construction shall comply with Section 4.106.4.1, 4.106.4.2, or 4.106.4.3, to facilitate current and future ~~installation and use of EV chargers~~electric vehicle charging. Electric vehicle supply equipment (EVSE) shall be installed in accordance with the *California Electrical Code,* Article 625.

Exceptions:

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

   1.1 Where there is no commercial power supply.

   Where there is evidence substantiating that meeting the requirements will alter the local utility infrastructure design requirements on the utility side of the meter so as to increase the utility side cost ~~to the homeowner or the developer~~ by more than ~~$400.00 per dwelling unit~~ an average of $4,500 per *electric capable, electric vehicle ready* and *electric vehicle supply equipment spaces.* If costs are found to exceed this level, the applicant shall provide EV infrastructure up to a level that would not exceed this cost for utility service or on-site transformer capacity.

2 Accessory Dwelling Units (ADU) and Junior Accessory Dwelling Units (JADU) without additional parking facilities.

4.106.4.1 New one- and two-family dwellings and town- houses with attached and detached private garages. ~~For each dwelling unit, install a listed raceway to accommodate a dedicated 208/240-volt branch circuit. The raceway shall not be less than trade size I (nominal I-inch inside diameter). The raceway shall originate at the main service or subpanel and shall terminate into a listed cabinet, box or other enclosure in close proximity to the proposed location of an EV charger. Raceways are required to be continuous at enclosed, inaccessible or concealed areas and spaces. The service panel and/or subpanel shall provide capacity to install a 40-ampere minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent protective device.~~Each dwelling unit shall be provided with one EV Ready pace.

EXCEPTION: Detached private garages without electrical service.

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

4.106.4.2 New multifamily dwellings. If residential parking is available, ten (10) percent of the total number of parking spaces on a building site, provided for all types of parking facilities shall be ~~electric vehicle charging spaces (EV spaces) capable of supporting future~~ EVSE spaces. Fifty (50) percent of all other parking spaces shall be EV Ccapable Sspaces. Calculations for the required number of EV spaces shall be rounded up to the nearest whole number.

Notes:

1. Construction documents are intended to demonstrate the project's capability and capacity for facilitating future EV charging.

2. There is no requirement for EV spaces to be constructed or available until EV chargers are installed for use.

4.106.4.2.1 Electric vehicle charging space (EV space) locations. Construction documents shall indicate the location of proposed EV spaces. Where common use parking is provided at least one EV space shall be located in the common use parking area and shall be available for use by all residents.

4.106.4.2.1.1 Electric vehicle charging stations (EVCS) shall comply with the requirements of the 2019 California Building Code. ~~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:~~

~~The EV space shall be located adjacent Lo an accessible parking space meeting the requirements of the *California Building Code,* Chapter 1A, to allow use of the EV charger from the accessible parking space.~~

~~The EV space shall be located on an accessible route, as defined in the *California Building Code,* Chapter 2, to the building.~~

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

4.106.4.2.2 Electric vehicle charging space (EV space) dimensions. The EV spaces shall be designed to comply with the requirements of the 2019 California Building Code. ~~following:~~

~~The minimum length of each EV space shall be 18 feet (5486 mm). The minimum width of each EV space shall be 9 feet (2743 mm 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).~~

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

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

4.106.4.2.34 ~~Multiple EV spaces required. Construction documents shall indicate the raceway termination point and proposed location of future EV spaces and EV chargers. Construction documents shall also provide information on amperage of future EVSE, raceway method(s), wiring schematics and electrical load calculations to verify that the electrical panel service capacity and electrical system, including any on-site distribution transformer(s), have sufficient capacity to simultaneously charge all EVs at all required EV spaces at the full rated amperage of the EVSE. Plan design shall be based upon a 40-ampere minimum branch circuit.~~

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~~Required raceways and related components that are planned to be installed underground, enclosed, inaccessible or in concealed areas and spaces shall be installed at the time of original construction.~~

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

4.106.4.3.1 Number of required EVSE and EV capable spaces. Ten percent (10%) of the total number ~~of required EV spaces shall be based upon the total number~~ of parking spaces provided for all types of parking facilities shall be EVSE spaces. Fifty percent (50%) of the total number of parking spaces for all types of parking facilities shall be EV Capable spaces. ~~in accordance with Table 4.106.4.3.1.~~ Calculations for the required number of EV spaces shall be rounded up to the nearest whole number.

