

ORDINANCE NO. 3202-22

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF SUNNYVALE TO AMEND VARIOUS SECTIONS OF TITLE 16 (BUILDINGS AND CONSTRUCTION) OF THE SUNNYVALE MUNICIPAL CODE TO ADOPT BY REFERENCE THE 2022 CALIFORNIA BUILDING, RESIDENTIAL, MECHANICAL, PLUMBING, ELECTRICAL, BUILDING STANDARDS ADMINISTRATIVE, ENERGY, HISTORICAL BUILDING, EXISTING BUILDING, AND GREEN BUILDING STANDARDS CODES, AND THE INTERNATIONAL PROPERTY MAINTENANCE CODE, WITH LOCAL AMENDMENTS AND RELATED FINDINGS

WHEREAS, the California Building Standards Commission (“CBSC”) is responsible for administering the implementation of the California building codes, which includes the proposal, review, and adoption processes; and

WHEREAS, the building codes are contained in the California Code of Regulations, Title 24; and

WHEREAS, since 1989, the CBSC has published triennial editions of these codes; and

WHEREAS, in January 2022, the State of California adopted the 2022 California Building Codes and published the documents on July 1, 2022.

WHEREAS, all local jurisdictions are required to adopt these codes with appropriate amendments by January 1, 2023, or be mandated to accept by default the version adopted by the State; and

WHEREAS, the City of Sunnyvale desires to amend the following codes adopted by the State of California for implementation on January 1, 2023:

- 2022 California Building Code (based on the 2021 International Building Code)
- 2022 California Residential Code (based on the 2021 International Residential Code)
- 2022 California Mechanical Code (based on the 2021 Uniform Mechanical Code)
- 2022 California Plumbing Code (based on the 2021 Uniform Plumbing Code)
- 2022 California Electrical Code (based on the 2020 National Electrical Code)
- 2022 California Building Standards Administrative Code

- 2022 California Energy Code
- 2022 California Historical Building Code
- 2022 California Existing Building Code
- 2022 California Green Building Standards Code
- 2021 International Property Maintenance Code

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF SUNNYVALE DOES ORDAIN AS FOLLOWS:

SECTION 1. Section 16.08.020 AMENDED. Section 16.08.020 of Chapter 16.08 (Administrative Code) of Title 16 (Buildings and Construction) of the Sunnyvale Municipal Code is hereby amended to read as follows:

Section 16.08.020. Adoption by reference.

The “2022 California Administrative Code” adopted by the State Building Standards Commission in California Code of Regulations (CCR) Title 24, Part 1 is hereby adopted by reference as the administrative code for all California codes adopted by the city of Sunnyvale.

SECTION 2. Section 16.16.020 AMENDED. Section 16.16.020 of Chapter 16.16 (Building Code) of Title 16 (Buildings and Construction) of the Sunnyvale Municipal Code is hereby amended to read as follows:

Section 16.16.020. Adoption by reference.

The 2021 International Building Code in its entirety, along with Appendices C, I, and J as published by the International Code Council, Inc. and amendments to sections of the 2021 International Building Code adopted by the State Building Standards Commission in California Code of Regulations (CCR) Title 24, Part 2, known as the 2022 California Building Code, is hereby adopted by reference, with changes and modifications as hereinafter set forth, as the building code of the city of Sunnyvale.

SECTION 3. Section 16.16.030 AMENDED. Section 16.16.030 of Chapter 16.16 (Building Code) of Title 16 (Buildings and Construction) of the Sunnyvale Municipal Code is hereby amended to read as follows:

Section 16.16.030. Administration.

2022 California Building Code, Chapter 1, Division II, is hereby amended as follows:

101.2. Scope.

[A] The provisions of this chapter shall apply to grading and to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal, and demolitions of every building or structure or any appurtenances connected or attached to such buildings or structures

within the city, including all plumbing and drainage systems, mechanical systems, and electrical wiring and fire safety systems, or parts thereof, within and serving such building or structure, excluding therefrom the following:

- (1) – (5) [Text unchanged.]
- (6) Detached one- and two-family dwellings and multiple single-family dwellings (townhouse units) not more than three stories above grade plane in height with a separate means of egress and their accessory structures shall comply with this code or the California Residential Code.

105.3.2. Time Limitation of Application. [Text unchanged.]

105.5. Permit Expiration.

- (1) – (3) [Renumbered, Text unchanged.]

Note: Reference Building Standards Law, Health and Safety Code Sections 18938.5 and 18938.6, for provisions related to expiration of permits.

105.7. Placement of Permit. [Text unchanged.]

107.5. Retention of Construction Documents. [Text unchanged.]

109.2. Schedule of Permit Fees. [Text unchanged.]

109.4. Work Commencing Before Permit Issuance. [Text unchanged.]

109.4.1. Investigation Fees: Work Without a Permit. [Text unchanged.]

109.4.2. Fee. [Text unchanged.]

109.6. Refunds. [Text unchanged.]

109.7. Plan Review Fees. [Text unchanged.]

110.3.8. Other Inspections. [Text unchanged.]

110.7. Inspection Record Card. [Text unchanged.]

110.8. Reinspections. [Text unchanged.]

111.2. Certificate Issued. [Text unchanged.]

114.1. Unlawful Acts. It is unlawful for any person, firm, or corporation to perform any grading, or to relocate, replace, erect, construct, enlarge, alter, repair, move, improve, remove, convert or demolish, equip, use, occupy, or

maintain any building or structure in the city, or to install or maintain any plumbing or drainage systems, or any mechanical systems, or any electrical wiring or fire safety systems in or about any building or structure or any appurtenances connected or attached to such buildings or structures in the city, or cause the same to be done, contrary to or in violation of any of the provisions of the administrative or technical code. Each such person is guilty of a separate offense for each and every day during any portion of which a violation of any provision of any codes continued, or permitted by such person and shall be punishable accordingly.

Section 117. Address Identification. [Text unchanged.]

SECTION 4. Section 16.16.050 AMENDED. Section 16.16.050 of Chapter 16.16 (Building Code) of Title 16 (Buildings and Construction) of the Sunnyvale Municipal Code is hereby amended to read as follows:

Section 16.16.050. Standards for high-rise buildings.

2022 California Building Code Section 403 is hereby replaced by the applicable provisions of Chapter 16.52.

SECTION 5. Section 16.16.060 AMENDED. Section 16.16.060 of Chapter 16.16 (Building Code) of Title 16 (Buildings and Construction) of the Sunnyvale Municipal Code is hereby amended to read as follows:

Section 16.16.060. Numbering of buildings.

2022 California Building Code Section 501.2 is hereby replaced with the applicable provisions of Section 16.16.030.

SECTION 6. Section 16.16.065 ADDED. Section 16.16.065 of Chapter 16.16 (Building Code) of Title 16 (Buildings and Construction) of the Sunnyvale Municipal Code is hereby added to read as follows:

Section 16.16.065. Fire-resistant penetrations and joints.

2022 California Building Code Section 1705.18 is hereby amended to read:

CBC 1705.18 Fire-resistant penetrations and joints. In high-rise buildings, in buildings assigned to Risk Category III or IV, or in fire areas containing Group R occupancies with an occupant load greater than 100, and other occupancies as determined necessary special inspections for through-penetrations, membrane penetration firestops, fire resistant joint systems and perimeter fire containment systems that are tested and listed in accordance with Sections 714.4.1.2, 714.5.1.2, 715.3.1 and 715.4 shall be in accordance with Section 1705.18.1 or 1705.18.2

SECTION 7. Section 16.16.070 AMENDED. Section 16.16.070 of Chapter 16.16 (Building Code) of Title 16 (Buildings and Construction) of the Sunnyvale Municipal Code is

hereby amended to read as follows:

Section 16.16.070. Fire extinguishing systems.

Except for the application of Sections 504.2 and 506.3 of the 2022 California Building Code, the installation requirements for fire extinguishing systems, including 2022 California Building Code Section 903, shall be governed by the applicable provisions of the 2022 California Fire Code as adopted by Chapter 16.52.

SECTION 8. Section 16.16.080 AMENDED. Section 16.16.080 of Chapter 16.16 (Building Code) of Title 16 (Buildings and Construction) of the Sunnyvale Municipal Code is hereby amended to read as follows:

Section 16.16.080. Fire protection systems.

2022 California Building Code Chapter 9 is hereby replaced by the applicable provisions of Chapter 16.52.

SECTION 9. Section 16.16.090 AMENDED. Section 16.08.090 of Chapter 16 (Building Code) of Title 16 (Buildings and Construction) of the Sunnyvale Municipal Code is hereby amended to read as follows:

Section 16.16.090. Roof material rating.

