

**Council Meeting: November 16, 2010****SUBJECT: 2010 California Fire Code with Amendments and Standards for High-Rise Buildings****REPORT IN BRIEF**

On November 9, 2010 Council voted to proceed with the public hearing regarding the adoption of the 2010 California Fire Code and the Standards for High-rise Buildings (High Rise Ordinance). This report outlines proposals for modification to the City of Sunnyvale Municipal Fire Code, Chapter 16.52, Standards for High-rise Buildings (High Rise Ordinance), Chapter 16.54; and Automatic Fire Sprinklers for One-and Two-family Dwellings contained within Chapter 16.17. Adoption is necessary to ensure the ability of the city to enforce codes specific to Sunnyvale's needs and for consistency within Santa Clara County.

The proposed amendments to the Sunnyvale Fire Code were developed in cooperation with other cities and fire districts within Santa Clara County in an effort to provide regulatory consistency throughout the county. With few exceptions, the proposed fire code amendments will be proposed for adoption by all fire jurisdictions in Santa Clara County. The changes have no impact on local zoning decisions.

Staff recommends that Council accept the 2009 International Fire Code, 2010 California Fire Code with amendments, and the changes to the High Rise Ordinance.

**BACKGROUND****Fire Code History and Adoption Process**

In California, the Office of the State Fire Marshal adopts the International Fire Code (IFC) and adds its own amendments as the fire code for the state. This adopted code is known as the California Fire Code (CFC) and is found in Part 9 of Title 24 of the California Code of Regulations. Title 24 is commonly referred to as the California Building Standards Code. The International Code Council (ICC) adopts new codes on a three-year cycle. The prior cycle in 2006 has been replaced by the current 2009 codes. The Office of the State Fire Marshal also adopts on a three-year cycle. The prior cycle in 2007 has been replaced by the current 2010 codes.

In 2010, the Office of the State Fire Marshal amended the 2009 IFC and titled it the "2010 California Fire Code." The 2010 CFC was published in July of 2010

and takes effect on January 1, 2011. Local jurisdictions may amend the CFC through adoption of the code by January 1, 2011. If no action is taken, the local jurisdiction is required to operate solely under the state adopted 2010 CFC.

Sunnyvale is currently using the 2007 CFC, with local amendments, which were adopted and became effective on January 1, 2008.

## **EXISTING POLICY**

### **Fire Services Sub-Element**

Goal 4.2C.1: Provide controls based on fire and life safety codes, ordinances, permits, and field inspections. Promote compliance through enforcement efforts.

Goal 4.2C.1a: Revise and adopt appropriate codes, ordinances and policies significant to fire and life safety issues.

## **DISCUSSION**

### **Cooperative Efforts at Regional Standardization**

In early 2010, the Sunnyvale Public Safety Fire Marshal and Fire Prevention staff participated in Santa Clara County Fire Marshals' workshops, focusing on the new 2010 CFC. A two-step process was followed:

1. The new CFC was examined to identify areas where state standards have changed. Where changes in the new CFC duplicated existing local amendments, the local amendment was deleted.
2. The workshop members identified and examined individual local amendments that were more restrictive than the new state standards. These amendments were examined to see if the underlying assumptions or operational experience, upon which the amendments were based, were still applicable. Where the basis for the amendment has not changed, the various options for local regulation were examined and agreement was reached on uniform wording for the amendment.

Because the code is developed by such a diverse group of interests and regions, the CFC is utilized as a code of minimum standards. Different climates, topography, geology, fire fighting tactics, fire fighting capabilities and resources warrant different levels of built-in fire protection. For these reasons and others, cities and fire districts amend and adopt codes, which are more restrictive than the California Building Standards Code (Title 24) or the underlying model code, such as the CFC.

## **Recommended Amendments to California Fire Code**

Fire code requirements and local amendments to the code do not prevent the fire code official (Fire Marshal) from accepting alternate materials and methods from a developer, when the alternate request complies with the intent of the code, and the modifications provide for the safety of the public and firefighters. Public Safety is committed to working with developers to ensure flexibility during the plan development and review process.