~~Table 4.106.4.3.1~~

~~Total number of parking spaces~~	~~Number of required EV spaces~~
~~0-9~~	~~0~~
~~10-25~~	~~1~~
~~26-50~~	~~2~~
~~51-75~~	~~4~~
~~76 – 100~~	~~5~~
~~101 – 150~~	~~7~~
~~151-200~~	~~10~~
~~201 and over~~	~~6 percent of total~~

SECTION 8. Chapter 24.10 of Title 24 of the San José Municipal Code is hereby amended by adding a Part to be numbered, entitled, and to read as follows:

Part 3
NonResidential Mandatory Measures (CALGreen, Ch. 5)

24.10.300 Electrical Vehicle (EV) Charging Stations (CALGreen, Ch. 5, §§5.106.5.3 – 5.106.5.3.5)

CALGreen Code, Chapter 5, Sections 5.106.5.3 through 5.106.5.5 are amended to read as follows:

5.106.5.3 Electric vehicle (EV) charging. [N] Construction shall comply with Section 5.106.5.3.1 ~~or~~through Section 5.106.5.3.4 to facilitate ~~future installation of electric vehicle supply equipment (EVSE). When EVSE(s) is/are installed, it shall be in accordance with the *California Building Code*, the *California Electrical Code* and as follows~~ current and future electric vehicle charging. EVSE ~~-~~shall be installed in accordance with the California Electrical Code, Article 625.~~:~~

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

~~1. The type and location of the EVSE.~~

~~2. A listed raceway capable of accommodating a 208/240 - volt dedicated branch circuit.~~

~~3. The raceway shall not be less than trade size 1".~~

~~4. The raceway shall originate at a service panel or a subpanel serving the area, and shall terminate in close proximity to the proposed location of the charging equipment and into a listed suitable cabinet, box, enclosure or equivalent.~~

~~5. The service panel or subpanel shall have sufficient capacity to accommodate a minimum 40-ampere dedicated branch circuit for the future installation of the EVSE.~~

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

~~1. The type and location of the EVSE.~~

~~2. The raceway(s) shall originate at a service panel or a subpanel(s) serving the area, and shall terminate in close proximity to the proposed location of the charging equipment and into listed suitable cabinet(s), box(es), enclosure(s) or equivalent.~~

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~~3. Plan design shall be based upon 40-ampere minimum branch circuits.~~

~~4. 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 all required EVs at its full rated amperage.~~

~~5. The service panel or subpanel(s) shall have sufficient capacity to accommodate the required number of dedicated branch circuit(s) for the future installation of the EVSE.~~

5.106.5.3.2~~3~~1 EVSE and EV capable requirements. ~~charging space calculation. [N] Table 5.106.5.3.3 shall be used to determine if single or multiple charging space requirements apply for the future installation of EVSE.~~ Ten percent (10%) of the total number of parking spaces provided for all types of parking facilities shall be EVSE spaces. Forty percent (40%) of the total number of parking spaces provided for all types of parking facilities shall be EV capable spaces. Calculations for the required number of electric vehicle spaces shall be rounded up to the nearest whole number.

Exceptions: On a case-by-case basis where the local enforcing agency determined EV charging and infrastructure is not feasible based upon one or more of the following conditions:

1. Where there is insufficient electrical supply.

2. Where there is evidence suitable to the local enforcing agency substantiating that additional local utility infrastructure design requirements, directly related to the implementation of Section 5.106.5.~~3~~1, may adversely impact the construction cost of the project.

