

Ordinance No. 5566

Ordinance of the Council of the City of Palo Alto Repealing Chapter 16.06 of the Palo Alto Municipal Code and Adopting a New Chapter 16.06, California Residential Code, 2022 Edition, and Local Amendments and Related Findings, and Amending Section Chapter 16.52, Flood Hazard Regulations, to Make Conforming Changes

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 the Chapter in its entirety and adopting a new Chapter 16.06 to read as follows:

**CHAPTER 16.06  
2022 California Residential Code,  
CALIFORNIA CODE OF REGULATIONS, TITLE 24, PART 2.5**

**Sections**

- 16.06.010 2022 California Residential Code adopted and amended.**
- 16.06.015 Local Amendments.**
- 16.06.020 2022 California Residential Code Appendix Chapters adopted.**
- 16.06.030 Cross - References to California Residential Code.**
- 16.06.040 Administration of California Residential Code.**
- 16.06.050 Section R202 Definitions.**
- 16.06.060 Table 301.2 Climatic and Geographic Design Criteria.**
- 16.06.070 Section R301.2.2.6 Irregular buildings.**
- 16.06.075 Section R304.4 Dwelling unit and congregate residence superficial floor area.**
- 16.06.080 Section R310 Emergency escape and rescue openings.**
- 16.06.090 Section R310.4.2.3 Window well fall protection.**
- 16.06.100 Section R310.4.1 Security bars.**
- 16.06.110 Section R313.1.1 Design and installation.**
- 16.06.120 Section R313.2 One- and two-family dwellings automatic fire sprinkler systems.**
- 16.04.130 Section R313.2.1 Design and installation.**
- 16.04.140 Section R313.2.2 NFPA 13D sprinkler systems increase in design requirements.**
- 16.04.150 Section R313.3 Dwelling unit fire sprinkler systems.**
- 16.06.160 Section R314.1 Smoke detection and notification.**
- 16.06.170 Section R314.1.1 Smoke alarms or detector end of life replacement**
- 16.06.180 Section R315.7.5. Carbon Monoxide alarms**

- 16.06.190 Section R319.1 Address numbers.**
- 16.06.200 Section R322.1 General (Palo Alto Flood Hazard Regulations).**
- 16.06.210 Section R337.1.5 Vegetation management compliance**
- 16.06.220 Section R401 GENERAL**
- 16.06.225 Section R402.2.1 Materials for concrete**
- 16.06.230 Section R403 FOUNDATION.**
- 16.06.240 Section R404.1.3 Concrete foundation walls.**
- 16.06.250 Section R504.3.1 Projections exposed to weather**
- 16.06.260 Section R506.1 General**
- 16.06.270 Section R602.10.4.5 Limits on methods GB and PCP**
- 16.06.280 Table R602.10.3(3) Bracing requirements based on seismic design category**
- 16.06.290 Section R608.5 Materials**
- 16.06.300 Section R703.8.5.1 Locations.**
- 16.06.310 Section R902.1.4 Roofing requirements in a Wildland-Urban Interface Fire Area**
- 16.06.320 Section R1003.9.2.1 Repairs, replacements, and alterations**
- 16.06.330 Section AJ103 Preliminary Meeting**

**16.06.010 2022 California Residential Code adopted and amended.**

The California Residential Code, 2022 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, 2019, shall be construed to apply to the corresponding provisions contained within the California Code of Regulations, Title 24, 2022. Ordinance No. 5509 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, 2022 Edition, Title 24, Part 2.5 of the California Code of Regulations, as adopted by this Chapter.

One copy of the California Residential Code, 2022 Edition, has been filed for use and examination of the public in the Office of the Building Official of the City of Palo Alto.

**16.06.015 Local Amendments.**

The provisions of this Chapter shall constitute local amendments to the cross-referenced provisions of the California Residential Code, 2022 Edition, and shall be deemed to replace the cross-referenced sections of said Code with the respective provisions set forth in this Chapter.

Where used in this Chapter 16.06, ellipses shall indicate text of the California Residential Code, 2022 Edition, that has been adopted without amendment but is omitted for brevity.

**16.06.020 2022 California Residential Code Appendix Chapters adopted.**

The following Appendix Chapters of the California Residential Code, 2022 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 AH – Patio Covers
- B. Appendix AJ – Existing Building and Structures
- C. Appendix AK – Sound Transmission
- D. Appendix AX – Swimming Pool Safety Act

**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, 2022 Edition, in order to facilitate reference and comparison to those provisions.

**16.06.040 Administration of California Residential Code**

Chapter 1, Division II of the 2022 California Residential Code is replaced in its entirety by Chapter 1, Division II of the 2022 California Building Code as amended by Palo Alto Municipal Code Chapter 16.04.

**16.06.050 Section R202 Definitions.**

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

**SUPERFICIAL FLOOR AREA.** "Superficial floor area" is the net floor area within the enclosing walls of the room in which the ceiling height is not less than seven feet six inches, excluding built-in equipment such as wardrobes, cabinets, kitchen units, or fixtures which are not readily removable.

**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.

**16.06.060 Table 301.2 Climatic and Geographic Design Criteria.**

Table 301.2 of the California Residential Code is amended to read:

**TABLE R301.2  
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	92	No	D0 thru E	Negligible	5"	Very High

WINTER DESIGN TEMP. (°F)	ICE BARRIER UNDERLAYEMENT REQUIRED	FLOOD HAZARDS	AIR FREEZING INDEX	MEAN ANNUAL TEMP. (°F)
40	No	See Footnotes p thru r	0	55

**P** The City of Palo Alto entered National Flood Insurance Program in 1979.

**Q** The effective date of the current Flood Insurance Study and Flood Insurance Rate Map is May 18, 2009.

**R** The panel numbers and dates of all currently effective FIRMs and FBFMs:  
06085CIND0A, 06085C0010H, 06085C0015H through 06085C0019H, 06085C0030H,  
06085C0036H , 06085C0038H , 06085C0180H ,06085C0185H (May 18, 2009 for all)

#### **16.06.070 Section R301.2.2.6 Irregular buildings.**

Section R301.2.2.6 of the California Residential Code is amended as follows:

The seismic provisions of this code shall not be used for structures, or portions thereof, located in Seismic Design Categories C, D0, D1 and D2 and considered to be irregular in accordance with this section. A building or portion of a building shall be considered to be irregular where one or more of the conditions defined in Items 1 through 8 occur. Irregular structures, or irregular portions of structures, shall be designed in accordance with accepted engineering practice to the extent the irregular features affect the performance of the remaining structural system. Where the forces associated with the irregularity are resisted by a structural system designed in accordance with accepted engineering practice, the remainder of the building shall be permitted to be designed using the provisions of this code.

**1. Shear wall or braced wall offsets out of plane.** Conditions where exterior shear wall lines or braced wall panels are not in one plane vertically from the foundation to the uppermost story in which they are required.

**2. Lateral Support of roofs and floors.** Conditions where a section of floor or roof is not

laterally supported by shear walls or braced wall lines on all edges.