2022 California Building Code Section 1505.1.3 is amended to read as follows:

1505.1.3 Roof Coverings in All Other Areas. [Text unchanged.]

SECTION 10. Section 16.16.100 AMENDED. Section 16.16.100 of Chapter 16.16 (Building Code) of Title 16 (Buildings and Construction) of the Sunnyvale Municipal Code is hereby amended to read as follows:

Section 16.16.100. Concrete construction.

2022 California Building Code Section 1705.3 is hereby amended to read:

1705.3 Concrete Construction. Special inspections and tests of concrete constructions shall be performed in accordance with this section and Table 1705.3.

Exceptions: Special inspections and tests shall not be required for:

1. Isolated spread concrete footings of buildings three stories or less above grade plane that are fully supported on earth or rock where the structural design of the footing is based on specified compressive strength f'_c , not more than 2,500 pounds per square inch (psi) (17.2 MPa), regardless of the compressive strength of the construction documents or used in the footing construction.
2. Continuous concrete footing supporting walls of buildings three stories or

less above grade plane that are fully supported on earth or rock where:

- 2.1 The footings support walls of light frame construction;
- 2.2. The footings are designed in accordance with Table 1809.7; or
- 2.3. The structural design of the footing is based on a specified compressive strength f'_c , no greater than 2,500 pounds per square inch (psi) (17.2 MPa), regardless of the compressive strength specified in the construction documents or used in the footing construction documents or used in the footing construction.
3. Nonstructural concrete slabs supported directly on the ground, including prestressed slabs on grade, where the effective prestress in the concrete is less than 150 psi (1.03 MPa).
4. Concrete foundation walls constructed in accordance with Table 1807.1.6.2.
5. Concrete patios, driveways, and sidewalks, on grade.

SECTION 11. Section 16.16.110 AMENDED. Section 16.16.110 of Chapter 16.16 (Building Code) of Title 16 (Buildings and Construction) of the Sunnyvale Municipal Code is hereby amended to read as follows:

Section 16.16.110. Modifications to ACI 318.

2022 California Building Code Section 1905.1.8 is amended to read as follows:

1905.1.7 ACI 318, Section 14.1.4. Delete ACI 318, Section 14.1.4, and replace with the following:

22.10 – 22.10.1 [Text unchanged.]

SECTION 12. Section 16.16.120 ADDED. Section 16.16.120 of Chapter 16.16 (Building Code) of Title 16 (Buildings and Construction) of the Sunnyvale Municipal Code is hereby added to read as follows:

2022 California Building Code Table 2308.6.1 (Wall Bracing Requirements) of CBC Chapter 23 (Wood) is amended as follows:

(1) The title of Table 2308.6.1 is amended to read:

TABLE 2308.6.1^{a, f, g}

(2) Footnotes “f” and “g” are added to Table 2308.6.1, to read:

- f. Methods PBS, HPS, and SFB are not permitted in Seismic Design Categories D or E.

g. Methods GB, DWB and PCP are not permitted in Seismic Design Category E.

SECTION 13. Section 16.17.020 AMENDED. Section 16.17.020 of Chapter 16.17 (Residential Code) of Title 16 (Buildings and Construction) of the Sunnyvale Municipal Code is hereby amended to read as follows:

Section 16.17.020. Adoption by reference.

The 2021 International Residential Code in its entirety, along with Appendices AH, AK, and AV as published by the International Code Council, Inc. and amendments to sections of the 2021 International Residential Code adopted by the State Building Standards Commission in California Code of Regulations (CCR) Title 24, Part 2.5, known as the 2022 California Residential Code, is hereby adopted by reference, with changes and modifications as hereinafter set forth, as the residential code of the city of Sunnyvale.

SECTION 14. Section 16.17.030 AMENDED. Section 16.17.030 of Chapter 16.17 (Residential Code) of Title 16 (Buildings and Construction) of the Sunnyvale Municipal Code is hereby amended to read as follows:

16.17.30. Administration.

2022 California Residential Code Chapter 1 Division II is hereby amended as follows:

2022 California Residential Code Chapter 1 Division II is hereby replaced by the provisions of Chapter 16.16.

SECTION 15. Section 16.17.040 AMENDED. Section 16.17.040 of Chapter 16.17 (Residential Code) of Title 16 (Buildings and Construction) of the Sunnyvale Municipal Code is hereby amended to read as follows:

Section 16.17.040. Definitions.

2022 California Residential Code Chapter 2 is hereby amended as follows:

For the purpose of the California Code, certain terms are defined as

follows:

(1) – (4) [Text unchanged.]

(5) “TOWNHOUSE UNIT”. A single family dwelling unit on an individual lot constructed in a group of three or more attached units in which each extends from foundation to roof and with a yard or public way on at least two sides.

(6) “HABITABLE SPACE”. A space in a building for living, sleeping, eating or cooking including bathrooms, toilet rooms, closets, halls, storage or utility spaces and similar areas.

SECTION 16. Section 16.17.050 AMENDED. Section 16.17.050 of Chapter 16.17

(Residential Code) of Title 16 (Buildings and Construction) of the Sunnyvale Municipal Code is hereby amended to read as follows:

Section 16.17.050. Fire-resistant construction.

2022 California Residential Code Table R302.1(2) footnote “a” is amended to read follows:

^a. For residential subdivisions where all dwellings and accessory buildings are equipped throughout with an automatic sprinkler system installed in accordance with Section R313, the fire separation distance for exterior walls not fire-resistance rated and for fire-resistance rated projections shall be permitted to be reduced to 0 feet, and unlimited unprotected openings and penetrations shall be permitted, where the adjoining lot provides an open setback yard that is 6 feet or more in width on the opposite side of the property line.

SECTION 17. Section 16.17.060 AMENDED. Section 16.17.060 of Chapter 16.17 (Residential Code) of Title 16 (Buildings and Construction) of the Sunnyvale Municipal Code is hereby amended to read as follows:

Section 16.17.060. Townhouse Units.

2022 California Residential Code Section R302.2 is amended as follows:

R302.2 Townhouse Units. Each townhouse unit shall be considered a separate building and shall be separated by fire-resistance rated wall assemblies meeting the requirements of Section R302.1 for exterior walls.

SECTION 18. Section 16.17.080 AMENDED. Section 16.17.080 of Chapter 16.17 (Residential Code) of Title 16 (Buildings and Construction) of the Sunnyvale Municipal Code is hereby amended to read as follows:

Section 16.17.080. Fire extinguishing systems.

2022 California Residential Code sections R313.1, R313.2, and R313.3 are hereby amended to read as follows:

R313.1 Townhouse unit automatic fire sprinkler systems.

An automatic residential fire sprinkler system shall be installed in townhouse units.

Existing Townhouse Units. An automatic residential fire sprinkler system shall be installed in existing townhouse units when additions or conversions from non-habitable to habitable spaces are made that are in excess of 50 percent of the habitable building area.

Firewalls used to separate building areas shall be constructed in accordance with the 2022 California Building Code and shall be without openings or penetrations.

Exception: A one-time addition to existing townhouse units that do not exceed 500 square feet of building area.

R313.1.1 Design and Installation.

Automatic residential fire sprinkler systems for townhouse units shall be designed and installed in accordance with NFPA 13D and local standards.

R313.2 One- and two-family dwellings automatic fire systems.

An automatic residential fire sprinkler system shall be installed in one- and two-family dwellings.

Existing one- and two-family dwellings. An automatic residential fire sprinkler system shall be installed in existing one and two-family dwellings when additions or conversions from non-habitable to habitable spaces are made that are in excess of 50 percent of the habitable building area.

Firewalls used to separate building areas shall be constructed in accordance with the 2022 California Building Code and shall be without openings or penetrations.

Exception: One-time additions to one and two-family dwellings that do not exceed 500 square feet of building area.

Group U private garages and carports shall comply with Section 903.2.18 of the 2022 California Fire Code.

R313.2.1 Design and Installation.

Automatic residential fire sprinkler systems for one- and two-family dwellings shall be designed and installed in accordance with NFPA 13D and local standards.

2022 California Residential Code Section R313.3 is hereby amended by deleting the following provisions:

R313.3 Dwelling unit fire sprinkler systems.

SECTION 19. Section 16.17.090 ADDED. Section 16.17.090 of Chapter 16.17 (Residential Code) of Title 16 (Buildings and Construction) of the Sunnyvale Municipal Code is hereby ADDED to read as follows:

Section 16.17.090 Electrical Energy Storage Systems

2022 California Residential Code Section R328.4 Locations is amended to read as follows:

R328.4 Locations. ESS shall be installed only in the following locations:
Detached garages and detached accessory structures.