~~TABLE 5.106.5.3.31~~

~~TOTAL NUMBER OF ACTUAL PARKING SPACES~~	~~NUMBER OF REQUIRED EV CHARGING SPACES~~
~~0-9~~	~~0~~

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~~10-25~~	~~1~~
~~26-50~~	~~2~~
~~51-75~~	~~4~~
~~76 - 100~~	~~5~~
~~101-150~~	~~7~~
~~151-200~~	~~10~~
~~201 and over~~	~~6 percent of total[1]~~

~~1. Calculation for spaces shall be rounded up 10 the nearest whole number.~~

~~Building Type~~	~~Electric vehicle supply equipment spaces~~	~~Electric Vehicle Ready Spaces~~	~~Electric vehicle capable spaces~~
~~Multifamily~~	~~0%~~	~~50%[1]~~	~~50%~~
~~All Other~~	~~10%~~	~~0%~~	~~40%~~

5.106.5.3.2 Electric service capacity for electric vehicle capable spaces. The building electrical panel that contains the physical space to accommodate the future installation of circuit breakers for electric vehicle capable spaces required by Section 5.106.5.3.1 shall have sufficient electrical capacity to provide no less than 8 amps at 208/240 volts per electric vehicle capable space.

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

5.106.5.3.5 Not adopted. ~~Future charging spaces. Future charging spaces qualify as designated parking as described in Section 5.106.5.2 Designated parking for clean air vehicles.~~

SECTION 9. Section 24.12.100 of Part 1 of Chapter 24.01 of Title 24 of the San José Municipal Code is hereby amended to read as follows:

24.12.100 Adoption of Technical Provisions of the California Building Energy Efficiency Standards

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A. Except as otherwise provided for in this Chapter, the California Building Energy Efficiency Standards ~~2016~~2019 edition, including the appendices thereto, together with those omissions, amendments, exceptions and additions thereto as amended in Title 24 of the California Code of Regulations are approved and adopted, and are hereby incorporated in this Chapter by reference and made a part hereof the same as if fully set forth herein.

B. One copy of the California Building Energy Efficiency Standards had been filed for use and examination of the public in the Office of the City Clerk of the City of San José.

SECTION 10. A new section 24.12.110 is added to Part 1 of Chapter 24.12 of Title 24 of the San José Municipal Code to be numbered, entitled, and to read as follows:

24.12.110 Definitions [Energy Standards, Subch. 1, §100.1(b)]

Energy Standards, Subchapter 1, Section 100.1(b) is amended to add the following definitions:

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

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.

MIXED-FUEL BUILDING or MIXED-FUEL DESIGN is a building or building design that uses natural gas or propane as fuel for space heating, water heating (including pools and spas), cooking appliances or clothes drying appliances or is plumbed for such equipment.

SECTION 11. A new section 24.12.120 is added to Part 1 of Chapter 24.12 of Title 24 of the San José Municipal Code to be numbered, entitled, and to read as follows:

24.12.120 Cross-References to the Building Energy Efficiency Standards

The provisions of this Chapter contain cross-references to the 2019 Building Energy Efficiency Standards for Residential and Non-Residential Buildings (Energy Standards) to facilitate references and comparison to those provisions.

SECTION 12. A new section 24.12.130 is added to Part 1 of Chapter 24.12 of Title 24 of the San José Municipal Code to be numbered, entitled, and to read as follows:

24.12.130 Local Amendments

The provisions of this Chapter shall constitute local amendments to the cross-referenced Energy Standards and modifies, repeals, or replaces the relevant standard.

SECTION 13. Chapter 24.12 of Title 24 of the San José Municipal Code is hereby amended by adding a Part to be numbered, entitled, and to read as follows:

Part 2
All Occupancies – Mandatory Requirements for the Manufacture, Construction, and Installation of Systems, Equipment and Building Components (Energy Standards, Subch. 2)

24.12.200 Mandatory Requirements for Solar Ready Buildings (Energy Standards, Subch. 2, §110.10)

Energy Standards, Subchapter 2, Section 110.10 is amended to read as follows:

(a) Covered Occupancies.

1. Single Family Residences. Single family residences located in subdivisions with ten or more single family residences and where the application for a tentative subdivision map for the residences has been deemed complete approved by the enforcement agency, which do not have a photovoltaic system installed, shall comply with the requirements of Section 110.10(b) through 110.10(e).

2. Low-rise Multifamily Buildings. Low-rise multi-family buildings that do not have a photovoltaic system installed shall comply with the requirements of Section 110.10(b) through 110.10(d).

