Ordinance No. 5216
Ordinance of the Council of the City of Palo Alto Repealing Chapter 16.04 of the Palo Alto Municipal Code and Amending Title 16 to Adopt a New Chapter 16.04, California Building Code, California Historical Building Code, and California Existing Building Code, 2013 Editions, and Local Amendments and Related Findings

The Council of the City of Palo Alto does ORDAIN as follows:

SECTION 1. Chapter 16.04 of the Palo Alto Municipal Code is hereby amended by repealing in its entirety and adopting a new Chapter 16.04 to read as follows:

16.04.010 2013 California Building Code adopted.

The California Building Code, 2013 Edition, Title 24, Part 2 of the California Code of Regulations, together with those omissions, amendments, exceptions and additions thereto, is adopted and hereby incorporated in this Chapter by reference and made a part hereof the same as if fully set forth herein.

Unless superseded and expressly repealed, references in City of Palo Alto forms, documents and regulations to the chapters and sections of the former California Code of Regulations, Title 24, 2010, shall be construed to apply to the corresponding provisions contained within the California Code of Regulations, Title 24, 2013. Ordinance No. 5099 of the City of Palo Alto and all other ordinances or parts of ordinances in conflict herewith are hereby suspended and expressly repealed.

Wherever the phrases "California Building Code" or "Building Code' are used in this code or any ordinance of the City, such phrases shall be deemed and construed to refer and apply to the California Building Code, 2013 Edition, as adopted by this chapter.

One copy of the California Building Code, 2013 Edition, has been filed for use and examination of the public in the Office of the Building Official of the City of Palo Alto.

16.04.020 2013 California Building Code Appendix Chapters adopted.

The following Appendix Chapter of the California Building Code, 2013 Edition, is adopted and hereby incorporated in this Chapter by reference and made a part hereof the same as if fully set forth herein:

A. Appendix I – Patio Covers

16.04.030 Cross - References to California Building Code.

The provisions of this Chapter contain cross-references to the provisions of the California

Building Code, 2013 Edition, in order to facilitate reference and comparison to those provisions.

16.04.040 Section 1.11.2.1.1 Duties and powers of the enforcing agency/Enforcement is amended to read the following:

1.11.2.1.1 The responsibility for enforcement of building standards adopted by the State Fire Marshal and published in the California Building Standards Code relating to fire and panic safety and other regulations of the State Fire Marshal shall, except as provided in Section 1.11.2.1.2, be as follows:

1. The city, county or city and county with jurisdiction in the area affected by the standard or regulation shall delegate the enforcement of the building standards relating to fire and panic safety and other regulations of the State Fire Marshal as they relate to Group R-3 occupancies, as described in Section 310.1 of Part 2 of the California Building Standards Code, to both enforcement divisions specific to their areas of enforcement disciplines:

1.1 The chief of the fire authority of the city, county or city and county, or an authorized representative and;

1.2. The chief building official of the city, county or city and county, or an authorized representative.

16.04.050 Violations -- Penalties.

Any person, firm or corporation violating any provision of this chapter is guilty of a misdemeanor and upon conviction thereof shall be punished as provided in subsection (a) of Section 1.08.010 of this code. Each separate day or any portion thereof during which any violation of this chapter occurs or continues shall be deemed to constitute a separate offense, and upon conviction thereof shall be punishable as provided in this section.

When the building official determines that a violation of this chapter or chapters 16.05, 16.06, 16.08, 16.14, 16.16 or 16.17 of this code has occurred, he/she may record a notice of pendency of code violation with the Office of the County Recorder stating the address and owner of the property involved. When the violation has been corrected, the building official shall issue and record a release of the notice of pendency of code violation.

16.04.060 Enforcement -- Citation authority.

The employee positions designated in this section may enforce the provisions of this chapter by the issuance of citations; persons employed in such positions are authorized to exercise the authority provided in Penal Code section 836.5 and are authorized to issue citations for violations of this chapter. The designated employee positions are: (1) chief building official; (2) building inspection supervisor; and (3) code enforcement officer.

16.04.70 Local Amendments.

The provisions of this Chapter shall constitute local amendments to the cross-referenced

provisions of the California Building Code, 2013 Edition, and shall be deemed to replace the cross-referenced sections of said Code with the respective provisions set forth in this Chapter.

16.04.080 Section 105.1.3 Demolition permits of Chapter 1 Division II is added to read:

105.1.3 Demolition permits. In addition to other requirements of law, every person seeking a permit to demolish a unit used for residential rental purposes shall furnish an affidavit or declaration under penalty of perjury that the unit proposed to be demolished is vacant, or that notice to vacate has been given to each tenant lawfully in possession thereof as required by law or by the terms of such tenancy. No work or demolition shall begin upon any portion of such a unit until each and every portion has been vacated by all tenants lawfully in possession thereof.

16.04.90 Section 105.5 Expiration. Section 105.5 of Division II is amended to read:

105.5 Expiration. Every permit issued shall become invalid unless the work on the site authorized by such permit is commenced within 180 days after its issuance, or if the work authorized on the site by such permit is suspended or abandoned for a period of 180 days after the time the work is commenced. The chief building official is authorized to grant, in writing, one or more extensions of time, for periods not more than 180 days each and may require;

1) that the construction documents be revised to partially or fully comply with current codes, and
2) payment of a fee.

Extensions shall be requested in writing and justifiable cause demonstrated. For the purpose of this section, failure to progress a project to the next level of required inspection shall be deemed to be suspension of the work.

16.04.100 Section 109.6 Refunds of Chapter 1 Division II Administration is amended to read:

109.6 Refunds The building official or the permit center manager may authorize the refund of any fee paid hereunder which was erroneously paid or collected. The building official or the permit center manager may authorize the refund of not more than eighty percent (80%) of the Permit Fee paid when no work has occurred under a permit issued pursuant to this Chapter. The building official or the permit center manager may authorize the refund of not more than eighty percent (80%) of the Plan Review Fee paid when a permit application is withdrawn or canceled before any plan review work has started.

16.04.110 Section 109.7 Re-Inspection Fees of chapter 1 Division II Administration is added to read:

109.7 Re-Inspection Fees. A Re-Inspection Fee may be assessed/authorized by the building official or the building inspection supervisor for each re-inspection required

when work for which an inspection is requested is not ready for inspection or when required corrections noted during prior inspections have not been completed. A "Re-Inspection Fee" may be assessed/authorized when;

1. The inspection record card is not posted or otherwise available on the work site,
2. The approved plans are not readily available for the inspector at the time of inspection,
3. The inspector is unable to access the work at the time of inspection, or;
4. When work has substantially deviated from the approved plans without the prior approval of the building official.
5. When a Re-Inspection Fee is assessed, additional inspection of the work will not be performed until the fee has been paid.

16.04.120 Section 110.3.3 Lowest Floor Elevation of chapter 1 Division II Administration is amended to read:

110.3.3 Lowest Floor Elevation. In flood hazard areas, upon placement of the lowest floor, including the basement, and prior to further vertical construction, the elevation certification shall be submitted to City Public Works Engineering for inspection approval prior to foundation inspection by City Building Inspection.

16.04.130 Section 111.1 of Division II – Use and occupancy.

Section 111.1 of Division II of the California Building Code is amended to read:

111.1 Use and occupancy. No building or structure shall be used or occupied, and no change in the existing occupancy classification of a building or structure or portion thereof shall be made, until the building official has issued a certificate of occupancy therefor as provided herein. Issuance of a certificate of occupancy shall not be construed as an approval of a violation of the provisions of this code or of other ordinances of the jurisdiction.

1. **Exception:** Certificates of occupancy are not required for work exempt from permits under Section 105.2 and:
2. Group R – Division 3 occupancies
3. Group U occupancies

111.1.1 Change of occupancy or tenancy. Each change of occupancy, official name or tenancy of any building, structure or portion thereof, shall require a new certificate of occupancy, whether or not any alterations to the building are required by this code.

If a portion of any building does not conform to the requirements of this code for a proposed occupancy, that portion shall be made to conform. The building official may issue a new certificate of occupancy without requiring compliance with all such requirements if it is determined that the change in occupancy or

tenancy will result in no increased hazard to life or limb, health, property or public welfare.

When application is made for a new certificate of occupancy under this section, the building official and fire chief shall cause an inspection of the building to be made. The inspector(s) shall inform the applicant of those alterations necessary, or if none are necessary, and shall submit a report of compliance to the building official.

Before any application for a new certificate of occupancy is accepted, a fee shall be paid by the applicant to cover the cost of the inspection of the building required by the change of occupancy or tenancy.

16.04.140 Section 111.3 of Division II – Temporary occupancy.

Section 111.3 of Division II of the California Building Code is amended to read:

111.3 Temporary occupancy. The building official is authorized to issue a temporary certificate of occupancy before the completion of the entire work covered by the permit, or as otherwise required, provided that such portion or portions shall be occupied safely. The building official shall set a time period during which the temporary certificate of occupancy is valid.

16.04.150 Section 111.5 of Division II – Posting.

Section 111.5 of Division II is added to the California Building Code to read:

111.5 Posting. The certificate of occupancy shall be posted in a conspicuous, readily accessible place in the building or portion of building to be occupied and shall not be removed except when authorized by the building official.

16.04.160 Section 702A amended – Definitions (Wild Land-Urban Interface Fire Area).

Section 702A (Wild Land-Urban Interface Fire Area) of the California Building Code is amended to read:

WILDLAND-URBAN INTERFACE FIRE AREA is a geographical area identified by the State of California as a "Fire Hazard Severity Zone" in accordance with Public Resources Code Sections 4201 through 4202 and Government Code Sections 51175 through 51189, or other areas designated by the enforcing agency to be at a significant risk from wildfires. Within the city limits of the City of Palo Alto, "Wild Land-Urban Fire Interface Area" shall also include all areas west of Interstate 280, and all other areas recommended as a "Very High Fire Hazard Severity Zone" by the Director of the California Department of Forestry.

16.04.170 Section 902.1 amended – Definitions.

Section 902.1 of the California Building Code is amended to include the following definitions:

DUAL SENSOR PHOTOELECTRIC/IONIZATION SMOKE DETECTOR OR ALARM. A smoke alarm or detector that utilizes both photoelectric and ionization methods in a single device.

DUAL SENSOR CARBON MONOXIDE AND SMOKE ALARM. A combination carbon monoxide and smoke alarm or detector that senses both smoke and CO in a single device.

IONIZATION SMOKE DETECTOR OR ALARM. A smoke alarm or detector that uses a small amount of radioactive material to detect invisible particles generated by flame.

PHOTOELECTRIC SMOKE DETECTOR OR ALARM. A smoke alarm or detector that uses a light-source to detect the presence of smoke.

16.04.180 Section 903.2 – Automatic Sprinkler Systems, Where Required.
Section 903.2 of the California Building Code is amended to read as follows:

903.2 Automatic sprinkler systems, where required. Approved automatic sprinkler systems in new buildings and structures and in existing modified buildings and structures, shall be provided in the locations described in this section. Automatic fire sprinklers shall be installed per the requirements set forth in Sections 903.2.1 through 903.2.18 and as follows, whichever is the more restrictive:

For the purposes of this section, firewalls and fire barriers used to separate building areas shall be constructed in accordance with the California Building Code and shall be without openings or penetrations.

1. An automatic sprinkler system shall be provided throughout all new buildings and structures.

   Exception: Group A,B,E,F,I,L,M,S and U occupancy buildings or structures that do not exceed 1,000 square feet of building area.

2. An automatic sprinkler system shall be provided for all existing buildings or structures where modifications have been determined by the Building Official to trigger requirements for seismic retrofit.

3. Any change in the character of the occupancy or in the use of any building with a Building Area equal to or greater than 3,600 square feet which in the opinion of the fire chief or building official would place the building into a more hazardous division of the same occupancy group or into a different group of occupancies and constitutes a greater degree of life safety*, or

increased fire risk**, shall require the installation of an approved automatic fire sprinkler system.

Definition only but not limited to:

- Life Safety – Increased occupant load, public assembly areas, public meeting areas, churches, indoor amusement attractions, building with complex exiting system due to increased occupant loads, large schools/day-care facilities, large residential care facilities with non-ambulatory clients.
- Fire Risks – High piled combustible storage, woodworking operations, hazardous operations using hazardous materials, increased fuel loads (storage of moderate to highly combustible materials), increased sources of ignition (welding, automotive repair with the used of flammable liquids and open flame).

4. An automatic sprinkler system shall be provided throughout all existing buildings when modifications are made that create conditions described in Sections 903.2.1 through 903.2.18, or that create an increase in fire area to more than 4100 square feet or modifications are equal to or greater than 100% of existing square footage of building area, whichever is more restrictive..

5. An automatic sprinkler system shall be provided throughout all new basements regardless of size and throughout existing basements that are expanded by more than 50%.

6. An automatic sprinkler system shall be provided throughout all new buildings located in the designated Wild Land-Urban Interface areas.

   Exception: Any non-residential accessory structures to single family residences that have a fire area of 500 square feet or less.

7. An automatic sprinkler system shall be provided throughout all existing buildings located in the designated Wild Land-Urban Interface areas when modifications are made that increases the fire area.

   Exception: One-time additions to existing buildings made after January 1, 1994 that do not exceed 500 square feet in fire area.

16.04.185 Section 903.3.1.1 NFPA sprinkler systems.

903.3.1.1 NFPA 13 sprinkler systems. Where the provisions of this code require that a building or portion thereof be equipped throughout with an automatic sprinkler system in accordance with this section, sprinklers shall be installed throughout in accordance with NFPA 13 and State and local requirements except as provided in Section 903.3.1.1.1.

1. For new buildings having no designated use or tenant, the minimum sprinkler design density shall be Ordinary Hazard Group
2. Where future use or tenant is determined to require a higher density, the sprinkler system shall be augmented to meet the higher density.

16.04.190 Section 903.3.1.2 – NFPA 13R sprinkler systems.

Section 903.3.1.2 of the California Building Code is amended to read as follows:

> **903.3.1.2 NFPA 13R sprinkler systems.** Where allowed in buildings of Group R, up to and including four stories in height , automatic sprinkler systems shall be installed throughout in accordance with NFPA 13R and State and local standards.

16.04.200 Section 903.3.1.2.2 – Attics and usable crawl spaces.

Section 903.3.1.2.2 is added to the California Building Code to read as follows:

> **903.3.1.2.2 Attics and usable crawl spaces.** Attics and usable under-floor spaces including crawl spaces shall be fully protected to residential or light hazard density as appropriate for the slope of the ceiling and configuration of framing.

16.04.210 Section 903.3.1.3 – NFPA 13D sprinkler systems.

Section 903.3.1.3 of the California Building Code is amended to read as follows:

> **903.3.1.3 NFPA 13D sprinkler systems.** Where allowed, automatic sprinkler systems installed in one-and two-family dwellings and townhouses shall be installed throughout in accordance with NFPA 13D and State and local standards.

16.04.220 Section 903.3.1.3.1 - Garages and attics.

Section 903.3.1.3.1 is added to the California Building Code to read as follows:

> **903.3.1.3.1 Garages and attics.** Garages, including Group U occupancies, shall be fully protected with sprinklers designed for residential density calculated with four (4) sprinklers flowing. Attics shall be fully protected to residential density or light hazard as appropriate for the slope of ceiling and configuration n of framing.
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> **Exception:** Non-usable attics in one-and two-family dwellings not located in the Wild Land Urban Interface area may be provided with an intermediate temperature pilot sprinkler above the attic scuttle and above any heat producing equipment in lieu of complete attic protection meeting the requirements above.

16.04.230 Section 903.3.7 - Fire department connections.

Section 903.3.7 of the California Building Code is amended to read as follows:

903.3.7 Fire department connections. Sprinkler systems shall be equipped with a minimum two-way Siamese Fire Department connection. Connections shall be located on a street front not less than three (3) feet or more than four (4) feet above grade and shall be equipped with an approved straightway check valve. Locations shall be subject to approval by the Fire Chief prior to any installation.

Exception: Automatic sprinkler systems installed in accordance with the NFPA standards 13-D for one- and two-family dwellings in the designated Wild Land-Urban Interface areas, and 13-R for multi-family dwellings throughout the City Palo Alto, may have a single 2-1/2-inch connection with approved straightway check valve.

16.04.240 Section 903.4.3 - Floor control valves.

Section 903.4.3 of the California Building Code is amended to read as follows:

903.4.3 Floor control valves. Automatic sprinkler systems serving buildings two (2) or more stories in height shall have valves installed so as to control the system independently on each floor including basements.

Exception: Buildings not over three (3) stories in height containing only R-3 occupancies, or with 10,000 square feet or less above the first story. Floor control valves shall be protected from tampering by installation in lockable enclosures or as approved by the chief. Floor control valve assemblies shall be provided with a flow switch and drain connections.

16.04.250 Section 907.2.11 - Single- and multiple-station smoke alarms.

Section 907.2.11 of the California Building Code is amended to read as follows:

907.2.11 Single- and multiple-station smoke alarms. Listed single- and multiple-station smoke alarms complying with UL217 shall be installed in accordance with Sections 907.2.11.1 through 907.2.11.5 and manufacturers installation and use instructions.

Smoke alarms more than 10 years old shall not be considered as satisfying any requirement of this code or subject to the provisions of the Health and Safety Code and shall be immediately replaced by the owner with a smoke alarm that complies with this section.

Smoke alarms and smoke detectors installed on or after January 1, 2014in compliance with this code or subject to the provisions of the Health and Safety Code shall also either be listed and approved for enhanced nuisance resistance

and rapid response to smoldering synthetic materials or shall meet the following requirements:

1. Smoke detectors or smoke alarms located within 20 feet of a kitchen, or a room containing a cooking appliance, wood burning fireplace or stove shall be photoelectric detectors or alarms.

2. In all other required locations dual sensor photoelectric/ionization detectors or alarms, shall be installed. A photoelectric smoke detector or alarm installed together with ionization smoke detectors or alarms may be used as a substitute for a dual sensor photoelectric/ionization detector or alarm.

   Exception: For Group R occupancies. A fire alarm or other approved system with interconnected photoelectric smoke detectors or alarms located in accordance with, and meeting the requirements of, this section may be installed. Upon the actuation of a smoke detector or alarm, only those notification appliances or alarms in the dwelling unit or guest room where the detector is actuated shall activate.

16.04.260 Section 1206.3.4 – Roof guardrails at interior courts.

Section 1206.3.4 is added to the California Building Code to read:

1206.3.4 Roof guardrails at interior courts. Roof openings into interior courts that are bounded on all sides by building walls shall be protected with guardrails. The top of the guardrail shall not be less than 42 inches in height above the adjacent roof surface that can be walked on. Intermediate rails shall be designed and spaced such that a 12 inch diameter sphere cannot pass through.

Exception: Where the roof opening is greater than 600 square feet in area.

16.04.270 Section 1505.1.4 Roofing requirements in a Wild Land-Urban Interface Fire Area.

Section 1505.1.4 of the California Building Code is amended to read:

1505.1.4 Roofing requirements in a Wild Land-Urban Interface Fire Area. The entire roof covering on new structures and existing structures on which more than 50 percent of the total roof area is replaced within any one-year period, and any roof covering applied in the alteration, repair or replacement of roofs on existing structures, shall be a fire-retardant roof covering that is at least Class A. Roofing requirements for structures located in a Wild Land-Urban Interface Fire Area shall also comply with Section 705.A.

16.04.280 Section 1612.1.1 - Palo Alto Flood Hazard Regulations.

Section 1612.1.1 is added to the California Building Code to read:

1612.1.1 Palo Alto Flood Hazard Regulations. Notwithstanding the provisions of Section 1612.1, all construction or development within a flood hazard area (areas depicted as a Special Flood Hazard Area on Flood Insurance Rate Maps published by the Federal Emergency Management Agency) shall comply with the City of Palo Alto Flood Hazard Regulations (Palo Alto Municipal Code Chapter 16.52). Where discrepancies exist between the requirements of this code and said regulations, the provisions of said regulations shall apply.

16.04.290 Section 1705.3 Concrete Construction.

Section 1705.3 of the California Building Code is amended to read:

1705.3 Concrete construction. The special inspections and verifications for concrete construction shall be as required by this section and Table 1705.3.

Exception: Special inspections 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 a specified compressive strength, f'_c, no greater than 2,500 pound per square inch (psi).
2. Continuous concrete footings 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.
3. Nonstructural concrete slabs supported directly on the ground, including pre-stressed slabs on grade, where the effective pre-stress 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.

16.04.300 Table 1809.7 Prescriptive Footings Supporting Walls of Light-Frame Construction.

Table 1809.7 of the California Building Code is amended to read:

TABLE 1809.7

Prescriptive Footings Supporting Walls of Light-Frame Construction[abcd]

Number of Floors Supported by the Footing [e]	Thickness of Foundation Wall (inches)	Width of Footing (inches)	Thickness of Footing (inches)	Depth of Foundation Below Natural Surface of Ground or Finish Grade (inches)
1&2	8	15	8	20
3	8	18	8	30
Group U Occupancies	8	12	8	12

a. The ground under the floor shall be permitted to be excavated to the elevation of the top of the footing.
b. Interior stud-bearing walls shall be permitted to be supported by isolated footings. The footing width and length shall be twice the width shown in this table, and footings shall be spaced not more than 6 feet on center.
c. See Section 1905 for additional requirements for concrete footings of structures assigned to Seismic Design Category C, D, E or F.
d. All foundations as required in the above Table shall be continuous and have a minimum of three #4 bars of reinforcing steel, except for one story, detached accessory buildings of Group U occupancy where two bars are required.
e. Footings shall be permitted to support a roof in addition to the stipulated number of floors. Footings supporting roof only shall be as required for supporting one floor.

16.04.310 Section 2308.9.3 Bracing. Section 2308.9.3 of the California Building Code is amended to read:

2308.9.3 Bracing. Braced wall lines shall consist of braced wall panels that meet the requirements for location, type and amount of bracing as shown in Figure 2308.9.3, specified in Table 2308.9.3(1) and are in line or offset from each other by not more than 4 feet (1219 mm). Braced wall panels shall start not more than $12^1/_2$ feet (3810 mm) from each end of a braced wall line. Braced wall panels shall be clearly indicated on the plans. Construction of braced wall panels shall be by one of the following methods:

1. Wood boards of $^5/_8$ inch (15.9 mm) net minimum thickness applied diagonally on studs spaced not over 24 inches (610 mm) o.c.
2. Wood structural panel sheathing with a thickness not less than 3/8 inch (9.5 mm) for 16-inch (406 mm) or 24-inch (610 mm) stud spacing in accordance with Tables 2308.9.3(2) and 2308.9.3(3).

3. Fiberboard sheathing panels not less than 1/2 inch (12.7 mm) thick applied vertically or horizontally on studs spaced not over 16 inches (406 mm) o.c. where installed with fasteners in accordance with Section 2306.6 and Table 2306.6.
4. Particleboard wall sheathing panels where installed in accordance with Table 2308.9.3(4).
5. Portland cement plaster on studs spaced 16 inches (406 mm) o.c. installed in accordance with Section 2510.
6. Hardboard panel siding where installed in accordance with Section 2303.1.6 and Table 2308.9.3(5).

For cripple wall bracing, see Section 2308.9.4.1. For all methods above, each panel must be at least 48 inches (1219 mm) in length, covering three stud spaces where studs are spaced 16 inches (406 mm) apart and covering two stud spaces where studs are spaced 24 inches (610 mm) apart.

16.04.320 Section 2308.12.5 Attachment of sheathing. Section 2308.12.5 of the California Building Code is amended to read:

2308.12.5 Attachment of sheathing. Fastening of braced wall panel sheathing shall not be less than that prescribed in Table 2308.12.4 or 2304.9.1. Wall sheathing shall not be attached to framing members by adhesives.

All braced wall panels shall extend to the roof sheathing and shall be attached to parallel roof rafters or blocking above with framing clips (18 gauge minimum) spaced at maximum 24 inches on center with four 8d nails per leg (total eight-8d nails per clip). Braced wall panels shall be laterally braced at each top corner and at maximum 24 inch intervals along the top plate of discontinuous vertical framing.

16.04. 310 Section 3404.7 – Suspended ceiling systems.
Section 3404.7 is added to the California Building Code to read:

3404.7 Suspended ceiling systems. In existing buildings or structures, when a permit is issued for alterations or repairs, the existing suspended ceiling system within the area of the alterations or repairs shall comply with ASCE 7-10 Section 13.5.6.

16.04.330 Section 3405.2.1 – Seismic Evaluation and Design Procedures for Repairs. Section 3405.2.1 is deleted and replaced to the California Building Code to read:

3405.2.1 Evaluation and design procedures. The building shall be evaluated by a registered design professional, and the evaluation findings shall be submitted to the code official. The evaluation shall establish whether the damaged building, if repaired to its pre-damage state, would comply with the provisions of this code

for wind and earthquake loads. Evaluation for earthquake loads shall be required if the substantial structural damage was caused by or related to earthquake effects or if the building is in Seismic Design Category C, D, E or F. The seismic evaluation and design shall be based on the procedures specified in the building code, ASCE 41 Seismic Evaluation and Upgrade of Existing Buildings. The procedures contained in Appendix A of the International Existing Building Code (IEBC) shall be permitted to be used as specified in Section 3405.2.1.2.

Wind loads for this evaluation shall be those prescribed in Section 1609.

3405.2.1.1 CBC level seismic forces. When seismic forces are required to meet the building code level, they shall be one of the following:

1. One hundred percent of the values in the building code. The R factor used for analysis in accordance with Chapter 16 of the building code shall be the R factor specified for structural systems classified as "Ordinary" unless it can be demonstrated that the structural system satisfies the proportioning and detailing requirements for systems classified as "intermediate" or "special".

1. Forces corresponding to BSE-1 and BSE-2 Earthquake Hazard Levels defined in ASCE 41. Where ASCE 41 is used, the corresponding performance levels shall be those shown in Table 3405.2.1.1.

TABLE 3405.2.1.1
ASCE 41 PERFORMANCE LEVELS

RISK CATEGORY (BASED ON CBC TABLE 1604.5)	PERFORMANCE LEVEL FOR USE WITH ASCE 41 BSE-1 EARTHQUAKE HAZARD LEVEL	PERFORMANCE LEVEL FOR USE WITH ASCE 41 BSE-2 EARTHQUAKE HAZARD LEVEL *
I	Life Safety (LS)	Collapse Prevention (CP)
II	Life Safety (LS)	Collapse Prevention (CP)
III	Damage Control	Limited Safety
IV	Immediate Occupancy (IO)	Life Safety (LS)
* Only applicable when Tier 3 procedure is used.		

3405.2.1.2 Reduced CBC level seismic forces. When seismic forces are permitted to meet reduced building code levels, they shall be one of the following:

1. Seventy-five percent of the forces prescribed in the building code. The R factor used for analysis in accordance with Chapter 16 of the building code shall be the R factor as specified in Section 3405.2.1.1.

2. In accordance with the California Existing Building Code and applicable chapters in Appendix A of the International Existing Building Code, as specified in Items a. through e. below. Structures or portions of structures that comply with the requirements of the applicable

chapter in Appendix A shall be deemed to comply with the requirements for reduced building code force levels.

a. The seismic evaluation and design of unreinforced masonry bearing wall buildings in Risk Category I or II are permitted to be based on the procedures specified in Appendix Chapter A1 of CEBC.

b. Seismic evaluation and design of the wall anchorage system in reinforced concrete and reinforced masonry wall buildings with flexible diaphragms in Risk Category I or II are permitted to be based on the procedures specified in Appendix Chapter A2 of IEBC.

c. Seismic evaluation and design of cripple walls and sill plate anchorage in residential buildings of light-frame wood construction in Risk Category I or II are permitted to be based on the procedures specified in Appendix Chapter A3 of IEBC.

d. Seismic evaluation and design of soft, weak, or open-front wall conditions in multi-unit residential buildings of wood construction in Risk Category I or II are permitted to be based on the procedures specified in Appendix Chapter A4 of IEBC.

e. Seismic evaluation and design of concrete buildings and concrete with masonry infill buildings in all risk categories are permitted to be based on the procedures specified in Appendix Chapter A5 of IEBC.