### **1. Fire access road width**

The CFC minimum required width for a fire access road is 20 feet for any type of construction. Appendix 'D' of the CFC and IFC further require 26 foot fire access roads for buildings greater than 30 feet in height. Sunnyvale does not adopt the Appendix 'D' because it contains other roadway, signage, and marking requirements that are already addressed in existing Sunnyvale Municipal Code sections. Portions of Appendix 'D' that are not already addressed in the Municipal Code are adopted by amendment.

Prior Sunnyvale fire code required a minimum fire access road width of 26 feet for all buildings or facilities exceeding 50 feet in height. The new code will reduce the height of buildings or facilities to 30 feet in height, which require a minimum fire access road width of 26 feet. On October 6, 2009, all jurisdictions within Santa Clara County accepted this standard for use in all new construction anticipating the 2010 fire code adoption. This standard was published by the Santa Clara County Fire Marshals' Association as approved by the Santa Clara County Fire Chiefs. Sunnyvale also published this standard, which is available on the Fire Prevention website.

### **2. Firefighters' air systems**

Current code requires firefighters' air systems for buildings having 6 or more floors used for human occupancy above the lowest floor of level having building access. The building height requirement has been changed to require only those buildings classified as a high-rise by the California Building Code. This change makes it easier to determine when systems are required and brings us in line with other jurisdictions that require firefighters' air systems. Wording has been changed to allow the fire code official to accept an alternate to the firefighters' air system.

Another change to this section requires existing systems to be maintained in accordance with nationally recognized fire safety standards.

### **3. Automatic fire sprinkler systems**

Currently, Sunnyvale requires automatic fire sprinkler systems for all new commercial and industrial buildings, which are 3600 square feet or larger. Participating Santa Clara County fire agencies agreed to amend the

requirement from 3600 square feet to 1000 square feet for new commercial and industrial buildings. This will afford a greater level of life safety protection in these buildings.

Currently, Sunnyvale requires automatic fire sprinkler systems for additions to commercial and industrial buildings 3600 square feet or larger. Sunnyvale will continue this requirement and has clarified the requirement for buildings that are less than 3600 square feet and are expanded to over 3600 square feet. The requirement was also clarified for buildings already over 3600 square feet that have additions made. Some participating Santa Clara County fire agencies agreed to a similar amendment. This will afford a greater level of life safety protection in these buildings.

Currently, Sunnyvale requires automatic fire sprinkler systems for significant alterations (50% or greater of the building square footage) for commercial and industrial buildings in excess of 3600 square feet. The new code will maintain this requirement. Most participating Santa Clara County fire agencies agreed to a similar amendment. This will afford a greater level of life safety protection in these buildings, while providing consistency throughout the county.

The Sunnyvale Municipal Code has required automatic fire sprinkler systems in all new one- and two-family dwellings since 1987. The 2010 California codes will for the first time, require automatic fire sprinklers for all new one- and two-family dwellings throughout the state. The new state requirement has been placed into the newly adopted 2010 California Residential Code. The amendments for one and two family dwelling fire sprinklers will be moved from Sunnyvale Municipal Code Chapter 16.52 to the California Residential Code amendments in Sunnyvale Municipal Code Chapter 16.17. Requirements for additions to one- and two-family dwelling will also be moved from Chapter 16.52 to the California Residential Code amendments in Chapter 16.17.

#### **4. Emergency Responder Radio Coverage**

Emergency responder radio coverage requirements have been part of the Sunnyvale code requirement for several code cycles. The 2010 CFC has now incorporated requirements for radio coverage including detailed installation and testing requirements. The revised Sunnyvale amendment incorporates the installation, testing, and maintenance requirements with no other changes.

#### **Changes to the High-rise ordinance**

A separate ordinance governs buildings classified as high-rises. A high-rise is any building having floors used for human occupancy located more than 75 feet above the lowest floor level having building access. There were no significant changes to the high-rise ordinance. Most changes were to delete sections that are now covered in the 2010 California Fire Code.