1. Attached garages separated from the dwelling unit living space in accordance with Section R302.6.
2. Outdoors installations or on the exterior side of the exterior walls shall not be located less than 3 feet (914 mm) from doors and windows directly entering the dwelling unit and shall not be located below any emergency escape and rescue openings.
3. Enclosed utility closets, basements, storage or utility spaces within dwelling units with finished or noncombustible walls and ceilings. Walls and ceilings of unfinished wood-framed construction shall be provided with not less than 5/8-inch (15.9 mm) Type X gypsum wallboard.
4. ESS shall not be installed in sleeping rooms, or closets or spaces opening directly into sleeping rooms or in habitable spaces of dwelling units.

SECTION 20. Section 16.17.095 ADDED. Section 16.17.095 of Chapter 16.17 (Residential Code) of Title 16 (Buildings and Construction) of the Sunnyvale Municipal Code is hereby ADDED to read as follows:

Section 16.17.095 Energy Storage Systems

2022 California Residential Code Section R328.7 Fire detection is amended to read as follows:

R328.7 Fire detection. Rooms and areas within dwelling units, basements and attached garages in which ESS are installed shall be protected by smoke alarms in accordance with Section R314. A heat detector, listed and interconnected to the smoke alarms, shall be installed in locations within dwelling units and attached garages where smoke alarms cannot be installed based on their listing.

ESS installed in Group R-3 and townhomes shall comply with the following:

1. Rooms and areas within dwellings units, sleeping units, basements and attached garages in which ESS are installed shall be protected by smoke alarms in accordance with Section R314.
2. A listed heat alarm interconnected to the smoke alarms shall be installed in locations within dwelling units, sleeping units and attached garages where smoke alarms cannot be installed based on their listing.

Exceptions:

1. A listed heat detector may be used in place of a heat alarm, so long as it is interconnected with devices that provide an audible alarm at all sleeping areas.
2. A fire sprinkler associated with an approved automatic sprinkler system that triggers an audible alarm upon activation of the waterflow switch, may be used in place of a heat alarm.

SECTION 21. Section 16.17.100 AMENDED. Section 16.17.100 of Chapter 16.17 (Residential Code) of Title 16 (Buildings and Construction) of the Sunnyvale Municipal Code is hereby amended to read as follows:

Section 16.17.100. Lath, gypsum board and plaster as wall bracing materials.

2022 California Residential Code Table R602.10.3(3) (Bracing Requirements Based On Seismic Design Category) of CRC Chapter 6 (Wall Construction) is amended as follows:

TABLE R602.10.3(3)^{ij}

2022 California Residential Code Table R602.10.3(3) footnotes “i” and “j” are added to the end of the table to read:

- i. Methods PBS, HPS, SFB and CS-SFB are not permitted in Seismic Design Categories D₀, D₁, and D₂.
- j. Methods GB, DWB and PCP are not permitted in Seismic Design Categories D₀, D₁, and D₂ where S₁ is greater than or equal to 0.75.

SECTION 22. Section 16.17.110 AMENDED. Section 16.17.110 of Chapter 16.17 (Residential Code) of Title 16 (Buildings and Construction) of the Sunnyvale Municipal Code is hereby amended to read as follows:

Section 16.17.110. Roof material rating.

2022 California Residential Code Section R902.1.2 is amended to read as follows:

R902.1.2 Roof Coverings in All Other Areas. [Renumbered, Text unchanged.]

SECTION 23. Section 16.17.120 AMENDED. Section 16.17.120 of Chapter 16.17 (Residential Code) of Title 16 (Buildings and Construction) of the Sunnyvale Municipal Code is hereby amended to read as follows:

Section 16.17.120 Swimming pools, spas and hot tubs.

2016 California Residential Code Section R326.1 is amended to read as follows:

R326.1 General. The design and construction of pools and spas shall comply with the 2016 California Residential Code.

SECTION 24. Section 16.18.020 AMENDED. Section 16.18.020 of Chapter 16.18 (Existing Building Code) of Title 16 (Buildings and Construction) of the Sunnyvale Municipal Code is hereby amended to read as follows:

Section 16.18.020. Adoption by reference.

The “2022 California Existing Building Code,” along with appendices A1, A3 and A4 adopted by the State Building Standards Commission in California Code of Regulations (CCR) Title 24, Part 10 is hereby adopted by reference, with changes and modifications as hereinafter set forth, as the existing building code of the city of Sunnyvale.

SECTION 25. Section 16.18.030 AMENDED. Section 16.18.030 of Chapter 16.18 (Existing Building Code) of Title 16 (Buildings and Construction) of the Sunnyvale Municipal Code is hereby amended to read as follows:

Section 16.18.030. Administration.

2022 California Existing Building Code Chapter 1 Division II is hereby amended as follows:

2022 California Existing Building Code 1 Division II is hereby replaced by the applicable provisions of Chapter 16.16.

SECTION 26. Section 16.18.040 AMENDED. Section 16.18.040 of Chapter 16.18 (Existing Building Code) of Title 16 (Buildings and Construction) of the Sunnyvale Municipal Code is hereby amended to read as follows:

Section 16.18.040. Moved structures.

2022 California Existing Building Code Section 409 is hereby amended to read:

409.1 Conformance. [Text unchanged.]

Exception: [Text unchanged.]

SECTION 27. Section 16.24.020 AMENDED. Section 16.24.020 of Chapter 16.24 (Plumbing Code) of Title 16 (Buildings and Construction) of the Sunnyvale Municipal Code is hereby amended to read as follows:

Section 16.24.020. Adoption by reference.

The 2021 Uniform Plumbing Code in its entirety as published by the International Association of Plumbing and Mechanical Officials and amendments to sections of the 2021 Uniform Plumbing Code adopted by the State Building Standards Commission in California Code of Regulations (CCR) Title 24, Part 5 known as the 2022 California Plumbing Code, is hereby adopted by reference, with changes and modifications as hereinafter set forth, as the plumbing code of the city of Sunnyvale.

SECTION 28. Section 16.24.025 AMENDED. Section 16.24.025 of Chapter 16.24 (Plumbing Code) of Title 16 (Buildings and Construction) of the Sunnyvale Municipal Code is hereby amended to read as follows:

Section 16.24.025. Administration.

2022 California Plumbing Code Chapter 1 Division II is hereby amended

as follows:

2022 California Plumbing Code Chapter 1 Division II is hereby replaced by the applicable provisions of Chapter 16.16.

SECTION 29. Section 16.24.030 AMENDED. Section 16.24.030 of Chapter 16.24 (Plumbing Code) of Title 16 (Buildings and Construction) of the Sunnyvale Municipal Code is hereby amended to read as follows:

Section 16.24.030. Alternative water sources for nonpotable applications.

2022 California Plumbing Code Chapter 15 is amended to read as follows:

1504.4 Groundwater Level. Adequate groundwater separation shall be demonstrated to the satisfaction of the Enforcing Agency per the requirements below. Adequate demonstration of the requirements can be shown through documented seasonal high groundwater levels within the area or if there is no evidence of groundwater in a test hole of the required depth.

Clothes washer system or simple system: The deepest irrigation or disposal point of the proposed graywater system shall not extend within five (5) vertical feet (1,524 mm) of groundwater.

Complex system: The deepest irrigation or disposal point of the proposed graywater system shall not extend within ten (10) vertical feet (3,048 mm) of groundwater.

SECTION 30. Section 16.28.020 AMENDED. Section 16.28.020 of Chapter 16.28 (Mechanical Code) of Title 16 (Buildings and Construction) of the Sunnyvale Municipal Code is hereby amended to read as follows:

Section 16.28.020. Adoption by reference.

The 2021 Uniform Mechanical Code in its entirety as published by the International Association of Plumbing and Mechanical Officials and amendments to sections of the 2021 Uniform Mechanical Code adopted by the State Building Standards Commission in California Code of Regulations (CCR) Title 24, Part 4 known as the 2022 California Plumbing Code, is hereby adopted by reference, with changes and modifications as hereinafter set forth, as the mechanical code of the city of Sunnyvale.

SECTION 31. Section 16.28.025 AMENDED. Section 16.28.025 of Chapter 16.28 (Mechanical Code) of Title 16 (Buildings and Construction) of the Sunnyvale Municipal Code is hereby amended to read as follows:

Section 16.28.025. Administration.