3. Those associated with the BSE-1 Earthquake Hazard Level defined in ASCE 41 and the performance level as shown in Table 3405.2.1.1. Where ASCE 41 is used, the design spectral response acceleration parameters SXS and SX1 shall not be taken less than seventy-five percent of the respective design spectral response acceleration parameters SDS and SD1 defined by the California Building Code and its reference standards.

16.04.340 Reference Standards (CBC Chapter 35)

Chapter 35 is amended by adding the following:

Standard Referenced Number	Title	Reference in Code; Section Number
ASCE 41-13	Seismic Evaluation and Upgrade of Existing Buildings	3405.2.1, TABLE 3405.2.1.1, 3405.2.1.2

16.04.350 2013 California Historical Building Code adopted.

The California Historical Building Code, 2013 Edition, Title 24, Part 8 (authorized by Health and Safety Code Sections 18950 through 18961), which provides alternative building regulations for the rehabilitation, preservation, restoration, or relocation of designated historic buildings, is

adopted and hereby incorporated in this Chapter by reference and made a part hereof the same as if fully set forth herein. One copy of the California Historical Building Code, 2013 Edition, has been filed for use and examination of the public in the Office of the Building Official of the City of Palo Alto.

16.04.360 2013 California Existing Building Code adopted. The California Existing Building Code, 2013 Edition, Title 24, Part 10, which provides alternative building regulations for the rehabilitation, preservation, restoration, or relocation of existing buildings, is adopted and hereby incorporated in this Chapter by reference and made a part hereof the same as if fully set forth herein. One copy of the California Existing Building Code, 2013 Edition, has been filed for use and examination of the public in the Office of the Building Official of the City of Palo Alto.
The following portions of International Existing Building Code, 2012 edition or of the appendix thereto, are approved or adopted or incorporated in this Chapter by reference, and shall be deemed to be a part of this Chapter;

A. Appendix Chapter A2, Earthquake Hazard Reduction in Existing Reinforced Concrete and Reinforced Masonry Wall Buildings with Flexible Diaphragm.
B. Appendix Chapter A4, Earthquake Hazard Reduction in Existing Wood-Frame Residential Buildings with Soft, Weak or Open-Front Walls.
C. Appendix Chapter A5, Seismic evaluation and design of concrete buildings and concrete with masonry infill buildings in all risk categories.

SECTION 2. The Council adopts the findings for local amendments to the California Building Code, 2013 Edition, attached hereto as Exhibit "A" and incorporated herein by reference.

SECTION 3. The Council finds that this project is exempt from the provisions of the California Environmental Quality Act ("CEQA"), pursuant to Section 15061 of the CEQA Guidelines, because it can be seen with certainty that there is no possibility that the amendments herein adopted will have a significant effect on the environment.

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SECTION 4. This ordinance shall be effective on the thirty-first day after the date of its adoption.

INTRODUCED: October 21, 2013

PASSED: November 18, 2013

AYES: BERMAN, BURT, HOLMAN, KLEIN, KNISS, PRICE, SCHARFF, SCHMID, SHEPHERD

NOES:

ABSENT:

ABSTENTIONS:

ATTEST:

for City Clerk

Mayor

APPROVED AS TO FORM:

For City Attorney

APPROVED:

City Manager

Director of Development Services

Director of Administrative Services

Exhibit A
FINDINGS FOR LOCAL AMENDMENTS
TO CALIFORNIA BUILDING CODE

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.

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.

Code: CBC				
Section	**Title**	**Add**	**Amended**	**Justification (See below for keys)**
702A	Wild Land-Urban Interface Fire Area		✓	T
902.1	Definition (Dual Sensor Carbon Monoxide and Smoke Alarm)	✓		T
903.2	Where Automatic Sprinklers Required		✓	T
903.3.1.1	NFPA 13 Sprinkler Systems		✓	T
903.3.1.2	NFPA 13R Sprinkler Systems		✓	T
903.3.1.2.2	Attic and Usable Crawl Space	✓		T
903.3.1.3	NFPA 13D Sprinkler Systems		✓	T
903.3.1.3.1	Garages and Attics	✓		T
903.3.7	Fire Department Connections		✓	T
903.4.3	Floor Control Valves	✓		T
907.2.11	Single- and Multiple-Station Smoke Alarms		✓	T
1206.3.4	Roof Guardrails at Interior Courts	✓		T
1505.1.4	Roof Requirements in a Wild Land-Urban Interface Fire Area		✓	C, T

1612.1.1	Palo alto Flood Hazard Regulations	✓		C, T
1705.3	Concrete Construction		✓	G
Table 1809.7	Prescriptive Footings Supporting Walls of Light Frame Construction		✓	G
2308.9.3	Bracing		✓	G
2308.12.5	Attachment of Sheathing		✓	G
3404.7	Suspended Ceiling Systems	✓		G
3405.2.1	Evaluation and Design Procedures	✓	✓	T
Appendix I	Patio Covers	✓		C

Code: IEBC				
Chapter	**Title**	**Add**	**Amended**	**Justification (See below for keys)**
A2	Earthquake Hazard Reduction in Existing Reinforced Concrete and Reinforced Masonry Wall Buildings with Flexible Diaphragm	✓		G
A4	Prescriptive Provisions for Seismic Strengthening of Cripple Walls and Sill Plate Anchorage of Lights, Wood-Frame Residential Buildings	✓		G
A5	Seismic evaluation and design of concrete buildings and concrete with masonry infill buildings in all risk categories	✓		G

Key to Justification for Amendments to Title 24 of the California Code of Regulations

C This amendment is justified on the basis of a local **climatic** condition. The seasonal climatic conditions during the late summer and fall create severe fire hazards to the public health and welfare in the City. The hot, dry weather frequently results in wild land fires on the brush covered slopes west of Interstate 280. The aforementioned conditions combined with the geological characteristics of the hills within the City create hazardous conditions for which departure from California Building Standards Code is required.

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

T The City of Palo Alto **topography** includes hillsides with narrow and winding access, which makes timely response by fire suppression vehicles difficult. Palo Alto is contiguous with the San Francisco Bay, resulting in a natural receptor for storm and waste water run-off. Also the City of Palo Alto is located in an area that is potentially susceptible to liquefaction during a major earthquake. The surface condition consists mostly of stiff to dense sandy clay, which is highly plastic and expansive in nature. The aforementioned conditions within the City create hazardous conditions for which departure from California Building Standards Code is warranted.

Ordinance No. 5217
Ordinance of the Council of the City of Palo Alto Repealing Chapter 16.05 of the Palo Alto Municipal Code and Amending Title 16 to Adopt a New Chapter 16.05, California Mechanical Code, 2013 Edition, and Local Amendments and Related Findings

The Council of the City of Palo Alto does ORDAIN as follows:

SECTION 1. Chapter 16.05 of the Palo Alto Municipal Code is hereby amended by repealing in its entirety 16.05and adopting a new Chapter 16.05 to read as follows:

16.05 CALIFORNIA MECHANICAL CODE

16.05.010 2013 California Mechanical Code adopted.

The California Mechanical Code, 2013 Edition, Title 24, Part 4 of the California Code of Regulations together with those omissions, amendments, exceptions and additions thereto, is adopted and hereby incorporated in this Chapter by reference and made a part hereof the same as if fully set forth herein.

Unless superseded and expressly repealed, references in City of Palo Alto forms, documents and regulations to the chapters and sections of the former California Code of Regulations, Title 24, 2010, shall be construed to apply to the corresponding provisions contained within the California Code of Regulations, Title 24, 2013. Ordinance No. 5100 of the City of Palo Alto and all other ordinances or parts of ordinances in conflict herewith are hereby suspended and expressly repealed.

Wherever the phrases "California Mechanical Code" or "Mechanical Code" are used in this code or any ordinance of the City, such phrases shall be deemed and construed to refer and apply to the California Mechanical Code, 2013 Edition, as adopted by this Chapter. One copy of the California Mechanical Code, 2013 edition, has been filed for use and examination of the public in the Office of the Building Official of the City of Palo Alto.

16.05.020 2013 California Mechanical Code Appendix Chapters adopted.

The following Appendix Chapters of the California Mechanical Code, 2013 Edition, are adopted and hereby incorporated in this Chapter by reference and made a part hereof the same as if fully set forth herein:

A. Appendix B– Procedures to be Followed to Place Gas Equipment in Operation

B. Appendix C– Installation and testing of Oil (Liquid) Fuel-Fired Equipment

C. Appendix D– Unit Conversion Tables

16.05.030 Cross - References to California Mechanical Code.

The provisions of this Chapter contain cross-references to the provisions of the California Mechanical Code, 2013 Edition, in order to facilitate reference and comparison to those provisions.

16.05.040 Violations -- Penalties.

Any person, firm or corporation violating any provision of this chapter is guilty of a misdemeanor and upon conviction thereof shall be punished as provided in subsection (a) of Section 1.08.010 of this code. Each separate day or any portion thereof during which any violation of this chapter occurs or continues shall be deemed to constitute a separate offense, and upon conviction thereof shall be punishable as provided in this section.

16.05.050 Enforcement -- Citation authority.

The employee positions designated in this section may enforce the provisions of this chapter by the issuance of citations; persons employed in such positions are authorized to exercise the authority provided in Penal Code section 836.5 and are authorized to issue citations for violations of this chapter. The designated employee positions are: (1) chief building official; (2) building inspection supervisor; and (3) code enforcement officer.

16.05.060 Local Amendments

The provisions of this Chapter shall constitute local amendments to the cross-referenced provisions of the California Mechanical Code, 2013 Edition, and shall be deemed to replace the cross-referenced sections of said Code with the respective provisions set forth in this Chapter.

16.05.70 504.2.1 Kitchen Exhaust Makeup Air: Section 504.2.1 of the California Mechanical Code is added to read:

> **504.2.1 Kitchen Exhaust Makeup Air.** Exhaust hood systems capable of exhausting in excess of 400 cubic feet per minute (0.19 m^3/s) shall be provided with makeup air at a rate approximately equal to the exhaust air rate and shall not negatively impact the California Energy Code supply air requirements of ASHRAE 62.2. Such makeup air systems shall be equipped with a means of closure and shall be automatically controlled to start and operate simultaneously with the exhaust system.

SECTION 2. The Council adopts the findings for local amendments to the California Mechanical Code, 2013Edition, attached hereto as Exhibit "A" and incorporated herein by reference.

SECTION 3. The Council finds that this project is exempt from the provisions of the California Environmental Quality Act ("CEQA"), pursuant to Section 15061 of the CEQA

Guidelines, because it can be seen with certainty that there is no possibility that the amendments herein adopted will have a significant effect on the environment.

SECTION 4. This ordinance shall be effective on the commencement of the thirty-first day after the date of its adoption.

INTRODUCED: October 21, 2013

PASSED: November 18, 2013

AYES: BERMAN, BURT, HOLMAN, KLEIN, KNISS, PRICE, SCHARFF, SCHMID, SHEPHERD

NOES:

ABSENT:

ABSTENTIONS:

ATTEST:

for City Clerk

Mayor

APPROVED AS TO FORM:

For City Attorney

APPROVED:

City Manager

Director of Development Services

Director of Administrative Services

Exhibit A
FINDINGS FOR LOCAL AMENDMENTS
TO CALIFORNIA MECHANICAL CODE, 2013

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.

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.

Code: CMC			
Section	**Title**	**Add**	**Justification (See below for keys)**
504.2.1	Kitchen Exhaust Makeup Air	✓	C
Appendix B	Procedures to be Followed to Place Gas Equipment in Operation	✓	G
Appendix C	Installation and testing of Oil (Liquid) Fuel-Fired Equipment	✓	G

Key to Justification for Amendments to Title 24 of the California Code of Regulations

C This amendment is justified on the basis of a local **climatic** condition. The seasonal climatic conditions during the late summer and fall create severe fire hazards to the public health and welfare in the City. The hot, dry weather frequently results in wild land fires on the brush covered slopes west of Interstate 280. The aforementioned conditions combined with the geological characteristics of the hills within the City create hazardous conditions for which departure from California Building Standards Code is required.

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

T The City of Palo Alto **topography** includes hillsides with narrow and winding access, which makes timely response by fire suppression vehicles difficult. Palo Alto is contiguous with the San Francisco Bay, resulting in a natural receptor for storm and waste water run-off. Also the City of Palo Alto is located in an area that is potentially susceptible to liquefaction during a major earthquake. The surface condition consists mostly of stiff to dense sandy clay, which is highly plastic and expansive in nature. The aforementioned conditions within the City create hazardous conditions for which departure from California Building Standards Code is warranted.

Ordinance No. 5218

Ordinance of the Council of the City of Palo Alto Repealing Chapter 16.06 of the Palo Alto Municipal Code and Amending Title 16 to Adopt a New Chapter 16.06, California Residential Code, 2013 Edition, and Local Amendments And Related Findings

The Council of the City of Palo Alto does ORDAIN as follows:

SECTION 1. Chapter 16.06 of Palo Alto Municipal Code is hereby amended by repealing in its entirety and adopting a new Chapter 16.06 to read as follows::

16.06.010 2013 California Residential Code adopted.

The California Residential Code, 2013 Edition, Title 24, Part 2.5 of the California Code of Regulations, together with those omissions, amendments, exceptions and additions thereto, is adopted and hereby incorporated in this Chapter by reference and made a part hereof the same as if fully set forth herein.

Unless superseded and expressly repealed, references in City of Palo Alto forms, documents and regulations to the chapters and sections of the former California Code of Regulations, Title 24, 2010, shall be construed to apply to the corresponding provisions contained within the California Code of Regulations, Title 24, 2013. Ordinance No. 5101 of the City of Palo Alto and all other ordinances or parts of ordinances in conflict herewith are hereby suspended and expressly repealed.

Wherever the phrases "California Residential Code" or "Residential Code" are used in this code or any ordinance of the city, such phrases shall be deemed and construed to refer and apply to the California Residential Code, 2013 Edition, as adopted by this Chapter.

One copy of the California Residential Code, 2013 Edition, has been filed for use and examination of the public in the Office of the Building Official of the City of Palo Alto.

16.06.020 2013 California Residential Code Appendix Chapters adopted.

The following Appendix Chapters of the California Residential Code, 2013 Edition, are adopted and hereby incorporated in this Chapter by reference and made a part hereof the same as if fully set forth herein:

A. Appendix G – Swimming Pools, Spas and Hot Tubs

B. Appendix H – Patio Covers

C. Appendix K – Sound Transmission

16.06.030 Cross - References to California Residential Code.

The provisions of this Chapter contain cross-references to the provisions of the California

Residential Code, 2013 Edition, in order to facilitate reference and comparison to those provisions.

16.06.040 Section 1.11.2.1.1 Duties and powers of the enforcing agency/Enforcement is amended with the following language:

Section 1.11.2.1.1 Duties and powers of the enforcing agency/Enforcement

The responsibility for enforcement of building standards adopted by the State Fire Marshal and published in the California Building Standards Code relating to fire and panic safety and other regulations of the State Fire Marshal shall, except as provided in Section 1.11.2.1.2, be as follows:

1. The city, county or city and county with jurisdiction in the area affected by the standard or regulation shall delegate the enforcement of the building standards relating to fire and panic safety and other regulations of the State Fire Marshal as they relate to Group R-3 occupancies, as described in Section 310.1 of Part 2 of the California Building Standards Code, to both enforcement divisions specific to their areas of enforcement disciplines:

1.1 The chief of the fire authority of the city, county or city and county, or an authorized representative and;

1.2. The chief building official of the city, county or city and county, or an authorized representative.

16.06.050 Violations -- Penalties.

Any person, firm or corporation violating any provision of this chapter is guilty of a misdemeanor and upon conviction thereof shall be punished as provided in subsection (a) of Section 1.08.010 of this code. Each separate day or any portion thereof during which any violation of this chapter occurs or continues shall be deemed to constitute a separate offense, and upon conviction thereof shall be punishable as provided in this section.

When the building official determines that a violation of this chapter or chapters 16.04, 16.05, 16.08, 16.14, 16.16 or 16.17 of this code has occurred, he/she may record a notice of pendency of code violation with the Office of the County Recorder stating the address and owner of the property involved. When the violation has been corrected, the building official shall issue and record a release of the notice of pendency of code violation.

16.06.060 Enforcement -- Citation authority.

The employee positions designated in this section may enforce the provisions of this chapter by the issuance of citations; persons employed in such positions are authorized to exercise the authority provided in Penal Code section 836.5 and are authorized to issue citations for violations of this chapter. The designated employee positions are: (1) chief building official; (2) building inspection supervisor; and (3) code enforcement officer.

16.06.070 Local Amendments.

The provisions of this Chapter shall constitute local amendments to the cross-referenced

provisions of the California Residential Code, 2013 Edition, and shall be deemed to replace the cross-referenced sections of said Code with the respective provisions set forth in this Chapter.

16.06.080 Chapter 1, Division II amended – Administration.
Chapter 1, Division II of the California Residential Code is amended to read:

DIVISION II
ADMINISTRATION

The provisions of Chapter 1 (Scope and Administration), Division II of the California Building Code, 2013 Edition, as locally amended and adopted, shall apply to this code.

16.06.090 Section R105.1.2 Demolition permits is added to read:

Section R105.1.2 Demolition Permits. In addition to other requirements of law, every person seeking a permit to demolish a unit used for residential rental purposes shall furnish an affidavit or declaration under penalty of perjury that the unit proposed to be demolished is vacant, or that notice to vacate has been given to each tenant lawfully in possession thereof as required by law or by the terms of such tenancy. No work or demolition shall begin upon any portion of such a unit until each and every portion has been vacated by all tenants lawfully in possession thereof.

16.04.100 Section R105.5 Expiration is amended to read:

R105.5 Expiration. Every permit issued shall become invalid unless the work on the site authorized by such permit is commenced within 180 days after its issuance, or if the work authorized on the site by such permit is suspended or abandoned for a period of 180 days after the time the work is commenced. The chief building official is authorized to grant, in writing, one or more extensions of time, for periods not more than 180 days each and may require;

1) that the construction documents be revised to partially or fully comply with current codes, and 2) payment of a fee.

Extensions shall be requested in writing and justifiable cause demonstrated. For the purpose of this section, failure to progress a project to the next level of required inspection shall be deemed to be suspension of the work.

16.06.110 Section R108.5 Refunds is amended to read:

R108.5 Refunds. The building official or permit center manager may authorize the refund of any fee paid hereunder which was erroneously paid or collected. The building official or permit center manager may authorize the refund of not more than eighty percent (80%) of the permit fee paid when no work has occurred under a permit issued pursuant to this Chapter. The building official or permit center manager may authorize

the refund of not more than eighty percent (80%) of the Plan Review Fee paid when a permit application is withdrawn or canceled before any plan review work has started.

16.06.120 Section R109.1.3 Floodplain Inspection is amended to read:

R109.1.3 Floodplain Inspections. In flood hazard areas, upon placement of the lowest floor, including the basement, and prior to further vertical construction, the elevation certification shall be submitted to City Public Works Engineering for inspection approval prior to foundation inspection by city building inspection.

16.06.130 Section R109.5 Re-Inspection Fees Assessed/Authorized is added to read:

R109.5 Re-Inspection Fees. A Re-Inspection Fee may be assessed/authorized by the building official or building inspection supervisor for each re-inspection required when work for which an inspection is requested is not ready for inspection or when required corrections noted during prior inspections have not been completed. A "Re-Inspection Fee" may be assessed/authorized when;

1. The inspection record card is not posted or otherwise available on the work site,

2. The approved plans are not readily available for the inspector at the time of inspection,

3. The inspector is unable to access the work at the time of inspection, or;

4. When work has substantially deviated from the approved plans without the prior approval of the building official.

5. When a Re-Inspection Fee is assessed, additional inspection of the work will not be performed until the fee has been paid.

16.06.140 Section R110.1 Use and Occupancy is amended to read:

R110.1 Use and Occupancy. No building or structure shall be used or occupied, and no change in the existing occupancy classification of a building or structure or portion thereof shall be made, until the building official has issued a certificate of occupancy therefor as provided herein. Issuance of a certificate of occupancy shall not be construed as an approval of a violation of the provisions of this code or of other ordinances of the jurisdiction.

Exception: Certificates of occupancy are not required for work exempt from permits under Section 105.2:

1. Group R - Division 3 occupancies

2. Group U occupancies

16.06.150 Section R202 amended – Definitions added.

Section R202 of the California Residential Code is amended to include the following definitions:

DUAL SENSOR PHOTOELECTRIC/IONIZATION SMOKE DETECTOR OR ALARM. A smoke alarm or detector that utilizes both photoelectric and ionization methods in a single device.

DUAL SENSOR CARBON MONOXIDE AND SMOKE ALARM. A combination carbon monoxide and smoke alarm or detector that senses both smoke and CO in a single device.

IONIZATION SMOKE DETECTOR OR ALARM. A smoke alarm or detector that uses a small amount of radioactive material to detect invisible particles generated by flame.

PHOTOELECTRIC SMOKE DETECTOR OR ALARM. A smoke alarm or detector that uses a light-source to detect the presence of smoke.

WILDLAND-URBAN INTERFACE FIRE AREA is a geographical area identified by the State of California as a "Fire Hazard Severity Zone" in accordance with Public Resources Code Sections 4201 through 4202 and Government Code Sections 51175 through 51189, or other areas designated by the enforcing agency to be at a significant risk from wildfires. Within the city limits of the City of Palo Alto, "Wildland-Urban Fire Interface Area" shall also include all areas west of Interstate 280, and all other areas recommended as a "Very High Fire Hazard Severity Zone" by the Director of the California Department of Forestry.

16.06.160 Table 301.2(1) Climatic and Geographic Design Criteria: Section Table 301.2(1) of the California Residential Code is added to read:

TABLE R301.2(1)
CLIMATIC AND GEOGRAPHIC DESIGN CRITERIA

GROUND SNOW LOAD	WIND DESIGN		SEISMIC DESIGN CATEGORY	SUBJECT TO DAMAGE FROM		
	Speed (mph)	Topographic effects		Weathering	Frost line depth	Termite
0	85	No	D_1 thru E	Negligible	5"	Very High

WINTER DESIGN TEMP. (^{O}F)	ICE BARRIER UNDERLAYEMENT REQUIRED	FLOOD HAZARDS	AIR FREEZING INDEX	MEAN ANNUAL TEMP. (^{O}F)
40	No	See Footnotes a thru c	0	55

The City of Palo Alto entered National Flood Insurance Program in 1979.
The effective date of the current Flood Insurance Study and Flood Insurance Rate Map is May 18, 2009.
The panel numbers and dates of all currently effective FIRMs and FBFMs: 06085CINDOA, 06085C0010H, 06085C0015H through 06085C0019H, 06085C0030H, 06085C0036H , 06085C0038H , 06085C0180H , 06085C0185H (May 18, 2009 for all)

16.06.170 Section R310.2.3 Window Well Fall Protection: Section R310.2.3 of the California Residential Code is added to read:

R310.2.3 Window Well Fall Protection. Window wells with a vertical depth greater than 30 inches shall have guards on all sides. The guards shall be provided in accordance with Section R312.1. Window well grates are not allowed. When gates are installed for exit at window wells and the depth of the window well is greater than 30 inches gates shall be installed with a permanent lock to prevent access by unauthorized persons. The gates shall be equipped to accommodate a locking device. The gates shall open outward away from the well, and shall be self-closing and have a self-latching device. Where the release mechanism of the self-latching device is located less than 54 inches from the bottom of the gate, the release mechanism shall be located at least 3 inches below the top of the gate. The gate and guards shall have no opening larger than ½ inch within 18 inches of the release mechanism. Openings, in other parts of gates, shall comply with Section R312.1.3. Access ladder shall comply with Section R310.2.1 and shall extend from the bottom of the well to the top of the guard.

16.06.180 Section R310.4.1 Security Bars: Section R310.4.1 of the California Residential Code is added to read:

R310.4.1 Security Bars. Fire Department plan check review and approval of all security bar submittals shall be required prior to the issuance of a Building Permit.

16.06.190 Section R313.2 One- and two-family dwellings automatic fire sprinkler systems. Section R313.2 of the California Residential Code is amended to read:

R313.2 One- and two-family dwellings automatic fire sprinkler systems. Approved automatic sprinkler systems in new one- and two- family dwellings and in existing modified one- and two- family dwellings shall be provided in accordance with this section.

1. An automatic sprinkler system shall be provided throughout all new residential buildings and structures.

Exception: New detached Group U occupancies, buildings or structures that do not exceed 1,000 square feet of building area.

2. An automatic sprinkler system shall be provided throughout all existing buildings when modifications are made that create an increase in fire area to more than 4100 square feet or modifications are equal to or greater than 100% of existing square footage of building area, whichever is more restrictive.

3. An automatic sprinkler system shall be provided throughout all new basements regardless of size and throughout existing basements that are expanded by more than 50%.

4. An automatic sprinkler system shall be provided throughout all new buildings located in the designated Wild Land-Urban Interface Fire areas.

Exception: Any detached non-residential accessory structures to single family residences that have a fire area of 500 square feet or less.

5. An automatic sprinkler system shall be provided throughout all existing buildings located in the designated Wild Land-Urban Interface Fire areas when modifications are made that increases the fire area.

Exception: One-time additions to existing buildings made after January 1, 1994 that do not exceed 500 square feet in fire area.

16.04.193 Section R313.1.1 – Design and installation

Section R313.1.1 of the California Residential Code is amended to read as follows:

R313.1.1 Design and installation. Where allowed, automatic sprinkler systems installed in townhouses shall be installed throughout in accordance with NFPA 13D and State and local standards.

16.04.195 Section R313.2.1 – Design and installation

Section R313.2.1 of the California Residential Code is amended to read as follows:

R313.2.1 Design and installation. Where allowed, automatic sprinkler systems installed in one- and two-family dwellings shall be installed throughout in accordance with NFPA 13D and State and local standards.

16.04.198 Section R313.3.1.1 – Required sprinkler locations.

Section R313.3.1.1 is amended to the California Residential Code to read as follows:

Section R313.3.1.1 – Required sprinkler locations. Sprinklers shall be installed to protect all areas of a dwelling unit. Garages, including Group U occupancies, shall be fully protected with sprinklers designed for residential density calculated with four (4) sprinklers flowing. Attics shall be fully protected to residential density or light hazard as appropriate for the slope of ceiling and configuration of framing.

Exception: Non-usable attics in one-and two-family dwellings not located in the Wild Land Urban Interface area may be provided with an intermediate temperature pilot sprinkler above the attic scuttle and above any heat producing equipment in lieu of complete attic protection meeting the requirements above.

16.06.200 Section R314.1– Smoke detection and notification.

Section R314.1 of the California Residential Code is amended to read:

R314.1 Smoke detection and notification. Listed single- and multiple-station smoke alarms complying with UL 217 shall be installed in accordance with the provisions of this code and the household warning equipment provisions of NFPA 72 and manufacturers installation and use instructions.

Smoke alarms more than 10 years old shall not be considered as satisfying any requirement of this code or subject to the provisions of the Health and Safety Code and shall be immediately replaced by the owner with a smoke alarm that complies with this section.

Smoke alarms and smoke detectors installed on or after January 1, 2014in compliance with this code or with the provisions of the Health and Safety Code shall also either be listed and approved for enhanced nuisance resistance and rapid response to smoldering synthetic materials or shall meet the following requirements:

1. Smoke detectors or smoke alarms located within 20 feet of a kitchen, or a room containing a cooking appliance, wood burning fireplace or stove shall be photoelectric detectors or alarms.