**Exception:** Portions of floors that do not support shear walls, braced wall panels above, or roofs shall be permitted to extend not more than 6 feet (1829 mm) beyond a shear wall or braced wall line.

**3. Shear wall or braced wall offsets in plane.** Conditions where the end of a braced wall panel occurs over an opening in the wall below.

**4. Floor and roof opening.** Conditions where an opening in a floor or roof exceeds the lesser of 12 feet (3658 mm) or 50 percent of the least floor or roof dimension.

**5. Floor level offset.** Conditions where portions of a floor level are vertically offset.

**6. Perpendicular shear wall and wall bracing.** Conditions where shear walls and braced wall lines do not occur in two perpendicular directions.

**7. Wall bracing in stories containing masonry or concrete construction.** Conditions where stories above grade plane are partially or completely braced by wood wall framing in accordance with Section R602 or cold-formed steel wall framing in accordance with Section R603 include masonry or concrete construction. Where this irregularity applies, the entire story shall be designed in accordance with accepted engineering practice.

**Exceptions:** Fireplaces, chimneys and masonry veneer in accordance with this code.

**8. Hillside light-frame construction.** Conditions in which all of the following apply:

8.1 The grade slope exceeds 1 unit vertical in 5 units horizontal where averaged across the full length of any side of the dwelling.

8.2 The tallest cripple wall clear height exceeds 7 feet (2134 mm), or where a post and beam system occurs at the dwelling perimeter, the post and beam system tallest post clear height exceeds 7 feet (2134 mm).

8.3 Of the total plan area below the lowest framed floor, whether open or enclosed, less than 50 percent is living space having interior wall finishes conforming to Section R702.

Where Item 8 is applicable, design in accordance with accepted engineering practice shall be provided for the floor immediately above the cripple walls or post and beam system and all structural elements and connections from this diaphragm down to and including connections to the foundation and design of the foundation to transfer lateral loads from the framing above.

**Exception:** Light-frame construction in which the lowest framed floor is supported directly on concrete or masonry walls over the full length of all sides except the downhill side of the dwelling need not be considered an irregular dwelling under

Item 8.

**16.06.75 Section R304.4 Dwelling unit and congregate residence superficial floor area.**

Section R304.4 of the California Residential Code is amended to read:

**R304.4 Dwelling unit and congregate residence superficial floor area.** Every dwelling unit and congregate residence shall have at least one room which shall have not less than 120 square feet of superficial floor area. Every room which is used for both cooking and living or both living and sleeping purposes shall have not less than 144 square feet of superficial floor area. Every room used for sleeping purposes shall have not less than 70 square feet of superficial floor area. When more than two persons occupy a room used for sleeping purposes the required superficial floor area shall be increased at the rate of 50 square feet for each occupant in excess of two. Guest rooms with cooking shall contain the combined required superficial areas of a sleeping and a kitchen, but not less than 144 square feet. Other habitable rooms shall be not less than 70 square feet.

Notwithstanding any provision of this Section, children under the age of six shall not be counted for purposes of determining whether a family with minor children complies with the provisions of this Code.

For the purposes of this section, "superficial floor area" means the net floor area within the enclosing walls of the room in which the ceiling height is not less than seven feet six inches, excluding built-in equipment such as wardrobes, cabinets, kitchen units, or fixtures which are not readily removable.

**16.06.080 Section R310 Emergency escape and rescue openings.**

Section R310 of the California Residential Code is amended to read:

**R310.1 Emergency escape and rescue opening required.** Basements, habitable attics and every sleeping room shall have not less than one operable emergency escape and rescue opening. Where basements contain one or more sleeping rooms, an emergency escape and rescue opening shall be required in each sleeping room. Emergency escape and rescue openings shall open directly into a public way, or to a yard or court that opens to a public way.

**Exceptions:**

1. Storm shelters and basements used only to house mechanical equipment not exceeding a total floor area of 200 square feet (18.58 m<sup>2</sup>)

**16.06.090 Section R310.4.2.3 Window well fall protection.**

Section R310.4.2.3 of the California Residential Code is added to read:

**R310.4.2.3 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. Openings shall comply with Section R312.1.3. Access ladder shall comply with Section R310.4.2.1 and shall extend from the bottom of the well to the top of the guard. Grates or similar barriers shall not be installed over the window well.

**16.06.100 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.

**16.06.110 Section R313.1.1 Design and installation.**

Section 313.1.1 of the California Residential Code is amended to read:

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

**16.06.120 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 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 of the California Building Code and as follows, whichever is the more restrictive:

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

**Exception:** New residential occupancies, buildings or structures that do not exceed 350 square feet of building area and contain no interior plumbing fixtures.

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 3600 square feet or when the addition is equal or greater than 50% of the existing building square footage whichever is more restrictive.
3. An automatic sprinkler system shall be provided throughout all new or altered basements used for storage/utility/occupancy or habitable space regardless of size and throughout existing basements that are expanded by more than 50%.

If the addition or alteration is only the basement, then only the basement is required to be fire sprinkler protected

4. An automatic sprinkler system shall be installed throughout when either the roof structure and/or exterior wall structure have been removed, altered and/or replaced by at least 50% of the existing structure.
5. An automatic sprinkler system shall be installed throughout when any change in use or occupancy creating a more hazardous fire/life safety condition, as determined by the Fire Chief.

**16.04.130 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.** R313.2.1 Design and installation. Where allowed, automatic sprinkler systems installed in one- and two-family detached dwellings shall be installed throughout in accordance with NFPA 13D and State and local standards. Fire sprinkler protection is required under rear covered patios extending over 4 feet perpendicular from the exterior of the structure.

**16.04.140 Section R313.2.2 NFPA 13D sprinkler systems increase in design requirements.**

Section R313.2.2 of the California Residential Code is added to read as follows:

**R313.2.2 Section R313.2.2 NFPA 13D sprinkler systems increase in design requirements.** In a higher fire fighting hazardous conditions a four head fire sprinkler calculation and coverage in all closets, bathrooms and attics will be required in Residential and Group U Occupancies as determined by the Fire Code Official in the following conditions:

1. Structures located in the High Hazardous Fire Areas.
2. Structures where the combined fire area is 3600 sq ft or larger.
3. Structures located 150 ft or greater from the Fire Department access roadways.
4. Basements and below grade structures.

**16.04.150 Section R313.3 Dwelling unit fire sprinkler systems.**

Section R313.3 of the California Residential Code is deleted in its entirety and amended as follows:

**R313.3 Dwelling unit fire sprinkler systems.** Fire sprinkler systems shall be designed and installed in accordance with NFPA 13D, State and local standards.



**16.06.160 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 California Fire Code Sections 907.2.11.1 through 907.2.11.5 and manufacturer's installation and use instructions.

Smoke alarms and smoke detectors shall be in compliance with this code or subject to the provisions of the Health and Safety Code, they shall also be listed and approved for rapid response to smoldering synthetic materials. All smoke alarms or detectors shall be of the photoelectric type or shall have equivalent detection capabilities in compliance with UL 217.