3. Hotel/Motel Occupancies and High-rise Multifamily Buildings. Hotel/motel occupancies and high-rise multifamily buildings ~~with ten habitable stories or fewer~~ shall comply with the requirements of Section 110.10(b) through 110.10(d).

4. Nonresidential Buildings. Nonresidential buildings ~~with three habitable stories or fewer, other than healthcare facilities,~~ shall comply with the requirements of Section 110.10(b) through 110.10(d).

(b) – (e) Subsections 110.10 (b) – (e) are adopted without modification.

SECTION 14. Chapter 24.12 of Title 24 of the San José Municipal Code is hereby amended by adding a Part to be numbered, entitled, and to read as follows:

Part 3
Nonresidential, High-Rise Residential, and Hotel/Motel Occupancies – Mandatory Requirements for Lighting Systems and Equipment, and Electrical Power Distribution Systems (Energy Standards, Subch. 4)

24.12.300 Additional Requirements for Mixed—Fuel Buildings (Amending Energy Standards, Subch. 4, to add §130.6)

Energy Standards, Subchapter 4 is amended to add Section 130.6 to be numbered, entitled, and to read as follows:

130.6 Additional Requirements for Mixed Fuel Buildings: Mixed Fuel Buildings shall also include the following additional components:

A. Water Heaters

i. A dedicated 240 electrical receptacle with a minimum capacity of 30 amps that is connected to the electrical panel with conductors of adequate capacity, within 3 feet from the water heater and accessible to the water heater with no obstructions.

ii. Both ends of the unused conductor shall be labeled with the words "For Future Heat Pump Water Heater" and be electrically isolated.

iii. 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.

iv. Located in an area with a minimum of 700 cubic feet of volume, or a ducting plan for eight-inch supply and exhaust ducts to the exterior or a space with 700 cubic feet of volume.

Exception to 140.0(b)2.A.iv. The space and ventilation requirements may be reduced to conform with the manufacturer's recommendations for a specific heat pump hot water heater that meets the requirements of Sections 110.0, 110.1 and 110.3.

B. Clothes Drying

i. A dedicated 240-volt electrical receptacle with a minimum capacity of 30 amps that is connected to the electrical panel with conductors of adequate capacity, within 3 feet of the appliance and accessible with no obstructions.

ii. Both ends of the unused conductor shall be labeled with the words "For Future Heat Pump Clothes Drying" and be electrically isolated.

C. Cooktop or Range A dedicated 240-volt electrical receptacle with a minimum capacity of 50 amps that is connected to the electrical panel with conductors of adequate capacity, within 3 feet of the appliance and accessible with no obstructions.

i. Both ends of the unused conductor shall be labeled with the words "For Future Inductive Range" and be electrically isolated.

EXCEPTION to 140.0(b)2.A, B, and C: If gas or propane plumbing is not installed for the specified end uses.

D. Other Gas Equipment.

i. For equipment that is specified or connected to natural gas or propane plumbing, the building shall include designated raceways and reserved capacity on the main electrical panel and subpanels, if applicable, sufficient to power electric equipment that provides the equivalent function as the intended function of the gas equipment; or,

ii. If gas plumbing exists but no gas equipment is specified or connected, the building shall include designated raceways and reserved capacity on the main electrical panel and subpanels, if applicable, sufficient to provide equivalent power at a maximum gas flow rate under normal gas service pressure. Plans shall include calculations for delivered gas power and equivalent electrical power, conductors, raceway sizes and panel capacities.

Exception to 140.0(b)2.D. If the applicant demonstrates that there is no viable electrical equipment that can perform the intended function of the gas equipment.

E. All newly installed raceways between the main electrical panel and any subpanels, and the point at which the conductors serving the building connect to the common conductors of the utility distribution system shall

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be sized for conductors adequate to serve all of the building's electrical requirements, including PV as specified Section 140.0(b)1 and future electric loads as specified in Section 140.0(b)2.

F. If the building includes an electrical transformer(s) feeding the main panel or any subpanels, the transformer(s) shall be located in a space large enough to accommodate a transformer(s) with a rated capacity sufficient to serve all of the building's electrical requirements, including PV as specified in Section 140.0(b)1 and future electric loads as specified in Section 140.0(b)2.