2022 California Mechanical Code Chapter 1 Division II is hereby amended as follows:

2022 California Mechanical Code Chapter 1 Division II is hereby replaced by the applicable provisions of Chapter 16.16.

SECTION 32. Section 16.32.020 AMENDED. Section 16.32.020 of Chapter 16.32 (Electrical Code) of Title 16 (Buildings and Construction) of the Sunnyvale Municipal Code is hereby amended to read as follows:

Section 16.32.020. Adoption by reference.

The 2022 National Electrical Code in its entirety as published by the National Fire Protection Association and amendments to sections of the 2022 National Electrical Code adopted by the State Building Standards Commission in California Code of Regulations (CCR) Title 24, Part 3 known as the 2022 California Electrical Code, is hereby adopted by reference, with changes and modifications as hereinafter set forth, as the electrical code of the city of Sunnyvale.

SECTION 33. Section 16.32.030 AMENDED. Section 16.32.030 of Chapter 16.32 (Electrical Code) of Title 16 (Buildings and Construction) of the Sunnyvale Municipal Code is hereby amended to read as follows:

Section 16.32.030. Administration.

2022 California Electrical Code section 89.101 is hereby amended as follows:

2022 California Electrical section 89.101 is hereby replaced by the applicable provisions of Chapter 16.16.

SECTION 34. Section 16.34.020 AMENDED. Section 16.34.020 of Chapter 16.34 (Historical Building Code) of Title 16 (Buildings and Construction) of the Sunnyvale Municipal Code is hereby amended to read as follows:

Section 16.34.020. Adoption by reference.

The “2022 California Historical Building Code” adopted by the State Building Standards Commission in California Code of Regulations (CCR) Title 24, Part 8 is hereby adopted by reference as the historical building code of the city of Sunnyvale.

SECTION 35. Section 16.42.020 AMENDED. Section 16.42.020 of Chapter 16.42 (Energy Code) of Title 16 (Buildings and Construction) of the Sunnyvale Municipal Code is hereby amended to read as follows:

Section 16.42.020. Adoption by reference.

The “2022 California Energy Code” adopted by the State Building Standards Commission in California Code of Regulations (CCR) Title 24, Part 6 is hereby adopted by reference as the energy code of the city of Sunnyvale.

SECTION 36. Section 16.42.030 AMENDED. Section 16.42.030 of Chapter 16.42 (Energy Code) of Title 16 (Buildings and Construction) of the Sunnyvale Municipal Code is hereby amended to read as follows:

Section 16.42.030. Scope.

- (a) Any project that has submitted a complete application for a planning or building entitlement prior to January 1, 2021, is not required to comply with the All-Electric Building requirements.
- (b) 2022 California Energy Code Section 100.0(e)2A (Newly constructed buildings – All newly constructed buildings) is hereby amended to read as follows:

100.0(e)2A. All newly constructed buildings. Sections 110.0 through 110.12 apply to all newly constructed buildings within the scope of Section 100.0(a). In addition, newly constructed buildings shall meet the requirements of Subsections B, C, D, ~~or~~ E, or F, as applicable; and shall be an All-Electric Building as defined in Section 100.1(b).

For the purposes of All-Electric Building requirements, “newly constructed buildings” shall include the buildings defined in Section 100.1 as well as newly constructed additions and improvements in existing buildings where more than 50 percent of the exterior walls are removed or 50 percent of the wall plate height is raised. The Chief Building Official shall make the final determination regarding the application of this section.

For the purposes of All-Electric Building requirements, “newly constructed buildings” shall not include newly constructed additions and tenant improvements in existing buildings except as defined above.

Exception 1: F, H, L Occupancies may utilize natural gas and shall provide installed prewiring for future use of electric appliances.

Exception 2: This exemption shall apply only for public agency owned and operated emergency centers. To take advantage of this exception applicant shall provide third party verification that All-Electric space heating requirement is not cost effective and feasible.

Exception 3: Non-residential kitchens may not utilize natural gas for cooking appliances unless the applicant establishes that there is not an all-electric option for the kitchen using commercially available technology. If the Building Official grants an exception, EnergySTAR rated natural gas appliances shall be used.

Exception 4: An All-Electric Building may receive power from equipment, located outside the building, that utilizes natural gas, propane, or other fuel to generate electricity. The Chief Building Official may grant an exception to allow natural gas or propane plumbing within an all-electric building to fuel such equipment if the applicant provides a third party verification that the standard electrical grid is not sufficiently reliable to meet the power needs for the intended use of the building.

Exception 5: If the applicant establishes that there is not an all-electric prescriptive compliance pathway for the building under the Energy Code, and that the building is not able to achieve the performance compliance standard applicable to the building under the Energy Code using commercially available technology and an approved calculation method or if it is demonstrated that there is equivalent greenhouse gas reduction, then the Building Official may grant a modification. If

the Building Official grants a modification pursuant to this Exception, the applicant shall comply with the pre-wiring provision of Note 1 below.

Note 1: If natural gas appliances are used in any of the above exceptions 1-3, natural gas appliance locations must also be electrically pre-wired for future electric appliance installation. They shall include the following:

1. A dedicated circuit, phased appropriately, for each appliance, with a minimum amperage requirement for a comparable electric appliance (see manufacturer's recommendations) with an electrical receptacle or junction box that is connected to the electric panel with conductors of adequate capacity, extending to within 3 feet of the appliance and accessible with no obstructions. Appropriately sized conduit may be installed in lieu of conductors;
2. Both ends of the conductor or conduit shall be labeled with the words "For Future Electric appliance" and be electrically isolated;
3. A circuit breaker shall be installed in the electrical panel for the branch circuit and labeled for each circuit, an example is as follows (i.e "For Future Electric Range;") and
4. All electrical components, including conductors, receptacles, junction boxes, or blank covers, related to this section shall be installed in accordance with the California Electrical Code.

Note 2: If any of the exceptions 1-3 are granted, the Building Official shall have the authority to approve alternative materials, design and methods of construction or equipment per CBC 104.

(c) Newly constructed buildings shall not have gas related utility meters on the property.

(d) Construction, alteration, relocation, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal and demolition of every building or structure constructed under this Chapter shall comply with the most current requirements of this Chapter.

(e) Upon approval of the Chief Building Official, the City may allow fuel gas infrastructure (e.g. a gas meter) to be installed and attached to a commercial or industrial space that qualifies for the exception contained in this chapter. Such fuel gas infrastructure shall not be installed, activated, or otherwise used unless the exemption specified in this chapter has been confirmed as part of the issuance of a building permit. If the fuel gas infrastructure is no longer serving the exception as required in this chapter, it shall either be capped, otherwise terminated, or removed by the entity previously entitled to the exemption, in a manner pursuant to all applicable Codes.

SECTION 37. Section 16.42.040 AMENDED. Section 16.42.040 of Chapter 16.42 (Energy Code) of Title 16 (Buildings and Construction) of the Sunnyvale Municipal Code is

hereby amended to read as follows:

Section 16.42.040. Definitions.

2022 California Energy Code Section 100.1(b) (Definitions) is hereby amended by adding the following definition:

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

SECTION 38. Section 16.42.050 AMENDED. Section 16.42.050 of Chapter 16.42 (Energy Code) of Title 16 (Buildings and Construction) of the Sunnyvale Municipal Code is hereby amended to read as follows:

Section 16.42.050. Space-conditioning equipment.

2022 California Energy Code Section 110.2 (Mandatory Requirements for Space-Conditioning Equipment), first paragraph, is hereby amended to read as follows:

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

SECTION 39. Section 16.42.060 AMENDED. Section 16.42.060 of Chapter 16.42 (Energy Code) of Title 16 (Buildings and Construction) of the Sunnyvale Municipal Code is hereby amended to read as follows:

Section 16.42.060. Service water-heating systems and equipment.

2022 California Energy Code Section 110.3 (Mandatory Requirements for Service Water-Heating Systems and Equipment), subsection (a), first paragraph, is hereby amended to read as follows:

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

SECTION 40. Section 16.42.070 AMENDED. Section 16.42.070 of Chapter 16.42 (Energy Code) of Title 16 (Buildings and Construction) of the Sunnyvale Municipal Code is hereby amended to read as follows:

Section 16.42.070. Pool and spa systems and equipment.

2022 California Energy Code Section 110.4 (Mandatory Requirements for Pool and Spa Systems and Equipment), subsection (a), first paragraph, is hereby amended to read as follows:

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

SECTION 41. Section 16.42.080 AMENDED. Section 16.42.080 of Chapter 16.42 (Energy Code) of Title 16 (Buildings and Construction) of the Sunnyvale Municipal Code is hereby amended to read as follows:

Section 16.42.080. Natural gas pilot lights.