2. In all other required locations dual sensor photoelectric/ionization detectors or alarms, shall be installed. A photoelectric smoke detector or alarm installed together with ionization smoke detectors or alarms may be used as a substitute for a dual sensor photoelectric/ionization detector or alarm.

   Exception: A fire alarm or other approved system with interconnected photoelectric smoke detectors or alarms located in accordance with, and meeting the requirements of, this section may be installed. Upon the actuation of a smoke detector or alarm, only those notification appliances or alarms in the dwelling unit or guest rooms where the detectors are actuated shall activate.

16.06.210 Section R322.1 – General.

The following paragraph is added to Section R322.1 of the California Residential Code:

Palo Alto Flood Hazard Regulations. Notwithstanding the provisions of this section, all construction or development within a flood hazard area (areas depicted as a Special Flood Hazard Area on Flood Insurance Rate Maps published by the Federal Emergency Management Agency) shall comply with the City of Palo Alto Flood Hazard Regulations (Palo Alto Municipal Code Chapter 16.52). Where discrepancies exist between the requirements of this code and said regulations, the provisions of said regulations shall apply.

16.06.220 Section R327.1.5 Vegetation management compliance. Section R327.1.5 of the California Residential Code is amended to read:

R327.1.5 Vegetation management compliance. Prior to building permit final approval, the property shall be in compliance with the vegetation management requirements prescribed-in California Fire Code section 4906, including California Public Resources Code 4291 or California Government Code Section 51182. Acceptable methods of compliance inspection and documentation shall be determined by the enforcing agency and may include any of the following:

1. Local, state, or federal fire authority or designee authorized to enforce vegetation management requirements.
2. Enforcing agency - City of Palo Alto Fire Inspection shall inspect the aforementioned requirements and indicate compliance prior to building division final inspection sign-off.
3. Third party inspection and certification authorized to enforce vegetation management requirements.
4. Property owner certification authorized by the enforcing agency.

16.06.230 Section R403.1.3 Seismic Reinforcing. Section R403.1.3 of the California Residential Code is amended to read:

R403.1.3 Seismic reinforcing. Concrete footings located in Seismic Design Categories D_0, D_1 and D_2, as established in Table R301.2(1), shall have minimum reinforcement of at least two continuous longitudinal reinforcing bars, one top and one bottom and not smaller than No. 4 bars. Bottom reinforcement shall be located a minimum of 3 inches (76 mm) clear from the bottom of the footing.

In Seismic Design Categories D_0, D_1 and D_2 where a construction joint is created between a concrete footing and a stem wall, a minimum of one No. 4 bar shall be installed at not more than 4 feet (1219 mm) on center. The vertical bar shall extend to 3 inches (76 mm) clear of the bottom of the footing, have a standard hook and extend a minimum of 14 inches (357 mm) into the stem wall.

In Seismic Design Categories D_0, D_1 and D_2 where a grouted masonry stem wall is supported on a concrete footing and stem wall, a minimum of one No. 4 bar shall be installed at not more than 4 feet (1219 mm) on center. The vertical bar shall extend to 3 inches (76 mm) clear of the bottom of the footing and have a standard hook.

In Seismic Design Categories D_0, D_1 and D_2 masonry stem walls without solid grout and vertical reinforcing are not permitted.

Exception: In detached one- and two-family dwellings which are three stories or less in height and constructed with stud bearing walls, plain concrete footings without longitudinal reinforcement supporting walls and isolated plain concrete footings supporting columns or pedestals are permitted.

16.06.240 Section R403.1.8 – Foundations on expansive soils.

Section R403.1.8 of the California Residential Code is amended to read:

R403.1.8 Foundations on expansive soils. Foundations and floor slabs for buildings located on expansive soils shall be designed in accordance with Section 1808.6 or Table 1809.7 of the California Building Code.

Table 1809.7 of the California Building Code is added and amended to read:

TABLE 1809.7

Prescriptive Footings Supporting Walls of Light-Frame Construction[abcd]

Number of Floors Supported by the Footing [e]	Thickness of Foundation Wall (inches)	Width of Footing (inches)	Thickness of Footing (inches)	Depth of Foundation Below Natural Surface of Ground or Finish Grade (inches)
1&2	8	15	8	20
3	8	18	8	30
Group U Occupancies	8	12	8	12

a) The ground under the floor shall be permitted to be excavated to the elevation of the top of the footing.

b) Interior stud-bearing walls shall be permitted to be supported by isolated footings. The footing width and length shall be twice the width shown in this table, and footings shall be spaced not more than 6 feet on center.

c) See Section 1905 of California Building Code for additional requirements for concrete footings of structures assigned to Seismic Design Category C, D, E or F.

d) All foundations as required in the above Table shall be continuous and have a minimum of three #4 bars of reinforcing steel, except for one story, detached accessory buildings of Group U occupancy where two bars are required.

e) Footings shall be permitted to support a roof in addition to the stipulated number of floors. Footings supporting roof only shall be as required for supporting one floor.

16.06.250 Table R602.10.3(3) – Bracing Requirements Based on Seismic Design Category.
Footnote e is added to Table R602.10. 3(3) to read as follows:

e. In Seismic Design Categories D_0, D_1 and D_2, Method GB is not permitted and the use of Method PCP is limited to one-story single-family dwellings and accessory structures.

16.06.260 Section R902.1.4 – Roofing requirements in a Wildland-Urban Interface Fire Area.
Section R902.1.4 of the California Residential Code is amended to read:

R902.1.4 Roofing requirements in a Wild Land-Urban Interface Fire Area. The entire roof covering on new structures and existing structures on which more than 50 percent of the total roof area is replaced within any one-year period, and any roof covering applied in the alteration, repair or replacement of roofs on existing structures, shall be a fire-retardant roof covering that is at least Class A. Roofing requirements for structures located in a Wildland-Urban Interface Fire Area shall also comply with Section R327.5.

16.06.270 Section R1003.9.2.1 – Repairs, replacements and alterations.
Section R1003.9.2.1 is added to the California Residential Code to read:

R1003.9.2.1 Repairs, replacements and alterations. When any repair, replacement or alteration to the roof of an existing structure is performed, a spark arrester shall be installed on the existing chimney in accordance with Section R1003.9.2.

SECTION 2. The Council adopts the findings for local amendments to the California Residential Code, 2013 Edition, attached hereto as Exhibit "A" and incorporated herein by reference.

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SECTION 3. The Council finds that this project is exempt from the provisions of the California Environmental Quality Act ("CEQA"), pursuant to Section 15061 of the CEQA Guidelines, because it can be seen with certainty that there is no possibility that the amendments herein adopted will have a significant effect on the environment.

SECTION 4. This ordinance shall be effective on the thirty-first day after the date of its adoption.

INTRODUCED: October 21, 2013

PASSED: November 18, 2013

AYES: BERMAN, BURT, HOLMAN, KLEIN, KNISS, PRICE, SCHARFF, SCHMID, SHEPHERD

NOES:

ABSENT:

ABSTENTIONS:

ATTEST:

for City Clerk

Mayor

APPROVED AS TO FORM:

City Attorney

APPROVED:

City Manager

Director of Development Services

Director of Administrative Services

Exhibit A
FINDINGS FOR LOCAL AMENDMENTS
TO CALIFORNIA RESIDENTIAL CODE (CRC)

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.

Code: CRC					
Section	**Title**	**Add**	**Deleted**	**Amended**	**Justification (See below for keys)**
R 202	Definition (Dual Sensor Carbon Monoxide and Smoke Alarm)	✓			T
Table R301.2(1)	Climatic and Geographic Design Criteria			✓	C, G, T
R310.2.3	Window Well Fall Protection	✓			T
R 310.4.1	Security Bars			✓	T
R313.1.1	Design and installation			✓	T
R 313.2	One and Two Family Dwellings Automatic Spr. Syst.			✓	T
R313.2.1	Design and installation			✓	T
R313.3.1.1	Required sprinkler locations			✓	T
R 314.1	Smoke Detection and Notification			✓	C, T
R 322.1	Flood Hazard Regulations			✓	T
R 327.1.5	Vegetation Management Compliance			✓	T
R403.1.3	Seismic Reinforcing			✓	G
R 403.1.8	Foundation on expansive Soils			✓	G, T
Table R602.10.3(3)	Bracing Requirements Based on Seismic Design Category			✓	G
R902.1.4	Roofing Requirements in Wildland-Urban Interface Fire Area			✓	T
R1003.9.2.1	Repairs, Replacements and Alterations			✓	T
Appendix G	Swimming Pools, Spas and Hot Tubs	✓			C, G
Appendix H	Patio Covers	✓			C
Appendix K	Sound Transmission	✓			C

Key to Justification for Amendments to Title 24 of the California Code of Regulations

C This amendment is justified on the basis of a local **climatic** condition. The seasonal climatic conditions during the late summer and fall create severe fire hazards to the public health and welfare in the City. The hot, dry weather frequently results in wild land fires on the brush covered slopes west of Interstate 280. The aforementioned conditions combined with the geological characteristics of the hills within the City create hazardous conditions for which departure from California Building Standards Code is required.

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

T The City of Palo Alto **topography** includes hillsides with narrow and winding access, which makes timely response by fire suppression vehicles difficult. Palo Alto is contiguous with the San Francisco Bay, resulting in a natural receptor for storm and waste water run-off. Also the City of Palo Alto is located in an area that is potentially susceptible to liquefaction during a major earthquake. The surface condition consists mostly of stiff to dense sandy clay, which is highly plastic and expansive in nature. The aforementioned conditions within the City create hazardous conditions for which departure from California Building Standards Code is warranted.

Ordinance No. 5219

Ordinance of the Council of the City Of Palo Alto Repealing Chapter 16.08 of the Palo Alto Municipal Code and Amending Title 16 to Adopt a New Chapter 16.08, California Plumbing Code, 2013 Edition, and Local Amendments and Related Findings

The Council of the City of Palo Alto does ORDAIN as follows:

SECTION 1. Chapter 16.08 of the Palo Alto Municipal Code is hereby amended by repealing in its entirety and adopting a new Chapter 16.08 to read as follows:

16.08 CALIFORNIA PLUMBING CODE

16.08.010 2013 California Plumbing Code adopted.

The California Plumbing Code, 2013 Edition, Title 24, Part 5 of the California Code of Regulations together with those omissions, amendments, exceptions and additions thereto, is adopted and hereby incorporated in this Chapter by reference and made a part hereof the same as if fully set forth herein.

Unless superseded and expressly repealed, references in City of Palo Alto forms, documents and regulations to the chapters and sections of the former California Code of Regulations, Title 24, 2010, shall be construed to apply to the corresponding provisions contained within the California Code of Regulations, Title 24, 2013. Ordinance No. 5102 of the City of Palo Alto and all other ordinances or parts of ordinances in conflict herewith are hereby suspended and expressly repealed.

Wherever the phrases "California Mechanical Code" or "Mechanical Code" are used in this code or any ordinance of the City, such phrases shall be deemed and construed to refer and apply to the California Mechanical Code, 2013 Edition, as adopted by this Chapter. One copy of the California Plumbing Code, 2013 edition, has been filed for use and examination of the public in the Office of the Building Official of the City of Palo Alto.

16.08.020 2013 California Plumbing Code Appendix Chapters adopted.

The following Appendix Chapters of the California Plumbing Code, 2013 Edition, are adopted and hereby incorporated in this Chapter by reference and made a part hereof the same as if fully set forth herein:

A. Appendix A – Recommended Rules for Sizing the Water Supply System

B. Appendix I – Installation Standards

16.08.030 Cross - References to California Plumbing Code.

The provisions of this Chapter contain cross-references to the provisions of the California Plumbing Code, 2013 Edition, in order to facilitate reference and comparison to those provisions.

16.08.040 Violations -- Penalties.

Any person, firm or corporation violating any provision of this chapter is guilty of a misdemeanor and upon conviction thereof shall be punished as provided in subsection (a) of Section 1.08.010 of this code. Each separate day or any portion thereof during which any violation of this chapter occurs or continues shall be deemed to constitute a separate offense, and upon conviction thereof shall be punishable as provided in this section.

16.08.050 Enforcement -- Citation authority.

The employee positions designated in this section may enforce the provisions of this chapter by the issuance of citations; persons employed in such positions are authorized to exercise the authority provided in Penal Code section 836.5 and are authorized to issue citations for violations of this chapter. The designated employee positions are: (1) chief building official; (2) building inspection supervisor; and (3) code enforcement officer.

16.08.060 Local Amendments

The provisions of this Chapter shall constitute local amendments to the cross-referenced provisions of the California Plumbing Code, 2013 Edition, and shall be deemed to replace the cross-referenced sections of said Code with the respective provisions set forth in this Chapter.

16.08.070 Section 306.3 Palo Alto Sewer Use

Section 306.3 is added to the California Plumbing Code to read:

> **306.3 Palo Alto Sewer Use.** All non-domestic waste shall comply with the City of Palo Alto Sewer Use Ordinance (Palo Alto Municipal Code Chapter 16.09). Where discrepancies exist between the requirements of this code and said ordinance, the provisions of said ordinance shall apply.

16.08.080 Section 606.9 Hose Bibs.

Section 606.9 is added to the California Plumbing Code to read:

> **606.9 Hose Bibs.** All commercial and industrial buildings where the building face is parallel to the city sidewalk shall have a hose bib connection installed, conveniently available to accommodate persons washing the building face or watering plants.

16.08.090 Section 701.1, Part 4 Materials.

Section 701.1, Part 4 of the California Plumbing Code is amended to read:

701.1 **(4)** Copper, copper alloys, lead and lead alloys, including brass, shall not be used for building sanitary sewer systems except for domestic waste sink traps and short lengths of associated connecting pipes where alternate materials are not practical.

Where permitted by the building official, copper tube for drainage and vent piping shall have a weight of not less than that of copper drainage tube type DWV.

16.08.100 Table 701.1 Materials for Drain, Waste, Vent Pipe and Fittings
Footnote 1 is amended to Table 701.1 to read as follows:

[1] For limitations on the use of Brass and Copper (Type DWV) refer to Section 701.1, Part 4.

16.08.110 Section 710.2 Sewage Discharge.
Section 710.2of the California Plumbing Code is amended to read:

710.2 Sewage Discharge. Drainage piping serving fixtures with flood level rims located below one foot above the elevation of the next upstream manhole cover of the public or private sewer serving such drainage piping shall be protected from backflow of sewage by installing an approved backwater valve. Fixtures above such elevation shall not discharge through the backwater valve except as approved by the local administrative authority. On existing structures, the backwater valve may be installed on the private property sewer lateral upstream of the building's cleanout at the public right of way.

16.08.120 Section 714.4 Commercial Food Waste Grinders Prohibited.
Section 714.4 of the California Plumbing Code is amended to read:

714.4 Commercial Food Waste Grinders Prohibited. The installation of a commercial food waste grinder connecting to a private sewage disposal system is prohibited.

16.08.130 Section 719.7 Cleanouts
Section 719.7 is added to the California Plumbing Code to read:

719.7 A cleanout shall be provided at the point of connection between the building sewer and the city lateral and an approved fitting shall be used to bring the cleanout riser to grade. Where sewer cleanouts are to be connected to existing city laterals, such connections shall be accomplished by use of an approved fitting.

16.08.140 Section 808.2 Cooling Water.
Section 808.2 of the California Plumbing Code is added to read:

808.2 Single Pass Cooling Water Systems Prohibited. Clean running water used

exclusively as a cooling medium in an appliance, device, or apparatus is prohibited.

16.08.150 Section 908.2 Horizontal Wet Venting for Bathroom Groups Section 908.2 of the California Plumbing Code is deleted.

16.08.160 Section 1014.1.3 Food Waste Disposal Units and Dishwashers.
Section 10.14.1.3 of the California Plumbing Code is amended to read:

> **1014.1.3 Food Waste Disposal Units and Dishwashers.** Unless specifically required or permitted by the Authority Having Jurisdiction, no dishwasher shall be connected to or discharge into any grease interceptor. Commercial Food Waste Disposal Units are prohibited.

16.08.170 Section 1101.3 Material Uses.
Section 1101.3 of the California Plumbing Code is amended to read:

> **1101.3 Material Uses.** Rainwater piping placed within the interior of a building or run within a vent or shaft shall be of cast iron, galvanized steel, wrought iron, Schedule 40 ABS DWV, Schedule 40 PVC DWV, stainless steel 304 or 316L (stainless steel 304 pipe and fittings shall not be installed underground and shall be kept not less than six (6) inches (152 mm) aboveground), or other approved materials, and changes in direction shall conform to the requirements of Section 706.0. ABS and PVC DWV piping installations shall be installed in accordance with IS 5 and IS 9. Except for individual single-family dwelling units, materials exposed within ducts or plenums shall have a flame-spread index of a maximum of twenty-five (25) and a smoke-developed index of a maximum of fifty (50), when tested in accordance with the Test for Surface-Burning Characteristics of the Building Materials (see the Building Code standards based on ASTM E 84 and UL 723.).
> ABS or PVC installations are limited to not more than two stories of areas of residential accommodation.

16.08.180 Section 1105.1.2 Roof Drains (Materials).
Section 1105.1.2 of the California Plumbing Code is amended to read:

> **1105.1.2** Roof drains and conductor/leader's shall be of cast iron, plastic or other approved materials.

16.08.190 Chapter 16A Non-Potable Water Reuse Systems.

Chapter 16A of the California Plumbing Code is adopted in entirety.

SECTION 2. The Council adopts the findings for local amendments to the California Plumbing Code, 2013Edition, attached hereto as Exhibit "A" and incorporated herein by reference.

SECTION 3. The Council finds that this project is exempt from the provisions of the California Environmental Quality Act ("CEQA"), pursuant to Section 15061 of the CEQA Guidelines, because it can be seen with certainty that there is no possibility that the amendments herein adopted will have a significant effect on the environment.

SECTION 4. This ordinance shall be effective on the commencement of the thirty-first day after the date of its adoption.

INTRODUCED: October 21, 2013

PASSED: November 18, 2013

AYES: BERMAN, BURT, HOLMAN, KLEIN, KNISS, PRICE, SCHARFF, SCHMID, SHEPHERD

NOES:

ABSENT:

ABSTENTIONS:

ATTEST:

for City Clerk

Mayor

APPROVED AS TO FORM:

For City Attorney

APPROVED:

City Manager

Director of Development Services

Director of Administrative Services

Exhibit A
FINDINGS FOR LOCAL AMENDMENTS TO
CALIFORNIA PLUMBING CODE, 2010 EDITION

Section 17958 of the California Health and Safety Code provides that the City may make changes to the provisions in the uniform codes that are published in 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 in the uniform codes and published in 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.

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, including amendments made only for administrative consistency, do not require findings.

	Code: CPC				
Section	**Title**	**Add**	**Deleted**	**Amended**	**Justification (See below for keys)**
306.3	Palo Alto Sewer Use	✓			C
606.9	Hose Bib	✓			C
701.1, Part4	Materials			✓	T
Table 701.1	Materials for Drain, Waste, vent Pipe and Fittings			✓	T
710.2	Sewage Discharge			✓	T
714.4	Commercial Food Waste Grinders Prohibited			✓	G & T
719.7	Cleanouts	✓			T & G
808.2	Cooling Water	✓			C & T
908.2	Horizontal Wet Venting for Bathroom Groups		✓		C & T
1014.1.3	Food Waste Disposal Units and Dishwashers			✓	T
1101.3	Material Uses			✓	G T
1105.1.2	Roof Drains (Materials)			✓	T
Chapter 16A	Non-Potable Water Reuse Syst.	✓			C & T

Key to Justification for Amendments to Title 24 of the California Code of Regulations

C This amendment is justified on the basis of a local **climatic** condition. The seasonal climatic conditions during the late summer and fall create severe fire hazards to the public health and welfare in the City. The hot, dry weather frequently results in wild land fires on the brush covered slopes west of Interstate 280. The aforementioned conditions combined with the geological characteristics of the hills within the City create hazardous conditions for which departure from California Building Standards Code is required.

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

T The City of Palo Alto **topography** includes hillsides with narrow and winding access, which makes timely response by fire suppression vehicles difficult. Palo Alto is contiguous with the San Francisco Bay, resulting in a natural receptor for storm and waste water run-off. Also the City of Palo Alto is located in an area that is potentially susceptible to liquefaction during a major earthquake. The surface condition consists mostly of stiff to dense sandy clay, which is highly plastic and expansive in nature. The aforementioned conditions within the City create hazardous conditions for which departure from California Building Standards Code is warranted.

Ordinance No. 5220
Ordinance of the Council of the City of Palo Alto Adopting a New Chapter 16.14 of the Palo Alto Municipal Code, California Green Building Standards Code 2013 Edition, and Local Amendments and Related Findings

The Council of the City of Palo Alto does ORDAIN as follows:

SECTION 1. Chapter 16.14 of the Palo Alto Municipal Code is hereby amended by repealing in its entirety Chapter 16.14 and adopting a new Chapter 16.14 to read as follows:

16.14.010 2013 California Green Building Standards Code adopted.

The California Green Building Standards Code, 2013 Edition, Title 24, Part 11 of the California Code of Regulations, together with those omissions, amendments, exceptions and additions thereto, is adopted and hereby incorporated in this Chapter by reference and made a part hereof the same as if fully set forth herein.

Unless superseded and expressly repealed, references in City of Palo Alto forms, documents and regulations to the chapters and sections of the former California Code of Regulations, Title 24, 2010, shall be construed to apply to the corresponding provisions contained within the California Code of Regulations, Title 24, 2013. Ordinance No. 5107 of the City of Palo Alto and all other ordinances or parts of ordinances in conflict herewith are hereby suspended and expressly repealed.

Wherever the phrases "California Green Building Standards Code" or "Cal Green" are used in this code or any ordinance of the City, such phrases shall be deemed and construed to refer and apply to the California Green Building Standards Code, 2013 Edition, as adopted by this chapter.

One copy of the California Green Building Standards Code, 2013 Edition, has been filed for use and examination of the public in the Office of the Building Official of the City of Palo Alto.

16.14.020 2013 California Green Building Standards Code Appendix Chapters adopted.

The following Appendix Chapters of the California Green Building Standards Code, 2013 Edition, are adopted and hereby incorporated in this Chapter by reference and made a part hereof the same as if fully set forth herein:

A. Appendix A4 - Residential Voluntary Measures (Sections A4.105 and A4.408 only)
B. Appendix A5 – Nonresidential Voluntary Measures (Tier 1 and Tier 2)

16.14.030 Cross - References to California Green Building Standards Code.

The provisions of this Chapter contain cross-references to the provisions of the California Green Building Standards Code, 2013 Edition, in order to facilitate reference and comparison to those provisions.

16.14.040 Build It Green

Build It Green is a professional non-profit membership organization whose mission is to promote healthy, energy and resource-efficient buildings in California. A Green Point Rated home must meet certain pre-requisites and earn a minimum point requirement in each of the five environmental categories. The points must be verified by a third-party independent Green Point Rater.

The most current version of the following checklists are adopted by reference and made a part hereof the same as if fully set forth herein: Green Point Rated New Homes Single Family, Green Point Rated New Homes Multi Family, Green Point Rated Existing Homes Single Family, and Green Point Rated Existing Homes Multi Family, and the rating manuals from which the checklists are derived.

16.14.050 Violations -- Penalties.

Any person, firm or corporation violating any provision of this chapter is guilty of a misdemeanor and upon conviction thereof shall be punished as provided in subsection (a) of Section 1.08.010 of this code. Each separate day or any portion thereof during which any violation of this chapter occurs or continues shall be deemed to constitute a separate offense, and upon conviction thereof shall be punishable as provided in this section.

16.14.060 Enforcement -- Citation authority.

The employee positions designated in this section may enforce the provisions of this chapter by the issuance of citations; persons employed in such positions are authorized to exercise the authority provided in Penal Code section 836.5 and are authorized to issue citations for violations of this chapter. The designated employee positions are: (1) chief building official; (2) building inspection supervisor; (3) Director of Development Services, and (4) Code enforcement officer.

16.14.070 Local Amendments.

The provisions of this Chapter shall constitute local amendments to the cross-referenced provisions of the California Green Building Standards Code, 2013 Edition, and shall be deemed to replace the cross-referenced sections of said Code with the respective provisions set forth in this Chapter.

16.14.080 Section 202 amended – Definitions added.

Section 202 of the California Green Building Standards Code is amended to include the following definitions:

BUILD IT GREEN, GREENPOINT RATED. Build It Green is a non-profit organization that administers the Green Point Rated program for the design and construction of environmentally responsive and healthy homes. The program includes a rating system that is third-party verified and includes recognition.

DEDICATED IRRIGATION METER. A dedicated irrigation meter is a water meter that exclusively meters water used for outdoor watering and irrigation, and is completely independent from the meter used for indoor water use.

HERS II. HERS shall mean the California Home Energy Rating System, a statewide program for residential dwellings administered by the California Energy Commission and defined in the 2008 California Building Energy Efficiency Standards. HERS Phase I provides field verification and diagnostic testing to show compliance with Title 24, Part 6, of the 2008 California Building Energy Efficiency Standards. HERS Phase II includes whole-house home energy efficiency ratings for existing and newly constructed homes. Applicants are not required to achieve a set rating.

INVASIVE PLANTS. Invasive plants are both indigenous and non-indigenous species with growth habits that are characteristically aggressive. Invasive plants that are of concern and may be prohibited by this code are defined as such in the "Water Use Classification of Landscape Species (WUCOLS), A Guide to the Water Needs of Landscape Plants," from the University of California Cooperative Extension.

MODEL WATER EFFICIENT LANDSCAPE ORDINANCE. The California ordinance regulating new construction and rehabilitated landscape project design, installation and maintenance. The Model Ordinance assigns a Maximum Applied Water Allowance (MAWA) based on landscaped area and climatological parameters. The City of Palo Alto has adopted more stringent compliance regulations in this code than the Model Ordinance; however, the Model Ordinance is referenced as the guiding document for water use calculations, irrigation system design, and water waste prevention.

PROCESS WATER. Process water means untreated wastewater, uncontaminated by toilet discharge or an unhealthy bodily waste, which is not a threat from unhealthful processing, manufacturing or operating wastes.

SALVAGE. Salvage means the controlled removal of construction or demolition debris/ material from a building, construction, or demolition site for the purpose of on- or off-site reuse, or storage for later reuse. Examples include air conditioning and heating systems, columns, balustrades, fountains, gazebos, molding, mantels, pavers, planters, quoins, stair treads, trim, wall caps, bath tubs, bricks, cabinetry, carpet, doors, ceiling fans, lighting fixtures, electrical panel boxes, fencing, fireplaces, flooring materials of wood, marble, stone or tile, furnaces, plate glass, wall mirrors, door knobs, door brackets, door hinges, marble, iron work, metal balconies, structural steel, plumbing

fixtures, refrigerators, rock, roofing materials, siding materials, sinks, stairs, stone, stoves, toilets, windows, wood fencing, lumber and plywood.

SQUARE FOOTAGE. For application of green building requirements, square footage means all new and replacement square footage, including basement areas (7 feet or greater in height) and garages, except that unconditioned garage space shall only count as 50% . Areas demolished shall not be deducted from the total new construction square footage. Square footage may also apply to landscapes, in which case it is the total surface area of the site not covered by impervious surfaces.

16.14.090 Section 303.1.2 Cumulative construction. Section 303.1.2 is added to the California Green Building Standards Code to read:

303.1.2 Cumulative construction. Cumulative construction over any two-year period, or a project completed in phases, shall be considered as a single project, subject to the highest level of green building requirements for that project, unless exempted by the Director of Development Services as impractical for compliance. If a project is developed in phases, such as a core and shell development following by a tenant improvement, regardless of ownership each phase will be subject to the green building requirements which apply to the scope of work constructed as part of that phase.