SECTION 15. Chapter 24.12 of Title 24 of the San José Municipal Code is hereby amended by adding a Part to be numbered, entitled, and to read as follows:

Part 4
Nonresidential, High-Rise Residential, and Hotel/Motel Occupancies – Performance and Prescriptive Compliance Approaches for Achieving Energy Efficiency (Energy Standards, Subch. 5)

24.12.400 Performance and Prescriptive Compliance Approaches (Energy Standards, Subch. 5, §140.0)

Energy Standards, Subchapter 5, Section 140.0 is amended to read as follows:

(a) The requirements of Sections 100.0 through 110.12 applicable to the building project (mandatory measures for all buildings).

(b) The requirements of Sections 120.0 through 130.65 (mandatory measures for nonresidential and high-rise residential and hotel/motel buildings).

(c) Either the performance compliance approach (energy budgets) specified in Section 1401 or the prescriptive compliance approach specified in Section 140.2 for the Climate Zone in which the building will be located. Climate zones are shown in FIGURE 100.1-A.

NOTE to Section 140.0(c): The Commission periodically updates, publishes and makes available to interested persons and local enforcement agencies precise descriptions of the Climate Zones, which is available by zip code boundaries depicted in the Reference Joint Appendices along with a list of the communities in each zone.

NOTE to Section 140.0: The requirements of Sections 140.1 through 140.9 apply to newly constructed buildings. Section 141.0 specifies which requirements of Section 140.1 through 140.9 also apply to additions or alterations to existing buildings.

24.12.410 Performance Approach: Energy Budgets (Energy Standards, Subch. 5 §140.1)

Energy Standards, Subchapter 5, Section 140.1 is amended to read as follows:

A ~~building~~ 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 compliance margin exceeds the value in Table 140.1-A below. The compliance margin shall be calculated by subtracting the energy budget calculated for the Proposed Design Building under Subsection (b) from the energy budget calculated for the Standard Design Building under Subsection (a) and dividing the result by the energy budget calculated for the Standard Design Building under Subsection (a).

Table 140.1-A Mixed Fuel Building Compliance Margins

Occupancy Type	Compliance Margins
Office Building	10%
Retail Store/Restaurant	10%
Hotel/motel and High-rise residential	5%
Industrial/Manufacturing	0%
All other Nonresidential occupancies	5%

(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 and signed by a Certified Energy Analyst and the energy budget for the Proposed Design is no greater than the Standard Design Building, the required compliance margin is reduced by 1%.

24.12.420 Prescriptive Approach (Energy Standards, Subch. 5, §140.2)

Energy Standards, Subchapter 5, Section 140.2 is amended 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 the following requirements as applicable.:

(a) Hotels and Motels

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 lighting power density (Watts/ft2) by ten percent (10%) from that required from Table 140.6-C.

5. In common areas, improve lighting without claiming any Power Adjustment Factor credits:

   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) High-rise Residential and All Other 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.

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3. Design Variable Air Volume (VAV) box minimum airflows to be equal to the zone ventilation minimums where VAV systems are installed.

4. Include economizers and staged fan control in air handlers with a mechanical cooling capacity ≥ 33,000 Btu/h.

5. Reduce the lighting power density (Watts/ft2) by ten percent (10%) from that required from Table 140.6-C.

6. Improve lighting without claiming any Power Adjustment Factor credits:

   A. Perform Institutional Tuning per Section 140.6(a)2J, and

   B. In office spaces, control to daylight dimming plus off per Section 140.6(a)2H, and

   C. Install Occupant Sensing Controls in Large Open Plan Offices per Section 140.6(a)2I.

SECTION 16. Chapter 24.12 of Title 24 of the San José Municipal Code is hereby amended by adding a Part to be numbered, entitled, and to read as follows:

Part 5
Low Rise Residential Buildings – Mandatory Features and Devices (Energy Standards, Subch. 7)

24.12.500 Mandatory Features and Devices for Low-Rise Residential Buildings (Energy Standards, Subch. 7 §150.0)

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Energy Standards, Subchapter 7, Section 150.0 is amended as follows:

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

NOTE: The requirements of Sections 150.0 (a) through (sr) apply to newly constructed buildings. Sections 150.2(a) and 150.2(b) specify which requirements of Sections 150.0(a) through 150.0(r) also apply to additions or alterations. The amendments to sections 150.0 (h) and 150.0 (n) do not apply to additions or alterations.