**Exception:** A photoelectric smoke alarm or detector shall be installed if located within 20 feet to a kitchen, fireplace or woodburning stove or within 5 feet of a bathroom.

**16.06.170 Section R314.1.1 Smoke alarms or detector end of life replacement.**

Section R314.2 of the California Residential Code is added to read:

**R314.1.1 Smoke alarms or detector end of life replacement.** Smoke alarms or detectors shall be replaced every 10 years or according to the manufacture guidelines, whichever is more restrictive.

**16.06.180 Section R315.7.5. Carbon Monoxide alarms.**

Section R315.7.5 of the California Residential Code is added to read:

**R315.7.5 Carbon Monoxide alarms or detectors end of life replacement.** Carbon monoxide alarms or detectors shall be replaced every 10 years or according to the manufacture guidelines, whichever is more restrictive.

**16.06.190 Section R319.1 Address numbers.**

The following subsections are added to Section R319.1 of the California Residential Code:

**R319.1.1 Address illumination.** Address identification required by Section R319.1 shall be illuminated.

**R319.1.2 Address identification size.** Address numbers and letters shall be sized as follows:

1. When the structure is between thirty-six (36) and fifty (50) feet from the road or other emergency means of access, a minimum of one-half inch (0.5") stroke by six inches (6") high is required.

2. When the structure is fifty (50) or more feet from the road or other emergency means of access, a minimum of one inch (1”) stroke by nine inches (12”) high is required.

**16.06.200 Section R322.1 – General (Palo Alto Floor Hazard Regulations).**

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 R322, 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 more stringent requirements shall apply.

**16.06.210 Section R337.1.5 Vegetation management compliance.**

Section R337.1.5 of the California Residential Code is amended to read:

**R337.1.5 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.

**16.06.220 Section R401 GENERAL.**

Section 401 of the California Residential Code is amended to read:

**R401.1 – R401.3** {CRC text not modified}

**R401.4 Soils tests.** Exception is added at end of the CRC text as follows:

Exception: Refer to PAMC 16.04.295

**R401.4.1 Geotechnical evaluation.** When permitted by the building official or designee,

in lieu of a complete geotechnical evaluation, the load bearing values in T401.4.1 shall be assumed.

**R401.4.1.1 – R401.4.2** {CRC text not modified}

**16.06.225 Section R402.2.1 Materials for concrete.**

Section 402.2.1 of the California Residential Code is amended to read:

**R402.2.1 Materials for concrete.** Materials for concrete shall comply with the requirements of Section R608.5.1, as amended by PAMC 16.14.250.

**16.06.230 Section R403 FOUNDATION.**

Section R403 of the California Residential Code is amended as follows:

**R403.1 – R403.1.1** {CRC text not modified}

**R403.1.2 Continuous footing in Seismic Design Categories D0, D1, and D2.** Exterior walls of buildings located in Seismic Design Categories D0, D1 and D2 shall be supported by continuous solid or fully grouted masonry or concrete footings. All required interior braced wall panels in buildings located in Seismic Design Categories D0, D1 and D2 shall be supported on continuous foundations.

**R403.1.3 Footing and stem wall reinforcing in Seismic Design Categories D0, D1, and D2.** Concrete footings located in Seismic Design Categories D0, D1 and D2, as established in Table R301.2(1), shall have not fewer than three No. 4 horizontal bars. One No. 4 horizontal bar shall be installed within 12 inches (305 mm) of the top of the stem wall and two No. 4 horizontal bars shall be located 3 to 4 inches (76 mm to 102 mm) from the bottom of the footing.

**R403.1.3.1 Concrete stem walls with concrete footings.** In Seismic Design Categories D0, D1 and D2 where a construction joint is created between a concrete footing and a stem wall, not fewer than one No. 4 vertical bar shall be installed at not more than 4 feet (1219 mm) on center. The vertical bar shall have a standard hook and extend to the bottom of the footing and shall have support and cover as specified in Section R403.1.3.5.3 and extend not less than 14 inches (357 mm) into the stem wall. Standard hooks shall comply with Section R608.5.4.5. Not fewer than one No. 4 horizontal bar shall be installed within 12 inches (305 mm) of the top of the stem wall and two No. 4 horizontal bars shall be located 3 to 4 inches (76 mm to 102 mm) from the bottom of the footing.

**R403.1.3.2 Masonry stem walls with concrete footings.** In Seismic Design Categories D0, D1 and D2 where a grouted masonry stem wall is supported on a concrete footing, not fewer than one No. 4 vertical bar shall be installed at not more than 4 feet (1219 mm) on center. The vertical bar shall have a standard hook and extend to the bottom of the footing and have support and cover as specified in Section

R403.1.3.5.3 and extend not less than 14 inches (357 mm) into the stem wall. Standard hooks shall comply with Section R608.5.4.5. Not fewer than one No. 4 horizontal bar shall be installed within 12 inches (305 mm) of the top of the wall and two No. 4 horizontal bars shall be located 3 to 4 inches (76 mm to 102 mm) from the bottom of the footing. Masonry stem walls shall be solid grouted.

In Seismic Design Categories D0, D1 and D2 masonry stem walls without solid grout and vertical reinforcing are not permitted.

**R403.1.3.3 – R403.1.7.4** {CRC text not modified}

**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 as amended in Municipal Code Section 16.04.300.

**R403.1.8.1** {CRC text not modified}

**16.06.240 Section R404.1.3 Concrete foundation walls.**

Section 404.1.3 of the California Residential Code is amended to read:

**R404.1.3 Concrete Foundation Walls.** *Concrete* foundation walls that support light-frame walls shall be designed and constructed in accordance with the provisions of this section, ACI 318, ACI 332, or PCA 100, as amended by PAMC Section 16.14.250. *Concrete* foundation walls that support above-grade *concrete* walls that are within the applicability limits of Section R608.2 shall be designed and constructed in accordance with the provisions of this section, ACI 318, ACI 332, or PCA 100, as amended by PAMC Section 16.14.250. *Concrete* foundation walls that support above-grade *concrete* walls that are not within the applicability limits of Section R608.2 shall be designed and constructed in accordance with the provisions of ACI 318, ACI 332, or PCA 100, as amended by PAMC Section 16.14.250. When ACI 318, ACI 332, PCA 100 or the provisions of this section, as amended by PAMC Section 16.14.250 are used to design *concrete* foundation walls, project drawings, typical details and specifications are not required to bear the seal of the architect or engineer responsible for design, unless otherwise required by the state law of the jurisdiction having authority.

**16.06.250 Section R504.3.1 Projections exposed to weather.**

Section R504.3.1 of the California Residential Code is added to read:

**R504.3.1 Projections exposed to weather.** Floor projections exposed to the weather and sealed underneath, including but not limited to balconies, landings, decks, and stairs shall be constructed of naturally durable wood, preservative-treated wood, corrosion-resistant (e.g. galvanized) steel, or similar approved materials.