2022 California Energy Code Section 110.5 (Natural Gas Central Furnaces, Cooking Equipment, Pool and Spa Heaters, and Fireplaces: Pilot Lights Prohibited), first paragraph, is amended as follows:

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

SECTION 42. Section 16.42.090 AMENDED. Section 16.42.090 of Chapter 16.42 (Energy Code) of Title 16 (Buildings and Construction) of the Sunnyvale Municipal Code is hereby amended to read as follows:

Section 16.42.090. Solar requirements.

(a) **Title.** 2022 California Energy Code Section 110.10 (Mandatory Requirements for Solar--Readiness), title, is hereby amended to read as follows:

SECTION 110.10 – MANDATORY REQUIREMENTS FOR SOLAR READY BUILDINGS AND SOLAR PANEL SYSTEM REQUIREMENTS

(b) **Hotel/Motel Occupancies and High-Rise Multifamily Buildings.** 2022 California Energy Code Section 110.10(a)3 (Covered Occupancies – Hotel/Motel Occupancies and High-rise Multifamily Buildings) is hereby amended to read as follows:

110.10(a)3. Hotel/Motel Occupancies and High-rise Multifamily Buildings. Hotel/motel occupancies and high-rise multifamily buildings with ten habitable stories or fewer, that do not have a photovoltaic system installed, shall comply with the requirements of Section 110.10(b) through 110.10(d) and Table 110.10-A.

(c) **Nonresidential Buildings.** 2022 California Energy Code Section 110.10(a)4 (Covered Occupancies – Nonresidential Buildings) is hereby amended to read as follows:

110.10(a)4. Nonresidential Buildings. Nonresidential buildings with three habitable stories or fewer, other than I-2 and I-2.1 buildings that do not have a photovoltaic system installed, shall comply with the requirements of Section 110.10(b) through 110.10(d) and Table 110.10-A.

(d) **Solar Panel Requirements for All New Nonresidential and High Rise Multifamily Buildings.** 2022 California Energy Code Section 110.10(a) (Covered Occupancies) is hereby amended by adding the following table:

Table 110.10-A: Solar panel requirements for all new nonresidential and high rise multifamily buildings	
Square footage of building	Size of panel
Less than 10,000 sq. ft.	Minimum of 5-kilowatt PV systems
Greater than or equal to 10,000 sq. ft.	Minimum of 10-kilowatt PV systems
EXCEPTION: As an alternative to a solar PV system, the building type may provide a solar hot water system (solar thermal) with a minimum collector area of 40 square feet, additional to any other solar thermal equipment otherwise required for compliance with Part 6.	

(e) **Minimum solar zone area - exceptions.** 2022 California Energy Code Section 110.10(b)1B (Minimum Solar Zone Area – Multifamily buildings, hotel/motel occupancies and nonresidential buildings), Exception 2, is hereby amended to read as follows:

EXCEPTION 2 to Section 110.10(b)1B: High-rise multifamily buildings, hotel/motel occupancies with a permanently installed domestic solar water-heating system complying with Section 150.1(c)8Biii and an additional collector area of 40 square feet.

(f) **Minimum solar zone area – performance equivalency.** 2022 California Energy Code Section 110.10(b)1B (Minimum Solar Area – Multifamily Buildings, Hotel/Motel Occupancies and Nonresidential Buildings) is hereby amended by adding the following:

EXCEPTION 6 to Section 110.10(b)1B: Performance equivalency approved by the building official.

(g) **Minimum Solar Zone Area – Shading.** 2022 California Energy Code Section 110.10(b)3 (Minimum Solar Zone Area – Shading) is hereby amended by adding the following:

110.10(b)3C. The solar zone needs to account for shading from obstructions that may impact the area required in 110.10(b)1B. When determined by the Building Official that conditions exist where excessive shading occurs and solar zones cannot be met, a performance equivalency approved by the Building Official may be used as an alternative.

SECTION 43. Section 16.43.020 AMENDED. Section 16.43.020 of Chapter 16.43 (Green Building Code) of Title 16 (Buildings and Construction) of the Sunnyvale Municipal Code is hereby amended to read as follows:

Section 16.43.020. Adoption by reference.

The “2022 California Green Building Standards Code” adopted by the State Building Standards Commission in California Code of Regulations (CCR) Title 24, Part 11 is hereby adopted by reference, with changes and modifications as hereinafter set forth, as the green building code of the city of Sunnyvale.

SECTION 44. Section 16.43.030 AMENDED. Section 16.43.030 of Chapter 16.43 (Green Building Code) of Title 16 (Buildings and Construction) of the Sunnyvale Municipal Code is hereby amended to read as follows:

Section 16.43.030. Fireplaces and wood-burning appliances.

(a) 2022 California Green Building Code Section 4.503 is amended to read as follows:

Section 4.503.1. Fireplaces . Any installed wood stove or pellet stove shall comply with U.S. EPA New Source Performance Standards (NSPS) emission limits as applicable and shall have a permanent label indicating they are certified to meet the emission limit.

This section shall not apply to the repair, reconstruction or replacement of any lawful, existing wood-burning appliance.

- (1) Coal;
- (2) Garbage;
- (3) Glossy or colored paper;
- (4) Paint;
- (5) Paint solvent;
- (6) Particle board;
- (7) Plastic or items made from plastic;
- (8) Rubber or items made from rubber;
- (9) Salt water driftwood;
- (10) Treated wood; and
- (11) Waste petroleum products.

(b) 2022 California Green Building Code Section 5.503.1 is amended to read as follows:

Section 5.503 Fireplaces . Install only a direct-vent sealed or pellet stove. Any installed pellet stove shall comply with U.S. EPA New Source Performance Standards (NSPS) emission limits as applicable, and shall have a permanent label indicating they are certified to meet the emission limits. Pellet stoves and fireplaces shall also comply with applicable local ordinances.

This section shall not apply to the repair, reconstruction or replacement of any lawful, existing wood-burning appliance.

It is unlawful to burn the following in any fireplace or wood-burning appliance:

- (1) Coal;
- (2) Garbage;
- (3) Glossy or colored paper;
- (4) Paint;
- (5) Paint solvent;
- (6) Particle board;
- (7) Plastic or items made from plastic;
- (8) Rubber or items made from rubber;
- (9) Salt water driftwood;
- (10) Treated wood; and
- (11) Waste petroleum products.

SECTION 45. Section 16.43.045 ADDED. Section 16.43.045 of Chapter 16.43 (Green Building Code) of Title 16 (Buildings and Construction) of the Sunnyvale Municipal Code is hereby added as follows:

Section 16.43.045. Scope. Any project that has submitted a complete application for a planning or building entitlement prior to January 1, 2021, is not required to comply with Sections 16.43.040 through 16.43.050.

SECTION 46. Section 16.43.040 AMENDED. Section 16.43.040 of Chapter 16.43 (Green Building Code) of Title 16 (Buildings and Construction) of the Sunnyvale Municipal Code is hereby amended to read as follows:

Section 16.43.040. Definitions.

2022 California Green Building Code Section 201 (Definitions) is hereby amended by adding and amending the following definitions:

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

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

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

Level 3 Electric Vehicle (EV) Ready Space: A parking space served by a complete electric circuit with at least a 208/240 volt, 40-ampere capacity including electrical panel capacity, overprotection device, a minimum 1” diameter raceway that may include multiple circuits as allowed by the California Electrical Code, wiring, and either a) a receptacle labelled “Electric Vehicle Outlet” with at least a ½” font adjacent to the parking space, or b) electric vehicle supply equipment (EVSE) with a minimum output of 30 amperes.

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

Level 3 Electric Vehicle Charging Station (EVCS): A parking space that includes installation of electric vehicle supply equipment (EVSE) with a minimum capacity of 40 amperes connected to a circuit serving a Level 3 EV Ready Space. EVCS installation may be used to satisfy a Level 3 EV Ready Space requirement. As applied to this code, a Level 3 shall be SAE J1772 (IEC Type 1) or alternative approved by the chief building official.

Automatic Load Management Systems (ALMS): (ALMS) A control system which allows multiple EV chargers or EV-Ready electric vehicle outlets to share a circuit or panel and automatically reduce power at each charger, providing the opportunity to reduce electrical infrastructure costs and/or provide demand response capability. ALMS systems must be designed to deliver at least 3.3kW to each EV Capable, EV Ready or EVCS space served by the ALMS. The connected amperage on-site shall not be lower than the required connected amperage per the 2022~~2019~~ California Green Building Code for the relevant building types.