16.14.100 Chapter 4 Preface: Green building requirements for project type and scope. A preface is added to Chapter 4 of the California Green Building Standards Code to read:

Preface – Green Building Requirements for Project Type and Scope For design and construction of residential projects, the City requires use of the Build It Green (BIG), Green Point Rated (GPR) program to comply with the mandatory measures of Chapter 4.

16.14.110 All Residential Building additions and alterations exceeding 1250 square feet must meet Build It Green, Green Point Rated (BIG GPR) minimum requirements and achieve 50 points.

16.14.120 All newly constructed Residential Buildings must achieve BIG GPR minimum requirements and achieve 70 points + 1 point per additional 70 square feet over 2500 square feet. Projects with landscape area greater than 5,000 square feet must claim a minimum of 15 points in water efficiency from the Landscape section of the BIG GPR or show compliance with the Model Water Efficient Landscape Ordinance.

16.14.130 At the completion of construction, a Green Point Rated Certificate of Evaluation must be filed with the City of Palo Alto for all projects requiring Build It Green, Green Point Rating.

16.14.140 **Section A4.105.1** and **A4.105.2** Reuse of Materials are adopted and apply to demolition of all Residential Projects.

16.14.150 **Section A5.305.2** Recycled water infrastructure for irrigation systems is adopted and applies to all projects other than single-family homes in geographic areas within the boundaries of a recycled water project area. All projects other than single-family homes not within the boundaries of a recycled water project area must install recycled water infrastructure for irrigation when the landscape area exceeds 1,000 square feet. Dedicated irrigation meters are to be installed in all new construction and rehabilitated landscapes when the landscape is greater than 1,000 square feet.

16.14.160 **Section A4.408.1** Enhanced Construction Waste Reduction is adopted at Tier 2 (75% construction waste reduction), and applies to all Residential Projects.

16.14.170 **Chapter 5 Preface Green Building Requirements for Project Type and Scope.** A Preface is added to Chapter 5 of the California Green Building Standards Code to read:

> **Preface – Green Building Requirements for Project Type and Scope**. For design and construction of non-residential projects, the City requires compliance with the mandatory measures of Chapter 5, in addition to use of the Voluntary Tiers.

16.14.180 All new nonresidential construction and additions of 1000 square feet or greater must comply with California Green Building Standards Code Mandatory plus Tier 2 requirements, as applicable to the scope of work.

16.14.190 **Section A5.303.5** Dual Plumbing and use of recycled water for toilet and urinal flushing is required for all building projects in geographic areas within the boundaries of a recycled water project area when the building area is greater than 10,000 square feet or where installation of 25 or more toilets and urinals is proposed. All projects not within the boundaries of a recycled water project area must install dual plumbing for use of recycled water for toilet and urinal flushing when the building area exceeds 100,000 square feet or where installation of 100 or more toilets and urinals is proposed.

16.14.200 Tenant improvements, renovations, or alterations of 5,000 square feet that include replacement or alteration of at least two of the following: HVAC system, building envelope, hot water system, or lighting system must comply with Mandatory California Green Building Standards Code plus Tier 1 requirements, as applicable to the scope of work.

16.14.210 **Section A5.304.4.1** Potable Water Reduction Tier 1 is adopted and applies to all nonresidential and multi-family residential tenant improvement and renovation construction projects when a landscape area greater than 1,000 square feet is included in the project scope. Documentation is required to demonstrate the Estimated Total Water Use (ETWU) falls within a Maximum Applied Water Allowance (MAWA) using the appropriate evapotranspiration adjustment factor (ETAF) designated by the prescribed potable water reduction tier.

16.14.220 Section A5.304.4.2 Potable Water Reduction Tier 2 is adopted and applies to all nonresidential and multi-family residential new construction projects when a landscape of any size is included in the project scope. Documentation is required to demonstrate the Estimated Total Water Use (ETWU) falls within a Maximum Applied Water Allowance (MAWA) using the appropriate evapotranspiration adjustment factor (ETAF) designated by the prescribed potable water reduction tier.

16.14.230 Section A5.305.2 Recycled water infrastructure for irrigation systems is adopted and applies to all projects in geographic areas within the boundaries of a recycled water project area. All projects not within the boundaries of a recycled water project area must install recycled water infrastructure for irrigation when the landscape area exceeds 1,000 square feet. Dedicated irrigation meters are to be installed in all new construction and rehabilitated landscapes when the landscape is greater than 1,000 square feet.

16.14.240 Section A5.408.3.1.1 Enhanced Construction Waste Reduction - Tier 2 is adopted and applies to all nonresidential construction, including both renovations and new construction, as long as the construction has a valuation exceeding $25,000.

16.14.250 All nonresidential projects exceeding $100,000 valuation must acquire an Energy STAR Portfolio Manager Rating and submit the rating to the City of Palo Alto once the project has been occupied after 12 months.

16.14.260 Section A5.105.1.3 Salvage is adopted and applies to demolition of all nonresidential projects.

16.14.270 Section A5.408.3.1.1 Enhanced Construction Waste Reduction - Tier 2 is adopted and applies to all nonresidential demolition.

16.14.280 Section 5.106.2 Local storm water pollution prevention. Section 5.106.2 is added to the California Green Building Standards Code to read:

> **Section 5.106.2 Local storm water pollution prevention.** Comply with additional storm water pollution prevention measures as applicable. (See Chapter 16.11, Storm water Pollution Prevention, of the Palo Alto Municipal Code.)

16.14.290 Section 5.304.3.2 Irrigation efficiency; Sections 5.304.3.2 is added to the California Green Building Standards Code to read:

> **5.304.3.2 Irrigation efficiency.** The irrigation system must meet an efficiency level of 71%, and subsurface and/or low volume irrigation must be used in all areas that exhibit any of these characteristics: less than 8 feet in width, with a slope greater than 25%, setback area within 24 inches of a non-permeable surface.

16.14.300 Section 5.304.3.3 Water waste; Sections 5.304.3.2 is added to the California Green Building Standards Code to read:

5.304.3.3 Water waste. The irrigation system must be designed and installed to prevent water waste due to overspray, low head drainage, or other conditions where water flows onto adjacent property, non-irrigated areas, walks, roadways, parking lots, or structures.

16.14.310 Irrigation scheduling. Overhead irrigation shall be scheduled between 8:00 p.m. and 10:00 a.m. unless weather conditions prevent it. Operation of the irrigation system outside the normal watering window is allowed for auditing and system maintenance. Total annual applied water shall be less than or equal to Maximum Applied Water Allowance (MAWA) as calculated per the potable water use reduction tier.

16.14.320 Section A5.105.1.3 Salvage. Section A5.105.1.3 of the California Green Building Standards Code is amended to read:

A5.105.1.3 Salvage. Salvage structural and non-structural items in good condition such as wood, light fixtures, plumbing fixtures, and doors as follows. Document the weight and number of the items salvaged.

1. Salvage for reuse on the project items that conform to other provisions of Title 24 in an onsite storage area.

2. Nonconforming items may be salvaged in dedicated collection bins for exempt projects or other uses.

16.14.330 Section A5.304.4 Potable water reduction. Section A5.304.4 of the California Green Building Standards Code is amended to read:

A5.304.4 Potable water reduction. Provide water efficient landscape irrigation design that reduces the use of potable water beyond the initial requirements for plant installation and establishment in accordance with Section A5.304.4.1 or A5.304.4.2. Calculations for the reduction shall be based on the water budget developed pursuant to section 5.304.1.

A5.304.4.1 Do not install invasive plant species.

16.14.340 Section A5.601.3.4 Voluntary measures for California Green Building Standards Code Tier 2. Sub-section 4 of Section A5.601.3.4 of the California Green Building Standards Code is amended to read:

4. From Division A5.5,

c) Comply with four elective measures selected from this division.

16.14.350 Performance Reviews -- Energy

All projects over 10,000 square feet. The City reserves the right to conduct a performance review, no more frequently than once every five years unless a project fails review, to evaluate

the building's energy use to ensure that resources used at the building and/or site do not exceed the maximum allowance set forth in the rehabilitation or new construction design. Energy use reviews may be initiated by the Building Division or as a coordinated effort between the City's Utilities Department and/or its designated contractors. Following the findings and recommendations of the review, the City may require adjustments to the energy usage or energy-using equipment or systems if the building is no longer compliant with the original design. Renovation or rehabilitation resulting from such audit activity shall be considered a project, and shall be subject to applicable documentation submittal requirements of the City. This section is effective only for those projects for which a building permit was issued after 01/01/2009.

16.14.360 Performance Reviews -- Water Use

All sites greater than one acre. The City reserves the right to conduct performance reviews, no more frequently than once every five years unless a project fails review, to evaluate water use to ensure that resources used at the building and/or site do not exceed a maximum allowance set forth in the rehabilitation or new construction design. Water use reviews may be initiated by the Building Division, or as a coordinated effort between the City's Utilities Department and the Santa Clara Valley Water District (SCVWD), or as part of SCVWD's established water conservation programs. Following the findings and recommendations of the review, the City may require adjustments to irrigation usage, irrigation hardware, and/or landscape materials to reduce consumption and improve efficiency. Renovation or rehabilitation resulting from such audit activity shall be considered a project, and shall be subject to applicable documentation submittal requirements of the City.

SECTION 2. The Council adopts the findings for local amendments to the California Green Building Standards Code, 2010 Edition, attached hereto as Exhibit "A" and incorporated herein by reference.

SECTION 3. The Council finds that this project is exempt from the provisions of the California Environmental Quality Act ("CEQA"), pursuant to Section 15061 of the CEQA Guidelines, because it can be seen with certainty that there is no possibility that the amendments herein adopted will have a significant effect on the environment.

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SECTION 4. This ordinance shall be effective on the thirty-first day after the date of its adoption.

INTRODUCED: October 21, 2013

PASSED: November 18, 2013

AYES: BERMAN, BURT, HOLMAN, KLEIN, KNISS, PRICE, SCHARFF, SCHMID, SHEPHERD

NOES:

ABSENT:

ABSTENTIONS:

ATTEST:

for City Clerk

Mayor

APPROVED AS TO FORM:

For City Attorney

APPROVED:

City Manager

Director of Development Services

Director of Administrative Services

Exhibit A

FINDINGS FOR LOCAL AMENDMENTS TO
CALIFORNIA GREEN BUILDING STANDARD CODE, 2010 EDITION

Section 17958 of the California Health and Safety Code provides that the City may make changes to the provisions in the uniform codes that are published in 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 in the uniform codes and published in 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.

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, including amendments made only for administrative consistency, do not require findings.

Code: Cal Green					
Section	**Title**	**Add**	**Deleted**	**Amended**	**Justification (See below for keys)**
303.1.2	Cumulative Construction	✓			C & E
5.106.2	Local Storm Water Pollution Prevention	✓			C
5.304.3.2	Irrigation Efficiency	✓			C
5.304.3.3	Water Waste	✓			C
A4.105	Deconstruction and Reuse of Existing Materials	✓			C & E
A4.408	Construction Waste Reduction, Disposal and Recycling.	✓			E
Appendix 5	Non-Residential Voluntary Measures	✓		✓	C & E

Key to Justification for Amendments to Title 24 of the California Code of Regulations

C This amendment is justified on the basis of a local **climatic** condition. The seasonal climatic conditions during the late summer and fall create severe fire hazards to the public health and welfare in the City. The hot, dry weather frequently results in wild land fires on the brush covered slopes west of Interstate 280. The aforementioned conditions combined with the geological characteristics of the hills within the City create hazardous conditions for which departure from California Building Standards Code is required.
Failure to address and significantly reduce greenhouse gas (GHG) emissions could result in rises in sea level, including in San Francisco Bay, that could put at risk Palo Alto homes and businesses, public facilities, and Highway 101 (Bayshore Freeway), particularly the mapped Flood Hazard areas of the City. Energy efficiency is a key component in reducing GHG emissions, and construction of more energy efficient buildings can help Palo Alto reduce its share of the GHG emissions that contribute to climate change. The burning of fossil fuels used in the generation of electric power and heating of buildings contributes to climate change, which could result in rises in sea level, including in San Francisco Bay, that could put at risk Palo Alto homes and businesses 1 public facilities, and Highway 101. Due to decrease in annual rain fall, Palo Alto experiences the effect of drought and water saving more than some other communities in California.

E Green building enhances the public health and welfare by promoting the **environmental** and economic health of the City through the design, construction, maintenance, operation and deconstruction of buildings and sites by incorporating green practices into all development. The green provisions in this Chapter are designed to achieve the following goals:
(a) Increase energy efficiency in buildings;
(b) Increase water and resource conservation;
(c) Reduce waste generated by construction and demolition projects;
(d) Provide durable buildings that are efficient and economical to own and operate;
(e) Promote the health and productivity of residents, workers, and visitors to the city;
(f) Recognize and conserve the energy embodied in existing buildings;
(g) Encourage alternative transportation; and
(h) Reduce disturbance of natural ecosystems.

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

T The City of Palo Alto **topography** includes hillsides with narrow and winding access, which makes timely response by fire suppression vehicles difficult. Palo Alto is contiguous with the San Francisco Bay, resulting in a natural receptor for storm and waste water run-off. Also the

City of Palo Alto is located in an area that is potentially susceptible to liquefaction during a major earthquake. The surface condition consists mostly of stiff to dense sandy clay, which is highly plastic and expansive in nature. The aforementioned conditions within the City create hazardous conditions for which departure from California Building Standards Code is warranted.

Ordinance No. 5221
Ordinance of the Council of the City of Palo Alto Repealing Chapter 16.16 of the Palo Alto Municipal Code And Amending Title 16 to Adopt a New Chapter 16.16, California Electrical Code, 2013 Edition, and Local Amendments and Related Findings

The Council of the City of Palo Alto does ORDAIN as follows:

SECTION 1. Chapter 16.16 of the Palo Alto Municipal Code is hereby amended by repealing in its entirety 16.16 and adopting a new Chapter 16.16 to read as follows:

16.16 CALIFORNIA ELECTRICAL CODE

16.16.010 2013 California Electrical Code adopted.

The California Electrical Code, 2013 Edition, Title 24, Part 4 of the California Code of Regulations together with those omissions, amendments, exceptions and additions thereto, is adopted and hereby incorporated in this Chapter by reference and made a part hereof the same as if fully set forth herein.

Unless superseded and expressly repealed, references in City of Palo Alto forms, documents and regulations to the chapters and sections of the former California Code of Regulations, Title 24, 2010, shall be construed to apply to the corresponding provisions contained within the California Code of Regulations, Title 24, 2013. Ordinance No. 5103 of the City of Palo Alto and all other ordinances or parts of ordinances in conflict herewith are hereby suspended and expressly repealed.

Wherever the phrases "California Electrical Code" or "Electrical Code" are used in this code or any ordinance of the City, such phrases shall be deemed and construed to refer and apply to the California Electrical Code, 2013 Edition, as adopted by this Chapter.

One copy of the California Electrical Code, 2013 edition, has been filed for use and examination of the public in the Office of the Building Official of the City of Palo Alto.

16.16.020 2013 California Electrical Code Annex Chapters adopted.

The following Annex Chapters of the California Electrical Code, 2013 Edition, are adopted and hereby incorporated in this Chapter by reference and made a part hereof the same as if fully set forth herein:

A. Annex B – Application Information for Ampacity Calculations
B. Annex C – Conduit and Tubing Fill Tables for Conductors and Fixture Wires of the Same Size
C. Annex I – Unit Recommended Tightening Torque Tables from UL Standard 486A-B

16.16.030 Cross - References to California Electrical Code.

The provisions of this Chapter contain cross-references to the provisions of the California Electrical Code, 2013 Edition, in order to facilitate reference and comparison to those provisions.

16.16.040 Section 89.102.2.3 Third Part Field Evaluation. Section 89.102.2.3 is added to read:

89.102.2.3. Third-Party Field Evaluation. City of Palo Alto approved applications for Third-Party Field Evaluators shall be submitted for each project submitting evaluation reports on Electrical Systems and others as required for these types of reports. Educational background, training experience, professional licenses, registrations or certificates, and other applicable qualifications for each key personnel shall include information as required and defined in NFPA 790 and 791 including but not limited to:

a. Technical Manager, direct Supervisor of FEB operations, and individual(s) managing the management system, minimum competency for personnel completing Field Evaluation projects, including educational background, experience, training, and professional registration.

b. Provide information on the basic evaluation process to the building official in determining the adequacy and completeness of submitted evaluations and evaluation reports.

16.16.050 Section 110.13 Mounting and Cooling of Equipment. Section 110.13 (A) (1) is added to read:

110.13 (A) (1) Slab-On-Grade Supporting Electrical Equipment. When electrical equipment is proposed to be installed, including temporary electrical for construction, in locations where the deleterious effects of the environment may create adverse maintenance issues with ground mounted electrical equipment a concrete slab-on-grade shall be installed to elevate, protect, and attach equipment to per City of Palo Alto Electrical Utilities Standards or approved engineering design.

16.16.060 Violations -- Penalties.

Any person, firm or corporation violating any provision of this chapter is guilty of a misdemeanor and upon conviction thereof shall be punished as provided in subsection (a) of Section 1.08.010 of this code. Each separate day or any portion thereof during which any violation of this chapter occurs or continues shall be deemed to constitute a separate offense, and upon conviction thereof shall be punishable as provided in this section.

16.16.070 Enforcement -- Citation authority.

The employee positions designated in this section may enforce the provisions of this chapter by the issuance of citations; persons employed in such positions are authorized to exercise the authority provided in Penal Code section 836.5 and are authorized to issue citations for violations of this chapter. The designated employee positions are: (1) chief building official; (2)

building inspection supervisor; and (3) code enforcement officer.

16.16.080 Local Amendments

The provisions of this Chapter shall constitute local amendments to the cross-referenced provisions of the California Electrical Code, 2013 Edition, and shall be deemed to replace the cross-referenced sections of said Code with the respective provisions set forth in this Chapter.

SECTION 2. The Council adopts the findings for local amendments to the California Electrical Code, 2013Edition, attached hereto as Exhibit "A" and incorporated herein by reference.

SECTION 3. The Council finds that this project is exempt from the provisions of the California Environmental Quality Act ("CEQA"), pursuant to Section 15061 of the CEQA Guidelines, because it can be seen with certainty that there is no possibility that the amendments herein adopted will have a significant effect on the environment.

SECTION 4. This ordinance shall be effective on the commencement of the thirty-first day after the date of its adoption.

INTRODUCED: October 21, 2013

PASSED: November 18, 2013

AYES: BERMAN, BURT, HOLMAN, KLEIN, KNISS, PRICE, SCHARFF, SCHMID, SHEPHERD

NOES:

ABSENT:

ABSTENTIONS:

ATTEST:

for City Clerk

Mayor

APPROVED AS TO FORM:

For City Attorney

APPROVED:

City Manager

Director of Development Services

Director of Administrative Services

Exhibit A
FINDINGS FOR LOCAL AMENDMENTS
TO CALIFORNIA ELECTRICAL CODE, 2013

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.

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.

Code: CEC			
Section	**Title**	**Add**	**Justification (See below for keys)**
110.13 (A)	Mounting and Cooling of Equipment	✓	**C**
Annex B	Application Information for Ampacity Calculations	✓	**G**
Annex C	Conduit and Tubing Fill Tables for Conductors and Fixture Wires of the Same Size	✓	**G**
Annex I	Unit Recommended Tightening Torque Tables from UL Standard 486A-B	✓	**G**

Key to Justification for Amendments to Title 24 of the California Code of Regulations

C This amendment is justified on the basis of a local **climatic** condition. The seasonal climatic conditions during the late summer and fall create severe fire hazards to the public health and welfare in the City. The hot, dry weather frequently results in wild land fires on the brush covered slopes west of Interstate 280. The aforementioned conditions combined with the geological characteristics of the hills within the City create hazardous conditions for which departure from California Building Standards Code is required.

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

T The City of Palo Alto **topography** includes hillsides with narrow and winding access, which makes timely response by fire suppression vehicles difficult. Palo Alto is contiguous with the San Francisco Bay, resulting in a natural receptor for storm and waste water run-off. Also the City of Palo Alto is located in an area that is potentially susceptible to liquefaction during a major earthquake. The surface condition consists mostly of stiff to dense sandy clay, which is highly plastic and expansive in nature. The aforementioned conditions within the City create hazardous conditions for which departure from California Building Standards Code is warranted.

Ordinance No. 5223
Adoption of an Ordinance Repealing and Reenacting Title 15 of the Palo Alto Municipal Code to Adopt the 2012 Edition of the International Fire Code, as Amended By the State of California, Also Known as the 2013 Edition of the California Fire Code, With Local Amendments and Related Findings (Chapter 15 of the Palo Alto Municipal Code)

The Council of the City of Palo Alto does ORDAIN as follows:

SECTION 1. Title 15 of the Palo Alto Municipal Code is hereby amended by repealing in its entirety Title 15 and enacting a new Title 15 to read as follows:

15.04 CALIFORNIA FIRE CODE

15.04.010 Adoption of the California Fire Code.

The California Fire Code, 2013 Edition, as adopted by the California Code of Regulations Title 24, Part 9, and Appendices B, C, D, F, and K is adopted as herein amended. One copy of the California Fire Code is on file and open to public inspection in the Office of the City Clerk. Additional copies of the secondary codes set forth within the California Fire Code, and the amendments set forth in this chapter, are on file and open to public inspection in the fire department administrative office.

Whenever the phrase "California Fire Code" appears in this code or in any ordinance of the city, such phrase shall be deemed and construed to refer to and apply to the "California Fire Code, 2013 Edition" as adopted by the California Code of Regulations Title 24, Part 9 and this chapter.

15.04.015 Section 102.5 amended – Application of residential code.
Section 102.5 of the California Fire Code is amended to read as follows:

> **102.5 Application of residential code.** Where structures are designed and constructed in accordance with the *California Residential Code*, the provisions of this code shall apply as follows:
>
> 1. Construction and design provisions: Provisions of this code pertaining to the exterior of the structure shall apply including, but not limited to, premises identification, fire apparatus access and water supplies. Provisions of this code pertaining to the interior of the structure shall apply when specifically required by this code including, but not limited to, Sections 903.2 through 903.3.7 and Section 907.2.10. Where interior or exterior systems or devices are installed, construction permits required by Section 105.7 of this code shall also apply.

2. Administrative, operational and maintenance provisions: all such provisions of this code shall apply.

15.04.017 Section 103.2 deleted.
Section 103.2 of the California Fire Code is deleted.

15.04.020 Sections 105.3.9 and 105.3.10 added- Permits/Permit fees.
Sections 105.3.9 and 105.3.10 are added to the California Fire Code to read as follows:

105.3.9 Permits/Permit fees. All permit fees shall be established by the City Council as set forth in the municipal fee schedule.

105.3.10 Operational Permits. Operational permits are valid for one year at which time they must be renewed by paying a fee specified in the municipal fee schedule.

15.04.030 Table 105.6.8 amended- Permit amounts for compressed gases.
Table 105.6.8 of the California Fire Code is amended to read as follows:

TABLE
105.6.8
PERMIT AMOUNTS FOR COMPRESSED GASES[1]

TYPE OF GAS	AMOUNT(cubic feet)[2] X 0.0283 for m^3
Corrosive	200
Flammable (except cryogenic and liquefied petroleum gases)	200
Highly toxic	Any amount
Inert and simple asphyxiant	6,000
Irritant	200
Moderately toxic	20
Other health hazards	650
Oxidizing (including oxygen)	504
Pyrophoric	Any amount
Radioactive	Any amount
Sensitizer	200
Toxic	Any Amount
Unstable (reactive)	Any amount

For SI: 1 cubic foot = 0.02832m^3.
[1] Refer to Chapters 27, 30, 32, 35, 37, 40 and 41 for additional requirements and exceptions.
[2] Cubic feet measured at normal Temperature and pressure.

15.04.040 Table 105.6.20 amended - Permit amounts for hazardous materials.

Table 105.6.20 of the California Fire Code is amended to read as follows:

TABLE
105.6.20
PERMIT AMOUNTS FOR HAZARDOUS MATERIALS[1]

TYPE OF MATERIAL	*AMOUNT*
Carcinogens	10 pounds
Combustible liquids	See Section 105.6.16
Corrosive materials:	
Gases	See Section 105.6.8
Liquids	55 gallons
Solids	500 pounds
Cryogens	See Section 105.6.10
Explosive materials	See Section 105.6.14
Flammable materials:	
Gases	See Section 105.6.8
Liquids	See Section 105.6.16
Solids	10 pounds
Highly toxic materials:	
Gases	Any amount
Liquids	Any amount
Solids	Any amount
Moderately toxic gas	20 cubic feet
Organic peroxides:	
Liquids: Class I-IV	Any Amount
Liquids: Class V	No Permit Required
Solids: Class I-IV	Any Amount
Solids: Class V	No Permit Required
Oxidizing materials:	
Gases	504 Cubic Feet
Liquids	Any amount
Solids:	Any amount
Other health	
Hazards:	55 gallons
Liquids	500 pounds
Pyrophoric materials:	
Gases	Any amount
Liquids	Any amount
Solids	Any amount
Radioactive materials:	
Gases	Any Amount
Liquids	See Section 105.6.47
Solids	See Section 105.6.47

Toxic materials:	
Gases	Any amount
Liquids	Any amount
Solids	Any amount
Unstable (reactive) materials:	
Gases	Any amount
Liquids	Any amount
Solids	Any amount
Water reactive	
materials: Liquids	Any amount
Solids	Any amount

For SI: 1 gallon = 3.785 L, 1 pound = 0.454kg.

a. 20 gallons when Table 2703.1.1(1) Note k applies and hazard identification signs in accordance with Section 2703.5 are provided for quantities of 20 gallons or less.

b. 200 pounds when Table 2703.1.1(1) Note k applies and hazard identification signs in accordance with Section 2703.5 are provided for quantities of 200 pounds or less.

15.04.050 Sections 105.6.48 and 105.6.49 added – Permits required.

Sections 105.6.48 and 105.6.49 are added to the California Fire Code to read as follows:

105.6.48 Radioactive materials. To store or handle at any installation more than one microcurie (37,000 becquerel) of radioactive material not contained in a sealed source or more than 1 millicurie (37,000,000 becquerel) of radioactive material in a sealed source or sources, or any amount of radioactive material for which a specific licenses from the Nuclear Regulatory Commission is required.

105.6.49 Day Care Permit. To operate a day care facility for more than six children or adults.

15.04.060 Sections 105.7.15 and 105.7.15 added.

Sections 105.7.15 and 105.7.16 are added to the California Fire Code to read as follows:

105.7.14 Cryogenic fluids. Except where federal or state regulations apply and except for fuel systems of the vehicle, to produce, store or handle cryogens in excess of the amounts listed in Table 105.6.10, to install a cryogenic vessel or piping system for the storage or distribution of cryogens. See Chapter 32.

105.7.15 Underground Fire Service Lines, installation or modification.

15.04.070 Sections 105.8.1 and 105.8.2 added – Fire and life safety.

Subsections 105.8.1 and 105.8.2 are added to the California Fire Code to read as follows:

105.8.1 Fire and life-safety plan review. Fire and life-safety plan review of all new construction, all remodels, and all additions shall be performed by the Fire Chief or his designee.

105.8.2 Site Map and Floor plans. The Fire Chief or fire code official may require as a condition of final permit approval, a site map including the use of standard or approved Palo Alto Fire Department symbols. Features would include interior floor plans, on-site hydrant locations, FDC locations, key safe locations, alarm panel locations, electrical panel locations, stairwell and elevator locations, water shut off locations, hazardous materials locations, and other significant design elements or fire service features. The site map is to be provided in a format compatible with the City's Geographic Information System (GIS) at time of construction. This requirement applies to newly constructed buildings, facilities where hazardous materials are used or stored in quantities exceeding permit amounts in Section 105, additions or permitted remodels when in the opinion of the fire code official a site map is warranted.