**FISCAL IMPACT**

None

**PUBLIC CONTACT**

Public contact was made by posting the Council agenda on the City's official-notice bulletin board outside City Hall, at the Sunnyvale Senior Center, Community Center and Department of Public Safety; and by making the agenda and report available at the Sunnyvale Public Library, the Office of the City Clerk and on the City's Web site. Notice of this meeting was also published in the San Jose Times on November 5 and 12, 2010 and the Sunnyvale Sun on November 12, 2010.

**ALTERNATIVES**

1. Adopt the 2010 California Fire Code with amendments and the changes to the High Rise Ordinance.
2. Do not accept the proposed amendments and municipal code changes.

**RECOMMENDATION**

Staff recommends Alternative #1, adopt the 2010 California Fire Code with amendments and the changes to the High Rise Ordinance.

Reviewed by:

Don Johnson, Director, Public Safety  
Prepared by: Lt. Jeff Schlesinger, Fire Marshal

Approved by:

Gary M. Luebbbers  
City Manager

**Attachments:**

- A. Resolution of the City Council of the City of Sunnyvale finding and determining the need for modifications to the 2010 California Fire Code
- B. Sunnyvale Municipal Code Chapter 16.52 - Amendments to the 2010 California Fire Code
- C. Sunnyvale Municipal Code Chapter 16.52 - Amendments to the 2010 California Fire Code with comments and strikethroughs of the 2007 Code.

- D. Sunnyvale Municipal Code Chapter 16.54 – Standards for High-rise buildings.
- E. Sunnyvale Municipal Code Chapter 16.54 – Standards for High-rise buildings with comments and strikethroughs of the 2007 Code.
- F. California Residential Code

**RESOLUTION NO. \_\_\_\_\_**

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF SUNNYVALE FINDING AND DETERMINING THE NEED FOR MODIFICATIONS TO THE 2010 CALIFORNIA FIRE CODE**

WHEREAS, the City of Sunnyvale is adopting the 2010 CALIFORNIA FIRE CODE with numerous changes and modifications;

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF SUNNYVALE that it finds and determines there is a need to adopt the changes or modifications because of local climatic, topographic, geological and related geographic conditions.

**General Findings**

1. Climatic

- a. Precipitation. Precipitation ranges from 4.83 to 30.30 inches per year with an average of approximately 13.86 inches per year. Approximately 90% falls during the months of November through April and 10% from May through October. This area experienced a major drought in 1977-78 and a moderate drought the next five years; it is possible that more droughts will occur in the future. The local climate is characterized by markedly delineated rainy and dry seasons, which tend to maximize the expansive characteristics of soil.
- b. Relative Humidity. Humidity generally ranges from 60% during daytime to 80% at night. It drops to 20% during the summer months and occasionally drops lower.
- c. Temperatures. Temperatures have been recorded as high as 108° F. Average summer highs are in the 78°-82° F. range.
- d. Winds. Prevailing winds are from the Northwest or Southeast. However, winds are experienced from virtually every direction at one time or another. Velocities are generally in the 5-mph to 15-mph range, gusting to 7.4 mph to 30 mph, particularly during the summer months. Extreme winds, up to 60 mph, have been known to occur. Two confirmed tornados have struck the City of Sunnyvale in the years 1951 and 1998.
- e. Summary. These local climatic conditions affect the acceleration, intensity and size of fire in the community. Times of little or no rainfall, of low humidity and high temperatures create extremely hazardous conditions, particularly as they relate to wood shake and shingle roof fires and conflagrations. The winds experienced in this area can have a tremendous impact upon structure fires of buildings in close proximity to one another commonly found in Sunnyvale. During wood shake and shingle roof fires, or exposure fires, winds can carry sparks and burning brands to other structures, thus spreading the fire and causing conflagrations. In building fires, winds can literally force fires back into the building and can create a blowtorch effect, in addition to preventing "natural" ventilation and cross-ventilation efforts.