(a) – (g): Subsections 150.0(a) – (g) are adopted without modification.

(h) **Space-Conditioning Equipment** is amended to add a sub-subsection 150.0(h)(5) to read as follows:

5. Systems using 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 240 volt, 30 amp electrical circuit that is connected to the electrical panel with conductors of adequate capacity, terminating within 3 feet from the designated future location of the compressor unit with no obstructions. In addition, all of the following:

i. Both ends of the unused conductor shall be labeled with the word "For Future Heat Pump Space Heater" and be electrically isolated; and

ii. A double pole circuit breaker in the electrical panel labeled with the words "For Future Heat Pump Space Heater".

EXCEPTION to Section 150.0(h)5.B. If a 240 volt electrical circuit with a minimum capacity of 30 amps exists for space cooling equipment.

(i) - (m): Subsections 150.0(i) – (m) are adopted without modification.

(n) **Water Heating System** is amended read as follows:

1. Systems using gas or propane water heaters to serve individual dwelling units shall include the following components:

A. A dedicated 240~~125~~ volt, 30 ~~20~~ amp electrical receptacle that is connected to the electrical panel with conductors of adequate capacity~~a 120/240 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. Both ends of the unused conductor shall be labeled with the words, "For Future Heat Pump Water Heater" ~~s "spare~~" and be electrically isolated; and

ii. ~~A reserved single 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 "Future 240V Use~~ A double pole circuit breaker in the electrical panel labeled with the words "For Future Heat Pump Water Heater".

B. A Category III or IV vent, or a Type B vent with straight pipe between the outside termination and the space where the water heater is installed; and

C. 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

D. A gas supply line with a capacity of at least 200,000 Btu/hr. Located in an area that is both:

i. At least 3 feet by 3 feet by 7 feet high; and

ii. Has a minimum volume of 760 cubic feet or a ventilation plan that includes the equivalent of one 16 inch by 24 inch grill for warm supply air and one 8 inch duct of no more than 10 feet in length for cool exhaust air.

Exception 1 to 150.0(n)1.D. The space and ventilation requirements may be reduced to conform with the manufacturer's recommendations for a specific heat pump hot water heater that meets the requirements of Sections 110.0, 110.1 and 110.3.

EXCEPTION 2 to Section 150.0(n)1.D. ADUs.

2. Water heating recirculation loops serving multiple dwelling units shall meet the requirements of Section 110.3(c)5.

3. Solar water-heating systems and collectors shall be certified and rated by the Solar Rating and Certification Corporation (SRCC), the International Association of Plumbing and Mechanical Officials, Research and Testing (IAPMO R&T), or by a listing agency that is approved by the Executive Director.

4. Instantaneous water heaters with an input rating greater than 6.8 kBTU/hr (2kW) shall meet the requirements of Section 110.3(c)7.

5. Systems using 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 one or more heat pump hot water heaters of equivalent combined capacity and performance. Plans shall include calculations for equivalent capacity and performance, electrical power, conductors, raceway sizes and panel capacities.

(o) - (r): Subsections 150.0(o) – (r) are adopted without modification.

(s) Subsection 150.0(s) is added be numbered, entitled, and to read as follows:

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 240-volt, 30 amp electrical receptacle that is connected to the electrical panel with conductors of adequate capacity, within 3 feet of the appliance and accessible with no obstructions. In addition, all of the following:

      i. Both ends of the unused conductor shall be labeled with the word "For Future Heat Pump Clothes Dryer" and be electrically isolated; and

      ii. A double pole circuit breaker in the electrical panel labeled with the words "For Future Heat Pump Clothes Dryer".

2. Cooking Range

   A. A dedicated 240-volt, 50 amp electrical receptacle that is connected to the electrical panel with conductors of adequate

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capacity, within 3 feet of the appliance and accessible with no obstructions. In addition, all of the following:

i. Both ends of the unused conductor shall be labeled with the word "For Future Electric Range" and be electrically isolated; and

ii. A double pole circuit breaker in the electrical panel labeled with the words "For Future Inductive Range".