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**16.06.260 Section R506.1 General.**

Section R506.1 of the California Residential Code is amended to read:

**R506.1 General.** Concrete slab-on-ground floors shall be designed and constructed in accordance with the provisions of this section of ACI 332, as amended by PAMC Section 16.14.250. Floors shall be a minimum 3 1/2 inches (89mm) thick (for expansive soils, see Section R403.1.8). The specified compressive strength of *concrete* shall be as set forth in Section R402.2.

**16.06.270 Section R602.10.4.5 Limits on methods GB and PCP.**

Section R602.10.4.5 of the California Residential Code is added to read:

**R602.10.4.5 Limits on methods GB and PCP.** In Seismic Design Categories D0, D1, and D2, Method GB is not permitted for use as an intermittent braced wall panels, but gypsum board is permitted to be installed when required by this Section to be placed on the opposite side of the studs from other types of braced wall panel sheathing. In Seismic Design Categories D0, D1, and D2, the use of Method PCP is limited to one-story single family dwelling and accessory structures.

**16.06.280 Table R602.10.3(3) Bracing requirements based on seismic design category.**

Footnote e to Table R602.10.3(3) is amended to read as follows:

e. In Seismic Design Categories D0, D1 and D2, Method GB is not permitted and PCP is limited to one-story dwellings and accessory structures.

**16.06.290 Section R608.5 Materials.**

Section R608.5 of the California Residential Code is amended to read:

**R608.5 Materials.** Materials used in the construction of concrete walls shall comply with this section, as amended by PAMC Chapter 16.14.250.

**16.06.300 Section R703.8.5.1 Locations.**

Section R703.8.5.1 of the California Residential Code is added to read:

**R703.8.5.1 Locations.** Flashing shall be installed at wall and roof intersections, gutters, wherever there is a change in roof slope or direction, and around roof openings. Where flashing is of metal, the metal shall be corrosion resistant with a thickness of not less than 0.019 inches (0.483 mm) (e.g. no. 26 galvanized sheet) and shall be primed and painted.

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**16.06.310 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 R337.5.

**16.06.320 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.

**16.06.330 Section AJ103 Preliminary Meeting.**

Section AJ103 of Appendix AJ of the California Residential Code is amended to read:

**Section AJ103.1 General.** If a building permit is required at the request of the prospective permit applicant, the building official or his or her designee may meet with the prospective applicant to discuss plans for any proposed work under these provisions prior to the application for the permit. The purpose of this preliminary meeting is for the building official to gain an understanding of the prospective applicant's intentions for the proposed work, and to determine, together with the prospective applicant, the specific applicability of these provisions.

**SECTION 2.** The Council adopts the findings for local amendments to the California Residential Code, 2022 Edition, attached hereto as Exhibit "A" and incorporated herein by reference.

**SECTION 3.** Section 16.52.040 (Definitions) of Chapter 16.52 (Flood Hazard Regulations) of Title 16 (Building) of the Palo Alto Municipal Code is amended to read as follows (additions underlined, deletions ~~struck through~~, and omissions of unchanged language noted by [ . . . ]):

**16.52.040 Definitions**

(a) The definitions contained hereafter shall govern the interpretation of the terms defined for the purposes of this chapter, except where the context clearly requires otherwise. Words used in this chapter and not defined in this section shall be interpreted so as to give them the meaning they have in common usage and to give this chapter its most reasonable application.

(1) "Appeal" means a request for a review of the floodplain administrator's interpretation of any provision of this chapter or a request for a variance.

(2) "Area of shallow flooding" means a designated AO or AH zone on the Flood Insurance Rate Map. The base flood depths range from one to three feet; a clearly defined channel does not exist; the path of flooding is unpredictable and indeterminate; and velocity flow may be evident.

(3) "Area of Special Flood Hazard." See "Special flood hazard area."

(4) "Base flood" or "one-hundred-year flood" means the flood having a one percent chance of being equaled or exceeded in any given year.

(5) "Base flood elevation (BFE)" means elevation of flooding, including wave height, relative to the National Geodetic Vertical Datum (NGVD), North American Datum (NAVD) or other datum specified on the Flood Insurance Rate Map (FIRM) having a 1% chance of being equaled or exceeded in any given year.

(6) "Basement" means any area of the building having its floor subgrade (below ground level) on all sides.

(7) "Breakaway walls" means any type of walls, whether solid or lattice, and whether constructed of concrete, masonry, wood, metal, plastic or any other suitable building material which is not part of the structural support of the building and which is designed to break away under abnormally high tides or wave action without causing any damage to the structural integrity of the building on which they are used or any buildings to which they might be carried by floodwaters. A breakaway wall shall have a safe design loading resistance of not less than ten and no more than twenty pounds per square foot. Use of breakaway walls must be certified by a registered engineer or architect and shall meet the following conditions:

(A) Breakaway wall collapse shall result from a water load less than that which would occur during the base flood; and

(B) The elevated portion of the building shall not incur any structural damage due to the effects of wind and water loads acting simultaneously in the event of the base flood.

(8) "Coastal high hazard area" is the area subject to high velocity waters, including coastal and tidal and inundation or tsunamis. The area is designated on the Flood Insurance Rate Map as Zone V1 - V30, VE or V.

(9) "Design Flood Elevation (DFE) elevation of the design flood, including wave height, relative to the datum specified on the community's flood hazard map.

(10) "Development" means any man-made change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations or bulk storage of equipment or materials.

(11) "Dry Floodproofing" a combination of measures that results in a structure, including the attendant utilities and equipment, being watertight with all elements substantially impermeable and with structural components having the capacity to resist flood loads.

(12) "Flood" or "Flooding" means a general and temporary condition of partial or complete inundation of normally dry land areas from (A) the overflow of floodwaters, (B) the unusual and rapid accumulation or runoff of surface waters from any source, and/or (C) the collapse or subsidence of land along the shore of a lake or other body of water as a result of erosion or undermining caused by waves or currents of water exceeding anticipated cyclical levels or suddenly caused by an unusually high water level in a natural body of water, accompanied by a severe storm, or by an unanticipated force of nature, such as flash flood or an abnormal tidal surge, or by some similarly unusual and unforeseeable event which results in flooding.

(13) "Flood Boundary and Floodway Map" means the official map on which the Federal Emergency Management Agency or Federal Insurance Administration has delineated both the areas of flood hazard and the floodway.

(14) "Flood Control Project" means a dam or barrier design and constructed to keep water away from or out of a specific area, including but not limited to levees, floodwalls and channelization.

(15) "Flood Insurance Rate Map" means the official map on which the Federal Emergency Management Agency or Federal Insurance Administration has delineated both the areas of special flood hazard and the risk premium zones applicable to the community.

(16) "Flood Insurance Study" means the official report provided by the Federal Insurance Administration that includes flood profiles, the Flood Insurance Rate Map, the Flood Boundary and Floodway Map, and the water surface elevation of the base flood.

(17) "Floodplain" or "flood-prone area" means any land area susceptible to being inundated by water from any flood.

(18) "Floodplain management" means the operation of an overall program of corrective and preventive measures for reducing flood damage, including but not limited to emergency preparedness plans, flood control works and floodplain management regulations.