## 2. Geological, Geographic and Topographic

- a. **Geographic Location.** Sunnyvale is located in the Santa Clara Valley. It has taken its place as the second largest city in the heart of the "Silicon Valley," the center for an expanding and changing technology industry.
- b. **Seismic Location.** Sunnyvale is situated on alluvial soils between San Francisco Bay and the San Andreas Fault zone. The City's location makes it particularly vulnerable to damage to taller and older structures caused by seismic events. The relatively young geological processes that have created the San Francisco Bay Area are still active today. Seismically, the City sits between two active earthquake faults (San Andreas and the Hayward/Calaveras) and numerous potentially active faults.
- c. **Seismic and Fire Hazards.** Gypsum wallboard and exterior portland cement plaster have performed poorly during recent California seismic events. The shear values for gypsum wallboard and portland cement stucco contained in the code are based on mono-directional testing. It is appropriate to limit the use of these products until cyclic loading testing are performed and evaluated. Fire following an earthquake has the potential of causing greater loss of life and damage than the earthquake itself.

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

Other variables may tend to intensify the situation:

1. The extent of damage to the water system;
  2. The extent of isolation due to bridge and/or freeway overpass collapse;
  3. The extent of roadway damage and/or amount of debris blocking the roadways;
  4. Climatic conditions (hot, dry weather with high winds);
  5. Time of day will influence the amount of traffic on roadways and could intensify the risk to life during normal business hours;
  6. The availability of timely mutual aid or military assistance;
  7. The large portion of dwellings with wood shingle roof coverings could result in conflagrations.
- d. **Size and Population.** The City has an area over 24 square miles in size, a residential population estimated to be 140,450 and a daytime population estimated to be 230,000.
  - e. **Development.** Sunnyvale is a community, which is projected to add 7,200 new residential units within the next twenty-five years, primarily in multi-family configurations, for which building security is a matter of acute importance.
  - f. **Public Safety Department.** Sunnyvale utilizes a public safety (joint police/fire) department with personnel who function as both fire suppression and police officers, resulting in fewer personnel than otherwise would be required for a city of its size. A

premium is therefore placed on built-in physical techniques and devices as crime preventative measures. It is therefore also imperative that fire detection and suppression occur as quickly as possible to minimize loss of property and life. For these reasons the most stringent provisions are required concerning fire detection, alarm and suppression systems.

- g. Roads and Streets. The number of vehicle miles driven in the City is steadily increasing and considerable efforts in traffic and roadway improvements are being made to ease the crush of commuters to and through the City to their homes and places of work. Because of the City's high concentration of jobs, much of the peak traffic is made by nonresidents traveling to or from Sunnyvale. The impact of planned developments and traffic flow will continue to have an effect on the Department of Public Safety and delivery of fire services.
- h. Industry. Sunnyvale is the site of many manufacturing and research industries which use toxic, flammable and explosive chemicals and materials in potentially hazardous combinations. Special precautions thus are required to minimize the risk of damage to adjoining persons and properties.
- i. Mixed Industrial/Residential Uses. High-density residential uses are located near high-risk industries, necessitating special precautions.
- j. Transportation. Sunnyvale is divided by an interstate highway, which potentially could affect response times of fire suppression equipment.
- k. Soil Conditions and Topography. Sunnyvale lies at the southern end of San Francisco Bay and is built atop the alluvial deposits that surround the margins of the Bay. The alluvium was created by the flooding of the many streams emptying into the San Francisco Bay depression, and from intermittent seawater inundation that has occurred over the last 2 or 3 million years. The areas closest to the Bay are overlain by unconsolidated fine silty clay, known as "Bay Mud" which varies in thickness from a few feet to as much as 30 feet. Generally, the older, more stable alluvium is to the south and the younger, less stable material is to the north. Bedrock lies beneath the area at depths generally 300' or more. The topography is essentially flat, dropping from an elevation of 300 feet to sea level. The slope across the City is in a northeasterly direction from the high point in the southwest corner to the Bay. The average slope is approximately 0.9%.

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

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

low bearing strength.

- l. Water/Sewer. Some parts of the Silicon Valley have hard water, which is corrosive to ferrous pipe. The groundwater table is unusually high in many places. Expansive soils create unstable conditions, which increase the potential of breaks in sewer laterals. To maintain health and sanitary services, it is necessary to gain access, to periodically maintain public sanitary laterals.
- m. Buildings, Landscaping and Clearances. Many of the newer large buildings and building complexes are of designs, which greatly limit visibility and approach to and accessibility by Public Safety resources. Many houses and other buildings with wood roofs and/or sidings are so close together that fire will readily spread from one to another by both radiation and convection.
- n. Summary. The stated local geological, geographic and topographical conditions increase the magnitude, exposure, accessibility problems and fire hazards presented to the Department of Public Safety. Lying beneath Sunnyvale are thick layers of sand, gravel and clay, known as alluvium, which amplify the effects of earthquakes. Based on the damage caused in Santa Clara Valley by the 1906 earthquake and the poor performance of alluvial deposits during earthquakes, this area could be subject to severe damage.