24.12.510 Performance and Prescriptive Compliance Approaches for Low-Rise Residential Buildings (Energy Standards, Subch. 7 §150.1)

Energy Standards, Subchapter 7, Section 150.1 is amended to read as follows:

(a) Section (a) is adopted without modification

(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~~ Building performance is calculated using Commission-certified compliance software as specified by the Alternative Calculation Methods Approval Manual.

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.

A. An All-Electric Building complies with the performance standard if both the Total Energy Design Rating and the Energy Efficiency Design Rating for the Proposed Building are no greater than the corresponding Energy Design Ratings for the Standard Design Building.

B. 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 if the Total Energy Design Rating for the Proposed Building is at least 10 points less than the Total Energy Design Rating for the Standard Design Building.

EXCEPTION 1 to Section 150.1(b)1.B. If the Certificate of Compliance is prepared and signed by a Certified Energy Analyst and the Total Energy Design Rating of the Proposed Design is no greater than the Standard Design Building, the Total Energy Rating of the Proposed Building required by Section 150.1(b)1.B may be reduced by 1.

EXCEPTION 2 to Section 150.1(b)1.B. 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 at least 2 points less than the Total Energy Design Rating for the Standard Design Building for Single Family Residences and at least 1 point less than the Total Energy Design Rating for the Standard Design Building for Low-Rise Multifamily Buildings.

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

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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 Building is no greater than the energy budget calculated for the Standard Design Building.

3. Section (b)(3) is adopted without modification.

(c) Prescriptive Standards/Component Package. Buildings that comply with the prescriptive standards shall be designed, constructed, and equipped to meet all of the requirements for the appropriate Climate Zone shown in TABLE 150.1-A or B. In TABLE 150.1-A and TABLE 150.1-B, a NA (not allowed) means that feature is not permitted in a particular Climate Zone and a NR (no requirement) means that there is no prescriptive requirement for that feature in a particular Climate Zone as well as all of the requirements of Section 150.1(c)15 and 16, whichever are more stringent. Installed components shall meet the following requirements:

1. – 14. Subsections 150.1(c)(1) – (14) are adopted without modification.

15. Additional Prescriptive Requirements for Single Family buildings.

A. Duct System Sealing and Leakage Testing. The duct systems shall exceed the minimum mandatory requirements of Section 150.0(m)11 A and B such that the total duct system leakage shall not exceed 2 percent of the nominal system air handler air flow.

B. Compact Hot Water. The hot water distribution system shall be designed and installed 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. Ducted Central Forced Air Heating Systems. Central Fan Integrated Ventilation Systems. The duct distribution system shall be designed reduce external static pressure to meet a maximum fan efficacy equal to:

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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.

D. Energy Storage. A battery energy storage system with a minimum capacity equal to 5 kWh shall be installed. The system shall have automatic controls programmed to charge anytime PV generation is greater than the building load and discharge to the electric grid, beginning during the highest priced time of use hours of the day.

16. Additional Prescriptive Requirements for Multifamily buildings.

A. Ducts in Conditioned Space. 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.

B. Roofing Products. Low-rise residential buildings with steep-sloped roofs shall have a minimum aged solar reflectance of 0.25.

C. Compact Hot Water. The hot water distribution system shall be designed and installed 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. 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 RA3.7.4.2.

E. Solar photovoltaic. A PV system meeting the minimum qualification requirements as specified in Joint Appendix JA11 sized to offset 100%, or the maximum amount permitted by the utility provider, -of the estimated site electricity load shall be installed. The plans shall include calculations for the electricity load and PV production.

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F. Energy Storage. A battery energy storage system with a capacity equivalent to the PV system shall be installed. The system shall have automatic controls programmed to charge anytime PV generation is greater than the building load and discharge to the electric grid, beginning during the highest priced time of use hours of the day.

Tables 150.1-C, 150.1-A and 150.1-B and associated footnotes are adopted without modification.

PASSED FOR PUBLICATION of title this _____ day of _____, 2019, by the following vote:

AYES:

NOES:

ABSENT:

DISQUALIFIED:

SAM LICCARDO
Mayor

ATTEST:

TONI J. TABER, CMC
City Clerk

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