SECTION 47. Section 16.43.050 AMENDED. Section 16.43.050 of Chapter 16.43 (Green Building Code) of Title 16 (Buildings and Construction) of the Sunnyvale Municipal Code is hereby amended to read as follows:

Section 16.43.050 Residential mandatory measures—Electric vehicle (EV) charging.

(a) 2022 California Green Building Code Section 4.106.4 (Electric vehicle (EV) charging for new construction) is hereby amended to read as follows:

4.106.4. Electric vehicle (EV) charging for new construction. New construction shall comply with Sections 4.106.4.1 or 4.106.4.2 to facilitate future installation and use of EV

chargers. Electric vehicle supply equipment (EVSE) shall be installed in accordance with the California Electrical Code, Article 625.

Exceptions:

1. Where there is no local utility power supply.
2. Accessory Dwelling Units (ADU) and Junior Accessory Dwelling Units (JADU) without additional parking facilities, unless the electrical panel is upgraded, or a new panel is installed in which case only the electrical capacity requirements apply.
3. Spaces accessible only by automated mechanical car parking systems are excepted from providing EV charging infrastructure.

(b) 2022 California Green Building Code Section 4.106.4.1 (New one- and two-family dwellings and townhouse units with attached private garages) is hereby amended to read as follows:

4.106.4.1. New one- and two-family dwellings and townhouse units with attached private garages.

1. In private garages with two or more parking spaces, install a Level 2 EV Ready Space and Level 1 EV Ready Space.
2. In private garages with only one parking space, install a Level 2 EV Ready Space.
3. In each carport space assigned to a dwelling unit, install a Level 2 EV Ready Space.
4. For parking spaces not assigned to a dwelling unit:
 - a. 30% of the unassigned parking space(s) shall be provided with at least one Level 2 EV Ready Space. Calculations for the required minimum number of Level 2 EV Ready spaces shall be rounded up to the nearest whole number.
 - b. In addition, each remaining unassigned parking space(s) shall be provided with at least a Level 1 EV Ready Space.

(c) 2022 California Green Building Code Section 4.106.4.1.1 (Identification) is hereby amended to read as follows:

4.106.4.1.1. Identification. The raceway termination location shall be permanently and visibly marked as “Level 2 EV-Ready”.

(d) 2022 California Green Building Code Section 4.106.4.2 (New multifamily dwellings, hotels and motels and new residential parking facilities) is hereby amended to read as follows:

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

1. 30% of the dwelling units with parking space(s) shall be provided with at least one Level 2 EV Ready Space. Calculations for the required minimum number of Level 2 EV Ready spaces shall be rounded up to the nearest whole number.
2. In addition, each remaining dwelling unit with parking space(s) shall be provided with at least a Level 1 EV Ready Space.

Notes:

1. ALMS may be installed to decrease electrical service and transformer costs associated with EV Charging Equipment subject to review of the authority having jurisdiction.
2. Installation of Level 2 EV Ready Spaces above the minimum number required level may offset the minimum number Level 1 EV Ready Spaces 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. If a building permit applicant provides documentation detailing that the increased cost of utility service or on-site transformer capacity would exceed an average of \$4,500 for each parking spaces with Level 2 EV Ready Spaces and Level 1 EV Ready Spaces, the applicant shall provide EV infrastructure up to a level that would not exceed this cost for utility service or on-site transformer capacity.
5. All accessible parking spaces for covered newly constructed multifamily dwellings shall provide Level 1 EV Ready Space or Level 2 EV Ready Spaces.

(e) The following sections of the 2022 California Green Building Code Section are deleted in their entirety: 4.106.4.2.1 (Multifamily development projects with less than 20 dwelling units; and hotels and motels with less than 20 sleeping units or guest rooms), 4.106.4.2.2 (Multifamily development projects with 20 or more dwelling units, hotels and motels with 20 or more sleeping units or guest rooms), 4.106.4.2.3 (EV Space Requirements), 4.106.4.2.4 (Multiple EV spaces required), 4.106.4.2.4 (Identification), and 4.106.4.2.5 (Electric Vehicle Ready Space Signage).

(f) 2022 California Green Building Code Section 4.106.4.3 (Electric vehicle charging for additions and alterations of parking facilities serving existing multifamily buildings) is hereby amended to read as follows:

4.106.4.3 New Hotels and Motels: In residential new construction buildings designated primarily for hotel and motel use with parking:

1. 20% of parking spaces shall be provided with at least one Level 2 Ready Space. Calculations for the required minimum number of Level 2 Ready Space shall be rounded up to the nearest whole number.
2. An additional 50% shall be provided with at least EV Capable.

Calculations for the required minimum number of spaces equipped with Level 2 Ready Space 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 Level 2 Ready Space and all required 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 EV Capable spaces; and service panel or subpanel(s) shall have sufficient capacity to accommodate the required number of dedicated branch circuit(s) for the future installation of the EVSE.

Notes:

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

(g) 2022 California Green Building Code Section 4.106.4.2.2.1 (Electric vehicle charging Stations (EVCS)) is hereby amended to read as follows:

4.106.4.2.2.1 Electric vehicle charging stations (EVCS).

Electric vehicle charging stations required by Section 4.106.4.2 shall comply with Section 4.106.4.2.2.1.

Exception: Electric vehicle charging stations serving public accommodations, public housing, motels and hotels shall not be required to comply with this section. See *California Building Code* Chapter 11B, for applicable requirements.

(h) Section 4.106.4.3 (Electric vehicle charging for additions and alterations of parking facilities serving existing multifamily buildings) of the 2022 California Green Building Code section shall be amended to Section 4.106.4.4 (Electric vehicle charging for additions and alterations of parking facilities serving existing multifamily buildings).

SECTION 48. Section 16.43.060 AMENDED. Section 16.43.060 of Chapter 16.43 (Green

Building Code) of Title 16 (Buildings and Construction) of the Sunnyvale Municipal Code is hereby amended to read as follows:

Section 16.43.060. Nonresidential mandatory measures—Electric vehicle (EV) charging.

- (a) 2022 California Green Building Code Section 5.106.5.3 (Electric vehicle (EV) charging) is hereby amended to read as follows:

5.106.5.3. Electric vehicle (EV) charging. New construction to provide electric vehicle infrastructure and facilitate electric vehicle charging shall comply with Section 5.106.5.3.1.

Exceptions:

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

- (b) 2022 California Green Building Code Section 5.106.5.3.1 (EV capable spaces) is hereby amended to read as follows:

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

1. 35% of parking spaces shall be provided with at least one Level 2 EVCS. Calculations for the required minimum number of Level 2 EVCS shall be rounded up to the nearest whole number.
2. An additional 35% shall be provided with at least EV Capable.

Calculations for the required minimum number of spaces equipped with Level 2 EVCS 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 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 EV Capable spaces; and service panel or subpanel(s) shall have sufficient capacity to accommodate the required number of dedicated branch circuit(s) for the future installation of the EVSE.

Notes:

1. ALMS may be installed to increase the number of EV chargers or the amperage or voltage beyond the minimum requirements in this code. The

option does not allow for installing less electrical panel capacity than would be required without ALMS.

(c) 2022 California Green Building Code Section 5.106.5.3.2 (Electric vehicle charging stations (EVCS)) is hereby amended to read as follows:

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

1. 35% of the available parking spaces on site shall be equipped with Level 2 EVCS;
2. An additional 35% shall be at least EV Capable.
3. A Level 3 EVCS (Direct Current Fast Charger) shall be provided for every one hundred (100) spaces on site or fraction thereof.

Calculations for the required minimum number of spaces equipped with Level 2 and Level 3 EVCS and EV Capable shall be rounded up to the nearest whole number.

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

Construction plans and specifications shall demonstrate that all raceways shall be a minimum of 1” and sufficient for installation of EVCS at all required 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 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 EVCS.

Notes:

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

(d) 2022 California Green Building Code Section 5.106.5.3.3 (Use of automatic load management systems (ALMS)) is hereby amended to read as follows:

5.106.5.3.3. Clean Air Vehicle Parking Designation. [Text Unchanged.]

(e) 2022 California Green Building Code Section 5.106.5.3.4 deleted in its entirety.

SECTION 49. Section 16.50.020 AMENDED. Section 16.50.020 of Chapter 16.50 (Property Maintenance Code) of Title 16 (Buildings and Construction) of the Sunnyvale Municipal Code is hereby amended to read as follows:

Section 16.50.020. Adoption by reference.

The “2021 International Property Maintenance Code” is hereby adopted by reference as the property maintenance code of the city of Sunnyvale. All references to jurisdictional requirements are found in the Sunnyvale Municipal Code or other appropriate schedules.