**Findings.**

With the exception of changes justified on administrative grounds, the local amendments of the CALIFORNIA FIRE CODE are justified by all of the aforementioned general findings.

BE IT FURTHER RESOLVED that the City Clerk is hereby directed to cause a copy of this resolution, together with the ordinances making the changes and modifications to the enumerated California codes, to be filed with the State Department of Housing and Community Development.

Adopted by the City Council at a regular meeting held on \_\_\_\_\_, 2010, by the following vote:

AYES:

NOES:

ABSTAIN:

ABSENT:

ATTEST:

APPROVED:

City Clerk Mayor (SEAL)

APPROVED AS TO FORM AND LEGALITY:

David E. Kahn, City Attorney

**Chapter 16.52  
FIRE CODE**

**ATTACH B**

<b>16.52.010</b>	<b>Title</b>
<b>16.52.020</b>	<b>Adoption by reference</b>
<b>16.52.030</b>	<b>Fire district designated</b>
<b>16.52.040</b>	<b>Storage of hazardous materials</b>
<b>16.52.050</b>	<b>Duties are discretionary</b>
<b>16.52.060</b>	<b>Reference to codes</b>
<b>16.52.070</b>	<b>Permit required</b>
<b>16.52.080</b>	<b>Inspection authorized</b>
<b>16.52.090</b>	<b>Conditions of permits</b>
<b>16.52.100</b>	<b>Explosives</b>
<b>16.52.110</b>	<b>Owner/occupant responsibility</b>
<b>16.52.120</b>	<b>Board of appeals</b>
<b>16.52.130</b>	<b>Violation penalties</b>
<b>16.52.140</b>	<b>General definitions</b>
<b>16.52.150</b>	<b>Vacant premises</b>
<b>16.52.160</b>	<b>Hazard to firefighters</b>
<b>16.52.170</b>	<b>Fire safety</b>
<b>16.52.180</b>	<b>Use and occupancy related requirements</b>
<b>16.52.190</b>	<b>Fire apparatus access roads</b>
<b>16.52.200</b>	<b>Access to building openings and roofs</b>
<b>16.52.210</b>	<b>Premise identification</b>
<b>16.52.220</b>	<b>Fire protection water supplies</b>
<b>16.52.230</b>	<b>Emergency responder radio coverage</b>
<b>16.52.240</b>	<b>Firefighters' air system</b>
<b>16.52.250</b>	<b>Immersion heaters</b>
<b>16.52.260</b>	<b>Stationary storage battery systems</b>
<b>16.52.270</b>	<b>Decorative vegetation in new and existing buildings</b>
<b>16.52.280</b>	<b>Automatic sprinkler systems</b>
<b>16.52.290</b>	<b>Standpipes</b>
<b>16.52.300</b>	<b>Fire department connection location</b>
<b>16.52.310</b>	<b>Maintenance of means of egress</b>
<b>16.52.320</b>	<b>Precautions against fire during construction</b>
<b>16.52.330</b>	<b>Means of egress during construction</b>
<b>16.52.340</b>	<b>Semiconductor fabrication facilities definitions</b>
<b>16.52.350</b>	<b>Lumber yards and wood working facilities</b>
<b>16.52.360</b>	<b>Hazardous materials general provisions</b>
<b>16.52.370</b>	<b>Hazardous materials storage</b>
<b>16.52.380</b>	<b>Use, dispensing, handling of hazardous materials</b>
<b>16.52.390</b>	<b>Corrosive materials definition</b>
<b>16.52.400</b>	<b>Explosives and fireworks</b>
<b>16.52.410</b>	<b>Locations where aboveground tanks are prohibited</b>
<b>16.52.420</b>	<b>Protected aboveground tanks</b>
<b>16.52.430</b>	<b>Underground tanks</b>
<b>16.52.440</b>	<b>Permanent and temporary tanks</b>
<b>16.52.450</b>	<b>Location of bulk plants or terminals</b>
<b>16.52.460</b>	<b>Toxic Materials</b>
<b>16.52.470</b>	<b>Location of containers</b>

**16.52.010. Title.**

This chapter shall be known and may be cited and referred to as the "Fire Code for the City of Sunnyvale."