(19) "Floodplain management regulations" means zoning ordinances, subdivision regulations, building codes, health regulations, special purpose ordinances (such as floodplain ordinance, grading ordinance and erosion control ordinance) and other applications of police power. The term describes such State of California or local regulations in any combination thereof, which provide standards for the purpose of flood damage prevention and reduction.

(20) "Floodproofing" means any combination of structural and nonstructural additions, changes or adjustments to non-residential structures which reduce or eliminate flood



damage to real estate or improved real property, water and sanitary facilities, structures and their contents.

(21) "Floodway" or "regulatory floodway" means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than one foot.

(22) "Functionally dependent use" means a use which has an intended purpose that cannot be performed, unless it is located or carried out in close proximity to water. The term includes only docking facilities, port facilities that are necessary for the loading and unloading of cargo or passengers, and shipbuilding and ship repair facilities, but does not include long-term storage or related manufacturing facilities.

(23) "Highest adjacent grade" means the highest natural elevation of the ground surface prior to construction next to the proposed ~~walls~~ foundation of a structure.

(24) "Historic structure" means any structure that is listed individually in the National Register of Historic Places or in the State of California Register of Historical Resources or any structure that is listed individually in the current edition of the Palo Alto Master List of Structures on the Historic Inventory in Category 1 "Exceptional Building" or Category 2 "Major Building" or any structure that has been certified by the Keeper of the National Register as contributing to the historical significance of a registered historic district.

(25) "Hydrodynamic Loads" loads imposed on an object by water flowing against and around it.

(26) "Hydrostatic Loads" loads imposed on an object by standing mass of water.

(27) "Letter of map change (LOMC)" means an official determination issued by FEMA that amends or revises an effective Flood Insurance Rate Map or Flood Insurance Study through a Letter of Map Amendment (LOMA), Letter of Map Revision (LOMR) or Letter of Map Revision based on fill (LOMR-F).

(A) "Letter of Map Amendment (LOMA)": An amendment based on technical data showing the property was incorrectly included in a designated special flood hazard area. A LOMA amends the current effective Flood Insurance Rate Map and establishes that a specific property, portion of a property, or structure is not located in a special flood hazard area.

(B) "Letter of Map Revision (LOMR)": A revision based on technical data that may show changes to flood zones, flood elevations, special flood hazard area boundaries and floodway delineations, and other planimetric features.

(C) "Letter of Map Revision (LOMR-F)": A determination that a structure or parcel of land has been elevated by fill above the base flood elevation and is, therefore, no longer located within the special flood hazard area. In order to qualify for this determination, the fill must have been permitted and placed in accordance with

the community's floodplain management regulation.

(D) "Conditional Letter of Map Revision (CLOMR)": A formal review and comment as to whether a proposed flood protection project or other project complies with the minimum NFIP requirements for such projects with respect to delineation of special flood hazard area. A CLOMR does not revise the effective Flood Insurance Rate Map or Flood Insurance Study, upon submission and approval of certified as-built documentation, a Letter of Map Revision may be issued by FEMA to revise the effective FIRM.

(28) "Lowest floor" means the lowest floor of the lowest enclosed area, including basement.

(A) An unfinished or flood resistant enclosure below the lowest floor that is usable solely for the parking of vehicles, building access or storage in an area other than a basement area is not considered a building's lowest floor, provided that it conforms to the applicable non-elevation design requirements, including but not limited to:

(i) The standard set forth in subdivision (3) of subsection (c) of Section 16.52.130;

(ii) The anchoring standards set forth in subdivision (1) of subsection (a) of Section 16.52.130;

(iii) The construction materials and methods standards set forth in subsection (b) of Section 16.52.130; and

(iv) The standards for utilities set forth in Section 16.52.140.

(B) For residential structures, all subgrade enclosed areas are prohibited as they are considered to be basements. This prohibition includes below-grade garages, storage areas and subfloor crawl spaces, except existing below-grade subfloor crawl spaces meeting the standards set forth in subsection (d) of Section 16.52.130.

(29) "Manufactured home" means a structure, transportable in one or more sections, which is built on a permanent chassis and is designed for use with or without a permanent foundation when it is attached to the required utilities. The term does not include a recreational vehicle.

(30) "Manufactured home park or subdivision" means a parcel (or contiguous parcels) of land divided into two or more manufactured home lots for sale or rent.

(31) "Market value of the structure" means that value of a structure determined by estimating the cost to replace the structure in a new condition and adjusting that cost figure by the amount of depreciation which has accrued since the structure was constructed. The cost of replacement of the structure shall be based on a square foot cost

factor determined by reference to a building cost estimating guide recognized by the building construction industry, as approved by the floodplain administrator. The amount of depreciation shall be determined by taking into account the age and physical deterioration of the structure and functional obsolescence, as approved by the floodplain administrator, but shall not include economic or other forms of external obsolescence. The use of replacement costs or accrued depreciation factors different from those contained in recognized building cost estimating guides may be approved at the discretion of the floodplain administrator only if such factors are included in a report prepared by an independent professional appraiser and supported by a written explanation of the differences.

(32) "Mean sea level" means, for purposes of the National Flood Insurance Program, the National Geodetic Vertical Datum (NGVD) of 1929 or other datum, to which base flood elevations shown on a community's Flood Insurance Rate Map are referenced.

(33) "New construction," for floodplain management purposes, means structures for which the "start of construction" commenced on or after the effective date of floodplain management regulations adopted by this community, and includes any subsequent improvements to such structures.

(34) "Person" means an individual or his agent, firm, partnership, association or corporation, or agent of the aforementioned groups, or the State of California or its agencies or political subdivisions.

(35) "Recreational vehicle" means a vehicle which:

- (A) Is built on a single chassis;
- (B) Measures 400 square feet or less at its largest or widest horizontal projection;
- (C) Is designed to be self-propelled or permanently towable by a small truck;
- (D) Is designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, seasonal use camping or travel; and
- (E) Incorporates a vehicle that is defined by the State of California as a camp trailer, camper, fifth-wheel travel trailer, or house car.

(36) "Remedy a violation" means to bring the structure or other development into compliance with the State of California or local floodplain management regulations, or, if this is not possible, to reduce the impacts of its noncompliance. Ways that impacts may be reduced include protecting the structure or other affected development from flood damages, implementing the enforcement provisions of this chapter or otherwise deterring future similar violations, or reducing federal or State of California financial exposure with regard to the structure or other development.

(37) "Riverine" means relating to, formed by, or resembling a river (including tributaries), stream, or brook.

(38) "Sand dunes" means naturally occurring accumulations of sand in ridges or mounds landward of the beach.

(39) "Special flood hazard area (SFHA)" means an area having special flood or flood-related erosion hazards, and shown on the Flood Insurance Rate Map as Zone A, AO, AI - A30, AE, AH, V1 - V30, VE or V.