SECTION 50. STATUTORY REFERENCES, INCLUSIONS OF AMENDMENTS AND ADDITIONS. Whenever reference is made to any portion of this ordinance, or of any other chapter or section of the Sunnyvale Municipal Code, or of any other ordinance of the city of Sunnyvale, or of any law of the State of California, the reference applies to all amendments and additions now or thereafter made.

SECTION 51. INTERPRETATIONS. In interpreting and applying the provisions of this ordinance, the requirements contained herein are declared to be minimum requirements for the purposes set forth. The provisions of this ordinance, insofar as they are substantially the same as existing statutory provisions relating to the same subject matter, shall be construed as restatements and continuations and not as new enactments. This ordinance shall not nullify the more restrictive provisions of covenants, agreements or other ordinances or laws, but shall prevail as to such provisions which are less restrictive.

SECTION 52. FINDINGS. To the extent the changes and modifications set forth in this ordinance to the 2022 California Building Standards Codes are deemed more restrictive than the standards contained in the 2022 California Building Standards Codes, thus requiring findings describing local conditions that justify such modifications, the Council finds and determines that the changes are reasonably necessary because of local climatic, geologic, or topographic conditions and adopts the findings for local amendments to the California Building Code, 2022 Edition, attached as Exhibit "A" and incorporated herein by reference.

SECTION 53. CEQA - EXEMPTION. The City Council finds, pursuant to Title 14 of the California Code of Regulations, Section 15308 (Class 8) Actions by Regulatory Agencies for Protection of the Environment and Section 15305 (Class 5) Minor alterations in Land Use Limitations and Section 15061 of the CEQA Guidelines, that this ordinance is exempt from the requirements of the California Environmental Quality Act (CEQA) because it can be seen with certainty that there is no possibility that the changes adopted will have a significant effect on the environment.

SECTION 54. CONSTITUTIONALITY; SEVERABILITY. If any section, subsection, sentence, clause or phrase of this ordinance is for any reason held to be invalid, such decision or decisions shall not affect the validity of the remaining portions of this ordinance. The City Council

hereby declares that it would have passed this ordinance, and each section, subsection, sentence, clause and phrase thereof irrespective of the fact that any one or more sections, subsections, sentences, clauses or phrases be declared invalid.

SECTION 55. EFFECTIVE DATE. This ordinance shall be in full force and effect January 1, 2023.

SECTION 56. POSTING AND PUBLICATION. The City Clerk is directed to cause copies of this ordinance to be posted in three (3) prominent places in the City of Sunnyvale and to cause publication once in The Sun, the official publication of legal notices of the City of Sunnyvale, of a notice setting forth the date of adoption, the title of this ordinance, and a list of places where copies of this ordinance are posted, within fifteen (15) days after adoption of this ordinance.

Introduced at a regular meeting of the City Council held on October 25, 2022, and adopted as an ordinance of the City of Sunnyvale at a regular meeting of the City Council held on November 1, 2022, by the following vote:

AYES:
NOES:
ABSTAIN:
ABSENT:
RECUSAL:

ATTEST:

APPROVED:

DAVID CARNAHAN
City Clerk
Date of Attestation: _____

LARRY KLEIN
Mayor

(SEAL)

APPROVED AS TO FORM:

JOHN A. NAGEL
City Attorney

EXHIBIT A

FINDINGS

Section 17958 of the California Health and Safety Code provides that the City may make changes to the provisions of the California Building Standards Code. Sections 17958.5 and 17958.7 of the Health and Safety Code require that for each proposed local change to those provisions of the California Building Standards Code which regulate buildings used for human habitation, the City Council must make findings supporting its determination that each such local change is reasonably necessary because of local climatic, geological, or topographical conditions. The City need not show that local conditions deviate from prevailing statewide conditions, only that the changes are “reasonably necessary because of local climatic, geological, or topographical conditions.” (Cal. Health & Safety Code § 17958.5; *ABS Inst. v. City of Lancaster* (1994) 24 Cal. App. 4th 285, 294.

Local building regulations having the effect of amending the uniform codes, which were adopted by the City prior to November 23, 1970, were unaffected by the regulations of Sections 17958, 17958.5 and 17958.7 of the Health and Safety Code. Therefore, amendments to the uniform codes which were adopted by the City Council prior to November 23, 1970, and have been carried through from year to year without significant change, need no required findings. Also, amendments to provisions not regulating buildings used for human habitation do not require findings.

General Findings

1. Climatic

- a. Precipitation.** Precipitation in Sunnyvale ranges from 4.83 to 30.30 inches per year with an average of approximately 13.86 inches per year. Approximately 90% falls during the months of November through April and 10% from May through October. This area experienced a major drought in 1977-78 and a moderate drought the next five years. It recently ended a seven-year drought and it is currently experiencing the driest three year period on record. The local climate is characterized by markedly delineated rainy and dry seasons, which tend to maximize the expansive characteristics of soil. Drought conditions tend to create more frequent and larger fire incidents
- b. Relative Humidity.** Humidity generally ranges from 60% during daytime to 80% at night. It drops to 20% during the summer months and occasionally drops lower.
- c. Temperatures.** Temperatures have been recorded as high as 108° F. Average summer highs are in the 78°-82° F. range.
- d. Winds.** Prevailing winds are from the Northwest or Southeast. However, winds are experienced from virtually every direction at one time or another. Velocities are generally in the 5-mph to 15-mph range, gusting to 7.4 mph to 30 mph, particularly during the summer months. Extreme winds, up to 60 mph, have been known to occur.

e. **Summary and Analysis.** These local climatic conditions affect the acceleration, intensity and size of fire in the community. Times of little or no rainfall, of low humidity and high temperatures create extremely hazardous conditions, particularly as they relate to wood shake and shingle roof fires and conflagrations. The winds experienced in this area can have a tremendous impact upon structure fires of buildings in close proximity to one another commonly found in Sunnyvale.

During wood shake and shingle roof fires, or exposure fires, winds can carry sparks and burning brands to other structures, thus spreading the fire and causing conflagrations. In building fires, winds can literally force fires back into the building and can create a blowtorch effect, in addition to preventing "natural" ventilation and cross-ventilation efforts. In developed areas of the City, fires can occur in buildings, rubbish, vehicles, and vegetation on vacant lots.

2. Geological, Geographic and Topographic

a. **Geographic Location.** Sunnyvale is located in the Santa Clara Valley. It has taken its place as the second largest city in the "heart of the Silicon Valley," the center for an expanding and changing technology industry.

b. **Seismic Location.** Sunnyvale is situated on alluvial soils between San Francisco Bay and the San Andreas Fault zone. The City's location makes it particularly vulnerable to damage to taller and older structures caused by seismic events. The relatively young geological processes that have created the San Francisco Bay Area are still active today. Seismically, the City sits between two active earthquake faults (San Andreas and the Hayward/Calaveras) and numerous potentially active faults.

c. **Seismic and Fire Hazards.** In the event of a seismic occurrence, many areas of the city can expect damage or collapse of buildings due to Sunnyvale's proximity to active earthquake faults. Secondary impacts could include ruptured gas lines, collapsed power lines, and breaks in the water distribution system. Gypsum wallboard and exterior portland cement plaster have performed poorly during recent California seismic events. The shear values for gypsum wallboard and portland cement stucco contained in the code are based on mono-directional testing. It is appropriate to limit the use of these products until cyclic loading testing are performed and evaluated. Fire following an earthquake has the potential of causing greater loss of life and damage than the earthquake itself.

Hazardous materials, particularly toxic gases, could pose the greatest threat to the largest number, should a significant seismic event occur. Public safety resources would have to be prioritized to mitigate the greatest threat, and may likely be unavailable for smaller single dwelling or structure fires.