15.04.080 Section 105.9 added – Certified Unified Program Agency Fees.

Section 105.9 is added to the California Fire Code to read as follows:

105.9 Certified Unified Program Agency (CUPA) Fees. Pursuant to the Participating Agency Agreement between the County of Santa Clara and the City of Palo Alto dated July 1, 1997, or as amended, the Fire Department is authorized to collect fees associated with the CUPA programs. The CUPA fees will be collected on an annual basis or as specified in the Palo Alto Fire Department Fee Schedule.

15.04.090 Section 106.1 amended – Inspection authority.

Section 106.1 of the California Fire Code is amended to read as follows:

106.1 Inspection authority. The fire code official is authorized to inspect, as often as necessary, buildings and premises, including such other hazards or appliances designated by the fire code official for the purposes of ascertaining and causing to be corrected any conditions which would reasonably tend to cause fire or contribute to its spread, result in an unauthorized discharge of hazardous materials, or any violation of this code or any other law or standard affecting fire and life safety.

15.04.100 Section 109.1.2 added - Enforcement/citation authority.

Section 109.1.2 is added to the California Fire Code to read as follows:

109.1.2 Enforcement/citation authority. The following designated employee positions may enforce the provisions of this chapter by the issuance of citations. Persons employed in such positions are authorized to exercise the authority provided in Penal Code Section 836.5 and are authorized to issue citations for violations of this chapter. The designated employee positions are: Fire Chief, Deputy Fire Chief, Fire Marshal, Fire Inspector, Hazardous Materials Specialist and Hazardous Materials Inspector.

15.04.110 Section 109.3 amended – violations and penalties.

Section 109.3 of the California Fire Code is amended to read as follows:

> Any person, firm or corporation violating any provision of this Title 15 shall be deemed guilty of a misdemeanor and upon conviction thereof shall be punished as provided in subsection (a) of Section 1.08.010 of the Palo Alto Municipal Code. Each separate day or any portion thereof during which any violation of the fire code occurs or continues shall be deemed to constitute a separate offense, and upon conviction thereof shall be punishable as herein provided.

15.04.120 Definitions added to section 202- "Device" and "Workstation."

The following definitions are added to Section 202 of the California Fire Code to read as follows:

> **DEVICE.** Device is, for the purpose of Exhibit "A," an appliance or piece of equipment that plays an active part in the proper functioning of the regulated systems. Examples include, but are not limited to the following: smoke detectors, heat detectors, flame detectors, manual pull stations, horns, alarms, bells, warning lights, hydrants, risers, FDCs, standpipes, strobes, control panels, transponders, and other such equipment used to detect, transmit, initiate, annunciate, alarm, or respond according to the system design criteria.
>
> **WORKSTATION** is a defined space or independent principal piece of equipment using hazardous materials where a specific function, laboratory procedure or research activity occurs. Approved or listed hazardous materials storage cabinets, flammable liquid storage cabinets or gas cabinets serving a workstation are included as part of the workstation. A workstation is allowed to contain ventilation equipment, fire protection devices, electrical devices, and other processing and scientific equipment.
>
> **CONTINUOUS GAS DETECTION SYSTEM.** An gas detection system where the analytical instrument is maintained in continuous operation and sampling is performed without interruption. Analysis is allowed to be performed on a cyclical basis at intervals not to exceed 30 minutes. In occupied areas where air is re-circulated and not exhausted to a treatment system (e.g. breathing zone), the fire code official may require a cyclical basis at intervals not to exceed 5 minutes. The gas detection system shall be able to detect the presence of a gas at or below the permissible exposure limit in occupiable areas and at or below ½ IDLH (or 0.05 LC 50 if no established IDLH) in unoccupiable areas.
>
> **CORROSIVE LIQUID.** Corrosive liquid is any liquid which, when in contact with living tissue, will cause destruction or irreversible alteration of such tissue by chemical action;
>
> 1) any liquid having a pH of 2 or less or 12.5 or more;
> 2) any liquid classified as corrosive by the U.S. Department of Transportation; and

3) any material exhibiting the characteristics of corrosivity in accordance with Title 22, California Code of Regulations §66261.22.

MODERATELY TOXIC GAS. A chemical or substance that has a median lethal concentration (LC50) in air more than 2000 parts per million but not more than 5000 parts per million by volume of gas or vapor, when administered by continuous inhalation for an hour, or less if death occurs within one hour, to albino rats weighing between 200 and 300 grams each.

MAXIMUM THRESHOLD QUANTITY (MAX TQ). Maximum Threshold Quantity (Max TQ) is the maximum quantity of a moderately toxic or toxic gas, which may be stored in a single vessel before a more stringent category of regulation is applied. The following equation shall be used to calculate the Max TQ:

Max TQ (pounds) = LC50 (ppm) x 2 lb.

For gas mixtures containing one or more toxic, highly toxic or moderately toxic components, LC50 shall be calculated using CGA Standards P-20 and P-23 as referenced in Appendix E, Section 103.1.3.1

OTHER HEALTH HAZARD MATERIAL. A hazardous material which affects target organs of the body, including but not limited to, those materials which produce liver damage, kidney damage, damage to the nervous system, act on the blood to decrease hemoglobin function, deprive the body tissue of oxygen or affect reproductive capabilities, including mutations (chromosomal damage), sensitizers or teratogens (effect on fetuses).

SECONDARY CONTAINMENT. Secondary containment is that level of containment that is external to and separate from primary containment and is capable of safely and securely containing the material, without discharge, for a period of time reasonably necessary to ensure detection and remedy of the primary containment failure.

WILDLAND-URBAN INTERFACE FIRE AREA. A geographical area identified by the state as a "Fire Hazard Severity Zone" in accordance with the Public Resources Code Sections 4201 through 4204 and Government Code Sections 51175 through 51189, or other areas designated by the enforcing agency to be at a significant risk from wildfires. See Article 86B for the applicable referenced sections of the Government Code and the Public Resources Code. <u>The Wildland-Urban Interface Fire Area shall be defined as all areas within the City of Palo Alto as set forth and delineated on the map entitled "Wildland-Urban Interface Fire Area" which map and all notations, references, data and other information shown thereon are hereby adopted and made a part of this chapter. The map properly attested, shall be on file in the Office of the City Clerk of the City of Palo Alto</u>.

15.04.210 Section 605.12 added - Immersion Heaters.

Section 605.12 is added to the California Fire Code to read as follows:

605.12 Immersion Heaters. All electrical immersion heaters used in dip tanks, sinks, vats and similar operations shall be provided with approved over-temperature controls and low liquid level electrical disconnects. Manual reset of required protection devices shall be provided.

15.04.220 Section 608.6.1 added - Failure of Ventilation System.
Section 608.6.4 is added to the California Fire Code to read as follows:

608.6.1.1 Failure of Ventilation System. Failure of the ventilation system shall automatically disengage the charging system.

15.04.225 Definitions added to section 902.1- "Dual Sensor Photoelectric/Ionization Smoke Detector or Alarm," "Dual Sensor Carbon Monoxide and Smoke Detector or Alarm", "Ionization Smoke Detector or Alarm," and "Photoelectric Smoke Detector or Alarm."

The following definitions are added to Section 902.1 of the California Fire Code to read as follows:

DUAL SENSOR PHOTOELECTRIC/IONIZATION SMOKE DETECTOR OR ALARM. A smoke alarm or detector that utilizes both photoelectric and ionization methods in a single device.

DUAL SENSOR CARBON MONOXIDE AND SMOKE ALARM. A combination carbon monoxide and smoke alarm or detector that senses both smoke and CO in a single device.

IONIZATION SMOKE DETECTOR OR ALARM. A smoke alarm or detector that uses a small amount of radioactive material to detect invisible particles generated by flame.

PHOTOELECTRIC SMOKE DETECTOR OR ALARM. A smoke alarm or detector that uses a light-source to detect the presence of smoke.

15.04.230 Section 903.2 amended – Automatic Sprinkler Systems, Where Required.
Section 903.2 of the California Fire Code is amended to read as follows:

903.2 Automatic sprinkler systems, where required. Approved automatic sprinkler systems in new buildings and structures and in existing modified buildings and structures, shall be provided in the locations described in this section. Automatic fire sprinklers shall be installed per the requirements set forth in Sections 903.2.1 through 903.2.18 and as follows, <u>whichever is the more restrictive</u>:

1. An automatic sprinkler system shall be provided throughout all new buildings and structures.

Exception: New non-residential occupancies, buildings or structures that do not exceed 1,000 square feet of building area.

2. An automatic sprinkler system shall be provided for all existing buildings or structures where modifications have been determined by the Building Official to trigger requirements for seismic retrofit.

3. An automatic sprinkler system shall be provided throughout all existing buildings when modifications are made that create conditions described in Sections 903.2.1 through 903.2.18, or that create an increase in fire area to more than 4100 square feet or when the addition is equal or greater than 100% of the existing building square footage whichever is more restrictive.

4. An automatic sprinkler system shall be provided throughout all new basements regardless of size and throughout existing basements that are expanded by more than 50%. <u>If the addition is only the basement, then only the basement is required to be sprinklered</u>.

5. An automatic sprinkler system shall be provided throughout all new buildings located in the designated Wildland-Urban Interface areas. **Exception:** Any non-residential accessory structures to single family residences that have a fire area of 500 square feet or less.

6. An automatic sprinkler system shall be provided throughout all existing buildings located in the designated Wildland-Urban Interface areas when modifications are made that increases the fire area.

   Exception: One time additions to existing buildings made after January 1994 that do not exceed 500 square feet in fire area.

15.04.235 Amend Section 903.1.1.1 to read:

903.1.1.1 NFPA 13 sprinkler systems. Where the provisions of this code require that a building or portion thereof be equipped throughout with an automatic sprinkler system in accordance with this section, sprinklers shall be installed throughout in accordance with NFPA 13 and State and local requirements except as provided in Section 903.3.1.1.

1. <u>For new buildings having no designated use or tenant, the minimum sprinkler design density shall be Ordinary Hazard Group</u>

2. <u>Where future use or tenant is determined to require a higher density, the sprinkler system shall be augmented to meet the higher density.</u>

15.04.240 Section 903.3.1.2 amended – NFPA 13R sprinkler systems.

Section 903.3.1.2 of the California Fire Code is amended to read as follows:

903.3.1.2 NFPA 13R sprinkler systems. Where allowed in buildings of Group R, up to and including four stories in height , automatic sprinkler systems shall be

installed throughout in accordance with NFPA 13R and State and local standards.

15.04.245 Section 903.3.1.2.2 added – Attics and usable crawl spaces.

Section 903.3.1.2.2 is added to the California Fire Code to read as follows:

903.3.1.2.2 Attics and usable crawl spaces. Attics and usable under-floor spaces including crawl spaces shall be fully protected to residential or light hazard density as appropriate for the slope of the ceiling and configuration of framing.

15.04.250 Section 903.3.1.3 amended – NFPA 13D sprinkler systems.

Section 903.3.1.3 of the California Fire Code is amended to read as follows:

903.3.1.3 NFPA 13D sprinkler systems. Where allowed, automatic sprinkler systems installed in one-and two-family dwellings and townhouses shall be installed throughout in accordance with NFPA 13D and State and local standards.

15.04.255 Section 903.3.1.3.1 added - Garages and attics.

Section 903.3.1.3.1 is added to the California Fire Code to read as follows:

903.3.1.3.1 Garages and attics. Garages, including Group U occupancies, shall be fully protected with sprinklers designed for residential density calculated with four (4) sprinklers flowing. Attics shall be fully protected to residential density or light hazard as appropriate for the slope of ceiling and configuration n of framing.

Exception: Non-usable attics in one-and two-family dwellings not located in the Wildland Urban Interface area may be provided with an intermediate temperature pilot sprinkler above the attic scuttle and above any heat producing equipment in lieu of complete attic protection meeting the requirements above.

15.04.260 Section 903.3.7 amended - Fire department connections.

Section 903.3.7 of the California Fire Code is amended to read as follows:

903.3.7 Fire department connections. Sprinkler systems shall be equipped with a minimum two-way Siamese Fire Department connection. Connections shall be located on a street front not less than three (3) feet or more than four (4) feet above grade and shall be equipped with an approved straightway check valve. Locations shall be subject to approval by the Fire Chief prior to any installation.

Exception: Automatic sprinkler systems installed in accordance with the NFPA standards 13-D for one- and two-family dwellings in the designated Wildland-Urban Interface areas, and 13-R for multi-family dwellings throughout the City Palo Alto, may have a single 2-1/2-inch connection with approved straightway

check valve.

15.04.270 Section 903.4.3 amended - Floor control valves.
Section 903.4.3 of the California Fire Code is amended to read as follows:

903.4.3 Floor control valves. Automatic sprinkler systems serving buildings two (2) or more stories in height shall have valves installed so as to control the system independently on each floor including basements.
Exception: Buildings not over three (3) stories in height containing only R-3 occupancies, or with 10,000 square feet or less above the first story.

Floor control valves shall be protected from tampering by installation in lockable enclosures or as approved by the chief. Floor control valve assemblies shall be provided with a flow switch and drain connections.

15.04.275 Section 907.2.11 amended - Single- and multiple-station smoke alarms.
Section 907.2.11 of the California Fire Code is amended to read as follows:

907.2.11 Single- and multiple-station smoke alarms. Listed single- and multiple-station smoke alarms complying with UL217 shall be installed in accordance with Sections 907.2.11.1 through 907.2.11.5 and manufacturers installation and use instructions.

Smoke alarms more than 10 years old shall not be considered as satisfying any requirement of this code or subject to the provisions of the Health and Safety Code and shall be immediately replaced by the owner with a smoke alarm that complies with this section.

Smoke alarms and smoke detectors installed on or after January 1, 2014 in compliance with this code or subject to the provisions of the Health and Safety Code shall also either be listed and approved for enhanced nuisance resistance and rapid response to smoldering synthetic materials or shall meet the following requirements:

1. Smoke detectors or smoke alarms located within 20 feet of a kitchen, or a room containing a cooking appliance, wood burning fireplace or stove shall be photoelectric detectors or alarms.

2. In all other required locations dual sensor photoelectric/ionization detectors or alarms, shall be installed. A photoelectric smoke detector or alarm installed together with an ionization smoke detectors or alarms may be used as a substitute for a dual sensor photoelectric/ionization detector or alarm.
   Exception: For Group R occupancies. A fire alarm or other approved system with interconnected photoelectric smoke detectors or alarms located in accordance with, and meeting the requirements of, this section

may be installed. Upon the actuation of a smoke detector or alarm, only those notification appliances or alarms in the dwelling unit or guest room where the detector is actuated shall activate.

15.04.280 Section 3304.8 added - Fire Walls.

Section 3304.8 is added to the California Fire Code to read as follows:

3304.8 Fire Walls. When firewalls are required, the wall construction shall be completed (with all openings protected) immediately after the building is sufficiently weather-protected at the location of the wall(s).

15.04.290 Section 3311.1 amended - Stairways Required.

Section 1411.1 of the California Fire Code is amended to read as follows:

3311.1 Stairways Required. Each level above the first story in new multi-story buildings shall be provided with at least two usable exit stairways after the floor decking is installed. The stairways shall be continuous and discharge to grade level. Stairways serving more than two floor levels shall be enclosed (with openings adequately protected) after exterior walls/windows are in place. Exit stairs in new and in existing, occupied buildings shall be lighted and maintained clear of debris and construction materials at all times.
Exception: For new multi-story buildings, one of the required exit stairs may be obstructed on not more than two contiguous floor levels for the purposes of stairway construction (i.e., installation of gypsum board, painting, flooring, etc.).

15.04.295 Section 3311.1 added - Required Means Of Egress.

Section 1411.1.1 is added to the California Fire Code to read as follows:

3311.1 Required Means Of Egress. All new buildings under construction shall have a least one unobstructed means of egress. All means of egress shall be identified in the Fire Protection Plan.

15.04.300 Section 202 amended – Definition of "continuous gas detection system."

The definition of "Continuous Gas Detection System" in Section **202** of the California Fire Code is amended to read:

CONTINUOUS GAS DETECTION SYSTEM. An approved gas detection system where the analytical instrument is maintained in continuous operation and sampling is performed without interruption. Analysis is allowed to be performed on a cyclical basis at intervals not to exceed 30 minutes. In occupied areas where air is re-circulated and not exhausted to a treatment system (e.g. breathing zone), the Chief may require a cyclical basis at intervals not to exceed 5 minutes. The gas detection system shall be able to detect the presence of a gas at or below the permissible exposure limit in occupiable

areas and at or below ½ IDLH (or 0.05 LC 50 if no established IDLH) in unoccupiable areas.

15.04.320 Section 507 added - Fire Protection Water Supply System.

Section 507 is added to the California Fire Code to read as follows:

507.1.2 Fire Protection Water Supply System. An approved hydrant and hose system or portable fire-extinguishing equipment suitable for the fire hazards involved shall be provided for open storage yards and processing areas. Hydrant and hose systems shall be installed in accordance with NFPA 24.

15.04.325 Section 5001.2.1.1 added – Gas mixtures.

Section 5001.2.1.1 is added to the California Fire Code to read as follows:

Section 5001.2.1.1 Gas mixtures. For gas mixtures containing one or more toxic, highly toxic or moderately toxic components, LC50 shall be calculated using CGA Standards P-20 and P-23 as referenced in Appendix E, Section 103.1.3.1

15.04.330 Section 5001.2.2.2 amended - Health Hazards.

Section 2701.2.2.2 of the California Fire Code is amended to read as follows:

5001.2.2.2 Health Hazards. The material categories listed in this section are classified as health hazards. A material with a primary classification as a health hazard can also pose a physical hazard.

1. Highly toxic, toxic and moderately toxic.
2. Corrosive materials
3. Moderately toxic gas.
4. Other health hazards

15.04.335 Section 5001.5.2.1 added – HMIS Exemptions.

Section 2701.5.2.1 is added to the California Fire Code to read as follows:

Section 5001.5.2.1 HMIS Exemptions. The following hazardous materials uses are found to not represent a sufficient degree of hazard in of themselves to justify the filing of a HMMP or HMIS.

SMALL COMPRESSED GAS CYLINDER EXEMPTION

A facility using compressed gas cylinders containing any of the following hazardous materials used for the purpose specified and stored at each facility in quantities not exceeding the thresholds specified below shall be exempted from the requirements of Chapter 6.95 Section 25501 (p) of the California Health and Safety Code:

(a) Non refrigerated or non-cryogenic helium compressed gas in quantities of not more than 1000 cubic feet at standard temperature and pressure for the purpose of filling party balloons.

(b) Non-refrigerated or non-cryogenic carbon dioxide and nitrogen compressed gases used for carbonation of beverages and stored in quantities of not more than 6000 cubic feet at standard temperature and pressure.

(c) Refrigerated or cryogenic carbon dioxide compressed gas used for carbonation of beverages and stored in quantities of not more than 6000 cubic feet (116 gallons) at standard temperature and pressure.

SMALL PROPANE GAS TANK EXEMPTION

Commercial facilities, restaurants and RV hookup stations that handle 300 gallons or less of propane gas in stationary tanks outside of buildings used exclusively for heating, cooling, or cooking shall be exempted from the requirements of Chapter 6.95 Section 25501 (p) of the California Health and Safety Code. This exception does not include sites that dispense propane.

CLOSED COOLING SYSTEM EXEMPTION

Closed cooling systems containing group A1 refrigerants, including fluorocarbons, chlorocarbons and chlorofluorocarbons used for air conditioning and refrigeration shall be exempted from the requirements of chapter 6.95 Section 25501 (p) of the California Health and Safety Code.

CLOSED FIRE SUPPRESSION SYSTEM EXEMPTION

Closed fire suppression systems shall be exempted from the requirements of Chapter 6.95 Section 25501 (p) of the California Health and Safety Code.

COMPRESSED AIR EXEMPTION

Compressed air in cylinders and bottles shall be exempted from Chapter 6.95 Section 25501 (p) of the California Health and Safety Code.

15.04.340 Section 5002.1 amended – addition of definition of "secondary containment."
The following definition is added to section 5002.1 of the California Fire Code to read:

SECONDARY CONTAINMENT. Secondary containment is that level of containment that is external to and separate from primary containment and is capable of safely and securely containing the material, without discharge, for a period of time reasonably necessary to ensure detection and remedy of the primary containment failure.

15.04.350 Section 5003.1 amended – addition of definitions of "carcinogen," "other health hazard material," and "sensitizer."

The following definitions are added to section 5003.1 of the California Fire Code to read:

CARCINOGEN is a substance that causes the development of cancerous growths in living tissue. A chemical is considered a carcinogen if:

1. It has been evaluated by the International Agency for Research on Cancer and found to be a carcinogen or potential carcinogen, or
2. It is listed a s a carcinogen or potential carcinogen in the latest edition of the Annual Report on Carcinogens published by the National Toxicology program, or
3. It is regulated by OSHA as a carcinogen.

OTHER HEALTH HAZARD MATERIAL is a hazardous material which affects target organs of the body, including but not limited to, those materials which produce liver damage, kidney damage, damage to the nervous system, act the blood to decrease hemoglobin function, deprive the body tissue of oxygen or affect reproductive capabilities, including mutations (chromosomal damage) or teratogens (effect on fetuses).

SENSITIZER is a chemical that causes a substantial proportion of exposed people or animals to develop an allergic reaction in normal tissue after repeated exposure to the chemical.

15.04.352 Section 5003.1.3.1 added - Toxic, Highly Toxic, Moderately Toxic gases and similarly used or handled materials.

Section 2703.1.3.1 is added to the California Fire Code to read as follows:

5003.1.3.1 Toxic, Highly Toxic, Moderately Toxic gases and similarly used or handled materials. The storage, use and handling of toxic, highly toxic and moderately toxic gases in amounts exceeding Table 60004.2 or 60004.3 shall be in accordance with this chapter and Chapter 60. Any toxic, highly toxic or moderately toxic material that is used or handled as a gas or vapor shall be in accordance with the requirements for toxic, highly toxic or moderately toxic gases.

15.04.354 Section 5003.1.5 added - Secondary Containment Requirements.

Section 5003.1.5 is added to the California Fire Code to read as follows:

5003.1.5 Other Health Hazards Including Carcinogens, Irritants and Sensitizers. The storage, use and handling of materials classified as other health hazards including carcinogens, irritants and sensitizers in amounts exceeding 810 cubic feet for gases, 55 gallons for liquids and 5,000 pounds for solids shall be in accordance with this Section 5003.

15.04.356 Section 5003.1.6 added - Secondary Containment Requirements.

Section 2703.1.6 is added to the California Fire Code to read as follows:

5003.1.6 Secondary Containment Requirements. A containment system shall be required for all hazardous materials, which are liquids or solids at normal temperature, and pressure (NTP) where a spill is determined to be a plausible event and where such an event would endanger, people, property or the environment. Construction shall be substantial, capable of safely and securely containing a sudden release without discharge. Design criteria shall be performance oriented and constructed of physically and chemically compatible materials to resist degradation and provide structural and functional integrity for a period of time reasonably necessary to ensure detection, mitigation, and repair of the primary system. Regardless of quantities, spill control and secondary containment shall also comply with Section 5004.2.

15.04.358 Section 5003.1.6 added – Other health hazards.

Section 5003.1.6 is added to the California Fire Code to read as follows:

> **5003.1.6 Other Health Hazards Including Carcinogens, Irritants and Sensitizers.** The storage, use and handling of materials classified as other health hazards including carcinogens, irritants and sensitizers in amounts exceeding 810 cubic feet for gases, 55 gallons for liquids and 5,000 pounds for solids shall be in accordance with this chapter.

15.04.360 Section 5003.2.2.1 amended - Design and Construction.

Section 2703.2.2.1 of the California Fire Code is amended to read as follows:

> **5003.2.2.1 Design and Construction.** Piping, tubing, valves, fittings and related components used for hazardous materials shall be in accordance with the following:

1. Piping, tubing, valves, fittings and related components shall be designed and fabricated from materials compatible with the material to be contained and shall be of adequate strength and durability to withstand the pressure, structural and seismic stress, and exposure to which they are subject.
2. Piping and tubing shall be identified in accordance with ASME A13.1 and the Santa Clara County Fire Chiefs Marking Requirements and Guidelines for Hazardous Materials and Hazardous Waste to indicate the material conveyed.
3. Readily accessible manual valves or automatic remotely activated fail-safe emergency shutoff valves shall be installed on supply piping and tubing at the following locations:
   a. The point of use.
   b. The tank, cylinder or bulk use.
4. Manual emergency shutoff valves and controls for remotely activated emergency shutoff valves shall be identified and the location shall be clearly visible accessible and indicated by means of a sign.
5. Backflow prevention or check valves shall be provided when the backflow of hazardous materials could create a hazardous condition or cause the unauthorized discharge of hazardous materials.
6. Where gases or liquids having a hazard ranking of: Health hazard Class 3 or 4

Flammability Class 3 or 4 Reactivity Class 4 in accordance with NFPA 704 are carried in pressurized piping above 15 pounds per square inch gauge (psig)(103 Kpa), an approved means of leak detection, emergency shutoff and excess flow control shall be provided. Where the piping originates from within a hazardous material storage room or area, the excess flow control shall be located within the storage room or area. Where the piping originates from a bulk source, the excess flow control shall be located as close to the bulk source as practical.

Exceptions:

1. Piping for inlet connections designed to prevent backflow.
2. Piping for pressure relief devices.

7. Secondary containment or equivalent protection from spills shall be provided for piping for liquid hazardous materials and for highly toxic and toxic corrosive gases above threshold quantities listed in Tables 6004.2 and 6004.3. Secondary containment includes, but is not limited to double walled piping.

   Exceptions:

   1. Secondary containment is not required for toxic corrosive gases if the piping is constructed of inert materials.
   2. Piping under sub-atmospheric conditions if the piping is equipped with an alarm and fail-safe-to-close valve activated by a loss of vacuum.

8. Expansion chambers shall be provided between valves whenever the regulated gas may be subjected to thermal expansion. Chambers shall be sized to provide protection for piping and instrumentation and to accommodate the expansion of regulated materials.

15.04.361 Section 5003.2.2.2 amended - Additional Regulation for Supply Piping for Health Hazard Materials.

Section 2703.2.2.2 of the California Fire Code is amended to read as follows:

5003.2.2.2 Additional Regulation for Supply Piping for Health Hazard Materials. Supply piping and tubing for gases and liquids having a health hazard ranking of 3 or 4 in accordance with ASME B31.3 and the following:

1. Piping and tubing utilized for the transmission of toxic, highly toxic, or highly volatile corrosive liquids and gases shall have welded or brazed connections throughout except for connections within an exhausted enclosure if the material is a gas, or an approved method of drainage or containment is provided for connections if the material is a liquid.
2. Piping and tubing shall not be located within corridors, within any portion of a means of egress required to be enclosed in fire-resistance-rated construction or in concealed spaces in areas not classified as Group H Occupancies.

   Exception: Piping and tubing within the space defined by the walls of corridors and the floor or roof above or in concealed space above other occupancies when installed in accordance with Section 415.8.6.3 of the California Building Code as required for Group H, Division 5 Occupancies.
3. All primary piping for toxic, highly toxic and moderately toxic gases shall pass a helium leak test of 1x10-9 cubic centimeters/second where practical, or shall

pass testing in accordance with an approved, nationally recognized standard. Tests shall be conducted by a qualified "third party" not involved with the construction of the piping and control systems.

15.04.370 Section 5003.3.1 amended - Unauthorized Discharges.

Section 2703.3.1 of the California Fire Code is amended to read as follows:

5003.3.1 Unauthorized Discharges. When hazardous materials are released in quantities reportable under state, federal or local regulations or when there is a threatened release that presents a threat to health, property or the environment, the fire code official shall be notified immediately in an approved manner and the following procedures required in accordance with Sections 5003.3.1.1 through 5003.3.1.4.

15.04.380 Section 5003.5.2 added - Ventilation Ducting.

Section 5003.5.2 is added to the California Fire Code to read as follows:

5003.5.2 Ventilation Ducting. Product conveying ducts for venting hazardous materials operations shall be labeled with the hazard class of the material being vented and the direction of flow.