(40) "Start of construction" includes substantial improvement and other proposed new development, and means the date on which the building permit was issued, provided the actual start of construction, repair, reconstruction, rehabilitation, addition, placement, or other improvement commenced within 180 days from the date of issuance of the permit. The actual start means either the first placement of permanent construction of a structure on a site, such as the pouring of slab or footings, the installation of piles, the construction of columns, or any work beyond the stage of excavation; or the placement of a manufactured home on a foundation. Permanent construction does not include land preparation, such as clearing, grading and filling; nor does it include the installation of streets and/or walkways; nor does it include excavation for a basement, footings, piers, or foundations or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main structure. For a substantial improvement, the actual start of construction means the first alteration of any wall, ceiling, floor, or other part of a structure, whether or not that alteration affects the external dimensions of the structure.

(41) "Structure" means a walled and roofed building, including but not limited to a gas or liquid storage tank, that is principally above ground, as well as a manufactured home.

(42) "Substantial damage" means damage of any origin sustained by a structure, whereby the cost of restoring the structure to its original damage-free condition would equal or exceed fifty percent of the market value of the structure before the damage occurred.

(43) "Substantial improvement" means any reconstruction, rehabilitation, addition, or other proposed new development of a structure, the cost of which equals or exceeds fifty percent of the market value of the structure before the start of construction of the improvement. This term includes a structure which has incurred substantial damage, regardless of the actual repair work to be performed.

The term shall not include:

- (A) Any project, or any portion of a project, for improvement of a structure undertaken in response to a finding by the local code enforcement official that there are existing violations of State of California or local health, sanitary, or safety code specifications which render the structure unfit for human

occupancy; or

(B) Any alteration of an historic structure, provided that the alteration will not result in the termination of a structure's continued designation as an historic structure; or

(C) Any project, or any portion of a project, for improvement of a structure that is required to comply with the Americans with Disabilities Act of 1990 (42 U.S.C. Section 12101 et.seq.).

(44) "Variance" means a grant of relief from the requirements of this chapter which permits construction in a manner that would otherwise be prohibited by this chapter.

(45) "Violation" means the failure of a structure or other development to be fully compliant with the community's floodplain management regulations. A structure or other development without the elevation certificate, other certifications, or other evidence of compliance required in this chapter is presumed to be in violation until such time as that documentation is provided.

(46) "Wet Floodproofing" Floodproofing method that relies on the use of flood damage-resistant materials and construction techniques in areas of a structure that are below the elevation required by this standard by intentionally allowing those areas to flood.

**SECTION 4.** Section 16.52.075 (Requirement to submit new technical data.) of Chapter 16.52 (Flood Hazard Regulations) of Title 16 (Building) of the Palo Alto Municipal Code is added to read as follows:

**16.52.075 Requirement to submit new technical data.**

A community's base flood elevations may increase or decrease resulting from physical changes affecting flooding conditions. As soon as practicable, but not later than six months after the date such information becomes available, the City shall notify FEMA of the changes by submitting technical or scientific data. Such submission is necessary so that, upon confirmation of those physical changes affecting flooding conditions, risk premium rates and flood plain management requirements will be based upon current data.

**SECTION 5.** Section 16.52.110 (Development permit required) of Chapter 16.52 (Flood Hazard Regulations) of Title 16 (Building) of the Palo Alto Municipal Code is amended to read as follows (ellipses indicate existing language that is unchanged but omitted for brevity):

**16.52.110 Development permit required.**

[. . .]

(b) The foundation design details, including but not limited to:

(1) The proposed elevation in relation to mean sea level, of the lowest floor, including basement, of all structures;

(2) For a crawl-space foundation, the location and total net area of foundation openings as required in this ordinance and applicable Federal Emergency Management Agency technical bulletins, including but not limited to, TB 1-93 and TB 7-93; and

(3) For foundations placed on fill, the location and height of the fill, and compaction requirements (compacted to ninety-five percent using the Standard Proctor Test method);

(c) Proposed elevation in relation to mean sea level to which any nonresidential structure will be floodproofed, as required in subdivision (3) of subsection (c) of Section [16.52.130](#) and applicable Federal Emergency Management Agency technical bulletins, including but not limited to TB 3-93;

[. . .]

**SECTION 6.** Section 16.52.130 (Standards of Construction) of Chapter 16.52 (Flood Hazard Regulations) of Title 16 (Building) of the Palo Alto Municipal Code is amended to read as follows (additions underlined, deletions ~~struck through~~, and omissions of unchanged language noted by [. . .]):

**16.52.130 Standards of construction.**

In all areas of special flood hazards the following standards are required:

[. . .]

(c) Elevation and Floodproofing.

(1) In residential new construction and substantial improvement of any residential structure, the lowest floor, including basement:

(A) In an AO zone, shall be elevated ~~above the highest adjacent grade~~ to height equal to or exceeding to a height above the highest adjacent grade of not less than the depth number specified in feet on the Flood Insurance Rate Map plus 1 foot, or elevated at least two not less than 3 feet above the highest adjacent grade if no depth number is specified;

(B) In an A zone, shall be elevated at least ~~one foot~~ two feet above the highest adjacent grade if no depth number is specified or one foot above the base flood elevation, whichever is higher; or

(C) In all other zones, including Coastal A zones shall be elevated at least one foot above to or above the base flood elevation.

(D) Basement floors that are below grade on all sides shall be elevated to or above base flood elevation plus 1 foot, or design flood elevation, whichever is higher.

(E) Garages and carport floors shall comply with one of the following:

(i) They shall be elevated to or above the elevations required above in (A), (B) and (C) or

(ii) They shall be at or above grade on all but one side of the structure and allow the automatic flow of floodwater into and out of the garage or carport. Where a garage or carport shall solely be used parking, building access or storage.

Upon the completion of the structure, the elevation of the lowest floor, including basement, shall be certified by a registered professional engineer or surveyor, and verified by a community official to be properly elevated. Such certification and verification shall be provided to the floodplain administrator.

(2) Nonresidential new construction and any substantially improved nonresidential structure shall either be elevated to conform with subdivision (1) of this subsection (c) or, together with attendant utility and sanitary facilities:

(A) Shall be floodproofed below the minimum elevation required in subdivision (1) above so that the structure is watertight with walls substantially impermeable to the passage of water;

(B) Shall possess structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy; and

(C) Shall be certified by a registered professional engineer that the standards of this subdivision are satisfied. The certification shall be provided to the floodplain administrator.

(D) Shall provide a flood emergency plan that includes maintenance and operation requirements. The plan shall be approved by the floodplain administrator. Plans shall be recorded as a covenant.