Other variables may tend to intensify the situation:

1. The extent of damage to the water system;
2. The extent of isolation due to bridge and/or freeway overpass collapse;
3. The extent of roadway damage and/or amount of debris blocking the roadways;
4. Climatic conditions (hot, dry weather with high winds);

5. Time of day will influence the amount of traffic on roadways and could intensify the risk to life during normal business hours;
6. The availability of timely mutual aid or military assistance;
7. The large portion of dwellings with wood shingle roof coverings could result in conflagrations.

d. Size and Population. The City has an area over 24 square miles in size and a population estimated to be 156,234.

e. Development. Sunnyvale is a community which is projected to add 15,500 new residential units within the next twenty years, primarily in multi-family configurations, for which building security is a matter of acute importance.

f. Public Safety Department. Sunnyvale utilizes a public safety (joint police/fire) department with personnel who function as both fire suppression and police officers, resulting in fewer personnel than otherwise would be required for a city of its size. A premium is therefore placed on built-in physical techniques and devices as crime preventative measures. It is therefore also imperative that fire detection and suppression occur as quickly as possible to minimize loss of property and life. Added protection of fire sprinkler systems and other fire protection measures will supplement normal public safety response by providing immediate protection for the building occupants and by containing and controlling the fire spread to the area of origin. For these reasons the most stringent provisions are required concerning fire detection, alarm and suppression systems.

g. Roads and Streets. Sunnyvale is characterized by large buildings and building complexes and is bounded by several major freeways and expressways, which intersect railroad tracks and additional expressways and major arterial streets. These surface features have a major adverse effect upon the road and street layout in the community, including major traffic routes. In addition, the number of vehicle miles driven in the City is steadily increasing and considerable efforts in traffic and roadway improvements are being made to ease the crush of commuters to and through the City to their homes and places of work. Because of the City's high concentration of jobs, much of the peak traffic is made by nonresidents traveling to or from Sunnyvale. Existing surface feature conditions limit the number and cause indirect routing of major arterial streets for normal traffic as well as emergency vehicle response. The impact of planned developments and traffic flow will continue to have an effect on the Department of Public Safety and delivery of fire services.

During the peak AM and PM traffic periods, the City experiences extremely heavy traffic congestion at key intersections and near freeway on-ramps and off-ramps. As noted above, the limited number and the indirect routing of some roads and streets in the community can create heavy, slow traffic conditions and excessively long travel routes from point to point within the community. Thus, in the event of an emergency at a key intersection, overpass, underpass, bridge or other circulation corridor, sections of the City may become temporarily isolated and response times for emergency crews increased beyond ideal times.

Intersections are rated on a level of service (LOS) scale ("A" for excellent operational conditions to "F" for poor conditions. Many of the City's major intersections are currently rated, or with new development, anticipated to be rated LOS D or less for both AM and PM peak hours. These

conditions create barriers to effective emergency response times, which in turn increase the risk of injury or spread of fire.

h. Industry. Sunnyvale is the site of many manufacturing and research industries which use toxic, flammable and explosive chemicals and materials in potentially hazardous combinations. Special precautions thus are required to minimize the risk of damage to adjoining persons and properties.

i. Mixed Industrial/Residential Uses. High-density residential uses are located near high-risk industries, necessitating special precautions.

j. Transportation. Sunnyvale is divided by an interstate highway, which potentially could affect response times of fire suppression equipment.

k. Soil Conditions and Topography. Sunnyvale lies at the southern end of San Francisco Bay and is built atop the alluvial deposits that surround the margins of the Bay. The alluvium was created by the flooding of the many streams emptying into the San Francisco Bay depression, and from intermittent seawater inundation that has occurred over the last 2 or 3 million years. The areas closest to the Bay are overlain by unconsolidated fine silty clay, known as "Bay Mud" which varies in thickness from a few feet to as much as 30 feet. Generally, the older, more stable alluvium is to the south and the younger, less stable material is to the north. Bedrock lies beneath the area at depths generally 300' or more. The topography is essentially flat, dropping from an elevation of 300 feet to sea level. The slope across the City is in a northeasterly direction from the high point in the southwest corner to the Bay. The average slope is approximately 0.9%.

The Silicon Valley is within a very active seismic area and local soil conditions can be highly expansive (clay soils). The Northridge earthquake provided hundreds of examples of damage to plain concrete footings. This type of damage is extremely expensive to repair, in contrast to the small expense of providing nominal footing reinforcement. Footing reinforcement is also necessary to prevent damage due to pumping action caused by local expansive soils, which shrink and swell during seasonal drying and wetting conditions.

Most of the surface soils in the Silicon Valley are relatively young and unconsolidated sedimentary materials formed from a wide variety of parent materials. The varying chemical composition, degree of weathering, and the relatively acid environment have created soils of varying types, which are particularly corrosive in nature. Much of the surface soil in the Silicon Valley is highly expansive (i.e., shrink-swell behavior) and has low bearing strength.

l. Water/Sewer. Some parts of the Silicon Valley have hard water, which is corrosive to ferrous pipe. The groundwater table is unusually high in many places. Expansive soils create unstable conditions, which increase the potential of breaks in sewer laterals. To maintain health and sanitary services, it is necessary to gain access, to periodically maintain public sanitary laterals.

Wastewater draining from indoor sources in Sunnyvale flows through sewer pipes that direct the wastewater to the Water Pollution Control Plant for treatment before being discharged to the San Francisco Bay. If left untreated before discharge, residential, commercial and industrial wastewater would upset the delicate ecosystem of southern San Francisco Bay. The City of Sunnyvale is one of 74 co-permittees listed under a regional municipal stormwater permit for the San Francisco Bay. On November 19, 2015, order No. R2-2009-0074 was adopted by the Regional

Water Quality Control Board (RWQCB) for Region 2. This permit regulates discharges from municipal separate storm drain systems into waterways under each co-permittee's jurisdiction. The City of Sunnyvale has developed an Urban Runoff Management Plan (URMP) to reduce, control, or otherwise address pollutant sources in discharges to the storm drain system. Departments within the City of Sunnyvale have adopted Best Management Practices (BMPs) and Standard Operating Procedures (SOPs) to reduce the presence of pollutants in stormwater discharges to the maximum extent practicable.

The Sunnyvale URMP focuses on prevention of illicit connection/illegal dumping, quality of industrial and commercial discharges, and minimizing impacts from new development and construction activities. The City implements BMPs for maintaining street and roads, storm drains, and water utilities, and preventing stormwater pollution.

m. Buildings, Landscaping and Clearances. Many of the newer large buildings and building complexes are of designs which greatly limit visibility and approach to and accessibility by Public Safety resources. Many houses and other buildings with wood roofs and/or sidings are so close together that fire may readily spread from one to another by both radiation and convection.

n. Business & Industry Centers. The current clusters of high-tech, bio-tech, manufacturing and similar companies create additional demands on water, sewer, and electrical facilities. These businesses offer opportunities and access to innovative products, services and technology, and may also be more likely to utilize such products, services, and technology. For example, the more businesses, the greater the demands on water, sewer and power facilities during peak mid-day periods, which could lead to shortages or service disruptions, or use of services and technology impacting health and safety. Similarly, the availability of high-tech and similar businesses creates unique access to innovative products and technology to reduce energy and water use to mitigate business demands.

o. Population. Sunnyvale has a current and rapidly growing population (both resident and daytime work) that impacts fire and police service. With more people, there is more traffic congestion during a greater part of the day, which not only slows emergency vehicle response but may also restrict access to fire and crime scenes. Similarly, more emergency incidents requiring a public safety response occur with a larger population, created a greater likelihood of simultaneous emergency incidents requiring a public safety response. This results in longer response times and fewer fire companies or police units to respond to emergencies within the community.

p. Summary and Analysis. The stated local geological, geographic and topographical conditions increase the magnitude, exposure, accessibility problems and fire hazards presented to the Department of Public Safety and have a negative impact upon the response capability of public safety resources. Lying beneath Sunnyvale are thick layers of sand, gravel and clay, known as alluvium, which amplify the effects of earthquakes. Based on the combination of these conditions, local experience from the damage caused in Santa Clara Valley by the 1906 earthquake and the poor performance of alluvial deposits during earthquakes, this area could be subject to severe structural damage or failure, multiple major fires and additional fire dangers, and place a great strain on police, fire and rescue resources. A seismic event could also trigger

widespread damage to hazardous material storage vessels and cause substantial hazardous material releases into the environment.

The possibility of fire ignition increases as earthquake shaking increases. Fire due to broken gas lines or short circuits of electrical systems is a major established hazard associated with earthquakes. Most buildings in Sunnyvale are partially or entirely combustible which increases the City's vulnerability to fire. As discussed above, traffic conditions may slow or impede emergency response in any given fire or hazardous materials event, particularly in the event of a seismic event or other natural disaster. Thus, with the potential inability of emergency services to guarantee rapid response, it is necessary to mitigate this problem by requiring additional protections such as built-in fire protection systems, which will provide for early detection and additional fire control.

Conclusion and Findings.

Local climatic, geologic, and topographic conditions impact crime prevention efforts and the frequency, spread, acceleration, intensity and size of fires involving buildings, strength of building structural systems to resist local hazards and ability to deliver uninterrupted services in the community. The potential for significant damage arising from these conditions makes it reasonably necessary to modify the uniform codes to mitigate the effects of the above conditions.

Therefore, the City Council finds that (with the exception of changes justified on administrative grounds), the local amendments of the 2022 California Building Codes are justified by all of the aforementioned general findings.