15.04.381 Section 5003.5.3 added - "H" Occupancies.

Section 2703.5.4 is added to the California Fire Code to read as follows:

5003.5.3 "H" Occupancies. In "H" occupancies, all piping and tubing may be required to be identified when there is any possibility of confusion with hazardous materials transport tubing or piping. Flow direction indicators are required.

15.04.390 Section 5003.9.8 amended - Separation of Incompatible Materials.

Section 2703.9.8 of the California Fire Code is amended to read as follows:

5003.9.8 Separation of Incompatible Materials. Incompatible materials in storage and storage of materials that are incompatible with materials in use shall be separated. When the stored materials are in containers having a capacity of more than
5 pounds (2 kg) or 0.5 gallon (2 L), separation shall be accomplished by:

1. Segregating incompatible materials in storage by a distance of not less than 20 feet (6096 mm) and in an independent containment system.
2. Isolating incompatible materials in storage by a noncombustible partition extending not less than 18 inches (457 mm) above and to the sides of the stored material.
3. Storing liquid and solid materials in hazardous material storage cabinets.
4. Storing compressed gases in gas cabinets or exhausted enclosures in accordance with Sections 5003.8.5 and 5003.8.6. Materials that are

incompatible shall not be stored within the same cabinet or exhausted enclosure.

15.04.391 Section 5003.9.11 added - Fire Extinguishing Systems for Workstations Dispensing, Handling or Using Hazardous Materials.

Section 5003.9.11 is added to the California Fire Code to read as follows:

5003.9.11 Fire Extinguishing Systems for Workstations Dispensing, Handling or Using Hazardous Materials. Combustible and non-combustible work stations which dispense, handle or use hazardous materials shall be protected by an approved automatic fire extinguishing system in accordance with Section 1803.10.

Exception: Internal fire protection is not required for Biological Safety Cabinets that carry NSF/ANSI certification where quantities of flammable liquids in use or storage within the cabinet do not exceed 500 ml.

15.04.400 Section 5004.2.1 amended - Spill Control for Hazardous Material Liquids.

Section 2704.2.1 of the California Fire Code is amended to read as follows:

5004.2.1 Spill Control for Hazardous Material Liquids. Rooms, buildings or areas used for storage of hazardous material liquids shall be provided with spill control to prevent the flow of liquids to adjoining areas. Floors in indoor locations and similar surfaces in outdoor locations shall be constructed to contain a spill from the largest single vessel by one of the following methods:

1. Liquid-tight sloped or recessed floors in indoor locations or similar areas in outdoor locations.
2. Liquid-tight floors in indoor locations or similar areas provided with liquid-tight raised or recessed sills or dikes.
3. Sumps and collection systems.
4. Other approved engineered systems.

Except for surfacing, the floors, sills, dikes, sumps and collection systems shall be constructed of noncombustible material, and the liquid-tight seal shall be compatible with the material stored. When liquid-tight sills or dikes are provided, they are not required at perimeter openings having an open-grate trench across the opening that connects to an approved collection system.

15.04.401 Section 5004.2.2 amended and Table 5004.2.2 deleted - Secondary Containment for Hazardous Material Liquids and Solids.

Table 5004.2.2 is deleted and Section 5004.2.2 of the California Fire Code is amended to read as follows:

5004.2.2 Secondary Containment for Hazardous Material Liquids and Solids. Buildings, rooms or areas used for the storage of hazardous materials liquids or solids shall be provided with secondary containment in accordance with this

section.

Amend Section 5004.2.2.2 as follows:
5004.2.2.2 Incompatible Materials. Incompatible materials shall be separated from each other in independent secondary containment systems.

15.04.410 Section 5005.4.4 amended - Emergency Alarm.
Section 5005.4.4 of the California Fire Code is amended to read as follows:

> **5005.4.4 Emergency Alarm.** When hazardous materials having a hazard ranking of 3 or 4 in accordance with NFPA 704, or toxic gases exceeding 10 cu. ft. and any amount of highly toxic compressed gases are transported through corridors or exit enclosures, there shall be an emergency telephone system, a local manual alarm station or an approved alarm-initiating device at not more than 150-foot (45,720 mm) intervals and at each exit and exit-access doorway throughout the transport route. The signal shall be relayed to an approved central, proprietary or remote station service or constantly attended on-site location and shall also initiate a local audible alarm.

15.04.420 Section 202 amended – addition of definition of "corrosive liquid."
The following definition is added to section 202of the California Fire Code to read as follows:

> **CORROSIVE LIQUID.** Corrosive liquid is a liquid which, when in contact with living tissue, will cause destruction or irreversible alteration of such tissue by chemical action. Examples include acidic, alkaline or caustic materials. Such material will be considered corrosive when the Ph is 2 or less or 12.5 or more, except for foodstuffs or medicine. Included are Department of Transportation and Title 22, California Code of Regulations, 66261.22 classed corrosives.

15.04.430 Section 5704.2.7.5.8 amended - Overfill Prevention.
Section 3404.2.7.5.8 of the California Fire Code is amended to read as follows:

> **5704.2.7.5.8 Overfill Prevention.** An approved means or method in accordance with Section 5704.2.9.6.6 shall be provided to prevent overfill of all Class I, II and IIIA liquid storage tanks. Storage tanks in refineries, bulk plants or terminals regulated by Sections 5706.4 or 5706.7 shall have overfill protection in accordance with API 2350.
>
> An approved means or method in accordance with Section 5704.2.9.7.6 shall be provided to prevent the overfilling of Class IIIB liquid storage tanks connected to fuel-burning equipment inside buildings.

15.04.440 Section 5704.2.7.5.9 added - Automatic Filling of Tanks.
Section 5704.2.7.5.9 is added to the California Fire Code to read as follows:

> **5704.2.7.5.9 Automatic Filling of Tanks.** Systems that automatically fill

flammable or combustible liquid tanks shall be equipped with an approved overfill protection system that sends an alarm signal to a constantly attended location and immediately stops the filling of the tank. The alarm signal and automatic shutoff shall be tested on an annual basis and records of such testing shall be maintained on-site for a period of five (5) years.

15.04.450 Section 6001.3 added - Moderately Toxic Gases with a LC50 Equal to or Less Than 3000 Parts Per Million.

Section 6001.3 is added to the California Fire Code to read as follows:

6001.3 Moderately Toxic Gases With A LC50 Equal To Or Less Than 3000 Parts Per Million. Notwithstanding the hazard class definition in Section 3702, moderately toxic gases with an LC50 less than 3000 parts per million shall additionally comply with the requirements for toxic gases in Section 6004 of this code.

15.04.460 Section 6002.1 amended – add definition of "moderately toxic gas" and "maximum threshold quantity."

The following definition is added to section 6002.1 of the California Fire Code to read as follows:

MODERATELY TOXIC GAS. Moderately toxic gas is a chemical or substance that has a median lethal concentration (LC50) in air more than 2000 parts per million but not more than 5000 parts per million by volume of gas or vapor, when administered by continuous inhalation for an hour, or less if death occurs within one hour, to albino rats weighing between 200 and 300 grams each.

MAXIMUM THRESHOLD QUANTITY. Maximum Threshold Quantity (Max TQ) is the maximum quantity of a moderately toxic or toxic gas, which may be stored in a single vessel before a more stringent category of regulation is applied. The following equation shall be used to calculate the Max TQ:

Max TQ (pounds) = LC50 (ppm) x 2 lb.

15.04.470 Section 6004 amended – Toxic gases including refrigerants.

Section 3704 of the California Fire Code is amended to read as follows:

Section 6004 HIGHLY TOXIC, TOXIC AND MODERATELY TOXIC GASES INCLUDING THOSE USED AS REFRIGERANTS.

15.04.480 Sections 6004.1.4 through 6004.1.17 added - Controls for toxic gases.

Sections 6004.1.4 through 6004.1.17 are added to the California Fire Code to read as follows:

6004.1.4 Automatic Shut-Off Valve. An automatic shut-off valve, which is of a fail-safe to close design, shall be provided to shut off the supply of highly toxic gases for any of the following:

1. Activation of a manual fire alarm system.
2. Activation of the gas detection system.
3. Failure of emergency power.
4. Failure of primary containment.
5. Seismic activity.
6. Failure of required ventilation.
7. Manual activation at an approved remote location.

6004.1.5 Emergency Control Station. Signals from emergency equipment used for highly toxic gases shall be transmitted to an emergency control station or other approved monitoring station, which is continually staffed by trained personnel.

6004.1.6 Maximum Threshold Quantity. Toxic gases stored or used in quantities exceeding the maximum threshold quantity in a single vessel per control area or outdoor control area shall comply with the additional requirements for highly toxic gases of Section 6004 of this code.

Moderately toxic gases stored or used in quantities exceeding the maximum threshold quantity in a single vessel per control area or outdoor control area shall comply with the additional requirements for toxic gases of Section 3704 of this code

6004.1.7 Reduced Flow Valve. All containers of materials other than lecture bottles containing Highly Toxic material and having a vapor pressure exceeding 29 psia shall be equipped with a reduced flow valve when available. If a reduced flow valve is not available, the container shall be used with a flow-limiting device. All flow limiting devices shall be part of the valve assembly and visible to the eye when possible; otherwise, they shall be installed as close as possible to the cylinder source.

6004.1.8 Annual Maintenance. All safety control systems at a facility shall be maintained in good working condition and tested not less frequently than annually. Maintenance and testing shall be performed by persons qualified to perform the maintenance and tests. Maintenance records and certifications shall be available to any representative of the Fire Department for inspection upon request.

6004.1.9 Fire Extinguishing Systems. Buildings and covered exterior areas for storage and use areas of materials regulated by this Chapter shall be protected by an automatic fire sprinkler system in accordance with NFPA 13. The design of the sprinkler system for any room or area where highly toxic, toxic and moderately toxic gases are stored, handled or used shall be in accordance with Section 2704.5.

6004.1.10 Local Gas Shut Off. Manual activation controls shall be provided at locations near the point of use and near the source, as approved by the fire code official. The fire code official may require additional controls at other places, including, but not limited to, the entry to the building, storage or use areas, and emergency control stations. Manual activated shut-off valves shall be of a fail-safe- to-close design.

6004.1.11 Exhaust Ventilation Monitoring. For highly toxic gases and toxic gases exceeding threshold quantities, a continuous monitoring system shall be provided to assure that the required exhaust ventilation rate is maintained. The monitoring system shall initiate a local alarm. The alarm shall be both visual and audible and shall be designed to provide warning both inside and outside of the interior storage, use, or handling area.

6004.1.12 Emergency Response Plan. If the preparation of an emergency response plan for the facility is not required by any other law, responsible persons shall prepare, or cause to be prepared, and filed with the fire code official, a written emergency response plan. If the preparation of an emergency response plan is required by other law, a responsible person shall file a copy of the plan with the Fire Chief.

6004.1.13 Emergency Response Team. Responsible persons shall be designated the on-site emergency response team and trained to be liaison personnel for the Fire Department. These persons shall aid the Fire Department in preplanning emergency responses, identifying locations where regulated materials are stored, handled and used, and be familiar with the chemical nature of such material. An adequate number of personnel for each work shift shall be designated.

6004.1.14 Emergency Drills. Emergency drills of the on-site emergency response team shall be conducted on a regular basis but not less than once every three months. Records of drills conducted shall be maintained.

6004.1.15 Cylinder Leak Testing. Cylinders shall be tested for leaks immediately upon delivery and again immediately prior to departure. Testing shall be approved by the fire code official in accordance with appropriate nationally recognized industry standards and practices, if any. Appropriate remedial action shall be immediately undertaken when leaks are detected

6004.1.16 Inert Gas Purge System. Gas systems shall be provided with dedicated inert gas purge systems. A dedicated inert gas purge system may be used to purge more than one gas, provided the gases are compatible. Purge gas systems inside buildings shall be located in an approved gas cabinet unless the system operates by vacuum demand.

6004.1.17 Seismic Shutoff Valve. An automatic seismic shut-off valve, which is

of a fail-safe to close design, shall be provided to shutoff the supply of highly toxic, toxic and moderately toxic gases with an LC_{50} less than 3000 parts per million upon a seismic event within 5 seconds of a horizontal sinusoidal oscillation having a peak acceleration of 0.3G (1.47m/sec^2) and a period of 0.4 seconds.

15.04.490 Section 6004.2 amended – Indoor storage and use of toxic gases.
Section 6004.2 of the California Fire Code is amended to read as follows:

6004.2 Indoor Storage and Use. The indoor storage or use of highly toxic, toxic and moderately toxic compressed gases shall be in accordance with Sections 6004.1 through 3704.2.2.10.3.3. The threshold quantity for highly toxic, toxic and moderately toxic gases for indoor storage and use are set forth in Table 6004.2.

Table 6004.2

Threshold Quantities for Highly Toxic, Toxic and Moderately Toxic Gases for Indoor Storage and Use	
Highly Toxic	0
Toxic	10 cubic feet
Moderately Toxic	20 cubic feet

15.04.491 Sections 6004.2.1 through 6004.2.1.1 amended – Applicability of toxic gas regulations.
Sections 6004.2.1 through 6004.2.1.1 of the California Fire Code are amended to read as follows:

6004.2.1 Applicability. The applicability of regulations governing the indoor storage and use of highly toxic, toxic, and moderately toxic compressed gases shall be as set forth in Sections 6004.2.1.1 through 6004.2.1.3.

6004.2.1.1 Quantities Not Exceeding the Maximum Allowable Quantity per Control Area. The indoor storage or use of highly toxic, and toxic and moderately toxic gases in amounts exceeding the threshold quantity per control area set forth in Table 6004.2 shall be in accordance with Sections 5001, 5003, 6001, 6004.1 and 6004.2.

15.04.492 Section 6004.2.2 amended – General requirements for use and storage of toxic gases.
Section 6004.2.2 of the California Fire Code is amended to read as follows:

6004.2.2 General indoor requirements. The general requirements applicable to the indoor storage and use of highly toxic and toxic compressed gases shall be in accordance with Sections 6004.2.2.1 through 6004.2.2.10.3.

Moderately toxic gases with an LC_{50} less than 3000 parts per million shall comply with the requirements for toxic gases in Sections 6004.2.2.1 through

6004.2.2.10.3

All other moderately toxic gases exceeding the threshold quantity shall comply with the requirements for toxic gases in Sections 6004.2.2.1 through 6004.2.2.7.

15.04.493 Section 6004.2.2.7 amended –Treatment systems.

Section 3704.2.2.7 of the California Fire Code is amended to read as follows:

6004.2.2.7 Treatment Systems. The exhaust ventilation from gas cabinets, exhausted enclosures, gas rooms and local exhaust systems required in Section 6004.2.2.4 and 6004.2.2.5 shall be directed to a treatment system. The treatment system shall be utilized to handle the accidental release of gas and to process exhaust ventilation. The treatment system shall be designed in accordance with Sections 6004.2.2.7.1 through 6004.2.2.7.5 and Section 505 of the California Mechanical Code.

Exceptions:

1.1 Highly toxic, toxic and moderately toxic gases storage. A treatment system is not required for cylinders, containers and tanks in storage when all of the following are provided:

1.2 Valve outlets are equipped with gas-tight outlet plug or caps.

1.3 Hand wheel-operated valves have handles secured to prevent movement.

1.4 Approved containment vessels or containment systems are provided in accordance with Section 6004.2.2.3.

15.04.494 Section 6004.2.2.10.1 amended – Alarms.

Section 3704.2.2.10.1 of the California Fire Code is amended to read as follows:

6004.2.2.10.1. Alarms. The gas detection system shall initiate a local alarm and transmit a signal to a constantly attended control station when a short-term hazard condition is detected. The alarm shall be both visual and audible and shall provide warning both inside and outside the area where the gas is detected. The audible alarm shall be distinct from all other alarms.

15.04.500 Section 6004.3 amended – Outdoor storage and use.

Section 6004.3 of the California Fire Code is amended to read as follows:

6004.3 Outdoor Storage and Use. The outdoor storage or use of highly toxic, toxic and moderately toxic compressed gases shall be in accordance with Sections 6004.3.1 through 6004.3.4. The threshold quantity for highly toxic, toxic and moderately toxic gases for outdoor storage and use are set forth in Table 6004.3.

Table

6004.3

Threshold Quantities for Highly Toxic, Toxic and Moderately Toxic Gases for Outdoor Storage and Use	
Highly Toxic	0
Toxic	10 cubic feet
Moderately Toxic	20 cubic feet

15.04.501 Sections 6004.3.1 and 6004.3.1.1 amended – Applicability of toxic gas regulations.

Sections 6004.3.1 and 6004.3.1.1 of the California Fire Code are amended to read as follows:

6004.3.1 Applicability. The applicability of regulations governing the outdoor storage and use of highly toxic, toxic, and moderately toxic compressed gases shall be as set forth in Sections 6004.3.1.1 through 6004.3.1.3.

6004.3.1.1 Quantities not exceeding the maximum allowable quantity per control area. The outdoor storage or use of highly toxic and toxic gases in amounts exceeding the threshold quantity per control area set forth in Table 6004.3 shall be in accordance with Sections 5001, 5003, 6001, 6004.1, and 6004.3.

Moderately toxic gases with an LC50 less than 3000 parts per million in amounts exceeding the threshold quantity in Table 6004.3 shall comply with the requirements for toxic gases in Sections 5001, 5003, 6001, 6004.1 and 6004.3.

Moderately toxic gases in amounts exceeding the threshold quantity in Table 6004.3 shall comply with the requirements for toxic gases in Sections 5001, 5003, 6001, 6004.1 and 6004.3.2.1 through 6004.3.2.5.

15.04.502 Section 6004.3.3 amended – Outdoor storage of tanks and cylinders.

Section 6004.3.3 of the California Fire Code is amended to read as follows:

6004.3.3 Outdoor storage weather protection for portable tanks and cylinders. Weather protection in accordance with Section 5004.13 and this section shall be provided for portable tanks and cylinders located outdoors and not within gas cabinets or exhausted enclosures. The storage area shall be equipped with an approved automatic sprinkler system in accordance with Section 5004.5.

15.04.510 Section 6101.4 added – Storage and use of liquefied petroleum gas.

Section 6101.4 is added to the California Fire Code to read as follows:

6101.4 Storage and use of liquefied petroleum gas. Storage and use of liquefied petroleum gas (LPG) is prohibited within the City limits of Palo Alto where natural gas mains exist.

EXCEPTION: The Fire Chief may permit the use of LPG for the following

purposes and in the following manner:

(1) A single tank of no more than 500-gallon (1892 L) water capacity in connection with portable equipment or devices which are approved for use with LPG.

(2) As an emergency standby fuel supply for critical industrial, medical or research equipment.

(3) A single tank of no more than 2000-gallon (7570 L) water capacity used in vehicle servicing operations installed in accordance with applicable safety standards.

The storage of LPG shall conform to the provisions of applicable state and local Codes and ordinances.

15.04.515 Section 6405.3.1 added – Silane distribution systems automatic shutdown.
Section 6405.3.1 is added to the California Fire Code to read as follows:

6405.3.1 Silane distribution systems automatic shutdown. Silane distribution systems shall automatically shut down at the source upon activation of the gas detection system at levels above the alarm level and/or failure of the ventilation system for the silane distribution system.

15.04.520 Section 4902.1 amended – Definition of wildland-urban interface area.
The definition of "wildland-urban interface fire area" in Section 4902.1 is amended to read as follows:

WILDLAND-URBAN INTERFACE FIRE AREA is a geographical area identified by the state as a "Fire Hazard Severity Zone" in accordance with the Public Resources Code Sections 4201 through 4202 and Government Code Sections 51175 through 51189. In addition, within the limits of the City of Palo Alto, wildland-urban fire interface area shall include all areas west of Highway 280 and all other areas recommended as Very High Fire Hazard Severity Zone by the director of Cal Fire.

15.04.530 Sections 4903.1 through 4903.4 added – General Requirements for wildland-urban interface fire areas.
Sections 4903.1 through 4903.4 are added to the California Fire Code to read as follows:

4903.1 General. When required by the fire code official, a fire protection plan shall be prepared.

4903.2 Content. The plan shall be based upon a site-specific wildfire risk assessment that includes considerations of location, topography, aspect, flammable vegetation, climatic conditions and fire history. The plan shall address water supply, access, building ignition and fire-resistance factors, fire protection systems and equipment, defensible space and vegetation management.

4903.3 Cost. The cost of fire protection plan preparation and review shall be the responsibility of the applicant.

4903.4 Plan retention. The fire protection plan shall be retained by the fire code official.

15.04.540 Sections 4907.1 through 4907.2 amended - Defensible space.

Sections 4070.1 through 4907.2 are added to the California Fire Code to read as follows:

4907.1 General. Persons owning, leasing, controlling, operating or maintaining buildings or structures in, upon or adjoining the Wildland-Urban Interface Fire Area and persons owning, leasing or controlling land adjacent to such buildings or structures, shall at all times:

1. Maintain an effective defensible space by removing and clearing away flammable vegetation and combustible growth from areas within 30 feet (9144 mm) of such buildings or structures.
   Exception: Single specimens of trees, ornamental shrubbery or similar plants used as ground covers, provided that they do not form a means of rapidly transmitting fire from the native growth to any structure.

2. Maintain additional effective defensible space by removing brush, flammable vegetation and combustible growth located 30 feet to 100 feet (9144 mm to 30480 mm) from such buildings or structures, when required by the fire code official due to steepness of terrain or other conditions that would cause a defensible space of only 30 feet (9144 mm) to be insufficient.
   Exception: Grass and other vegetation located more than 30 feet (9144 mm) from buildings or structures and less than 18 inches (457 mm) in height above the ground need not be removed where necessary to stabilize the soil and prevent erosion.

3. Remove portions of trees, which extend within 10 feet (3048 mm) of the outlet of a chimney.

4. Maintain trees adjacent to or overhanging a building free of deadwood.

5. Maintain the roof of a structure free of leaves, needles or other dead vegetative growth.

6. Remove flammable vegetation a minimum of 10 feet around liquefied petroleum gas tanks/containers.

7. Firewood and combustible materials shall not be stored in unenclosed spaces beneath buildings or structures, or on decks or under eaves, canopies or other projections or overhangs. The storage of firewood and combustible material within the defensible space shall be located a minimum of 30 feet (6096 mm) from

structures and separated from the crown of trees by a minimum horizontal distance of 15 feet (4572 mm).
Exception: Firewood and combustible materials not for consumption on the premises shall be stored as approved by the fire code official.

8. Clear areas within 10 feet (3048 mm) of fire apparatus access roads and driveways to of non-fire-resistive vegetation growth.

   Exception: Grass and other vegetation located more than 30 feet (9144 mm) from buildings or structures and less than 18 inches (457 mm) in height above the ground need not be removed where necessary to stabilize the soil and prevent erosion.

4907.2 Corrective Actions. The executive body is authorized to instruct the fire code official to give notice to the owner of the property upon which conditions regulated by Section 4907.1 exist to correct such conditions. If the owner fails to correct such conditions, the executive body is authorized to cause the same to be done and make the expense of such correction a lien upon the property where such condition exists.

15.04.550 Sections 4914 through 4914.3 added – Access Requirements for wildland-urban interface fire areas.

Section 4914 is added to the California Fire Code to read as follows:

4914 ACCESS

4914.1 General. Buildings and structures, or portions thereof, hereafter constructed or relocated into or within wildland-urban interface areas shall be provided with fire apparatus access in accordance with this chapter.

4914.2 Driveways. Driveways with an all-weather surface shall be provided when any portion of an exterior wall of the first story of a building is located more than 150 feet (45 720 mm) from a fire apparatus access road. Driveways shall provide a minimum unobstructed width of 12 feet (3658 mm) and a minimum unobstructed height of 13 feet 6 inches (4115 mm). Driveways in excess of 150 feet (45 720 mm) in length shall be provided with turnarounds. Driveways in excess of 200 feet (60960 mm) in length and less than 20 feet (6096 mm) in width shall be provided with turnouts in addition to turnarounds. An all-weather surface shall be any surface material acceptable to the code official.

A driveway shall not serve in excess of two dwelling units without meeting the requirements for an access road in accordance with this chapter.

Driveway turnarounds shall be in accordance with Fire Department Standards. Driveways that connect with a road or roads at more than one point may be considered as having a turnaround if all changes of direction

meet the radii requirements for driveway turnarounds.

Driveway turnouts shall be an all-weather road surface at least 10 feet (3048 mm) wide and 30 feet (9144 mm) long. Driveway turnouts shall be located as required by the code official.

Vehicle load limits shall be posted at both entrances to bridges on driveways and private roads. Design loads for bridges shall be established by the code official.

4914.3 Fire apparatus access roads. Fire apparatus access roads shall be all weather roads with a minimum width of 20 feet (6096 mm) and a clear height of 13 feet 6 inches (4115 mm); and shall be designed in accordance with Fire Department Standards. Dead-end roads in excess of 150 feet (45 720 mm) in length shall be provided with turnarounds designed in accordance with Fire Department Standards. An all-weather road surface shall be any surface material acceptable to the code official.

15.04.560 Sections 4915 through 4915.9 added – Water supply requirements for wildland-urban interface fire areas.

Section 4915 is added to the California Fire Code to read as follows:

4915 WATER SUPPLY

4915.1 General. Buildings and structures, or portions thereof, hereafter constructed or relocated into or within wildland-urban interface areas shall be provided with fire protection water supplies in accordance with this chapter.
Exception: Buildings containing only private garages, carports, sheds and agricultural buildings with a building area of not more than 500 square feet (56 m2).

4915.2 Water sources. The point at which a water source is available for Fire Department use shall be located not more than 600 feet from all portions of the exterior walls of the building and be approved by the code official. The distance shall be measured along an unobstructed line of travel.

Water sources shall have a minimum usable water volume as determined by the adequate water supply needs in accordance with Section 4915.4. This water source shall be equipped with an approved hydrant. The water source shall be provided and maintained by a recognized water purveyor, mutual water company or water pumped from a well. The design, construction, location, water level maintenance, access, and access maintenance of man-made water sources shall be approved by the code official.

4915.3 Hydrants. All hydrants shall be designed and constructed in accordance

with nationally recognized standards. The location and access shall be approved by the code official.

4915.4 Adequate water supply. Adequate fire protection water supplies shall be as follows:

1. **One and two-family dwellings.** The required fire protection water supply for one- and two- family dwellings shall be in accordance with Appendix B.
   Exception: The water supply duration need not exceed 30 minutes for structures not exceeding 2,400 sq. ft.

2. **Buildings other than one- and two-family dwellings.** The water supply required for buildings other than one-and two-family dwellings shall be in accordance with Appendix B.
   Exception: The water supply duration need not exceed 2 hours.

4915.5 Obstructions. Access to all water sources required by this code shall be unobstructed at all times. The code official shall not be deterred or hindered from gaining immediate access to water source equipment, fire protection equipment or hydrants.

4915.6 Identification. Water sources, hydrants and fire protection equipment shall be clearly identified in a manner approved by the code official to identify location and to prevent obstruction by parking and other obstructions.

4915.7 Testing and maintenance. Water sources, hydrants and other fire protection equipment required by this code shall be subject to periodic tests as required by the code official. All such equipment installed under the provisions of this code shall be maintained in an operative condition at all times and shall be repaired or replaced where defective. Additions, repairs, alterations and servicing of such fire protection equipment and resources shall be in accordance with approved standards.

4915.8 Clearance of fuel. Defensible space shall be provided around water tank structures, water supply pumps and pump houses in accordance with Section 4907.

4915.9 Standby power. Stationary water supply facilities within the wildland-urban interface area dependent on electrical power to meet adequate water supply demands shall provide standby power systems in accordance with the Electrical Code to ensure that an uninterrupted water supply is maintained. The standby power source shall be capable of providing power for a minimum of two hours.