(3) All new construction and substantially improved structures, with fully enclosed areas below the lowest floor (excluding basements) that are usable solely for the parking of vehicles, building access or storage, and which are subject to flooding shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement shall comply with the California Building Code guidelines set forth in the applicable Federal Emergency Management Agency technical bulletins, including but not limited to TB 1-93 and TB 7-93 and shall meet or exceed the following minimum criteria:

(A) Possess a minimum of two openings on different sides of each enclosed area. If a building has more than one enclosed area, each area shall have openings with the total net area of nonengineered openings of not less than one square inch for every square foot of enclosed area, subject to flooding where the enclosed area is measured on the exterior of the enclosure walls. The bottom of all openings shall be no higher than one foot above ~~grade~~ the higher of the final interior grade or floor and the finished exterior grade immediately under each opening. Openings may be equipped with screens,

louvers, valves or other coverings or devices provided that they permit the automatic entry and exit of floodwaters into and out of the enclosed areas and shall be accounted for in the determination of the net open area; or

(B) Be certified by a registered professional engineer or architect. Construction documents shall include a statement by a registered design professional that the design of the openings will provide for equalization of hydrostatic flood forces on exterior walls by allowing for the automatic entry and exit of floodwaters as specified on Section 2.7.2.2 of ASCE 24.

(C) Openings shall be not less than 3 inches in any direction in the plane of the wall.

(D) Openings shall be permitted to be installed in doors and windows; doors and windows without installed openings do not meet the requirement of this section.

(4) Manufactured homes shall also meet the standard in Section 16.52.160.

(d) Existing Residential Below Grade Subfloor Crawl Spaces. Notwithstanding the provisions of subsection (c)(1) for existing residential structures, existing below-grade subfloor crawl spaces shall be allowed to remain beneath substantially improved structures provided all other standards of construction set forth in Section 16.52.130 and the following conditions are met:

(1) The lowest floor of the living space of the existing structure is at ~~or above~~ the elevation required under subsection (c) above;

(2) The below-grade crawl space shall be backfilled to the maximum extent possible without violating Uniform Building Code requirements for minimum crawl space height;

(3) The crawl space grade is not more than two feet below the lowest adjacent grade outside the foundation;

(4) The height of the crawl space, measured from the interior grade of the crawl space to the top of the foundation wall, does not exceed four feet;

(5) There is an adequate drainage system capable of removing floodwaters from the interior area of the crawl space within seventy-two hours after the flood event; and

(6) The expected velocity of the floodwaters at the site does not exceed five feet per second.

(e) Prohibition of Residential Basement Construction.

(1) For residential structures located within a Special Flood Hazard Area:

(A) No new basements shall be constructed; and

(B) No existing basements shall be expanded.



**SECTION 7.** Section 16.52.160 (Standards of manufactured homes) of Chapter 16.52 (Flood Hazard Regulations) of Title 16 (Building) of the Palo Alto Municipal Code is amended to read as follows (additions underlined and deletions ~~struck through~~):

**16.52.160 Standards for manufactured homes.**

All new and replacement manufactured homes and additions to manufactured homes on foundations in flood hazard areas or coastal high-hazard areas shall:

(a) Be elevated so that the lowest floor ~~is at or above the based flood elevation~~ elevation meets requirements specified in sections 16.52.130 and 16.52.180 as applicable; and

(b) Be securely anchored to a permanent foundation system to resist flotation, collapse or lateral movement in accordance with ASCE 24.

**SECTION 8.** Section 16.52.180 (Coastal high hazard areas) of Chapter 16.52 (Flood Hazard Regulations) of Title 16 (Building) of the Palo Alto Municipal Code is amended to read as follows (additions underlined, deletions ~~struck through~~, and omissions of unchanged language noted by [. . .]):

**16.52.180 Coastal high hazard areas.**

Within coastal high hazard areas established in Section 16.52.060 the following standards shall apply:

(a) All new construction and substantial improvements shall be elevated on adequately anchored pilings or columns and securely anchored to such pilings or columns so that the lowest horizontal portion of the structural members of the lowest floor (excluding the pilings, columns, grade beams and bracing) is elevated to or above the base flood elevation plus 1 foot or design flood elevation, whichever is higher. Wind loading values used shall be those required by applicable state or local building standards.

(b) All new construction and other development shall be located on the landward side of the reach of mean high tide.

[. . .]

**SECTION 9.** 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 10.** This ordinance shall be effective on the thirty-first day after the date of its adoption.

INTRODUCED: October 17, 2022

PASSED: November 14, 2022

AYES: BURT, CORMACK, DUBOIS, FILSETH, KOU, STONE, TANAKA

NOES:

ABSENT:

ABSTENTIONS:

ATTEST:

DocuSigned by:  
*Lesley Milton*  
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\_\_\_\_\_  
City Clerk

DocuSigned by:  
*Patrick Burt*  
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\_\_\_\_\_  
Mayor

APPROVED AS TO FORM:

DocuSigned by:  
*Albert Yang*  
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\_\_\_\_\_  
Assistant City Attorney

APPROVED:

DocuSigned by:  
*Ed Shihada*  
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City Manager

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*[Signature]*  
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Director of Planning and Development Services

DocuSigned by:  
*Brad Eggleston*  
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Director of Public Works

DocuSigned by:  
*Kelly S. Rose*  
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Director of Administrative Service

<b>Code: California Residential Code, Title 24, Part 2.5</b>					
<b>Chapter(s), Section(s), Table(s), Appendices</b>	<b>Title</b>	<b>Add</b>	<b>Deleted</b>	<b>Amended</b>	<b>Justification (See below for keys)</b>
R202	Wildland-Urban Interface Fire Area			✓	<b>T</b>
R202	Superficial floor area	✓			<b>A, G</b>
Table R301.2	Climatic and Geographic Design Criteria			✓	<b>C, G, T</b>
R301.2.2.6	Irregular Buildings			✓	<b>G</b>
R304.4	Dwelling unit and congregate residence	✓			<b>A, G</b>
R310	Emergency Escape and Rescue Openings			✓	<b>C, T</b>
R310.4.2.3	Window Well Fall Protection			✓	<b>T</b>
R 310.4.1	Security Bars	✓			<b>T</b>
R313.1.1	Design and installation			✓	<b>T</b>
R 313.2	One and Two Family Dwellings Automatic Spr. Syst.			✓	<b>T</b>
R313.2.1	Design and installation			✓	<b>T</b>
R313.2.2	NFPA 13D sprinkler increase in design requirements	✓			<b>T</b>
R313.3	Dwelling unit fire sprinkler systems			✓	<b>T</b>
R 314.1	Smoke Detection and Notification			✓	<b>C, T</b>
R314.1.1	Smoke alarms or detector end of life replacement			✓	<b>T</b>
315.7.5	Carbon monoxide alarms			✓	<b>T</b>
R 319.1	Address Identification			✓	<b>T</b>
R 322.1	Flood Hazard Regulations			✓	<b>T</b>
R 327.1.5	Vegetation Management Compliance			✓	<b>T</b>
R401	General			✓	<b>T, G</b>

R402.2.1	Materials for concrete			✓	<b>E</b>
R403, R403.1.2, R403.1.3, R403.1.3.1, R403.1.3.2	Foundation			✓	<b>G, T</b>
R 403.1.8	Foundation on expansive Soils			✓	<b>G, T</b>
R404.1.3	Concrete foundation walls			✓	<b>E</b>
R 504.3.1	Projections exposed to weather	✓			<b>G, T</b>
R506.1	Concrete Floors on ground			✓	<b>E</b>
R602.10.4.5	Limits on methods GB and PCP	✓			<b>G</b>
Table R602.10.3(3)	Bracing Requirements Based on Seismic Design Category			✓	<b>G</b>
R608.5	Materials			✓	<b>E</b>
R 703.8.5.1	Flashing Locations			✓	<b>T</b>
R902.1.4	Roofing Requirements in Wildland- Urban Interface Fire Area			✓	<b>T</b>
R1003.9.2.1	Repairs, Replacements and Alterations			✓	<b>T</b>
Appendix AH	Patio Covers	✓			<b>C</b>
Appendix AJ	Existing Building and Structures	✓			<b>C, T</b>
Appendix AK	Sound Transmission	✓			<b>C</b>
Appendix AX	Swimming Pool Safety Act	✓			<b>C, G</b>
AJ103, AJ103.1	Preliminary Meeting, General			✓	<b>C, G</b>

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

**A** This is an **administrative** amendment to clarify and establish civil and administrative procedures, regulations, or rules to enforce and administer the activities by the Palo Alto Building Inspection Department. These administrative amendments do not need to meet HSC 18941.5/17958/13869 per HSC 18909(c).

**C** This amendment is justified based on 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 based on 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 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 and emergency response vehicles difficult. Palo Alto is contiguous with the San Francisco Bay, resulting in a natural receptor for storm and wastewater 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.

**Certificate Of Completion**

Envelope Id: D7A3D7A742E54B7B93989ECE93D9649F	Status: Completed
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Source Envelope:	
Document Pages: 173	Signatures: 55
Certificate Pages: 3	Initials: 0
AutoNav: Enabled	Envelope Originator:
Envelopeld Stamping: Enabled	Vinhloc Nguyen
Time Zone: (UTC-08:00) Pacific Time (US & Canada)	250 Hamilton Ave
	Palo Alto , CA 94301
	Vinhloc.Nguyen@CityofPaloAlto.org
	IP Address: 199.33.32.254

**Record Tracking**

Status: Original	Holder: Vinhloc Nguyen	Location: DocuSign
11/21/2022 11:02:42 AM	Vinhloc.Nguyen@CityofPaloAlto.org	
Security Appliance Status: Connected	Pool: StateLocal	
Storage Appliance Status: Connected	Pool: City of Palo Alto	Location: DocuSign

**Signer Events**

Signer Events	Signature	Timestamp
Albert Yang Albert.Yang@CityofPaloAlto.org Assistant City Attorney City of Palo Alto Security Level: Email, Account Authentication (None)	 <p>DocuSigned by: Albert Yang 15B6C45220134DC...</p> <p>Signature Adoption: Pre-selected Style Using IP Address: 97.126.59.62</p>	<p>Sent: 11/21/2022 11:11:03 AM Viewed: 11/21/2022 2:49:57 PM Signed: 11/21/2022 2:51:09 PM</p>


**Electronic Record and Signature Disclosure:**  
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Geoffrey Blackshire Geoffrey.Blackshire@CityofPaloAlto.org Fire Chief Fire Services Security Level: Email, Account Authentication (None)	 <p>DocuSigned by: Geoffrey Blackshire 0FF7BFD93914C6...</p> <p>Signature Adoption: Pre-selected Style Using IP Address: 199.33.32.254</p>	<p>Sent: 11/21/2022 2:51:19 PM Resent: 11/29/2022 3:43:47 PM Viewed: 11/29/2022 3:54:58 PM Signed: 11/29/2022 3:56:24 PM</p>
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**Electronic Record and Signature Disclosure:**  
Not Offered via DocuSign

Brad Eggleston Brad.Eggleston@CityofPaloAlto.org Director of Public Works City of Palo Alto Security Level: Email, Account Authentication (None)	 <p>DocuSigned by: Brad Eggleston DF8505A6373A4DF...</p> <p>Signature Adoption: Pre-selected Style Using IP Address: 199.33.32.254</p>	<p>Sent: 11/29/2022 3:56:35 PM Viewed: 11/29/2022 5:45:39 PM Signed: 11/29/2022 5:46:20 PM</p>
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**Electronic Record and Signature Disclosure:**  
Not Offered via DocuSign

Kiely Nose Kiely.Nose@CityofPaloAlto.org Director, Administrative Services/CFO City of Palo Alto Security Level: Email, Account Authentication (None)	 <p>DocuSigned by: Kiely S. Nose 0513042E38B4409...</p> <p>Signature Adoption: Uploaded Signature Image Using IP Address: 73.162.77.140</p>	<p>Sent: 11/29/2022 5:46:29 PM Viewed: 12/1/2022 7:25:34 AM Signed: 12/1/2022 7:26:13 AM</p>
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**Electronic Record and Signature Disclosure:**  
Not Offered via DocuSign

Signer Events	Signature	Timestamp
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Jonathan Lait  
 Jonathan.Lait@CityofPaloAlto.org  
 Interim Director Planning and Community Environment  
 City of Palo Alto  
 Security Level: Email, Account Authentication (None)  
**Electronic Record and Signature Disclosure:**  
 Not Offered via DocuSign

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 Signature Adoption: Uploaded Signature Image  
 Using IP Address: 99.88.42.180


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 Signed: 12/1/2022 11:16:47 AM

Ed Shikada  
 Ed.Shikada@CityofPaloAlto.org  
 Ed Shikada, City Manager  
 City of Palo Alto  
 Security Level: Email, Account Authentication (None)  
**Electronic Record and Signature Disclosure:**  
 Not Offered via DocuSign

DocuSigned by:  
  
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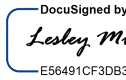
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 Signed: 12/1/2022 1:50:45 PM

Patrick Burt  
 pat@patburt.org  
 Mr  
 Security Level: Email, Account Authentication (None)  
**Electronic Record and Signature Disclosure:**  
 Not Offered via DocuSign

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 Resent: 12/2/2022 10:23:28 AM  
 Viewed: 12/2/2022 11:49:03 AM  
 Signed: 12/2/2022 11:49:57 AM

Lesley Milton  
 Lesley.Milton@CityofPaloAlto.org  
 City Clerk  
 City Clerk  
 Security Level: Email, Account Authentication (None)  
**Electronic Record and Signature Disclosure:**  
 Not Offered via DocuSign

DocuSigned by:  
  
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In Person Signer Events	Signature	Timestamp
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Editor Delivery Events	Status	Timestamp
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Agent Delivery Events	Status	Timestamp
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Intermediary Delivery Events	Status	Timestamp
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Certified Delivery Events	Status	Timestamp
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Carbon Copy Events	Status	Timestamp
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Witness Events	Signature	Timestamp
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Notary Events	Signature	Timestamp
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Envelope Summary Events	Status	Timestamps
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Certified Delivered	Security Checked	12/2/2022 11:55:06 AM

<b>Envelope Summary Events</b>	<b>Status</b>	<b>Timestamps</b>
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Completed	Security Checked	12/2/2022 11:55:38 AM

<b>Payment Events</b>	<b>Status</b>	<b>Timestamps</b>
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