Exceptions:

1. When approved by the code official, a standby power supply is not

required where the primary power service to the stationary water supply facility is underground.

2. A standby power supply is not required where the stationary water supply facility serves no more than one single-family dwelling.

15.04.570 Sections 4916 through 4916.3 added – Fire sprinkler requirements for wildland-urban interface fire areas.

Section 4916 is added to the California Fire Code to read as follows:

4916 AUTOMATIC FIRE SPRINKLER SYSTEMS

4916.1 General. Buildings and structures located in wildland-urban interface areas shall be provided with automatic fire sprinkler protection in accordance with this chapter.

4916.2 New buildings. An approved automatic fire sprinkler system shall be provided throughout all new buildings located in the wildland-urban interface area.

Exception: Accessory structures to single-family residences that are non-residential and that have a building area of 500 square feet or less.

4916.3 Existing buildings. An approved automatic fire sprinkler system shall be provided throughout all existing buildings located in the wildland-urban interface area when modifications are made that increase the building area.

Exception: One-time additions to existing buildings made after January 1, 1994 that do not exceed 500 square feet in building area.

15.04.580 Sections 4917 through 4917.3.5 added – General Requirements for wildland-urban interface fire areas.

Sections 4917 through 4917.3.5 are added to the California Fire Code to read as follows:

4917 GENERAL REQUIREMENTS FOR SUPPRESSION AND CONTROL

4917.1 General

4917.1.1 Scope. The provisions of this chapter establish general requirements applicable to new and existing properties located within wildland-urban interface areas.

4917.1.2 Objective. The objective of this appendix is to provide necessary fire- protection measures to reduce the threat of wildfire in a wildland-urban interface area and improve the capability of controlling such fires.

4917.2 Vegetation Control

4917.2.1 General. Vegetation control shall comply with Sections 4917.2.2 through 4917.2.5.

4917.2.2 Maintenance of Defensible Space

4917.2.2.1 General. Defensible spaces required by 4907 shall be maintained in accordance with Section 4917.2.2.

4917.2.2.2 Modified Area. Non-fire-resistive vegetation or growth shall be kept clear of buildings or structures, in accordance with Section 4907, in such a manner as to provide a clear area for fire suppression operations.

4917.2.2.3 Responsibility. Persons owning, leasing, controlling, operating or maintaining buildings or structures are responsible for maintenance of defensible spaces. Maintenance of the defensible space shall include modifying or removing nonfire-resistive vegetation and keeping leaves, needles and other dead vegetative material regularly removed from roofs of buildings and structures.

4917.2.2.4 Trees. Tree crowns extending to within 10 feet (3048 mm) of any structure shall be pruned to maintain a minimum horizontal clearance of 10 feet (3048 mm). Tree crowns within the defensible space shall be pruned to remove limbs located less than 6 feet (1829 mm) above the ground surface adjacent to the trees.

Portions of tree crowns that extend within 10 feet (3048 mm) of the outlet of a chimney shall be pruned to maintain a minimum horizontal clearance of 10 feet (3048 mm).

Deadwood and litter shall be regularly removed from trees.

4917.2.3 Clearance Of Brush Or Vegetative Growth From Roadways. The code official is authorized to require areas within 10 feet (3048 mm) on each side of portions of fire apparatus access roads and driveways to be cleared of non-fire- resistive vegetation growth.
Exception: Single specimens of trees, ornamental vegetative fuels or cultivated ground cover, such as green grass, ivy, succulents or similar plants used as ground cover, provided they do not forma means of readily transmitting fire.

4917.2.4 Clearance of brush and vegetative growth from electrical transmission and distribution lines.

4917.2.4.1 General. Clearance of brush and vegetative growth from electrical transmission and distribution lines shall be in accordance with Section 4917.2.4.
Exception: Section **4917.2.4** does not authorize persons not having legal right of entry to enter on or damage the property of others without consent of the

owner.

4917.2.4.2 Support clearance. Persons owning, controlling, operating or maintaining electrical transmission or distribution lines shall have an approved program in place that identifies poles or towers with equipment and hardware types that have a history of becoming an ignition source, and provides a combustible free space consisting of a clearing of not less than 10 feet (3048 mm) in each direction from the outer circumference of such pole or tower during such periods of time as designated by the code official.
Exception: Lines used exclusively as telephone, telegraph, messenger call, alarm transmission or other lines classed as communication circuits by a public utility.

4917.2.4.3 Electrical distribution and transmission line clearances.

4917.2.4.3.1 General. Clearances between vegetation and electrical lines shall be in accordance with 4917.2.4.3.

4917.2.4.3.2 Trimming clearance. At the time of trimming, clearances not less than those established by Table 4917.2.4.3.2 shall be provided. The radial clearances shown below are minimum clearances that shall be established, at time of trimming, between the vegetation and the energized conductors and associated live parts.

Table 4917.2.4.3.2 is added to the California Fire Code to read as follows:

TABLE 4917.2.4.3.2
MINIMUM CLEARANCES BETWEEN VEGETATION AND ELECTRICAL LINES AT TIME OF TRIMMING

LINE VOLTAGE	MINIMUM RADIAL CLEARANCE FROM CONDUCTOR (feet)
2,400-72,000	4
72,001-110,000	6
110,001-300,000	10
300,001 or more	15

For SI: 1 foot = 304.8 mm.

Exception: The code official is authorized to establish minimum clearances different than those specified by Table 4917.2.4.3.2 when evidence substantiating such other clearances is submitted to and approved by the code official.

4917.2.4.3.3 Minimum Clearance To Be Maintained. Clearances not less than those established by Table 4917.2.4.3.3 shall be maintained during such periods of time as designated by the code official. The site-specific clearance achieved, at

time of pruning, shall vary based on species growth rates, the utility company-specific trim cycle, the potential line sway due to wind, line sag due to electrical loading and ambient temperature and the tree's location in proximity to the high voltage lines.

Exception: The code official is authorized to establish minimum clearances different than those specified by 4917.2.4.3.3.3 when evidence substantiating such other clearances is submitted to and approved by the code official.

Table 4917.2.4.3.3 is added to the California Fire Code to read as follows:

TABLE 4917.2.4.3.3
MINIMUM CLEARANCES BETWEEN VEGETATION AND ELECTRICAL LINES TO BE MAINTAINED

LINE VOLTAGE	MINIMUM CLEARANCE (inches)
750-35,000	6
35,001-60,000	12
60,001-115,000	19
115,001-230,000	30.5
230,001-500,000	115

For SI: 1 inch = 25.4 mm.

4917.2.4.3.4 Electrical Power Line Emergencies. During emergencies, the utility shall perform the required work to the extent necessary to clear the hazard. An emergency can include situations such as trees falling into power lines, or trees in violation of Table 4917.2.3.3.3.

4917.2.5 Correction Of Condition. The fire code official is authorized to give notice to the owner of the property on which conditions regulated by Section 4917.2 exist to correct such conditions. If the owner fails to correct such conditions, the legislative body of the jurisdiction is authorized to cause the same to be done and make the expense of such correction a lien on the property where such condition exists.

4917.3 ACCESS RESTRICTIONS

4917.3.1 Restricted Entry To Public Lands. The fire code official is authorized to determine and publicly announce when wildland-urban interface areas shall be closed to entry and when such areas shall again be opened to entry. Entry on and occupation of wildland-urban interface areas, except public roadways, inhabited areas or established trails and campsites that have not been closed during such time when the wildland-urban interface area is closed to entry, is prohibited.

Exceptions:

1. Residents and owners of private property within wildland-urban interface

areas and their invitees and guests going to or being on their lands.

2. Entry, in the course of duty, by peace or police officers, and other duly authorized public officers, members of a fire department and members of the Wildland Firefighting Service.

4917.3.2 Trespassing On Posted Private Property.

4917.3.2.1 General. When the fire code official determines that a specific area within a wildland-urban interface area presents an exceptional and continuing fire danger because of the density of natural growth, difficulty of terrain, proximity to structures or accessibility to the public, such areas shall be restricted or closed until changed conditions warrant termination of such restriction or closure. Such areas shall be posted in accordance with Section 4917.3.2.2.

4917.3.2.2 Signs. Approved signs prohibiting entry by unauthorized persons and referring to this code shall be placed on every closed area.

4917.3.2.3 Trespassing. Entering and remaining within areas closed and posted is prohibited. Exception: Owners and occupiers of private or public property within closed and posted areas; their guests or invitees; authorized persons engaged in the operation and maintenance of necessary utilities such as electrical power, gas, telephone, water and sewer; and local, state and federal public officers and their authorized agents acting in the course of duty.

4917.3.3 Use Of Fire Roads And Defensible Space. Motorcycles, motor scooters and motor vehicles shall not be driven or parked on, and trespassing is prohibited on, fire roads or defensible space beyond the point where travel is restricted by a cable, gate or sign, without the permission of the property owners. Vehicles shall not be parked in a manner that obstructs the entrance to a fire road or defensible space.

Exception: Public officers acting within their scope of duty. Radio and television aerials, guy wires thereto, and other obstructions shall not be installed or maintained on fire roads or defensible spaces, unless located 16 feet (4877 mm) or more above such fire road or defensible space.

4917.3.4 Use of Motorcycles, Motor Scooters, Ultra light Aircraft And Motor Vehicles. Motorcycles, motor scooters, ultra light aircraft and motor vehicles shall not be operated within wildland-urban interface areas, without a permit by the code official, except on clearly established public or private roads. Permission from the property owner shall be presented when requesting a permit.

4917.3.5 Tampering With Locks, Barricades, Signs and Address Markers. Locks, barricades, seals, cables, signs and address markers installed within wildland- urban interface areas, by or under the control of the code official,

shall not be tampered with, mutilated, destroyed or removed.

Gates, doors, barriers and locks installed by or under the control of the code official shall not be unlocked.

15.04.584 Sections 4917.4 through 4917.4.10 added – Ignition source control requirements for wildland-urban interface fire areas.

Sections 4917.4 through 4917.4.10 are added to the California Fire Code to read as follows:

4917.4 IGNITION SOURCE CONTROL

4917.4.1 General. Ignition sources shall be in accordance with Section 4917.4.

4917.4.2 Objective. Regulations in this section are intended to provide the minimum requirements to prevent the occurrence of wildfires.

4917.4.3 Clearance From Ignition Sources. Clearance between ignition sources and grass, brush or other combustible materials shall be maintained a minimum of 30 feet (9144 mm).

4917.4.4 Smoking. When required by the fire code official, signs shall be posted stating NO SMOKING. No person shall smoke within 15 feet (4572 mm) of combustible materials or non-fire-resistive vegetation.
Exception: Places of habitation or in the boundaries of established smoking areas or campsites as designated by the fire code official.

4917.4.5 Equipment and Devices Generating Heat, Sparks Or Open Flames. Equipment and devices generating heat, sparks or open flames capable of igniting nearby combustibles shall not be used in wildland-urban interface areas without a permit from the code official.
Exception: Use of approved equipment in habitated premises or designated campsites that are a minimum of 30 feet (9144 mm) from grass-, grain-, brush- or forest-covered areas.

4917.4.6 Fireworks. Fireworks shall not be used or possessed in wildland-urban interface areas.

4917.4.7 Outdoor Fires.

4917.4.7.1 General. No person shall build, ignite or maintain any outdoor fire of any kind for any purpose in or on any wildland-urban interface area, except by the authority of a written permit from the code official.
Exception: Outdoor fires within inhabited premises or designated campsites where such fires are in a permanent barbecue, portable barbecue, outdoor fireplace or grill and are a minimum of 30 feet (9144 mm) from any

combustible material or nonfire-resistive vegetation.

4917.4.7.2 Permits. Permits shall incorporate such terms and conditions that will reasonably safeguard public safety and property. Outdoor fires shall not be built, ignited or maintained in or on hazardous fire areas under the following conditions:

1. When high winds are blowing,
2. When a person 17 years old or over is not present at all times to watch and tend such fire, or
3. When a public announcement is made that open burning is prohibited.

4917.4.7.3 Restrictions. No person shall use a permanent barbecue, portable barbecue, outdoor fireplace or grill for the disposal of rubbish, trash or combustible waste material.

4917.4.8 Outdoor Fireplaces, Permanent Barbecues And Grills. Outdoor fireplaces, permanent barbecues and grills shall not be built, installed or maintained in wildland-urban interface areas without approval of the fire code official.

Outdoor fireplaces, permanent barbecues and grills shall be maintained in good repair and in a safe condition at all times. Openings in such appliances shall be provided with an approved spark arrestor, screen or door.
Exception: When approved by the fire code official, unprotected openings in barbecues and grills necessary for proper functioning.

4917.4.9 Reckless Behavior. The fire code official is authorized to stop any actions of a person or persons if the official determines that the action is reckless and could result in an ignition of fire or spread of fire.

4917.4.10 Planting Vegetation Under Or Adjacent To Energized Electrical Lines. No vegetation shall be planted under or adjacent to energized power lines that, at maturity, shall grow within 10 feet (3048 mm) of the energized conductors.

15.04.585 Section 4917.5 added – Storage control requirements for wildland-urban interface fire areas.

Section 4917.5 is added to the California Fire Code to read as follows:

4917.5 CONTROL OF STORAGE

4917.5.1 General. In addition to the requirements of the California Fire Code, storage and use of the materials shall be in accordance with Section 4917.5.

4917.5.2 Hazardous materials. Hazardous materials in excess of 10 gallons (37.8 L) of liquid, 200 cubic feet (5.66 m^3) of gas, or 10 pounds (4.54 kg) of solids require a permit and shall comply with nationally recognized standards for storage and use.

4917.5.2.1 Liquefied Petroleum Gas Installations

4917.5.2.1.1 General. The storage of liquefied petroleum gas (LP gas) and the installation and maintenance of pertinent equipment shall be in accordance with the California Fire Code and recognized standards.

4917.5.2.1.2 Location of containers. LP-gas containers shall be located within the defensible space in accordance with the California Fire Code.

4917.5.3 Explosives. Explosives shall not be possessed, kept, stored, sold, offered for sale, given away, used, discharged, transported or disposed of within wildland- urban interface areas.

4917.5.4 Combustible Materials.

4917.5.4.1 General. Outside storage of combustible materials such as, but not limited to, wood, rubber tires, building materials or paper products shall comply with the other applicable sections of this code and this section.

4917.5.4.2 Individual Piles. Individual piles shall not exceed 5,000 square feet (465 m 2) of contiguous area. Piles shall not exceed 50,000 cubic feet (1416 m 3) in volume or 10 feet (3048 mm) in height.

4917.5.4.3 Separation. A clear space of at least 40 feet (12 192 mm) shall be provided between piles. The clear space shall not contain combustible material or nonfire-resistive vegetation.

4917.5.4.4 Storage of Firewood and Combustible Materials

4917.5.4.4.1 General. Firewood and combustible material shall not be stored in unenclosed spaces beneath buildings or **structures**, or on decks or under eaves, canopies or other projections or overhangs. When required by the code official, storage of firewood and combustible material stored in the defensible space shall be located a minimum of 20 feet (6096 mm) from structures and separated from the crown of trees by a minimum horizontal distance of 15 feet (4572 mm).

4917.5.4.4.2 Storage For Off-Site Use. Firewood and combustible materials not for consumption on the premises shall be stored so as to not pose a hazard.

15.04.586 Section 4917.6 added –Dumping in wildland-urban interface areas.
Section 4917.6 is added to the California Fire Code to read as follows:

4917.6 DUMPING

4917.6.1 Waste Material. Waste material shall not be placed, deposited or dumped in wildland-urban interface areas, or in, on or along trails, roadways or highways or against structures in wildland-urban interface areas.
Exception: Approved public and approved private dumping areas.

4917.6.2 Ashes And Coals. Ashes and coals shall not be placed, deposited or dumped in or on wildland-urban interface areas.
Exceptions:

1. In the hearth of an established fire pit, camp stove or fireplace.
2. In a noncombustible container with a tight fitting lid, which is kept or maintained in a safe location not less than 10 feet (3048 mm) from nonfire-resistive vegetation or structures.
3. Where such ashes or coals are buried and covered with 1 foot (305 mm) of mineral earth not less than 25 feet (7620 mm) from nonfire-resistive vegetation or structures.

15.04.587 Section 4917.7 added - Protection Of Pumps And Water Storage Facilities.
Section 4917.7 is added to the California Fire Code to read as follows:

4917.7 PROTECTION OF PUMPS AND WATER STORAGE FACILITIES

4917.7.1 General. The reliability of the water supply shall be in accordance with Section 4917.7.

4917.7.2 Objective. The intent of this section is to increase the reliability of water storage and pumping facilities and to protect such systems against loss from intrusion by fire.

4917.7.3 Fuel Modification Area. Water storage and pumping facilities shall be provided with a defensible space of not less than 30 feet (9144 mm) clear of non-fire- resistive vegetation or growth around and adjacent to such facilities.

Persons owning, controlling, operating or maintaining water storage and pumping systems requiring this defensible space are responsible for clearing and removing nonfire-resistive vegetation and maintaining the defensible space on the property owned, leased or controlled by said person.

4917.7.4 Trees. Portions of trees that extend to within 30 feet (9144 mm) of combustible portions of water storage and pumping facilities shall be removed.

4917.7.5 Protection of Electrical Power Supplies. When electrical pumps are used to provide the required water supply, such pumps shall be connected to a standby power source to automatically maintain electrical power in the event of power loss. The standby power source shall be capable of providing power for a minimum of two hours in accordance with the Electrical Code.
Exception: A standby power source is not required where the primary power service to pumps are underground as approved by the code official.

15.04.588 Section 4917.8 added – Land use limitations in wildland-urban interface fire areas. Section 4917.8 is added to the California Fire Code to read as follows:

4917.8 LAND USE LIMITATIONS

4917.8.1 General. Temporary fairs, carnivals, public exhibitions and similar uses must comply with all other provisions of this code in addition to enhanced ingress and egress requirements.

4917.8.2 Objective. The increased public use of land or structures in wildland-urban interface areas also increases the potential threat to life safety. The provisions of this section are intended to reduce that threat.

4917.8.3 Permits. Temporary fairs, carnivals, public exhibitions or similar uses shall not be allowed in a designated wildland-urban interface area, except by permit from the code official.

Permits shall incorporate such terms and conditions that will reasonably safeguard public safety and property.

15.04.590 Addition of Chapter 19 – Life safety requirements for existing high rise buildings.

Chapter 19 is added to the California Fire Code to read as follows:

CHAPTER 19
LIFE SAFETY REQUIREMENTS FOR EXISTING HIGH-RISE BUILDINGS SECTION 1901

GENERAL

1901.1 Purpose. The purpose of this appendix is to provide a reasonable degree of safety to persons occupying existing high-rise buildings by requiring minimum standards for exit corridors, exit stairways and elevator shafts, monitored alarm systems and emergency plans.

1901.2 Scope. The requirements shall apply to all high-rise buildings constructed prior to January 1, 1994 which have floors used for human

occupancy located more than 75 feet above the lowest level of approved fire department vehicle access or other physical configuration that qualifies a building as high rise by local ordinance.

1901.3 Permits Required.

1. Building permits shall be obtained as required by the Building Code.

2. Not less than 30 days prior to submitting plans for a building permit, a preplan review meeting shall be held, including the owner's design team, building official and the chief, to determine the adequacy of the life-safety emergency systems concept for the building. The life-safety emergency systems shall be reflected on the plans for the building and become a permanent part of the building department's records. The building official and the chief may require sufficient documentation, based upon engineering analysis, that the concept meets the intent of nationally recognized good practices and such guidelines as the building official and chief have published.

1901.4 Enforcement. The provisions of this appendix shall be enforced by the chief.

1901.5 Compliance. All buildings shall be made to conform with the requirements of Section 1902 within the following time periods:

1. Subsections 1902.11, 1902.12 and 1902.13 shall be completed within six months of the adoption date of this Chapter.

2. The owners of buildings affected by this appendix or their representatives shall submit plans to the building official showing intended methods of compliance with subsections 1902.1 through 1902.10 on or before June 30, 1990.

3. Subsections 1902.5, 1902.8, and 1902.9 shall be completed on or before January 1, 1991.

4. Subsections 1902.1, 1902.2, 1902.3, 1902.4, 1902.5, 1902.6 and 1902.8 shall be completed on or before April l, 1994.

Note: Regardless of any specific compliance date stipulated above, a building shall not be deemed in violation of this Chapter until such date has expired

1901.6 Exceptions. The Fire Chief may grant certain exceptions to the requirements of this Chapter, under the following circumstances:

1. The Fire Chief may allow the use of alternate materials or methods of

compliance upon a finding that the use of such alternate materials or methods of compliance will provide levels of fire and life safety equal to or greater than those otherwise required in this Chapter.

2. The Fire Chief may waive individual requirements of this Chapter or grant reasonable extensions of time in which to comply with said requirements upon a finding that such requirements are not practical or possible, or pose an unreasonable hardship. The determination of whether compliance is not practical or possible, or an unreasonable hardship, shall be based upon an overall evaluation of the following factors:

(i) The amount of fire and life safety that would be lost if the requirements were waived or deferred;

(ii) The cost of complying with the requirements;

(iii) The financial hardship and disruption to occupants and users of the building in question;

(iv) The type and nature of the use of the building in question; and

(v) Such other factors as in the judgment of Fire Chief will result in providing a reasonable degree of safety as required by this Uniform Fire Code, to persons occupying or using the building.

3. The Fire Chief may grant reasonable extensions of time, up to two additional years, within which to comply with the requirements of subsections 1902.1, 1902.2, 1902.3, 1902.4, 1902.6, 1902.7 and 1902.9 of this Chapter, upon making a finding of hardship based upon the factors set forth in subsection (2) of this subsection 1901.6(f), or upon the agreement of the building owner that within said time, the building will be 100% sprinklered, in accordance with NFPA 13.

4. The Fire Chief shall prepare written notice of determination to grant or not to grant exceptions pursuant to this paragraph. The Fire Chief shall distribute the notice of determination in the next available council packet; shall mail notice, postage prepaid, to the affected building owner; and shall publish such notice once in a newspaper of general circulation not later than five (5) days after the distribution of the notice on the city council packet. The notice shall state the address and general description of the subject property and the nature of the determination. The notice shall also state that the details regarding the decision will be available in the Fire Chief's office, and that an appeal may be taken within ten (10) days after the date of publication of the notice.

1901.7 Appeals.

1. Any person aggrieved or affected by any determination made by the Fire Chief pursuant to subsection 1901.6 of this Chapter may appeal that determination in accordance with this subsection 1901.7.

2. An appeal from the decision of the Fire Chief shall be initiated within ten (10) days after the publication of notice, as provided in Paragraph 1901.6, by the filing at the office of the City Manager of a written, dated appeal, signed by all parties named as appellants, stating the names and official mailing addresses of all appellant(s) participating in the appeal and their relationship to the matter being appealed.

3. The appeal shall contain a statement of all facts supporting the contention of the appellant(s) and all reasons why the decision of the Fire Chief should be reversed, modified or set aside.

4. The appeal shall be accompanied by a fee, as set forth in the Municipal Fee Schedule for Fire Department appeals.

5. Upon receipt of any appeal, the City Manager or designee shall set a date for a hearing. Such hearing shall be held within fifteen (15) days of receipt of the appeal. A notice of the time and place of the hearing shall be given to the appellant(s) by the City Manager or designee in writing. The notice shall be mailed, postage prepaid, addressed to the appellant(s) at the address(es) listed on the appeal, or it shall be delivered to the appellant(s) personally, at least ten (10) days prior to the hearing date. If the appellant is other than the building owner, the building owner shall also be notified of the hearing.

6. The City Manager or designee (other than any personnel from the Fire Department), shall hear the appeal. At the time and place set for the hearing, the City Manager or designee shall receive all testimonial, documentary and tangible evidence bearing on the issues. The City Manager or designee may continue the hearing from time to time. The City Manager or designee may approve, modify or disapprove the determination of the Fire Chief. Within three (3) working days of the close of the hearing, the City Manager or designee shall render a decision in writing. The decision shall be mailed, postage prepaid, to the appellant(s) at the address(es) listed on the appeal or delivered to the appellant(s) personally. If the appellant is other than the building owner, the building owner shall also be notified of the decision.

7. The decision of the City Manager or designee shall be final.

1901.8 Penalty. Failure to comply with subsection (e) above is unlawful and any person, firm or corporation, whether as principal, agent, employee or otherwise, violating any provisions of the above requirements shall be guilty of a misdemeanor. Such person, firm or corporation is guilty of a separate offense for each and every day during any portion of which any violation of these requirements is committed, continued or permitted by such person, firm or corporation.

1901.9 Severability. Should any section, subsection, paragraph, sentence, clause or phrase of this appendix be declared unconstitutional or invalid for any reason, such decision shall not affect the validity of the remaining portions of these requirements.

SECTION 5002 REQUIREMENTS

1902.1 Automatic Sprinklers. All required exit corridors, stairwells, elevator lobbies, public assembly areas occupied by 100 or more persons and commercial kitchens shall be protected by an approved automatic sprinkler system meeting the design criteria of NFPA 13. One sprinkler head shall be provided on the room side of every corridor opening.
Exception: Sprinkler heads may be omitted in stairwells of noncombustible construction.

1902.2 Corridor Doors. All doors opening into required exit corridors shall be in conformance with the Building Code.
Exception: Existing 1-3/8 inch bonded, solid-core wood doors, if equipped with self-closures, need not be replaced.

1902.3 Corridor Openings. All openings into required exit corridor, other than doors, shall be in conformance with the Building Code.

1902.4 Exit Stairways. All high-rise buildings shall have a minimum of two approved exit stairways. The Fire Chief may allow a minimum of one approved stairway upon a finding that additional automatic sprinkler protection is provided that meets the spirit of this Appendix and provides at least the equivalent protection of that prescribed in this Appendix.

1902.5 Exit Stairwell Doors. All stairwell doors which are to be locked from the stairwell side shall automatically unlock, without unlatching, when the alarm system activates.

1902.6 Elevator Lobby Separation. All elevators on all floors shall open into elevator lobbies which are separated from the remainder of the building as is required for corridor construction in the Building Code. The Fire Chief may

waive this requirement upon a finding that additional automatic sprinkler protection is provided that meets the spirit of this Appendix and provides at least the equivalent protection of that prescribed in this Appendix.

1902.7 Elevator Recall. All automatic elevators shall be equipped for emergency operation in conformance with the Building Code.

1902.8 Fire Alarm Systems. All high-rise buildings shall have an alarm system meeting the requirements of this section. All required fire alarm systems shall be designed to be heard clearly by all occupants within the building but in no case shall it be less than 60 dB, or 15 dB above ambient noise levels, as measured in the A scale, within all habitable areas of the building. All required alarm systems shall operate automatically by smoke or products of combustion detectors and by manual pull stations as approved by the chief.

1902.9 Fire Alarm Supervision. All fire alarm systems shall be connected to an approved central station or the local fire department dispatch office in conformance with the Fire Code as approved by the chief.

1902.10 Exit Illumination. Exits shall be illuminated at any time the building is occupied with lights having an intensity of not less than 1 foot-candle at floor level. Such lighting shall have an independent alternate source of supply such as an emergency battery pack.

1902.11 Emergency Plan. The management for all buildings shall establish and maintain a written fire and life safety emergency plan which has been approved by the chief. The chief shall develop written criteria and guidelines upon which all plans shall be based.

1902.12 Posting of Emergency Plan and Exit Plans. Copies of the emergency plan and exiting plans (including elevator and stairway placarding) shall be posted in locations approved by the chief.

1902.13 Fire Drills. The management of all buildings shall conduct fire drills for their staff and employees at least every 120 days. The fire department must be advised of such drills at least 24 hours in advance. A written record of each drill shall be maintained in the building management office and made available to the fire department for review.

15.05 INTERNATIONAL FIRE CODE

15.05.10 Adoption of Chapters 3, 4, 5, 8, 25, and 56 of the International Fire Code. Chapters 3, 4, 5, 8, 25, and 56 of the International Fire Code, 2012 Edition, are adopted, as herein amended. One copy of the International Fire Code is on file and open to public inspection in the office of the city clerk. Three copies of the secondary codes set forth within

the International Fire Code, and the amendments set forth in this chapter, are on file and open to public inspection in the fire department administrative office.

Whenever the phrase "International Fire Code" appears in this code or in any ordinance of the city, such phrase shall be deemed and construed to refer to and apply to the "International Fire Code, 2009 Edition" and this chapter.

15.05.015 Section 304.1.2.1 added – Weed and Combustible Debris removal.
Section 304.1.2.1 is added to the International Fire Code to read as follows:

> **304.1.2.1 Weed and Combustible Debris removal.** The fire chief may cause the removal of weeds or combustible debris on properties in which further delay of such removal would promote a hazard. The chief may also at his option bill subject properties for any and all expenses related to the removal or as outlined in Chapter 8.08 of the Palo Alto Municipal Code.

15.05.020 Section 308.3.5 deleted – Religious Ceremonies.
Section 308.3.5 of the International Fire Code is deleted.

15.05.030 Sections 311.5 through 311.5.3 deleted – Vacant premises.
Sections 311.5 through 311.5.3 of the International Fire Code are deleted.

15.05.035 Section 316.4 added – Roof guardrails at interior courts.
Section 316.4 is added to the International Fire Code to read as follows:

> **316.4 Roof guardrails at interior courts.** Roof openings into interior courts that are bounded on all sides by building walls shall be protected with guardrails. The top of the guardrail shall not be less than 42 inches in height above the adjacent roof surface that can be walked on. Intermediate rails shall be designed and spaced such that a 12-inch diameter sphere cannot pass through. **Exception:** Where the roof opening is greater than 600 square feet in area.

15.05.040 Section 404.2 amended – Fire safety and evacuation plan required.
Section 404.2 of the International Fire Code is amended to read as follows:

> **404.2 Where Required.** An approved fire safety and evacuation plan shall be prepared and maintained for the following occupancies and buildings.
> 1. Group A buildings having an occupant load of 100 or more persons.
> 2. Group B buildings having an occupant load of 500 or more persons, or 2 or more stories in height.
> 3. Group E: See §3.13 Title 19, CCR for regulations.
> 4. Group H.
> 5. Group I. See §3.09 Title 19, CCR for regulations.
> 6. Group R-1. See §3.09 Title 19, CCR for regulations.

7. Group R-2 college and university buildings.
8. Group M buildings having an occupant load of 500 or more persons.
9. Covered malls exceeding 50,000 square feet (4645 m2) in aggregate floor area.
10. Underground buildings.

15.05.050 Section 404.3.1 amended – Fire evacuation plans.

Section 404.3.1 of the International Fire Code is amended to read as follows:

404.3.1 Fire Evacuation Plans. Fire evacuation plans shall include the following:

1. Emergency egress or escape routes and whether evacuation of the building is to be complete or, where approved, by selected floors or areas only.
2. Description of what the fire alarm, if required, sounds and looks like (audible and visual warning devices).
3. Procedures for employees who must remain to operate critical equipment before evacuating.
4. Procedures for accounting for employees and occupants after evacuation has been completed.
5. Identification and assignment of personnel responsible for rescue or emergency medical aid.
6. The preferred and any alternative means of notifying occupants of a fire or emergency.
7. The preferred and any alternative means of reporting fires and other emergencies to the fire department or designated emergency response organization.
8. Identification and assignment of personnel who can be contacted for further information or explanation of duties under the plan.
9. A description of the emergency voice/alarm communication system alert tone and preprogrammed voice messages, where provided.

15.05.060 Table 405.2 amended – Fire and evacuation drills.

Table 405.2 of the International Fire Code is amended to read as follows:

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TABLE 405.2
FIRE AND EVACUATION DRILL
FREQUENCY AND PARTICIPATION

GROUP OR OCCUPANCY	FREQUENCY	PARTICIPATION
Group A	Quarterly	Employees
Group B[b]	Annually	Employees
Group E	See §3.13 Title 19, CCR	
Group I	See §3.13 Title 19, CCR	
Group R-1	See §3.13 Title 19, CCR	
Group R-2[c]	Four annually	All occupants

1. The frequency shall be allowed to be modified in accordance with Section 408.3.2.

b. Group B buildings having an occupant load of 500 or more persons.

c. Applicable to Group R-2 college and university buildings in accordance with Section 408.3.

15.05.070 Sections 408.3.1 through 408.3.4 deleted.
Sections 408.3.1 through 408.3.4 of the International Fire Code are deleted.

15.05.075 Sections 408.5.1 through 408.5.5 deleted.
Sections 408.5.1 through 408.5.5 of the International Fire Code are deleted.

15.04.076 Sections 408.6 through 408.6.2 deleted.
Sections 408.6 through 408.6.2 of the International Fire Code are deleted.

15.04.077 Sections 408.7 through 408.7.4 deleted.
Sections 408.7 through 408.7.4 of the International Fire Code are deleted.

15.04.078 Sections 408.8 through 408.8.3 deleted.
Sections 408.8 through 408.8.3 of the International Fire Code are deleted.

15.05.079 Section 408.9 amended – Group R-2 occupancies.
Section 408.9 of the International Fire Code is amended to read as follows:

> **408.9 Group R-2 Occupancies.** Group R-2 occupancies shall comply with the requirements of Sections 408.9.1 through 408.9.3 and Sections 401 through 406. Group R-2 college and university buildings shall comply with the requirements of Sections 408.9.1 through 408.9.6 and Sections 401 through 406.

15.05.080 Sections 408.9.4 through 408.9.5 added – First Emergency Evacuation Drill.
Sections 408.9.4 through 408.9.5 are added to the International Fire Code to read as follows:

> **408.9.4 First Emergency Evacuation Drill.** The first emergency evacuation drill of each school year shall be conducted within 10 days of the beginning of classes.
>
> **408.9.5 Time of Day.** Emergency evacuation drills shall be conducted at different hours of the day or evening, during the changing of classes, when the school is at assembly, during the recess or gymnastic periods, or during other times to avoid distinction between drills and actual fires.

15.04.090 Sections 408.10 through 408.10.5 deleted.
Sections 408.10 through 408.10.5 of the International Fire Code are deleted.

15.05.100 Section 408.11.1.2 amended – Plan Revisions.
Section 408.11.1.2 of the International Fire Code is amended to read as follows:

> **408.11.1.2 Revisions.** The lease plans shall be revised annually or as often as necessary to keep them current.

15.05.110 Section 503.1.1 amended – Buildings and facilities.
Section 503.1.1 of the California Fire Code is amended to read as follows:

> **503.1.1 Buildings and facilities.** Approved fire apparatus access roads shall be provided for every facility, building or portion of a building hereafter constructed or moved into or within the jurisdiction. The fire apparatus access road shall comply with the requirements of this section and Fire Department access road standards and shall extend within 150 feet 945,720 mm) of all portions of the facility and all portions of the exterior walls of the first story of the building as measured by an approved route around the exterior of the building or facility.
> **Exception:** When Group R, Division 3, or Group U occupancies are equipped throughout with an approved automatic fire sprinkler system, the provisions of Sections 503.1.1 and 503.2.1 may be modified by the fire code official.

15.05.120 Section 503.2.1 amended – Dimensions.
Section 503.2.1 of the California Fire Code is amended to read as follows:

> **503.2.1 Dimensions.** Fire apparatus access roads shall have an unobstructed width of not less than 20 feet (6096 mm), except for approved security gates in accordance with Section 503.6, and an unobstructed vertical clearance of 13 feet 6 inches (4115 mm).
> **Exception:** When there are not more than two Group R, Division 3, or Group U occupancies, the access road width may be modified by the fire code official.

15.05.130 Section 503.7 added – Traffic Calming Devices.
Section 503.7 is added to the California Fire Code to read as follows:

> **503.7 Traffic Calming Devices.** Traffic Calming Devices such as speed humps, traffic circles or other physical measures intended to control vehicle speed on fire apparatus access roads are prohibited unless approved by the fire code official.

15.05.140 Section 504.4 amended – Access Control Devices.
Section 504.4 of the California Fire Code is amended to read as follows:

> **504.4 Access Control Devices.** When access control devices including bars, grates, gates, electric or magnetic locks or similar devices, which would inhibit rapid fire department emergency access to the building, are installed, such devices shall be approved by the fire code official. All access control devices shall be provided with an approved means for deactivation or unlocking by the fire department.
>
> Access control devices shall also comply with Chapter 10 Egress.

15.05.150 Section 507.4 added – Roof guards at interior courts.
Section 507.4 is added to Chapter 5 of the International Fire Code to read as follows:

> **507.4 Roof Guards At Interior Courts.** Roof openings into interior courts that are bounded on all sides by building walls shall be protected with roof guards. The top of the roof guard shall not be less than 42 inches in height above the adjacent roof surface that can be walked on. Intermediate rails shall be designed and spaced such that a 12-inch diameter sphere cannot pass through.
> **Exception:** Interior courts with roof opening greater than 600 square feet in area.

15.05.160 Section 510.1 amended – Emergency responder radio coverage in buildings.
Section 510.1 of the International Fire Code is amended to read as follows:

> **510.1 Emergency responder radio coverage in buildings.** All buildings shall have approved radio coverage for emergency responders within the building based upon the existing coverage levels of the public safety communications system of the jurisdiction at the exterior of the building. This section shall not require improvement of the existing public safety communications system. Emergency responder radio coverage systems shall be installed in accordance with Section 510 and Appendix J.

15.05.170 Section 510.1.1 added – Obstruction by New Buildings.
Section 510.1 of the California Fire Code is amended to read as follows:

510.1.1 Obstruction by new buildings. When determined, a new structure obstructing line of sight emergency radio communications to existing buildings or to any other locations, the developer of the structure shall provide and install the radio retransmission equipment necessary to restore communications capabilities. The equipment shall be located in an approved space or area within the new structure.

15.05.180 Section 806.1.1 amended – Display inside buildings.

Section 510.1 of the International Fire Code is amended to read as follows:

806.1.1 Display inside buildings. The display of decorative vegetation, including Christmas trees, in new and existing buildings shall be in accordance with the California Code of Regulations, Title 19, Division 1, §3.08 and Sections 806.1 through 806.5 of this Code.

15.05.190 Section 5601.1 amended - Scope- Explosives and Fireworks

Section 5601.1 of the International Fire Code is amended to read as follows:

5601.1 Scope - Explosives and Fireworks. For explosives requirements see Title 19 California Code of Regulations Chapter 10 and section 5601.1.1 of this chapter. For fireworks requirements see Title 19 California Code of Regulations Chapter 6 and section 5601.1.2 of this chapter.

Exceptions:

1. The armed Forces of the United States, Coast Guard or National Guard.
2. Explosives in forms prescribed by the official United States Pharmacopoeia.
4. The use of explosive materials by federal, state and local regulatory, law enforcement and fire agencies acting in their official capacities.
5. Items preempted by federal regulations.

15.05.200 Sections 5601.1. through 5608.1.1 added – Explosives, fireworks, and rocketry.

Sections 5601.1.1 through 5601.5.3.2.3 are added to the International Fire Code to read as follows:

5601.2 Explosives. The possession, manufacture, storage, sale, handling, and use of explosives are prohibited.

Exceptions:

1. Possession, storage, handling and use of explosives for test and research purposes is allowed with permit and approval of the fire code official.
2. Possession, storage, handling and use of squibs, explosive nuts or bolts and similar small quantity explosive devices is allowed with permit and approval of the fire code official.

5601.3 Fireworks. The possession, manufacture, storage, sale, handling, and use of fireworks, including those fireworks classified as Safe and Sane by the California State Fire Marshal, are prohibited.

Exceptions:

1. Storage, handling and use of fireworks and pyrotechnic special effects outside of buildings when used for public or proximate audience displays, motion picture, television, theatrical and group entertainment productions and when in accordance with Title 19 of the California Code of Regulations.
2. Storage, handling and use of pyrotechnic special effects fireworks inside of buildings when used for proximate audience displays or special effects in theatrical, television, motion picture and group entertainment productions when in accordance with Title 19 of the California Code of Regulations and when in buildings equipped throughout with an approved fire sprinkler system.

5601.4 Rocketry. The storage, handling, and use of model rockets shall be in accordance with Title 19 of the California Code of Regulations and as approved by the Fire Code Official.

Add Sections 5601.5 through 5601.5.3.2.3 to read:

5601.5 Small Arms Ammunition-General. Indoor storage and display of black powder, smokeless propellants and small arms ammunition shall comply with Sections 5601.5.1 through 5601.5.4.2.3.

5601.5.1 Packages. Smokeless propellants shall be stored in approved shipping containers conforming to DOTn 49 CFR, Part 173.

5601.5.1.1 Repackaging. The bulk repackaging of smokeless propellants, black powder and small arms primers shall not be performed in retail establishments.

5601.5.1.2 Damaged packages. Damaged containers shall not be repackaged.

Exception: Approved repackaging of damaged containers of smokeless propellant into containers of the same type and size as the original container.

5601.5.2 Storage in Group R occupancies. The storage of small arms ammunition in Group R occupancies shall comply with Sections 5601.5.2.1 through 5601.5.2.3.

5601.5.2.1 Smokeless propellants. Smokeless propellants intended for personal use in quantities not exceeding 20 pounds (9 kg) are permitted to be stored in Group R-3 occupancies where kept in original containers. Smokeless powder in quantities exceeding 20 pounds (9 kg) but not exceeding 50 pounds (23 kg) are permitted to be stored in Group R-3 occupancies where kept in a wooden box or cabinet having walls of at least 1 inch (25 mm) nominal thickness.

5601.5.2.2 Black powder. Black powder intended for personal use in quantities not exceeding

20 pounds (9 kg) are permitted to be stored in Group R-3 occupancies where kept in original containers and stored in a wooden box or cabinet having walls of at least 1 inch (25 mm) nominal thickness

5601.5.2.3 Small arms primers. No more than 10,000 small arms primers shall be stored in Group R-3 occupancies.

5601.5.3 Display and storage in Group M occupancies. The display and storage of small arms ammunition in Group M occupancies shall comply with Sections 5601.5.3.1 through 5601.5.3.2.3.

5601.5.3.1 Display. The display of small arms ammunition in Group M occupancies shall comply with Sections 5601.5.3.1.1 through 5601.5.3.1.3.

5601.5.3.1.1 Smokeless propellant. No more than 20 pounds (9 kg) of smokeless propellants, each in containers of 1 pound (0.454 kg) or less capacity, shall be displayed in Group M occupancies.

5601.5.3.1.2 Black powder. No more than 1 pound (0.454 kg) of black powder shall be displayed in Group M occupancies.

5601.5.3.1.3 Small arms primers. No more than 10,000 small arms primers shall be displayed in Group M occupancies.

5601.5.3.2 Storage. The storage of small arms ammunition in Group M occupancies shall comply with Sections 5601.5.3.2.1 through 5601.5.3.2.3.

5601.5.3.2.1 Storage of Smokeless propellant. Commercial stocks of smokeless propellants not on display shall not exceed 100 pounds (45 kg). Quantities exceeding 20 pounds (9 kg), but not exceeding 100 pounds (45 kg) shall be stored in portable wooden boxes having walls of at least 1 inch (25 mm) nominal thickness.

5601.5.3.2.2 Black powder. Commercial stocks of black powder not on display shall not exceed 50 pounds (23 kg) and shall be stored in a type 4 indoor magazine. When black powder and smokeless propellants are stored together in the same magazine, the total quantity shall not exceed that permitted for black powder.

5601.5.3.2.3 Small arms primers. Commercial stocks of small arms primers not on display shall not exceed 750,000. Storage shall be arranged such that not more than 100,000 small arms primers are stored in any one pile and piles are at least 15 feet (4572 mm) apart.

SECTION 2. The Council adopts the findings for local amendments to the California Fire Code, 2013 Edition, attached hereto as Exhibit "A" and incorporated herein by reference.

SECTION 3. The Council finds that this project is exempt from the provisions of the California Environmental Quality Act ("CEQA"), pursuant to Section 15061 of the California Guidelines, because it can be seen with certainty that there is no possibility that the amendments herein adopted will have a significant effect on the environment.

SECTION 4. This Ordinance shall become effective on the commencement of the thirty-first day after the day of its adoption.

INTRODUCED: October 21, 2013

PASSED: November 18, 2013

AYES: BERMAN, BURT, HOLMAN, KLEIN, KNISS, PRICE, SCHARFF, SCHMID, SHEPHERD

NOES:

ABSENT:

ABSTENTIONS:

ATTEST:

City Clerk

Mayor

APPROVED AS TO FORM:

Senior ~~Deputy~~ City Attorney
Asst.

APPROVED:

City Manager

Director of Human Resources

Director of Administrative Services

EXHIBIT A

Findings for Local Amendments to the
2013 California Fire Code

The following local amendments to the 2013 California Fire Code make modifications as authorized by the California Health and Safety Code. In accordance with Section 18941.5 of said Code, Findings are hereby made to show that such modifications or changes are reasonably necessary because of local climatic, geological or topographical conditions.

PREAMBLE I.

Findings of fact:

A. Pursuant to Section 17958.5 of the California Health and Safety Code, the report contained herein is submitted as the "Findings of Fact" document with regard to the adoption of the California Fire Code, 2013 Edition, and amendments. Under this adopting ordinance, specific amendments have been established which are more restrictive in nature than those adopted by the State of California (State Building Code Standards, State Housing and Community Development Codes) commonly referred to as California Code of Regulations, Titles 19, 24 and 25.

B. These amendments to the California Fire Code, 2013 Edition, have been recognized by the City of Palo Alto ("City") as tools for addressing the fire problems, concerns and future direction by which the authority can establish and maintain an environment which will afford a level of fire and life safety to all who live and work within the City's boundaries.

C. Under the provisions of Section 17958.5 of the Health and Safety Code, local amendments shall be based upon the following: climatic, geological/geographical, and topographical conditions. The findings of fact contained herein shall address each of these situations and shall present the local situation which, either singularly or in combination, caused the established amendments to be adopted.

1. Climactic Conditions:

The City, on an average, experiences an annual rainfall of 16" - 18". This rainfall can be expected between October and April of each year. However, during the summer months there is little, if any, measurable precipitation. During this dry period the temperatures are usually between 70-90 degrees with light to gusty westerly winds. These drying winds, combined with the natural vegetation which is dominant throughout the area, create a hazardous fuel condition which can cause, and has caused in the past, extensive grass and brush land fires. With more and more development encroaching into these wooded and grass covered areas, wind-driven fires could have severe consequences, as has been demonstrated on several occasions in Palo Alto and other areas of the state. Fires in structures can easily spread to the wildland as well as a fire in the wildland into a structure.

Because of the weather patterns, a normal rainfall cannot always be relied upon. This can result in water rationing and water allocation systems, as demonstrated by the drought years of 1986-1991. Water shortages can also be expected in the future due to the current water storage capacities and increased consumption. The water supply for the Palo Alto fire department makes use of automatic fire sprinkler systems feasible as a means to reduce our dependency on large volumes of water for fire suppression.

2. Geological & Geographical Conditions

Geographical Location. Palo Alto is located at the northern most part of Santa Clara County. Palo Alto is a major focus of the "Silicon Valley," the center for an expanding and changing electronics industry, as well as pharmaceutical, biomedical, and genetic research.

Seismic Location. Palo Alto is situated on alluvial solids 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. Approximately 55% of the City's land surface is in the high-to-moderate seismic hazard zones.

Seismic and Fire Hazards. Fire following an earthquake has the potential of causing greater loss of life and damage than the earthquake itself.

The majority of the City's high-rise structures are located in seismic risk zones. Should a significant seismic event occur, Public Safety resources would have to be prioritized to mitigate the greatest threat, and may not be available for every structural fire. In such event, individual structures, including high-rise buildings, should be equipped to help in mitigating the risk of damage.

Other variables may tend to intensify the situation:

a. The extent of damage to the water system;

b. The extent of isolation due to bridge and/or freeway overpass collapse;

c. The extent of roadway damage and/or amount of debris blocking the roadways;

d. Climatical conditions (hot, dry weather with high winds);

e. Time of day will influence the amount of traffic on roadways and could intensify the risk to life during normal business hours;

f. The availability of timely mutual aid or military assistance;

g. Many high-rise structures are located near areas of high fire danger necessitating special

precautions.

Transportation. Palo Alto is dissected by a major state highway (El Camino Real) and two major freeways (I-280 and U.S. 101), which potentially could negatively affect response times of fire suppression equipment.

Soil Conditions. Palo Alto 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 many streams emptying into the San Francisco Bay depression, and from intermittent sea water 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 of generally 300' or more.

3. Topographical Conditions:

The findings of fact for the topographical element, as would be expected, are closely associated with the geological/geographical element. With the elevation changes within the district, development is of course following the path of least resistance, creating a meandering pattern. This then does not lend itself to a good systematic street and road layout, which would promote easy traffic flow. It has, in fact, resulted in few major crosstown thoroughfares which tend to be heavily congested, primarily during commute hours and seasonal periods of the year. This creates barriers which reduce the response time of fire equipment and other emergency services. The topography of the district is being burdened by major structures. Employment areas are throughout the district. The people who work in these complexes have added to the traffic congestion throughout the city, thereby reducing the fire department's response time capabilities.

Inherent delays caused by the traffic patterns to many of these types of projects, make it necessary to mitigate this problem by requiring additional built-in automatic fire protection systems to provide early detection and initial control until the arrival of the fire department.

The topography of the district in much of the commercial and residential zones lies within or near a flood plane. Periodically, heavy rains and high tides cause region-wide flooding which not only delays response but also increases demands on fire personnel. The fire code amendments increase safeguards and initialize early response to help compensate for these physical delays.

As a result of the findings of facts which identify the various climatic, geological/geographical and topographical elements, those additional requirements as specified in the amendments to adopting ordinance for the California Fire Code 2013 Edition, by the City of Palo Alto area are considered reasonable and necessary modifications. The experience of several disastrous fires within the city in addition to Santa Clara, Monterey, San Mateo, Alameda and Contra Costa counties have demonstrated the need for other fire protection features, the most significant of which was located in the Oakland/Berkeley Hills in which over 3,000 homes were destroyed and 25 human lives were lost. While it is clearly understood that the adoption of

such regulations may not prevent the incidence of fire, the implementation of these various amendments to the Code may reduce the severity and potential of loss of life and property.

II. Specific Findings for Local Amendments

The majority of local amendments (those not specifically listed below) are made strictly to conform to other parts of the Palo Alto Municipal Code (PAMC) and for similar administrative purposes.

Based upon the findings of fact described in section I, the City Council also makes the following specific findings regarding local climatic, geological, and topographic conditions related to local amendments to the California and International Fire Codes found in Chapters 15.04 and 15.05 of Title 15 of the Palo Alto Municipal Code ("PAMC"):

1. The local amendments contained in PAMC sections 15.04.030 through 15.04.070 and sections 15.04.325 through 15.04.441 relating to general conditions for hazardous materials are necessary modifications to the California Fire Code flammable and hazardous materials sections because they maintain consistency with the Hazardous Materials Storage Ordinance which has been adopted county-wide since 1983. Requirements include safeguards such as monitoring, secondary containment, separation of non compatibles which prevent incidents should a seismic event, unauthorized release or accident occur.

2. The local amendment contained in PAMC section 15.05.015- Weed removal- is necessary to require weeds to be removed from properties when determined to be a hazard at the expense of the responsible party. Weeds can be a fire hazard that may also contribute to the uncontrolled spread of fire as a result of the climatic, geographical, and topographical conditions described in Findings 1, 2, and 3 above.

3. The local amendments contained in PAMC section 15.05.140 through 15.05.170 set forth measures to limit delays in response time and reduce hazards to firefighters. These measures are necessary to prevent exacerbation of response delays associated with the Climatic, Geographical and Topographical conditions listed in Findings 1, 2 and 3 above.

4. The local amendment contained in PAMC section 15.04.210- Immersion Heaters- is necessary as a fire control measure because it requires additional controls on process heating devices which are often activated when unattended. See Geological Findings 2.

5. The local amendments contained in PAMC 15.04.230 through 15.04.260 relating to fire sprinkler systems are necessary for faster control of fires in the dense populated area of our community to confine a fire to the area of origin rather than spread to neighboring structures.

The modifications contained in these amendments provide additional fire extinguishing systems in new construction, major remodels, additions, and occupancy classification changes to help mitigate the problems identified in Findings 1, 2, and 3, above- Climatic, Geographical and Topographical.

6. The local amendment contained in PAMC section 15.04.270 - Floor control valves- is necessary to provide fire extinguishing control devices that allow systems to remain partially in service while repairs or maintenance are ongoing. See Findings 1 and 2 above- Climatic and Geographical.

7. The local amendment contained in Section 15.04.275- Single- and multiple-station smoke alarms- is necessary to alert occupants at the earliest possible stage of smoldering residential fires.

This modification requires smoke detection provided in new construction, remodels, additions, rental housing and newly purchased homes to be photoelectric or dual sensor technology to allow greater likelihood of occupants safely escaping residential fires and notifying the fire department during the earliest possible stage of fire growth. This will help mitigate the problems identified in Findings 1, 2, and 3, above- Climatic, Geographical and Topographical.

8. The local amendments contained in PAMC sections 15.04.280 through 15.04.295 provide for additional fire and life safety measures during construction and demolition. See Findings 2 and 3, above- Geographical and Topographical.

9. The local amendments contained in PAMC 15.04.300– Definition of "continuous gas detection system" and sections 15.04.325, 15.04.352 and 15.04.450 through 15.04.502 regarding toxic gases incorporate requirements established by the Model Toxic Gas Ordinance and California Fire Code. Administrative and restrictive measures include changes in definitions, quantities regulated, and utilizes County consensus guidelines established by other regional agencies which share similar climatic, geological/geographical, and topographical conditions. See Findings 1, 2 and 3, above- Climatic, Geographical and Topographical.

10. The local amendment contained in PAMC sections 15.04.310 and 15.04.320- Fire Protection Water Supply System, requires an adequate water supply in areas used for storage of highly combustible organic waste materials. This requirement mitigates the added hazards and limited access conditions described in Findings 1 and 3, above- Climatic and Topographical.

11. The local amendments contained in PAMC section 15.04.510 - Storage and use of liquefied petroleum gas- place restrictions on liquid petroleum gas where natural gas is provided. These restrictions are appropriate given Palo Alto's seismically active local geological conditions because they will reduce portable container releases in the event of seismic activity and mitigate the geological risk described in Finding 2, above- Geographical.

12. The local amendments contained in PAMC section 15.04.515 – Silane distribution systems automatic shutdown- place restrictions on silane distribution systems. These restrictions are appropriate given Palo Alto's seismically active local geological conditions because they will reduce release volume in the event of seismic activity or unauthorized release and mitigate the geological risk described in Finding 2, above- Geographical.

13. The local amendments contained in PAMC sections 15.04.520 through 15.04.588 set forth protections for urban-wildland interface areas that are necessary to mitigate the additional fire risks in the Palo Alto foothills hazardous fire zone. The modifications contained

in these amendments provide for additional precautions against fire risks and additional fire extinguishing systems necessitated by the conditions listed in Findings 1, 2, and 3, above- Climatic, Geographical and Topographical.

14. The local amendments contained in PAMC section 15.04.590- Life safety requirements for existing high rise buildings- are designed to provide additional fire and life safety features in existing high-rise buildings given the seismically sensitive geological conditions described in Findings 2 and 3, above- Geographical and Topographical.

15. The local amendments contained in PAMC section 15.05.035- Roofguards at interior courts provides for additional fire and life safety measures for firefighters on buildings with unconventional lightwells. See Findings 2 and 3, above- Geographical and Topographical.