**16.52.020. Adoption by reference.**

The book entitled "2009 International Fire Code" as amended by the "2010 California Fire Code", including appendixes Chapter B, C, and J, as amended by the State of California, and local amendments, hereby are adopted by reference as the Fire Code of the City of Sunnyvale. Copies are on file in the Fire Prevention Office.

**16.52.030. Fire district designated.**

The entire City of Sunnyvale is designated as a fire district.

**16.52.040. Storage of hazardous materials.**

Whenever any provision of this chapter conflicts with any provision of Title 16.53 or Title 20 of the Sunnyvale Municipal Code, the stricter provision shall govern.

**16.52.050. Duties are discretionary.**

Notwithstanding any other provision of this chapter or any provision of the California Fire Code, whenever the words "shall" or "must" are used in establishing a responsibility or duty of the City, its elected or appointed officers, employees, or agents, it is the legislative intent that such words establish discretionary responsibility or duty requiring the exercise of judgment and discretion.

All inspections specified herein shall be at the discretion of the fire code official and nothing in the California Fire Code or in the Sunnyvale Municipal Code shall be construed as requiring the city to conduct any such inspection nor shall any actual inspection made imply a duty to conduct any other inspection. Furthermore, neither the California Fire Code nor the Sunnyvale Municipal Code shall be construed to hold the city or any officers, employees or representatives of the city responsible for any damage to persons or property by reason of making inadequate or negligent inspection or by reason of any failure to make an inspection or reinspection.

**16.52.060. Reference to codes.**

California Fire Code Section 1.1.8 is hereby amended by adding the following provision:

**101.1.8.2. Reference to codes.** Whenever reference is made in this code to a building, mechanical, plumbing, or electrical code, such reference shall mean the version of such code as amended and adopted by the city of Sunnyvale.

**16.52.070. Permit required.**

California Fire Code Section 105.1.1 is hereby amended to read:

**105.1.1 Permits required.** Permits required by this code shall be obtained from the fire code official or hazardous materials compliance unit. Permit fees, if any, shall be paid prior to issuance of the permit. Issued permits shall be kept on the premises designated therein at all times and shall be readily available for inspection by the fire code official or hazardous materials compliance unit. Where a permit for storage of a hazardous material, as defined by Title 20 and/or Chapter 16.53 of the Sunnyvale Municipal Code, is obtained pursuant to those provisions, notwithstanding Section 105.2.2, there shall be no requirement for an additional permit for the storage of such hazardous materials under the California Fire Code.

**16.52.080. Inspection authorized.**

California Fire Code Section 105.2.2 is hereby amended by adding the following provisions:

**105.2.2 Inspection authorized.** Before a new operational permit is approved, the fire code official is authorized to inspect the receptacles, vehicles, buildings, devices, premises, storage spaces or areas to be used to determine compliance with this code or any operational constraints required. In instances where laws or regulations are enforceable by agencies or departments other than the Department of Public Safety, joint approval shall be obtained from all agencies or departments involved.

California Fire Code Section 105.3 is hereby amended by adding the following provisions:

**105.3.9 Permits for institutions.** It shall be unlawful to operate, maintain or use any institution until all state and local laws and regulations governing safety from fire and panic have been satisfactorily complied with and a permit from the fire code official has been obtained for that occupancy. (For the purpose of this section, an institution shall be, but is not limited to, hospitals, children's homes or institutions, home or institution for insane or mentally retarded persons, home or institution for the care of aged or senile persons, sanitariums, nursing or convalescent homes, certified family care homes, out-of-home placement facilities, halfway houses and day care nurseries, or similar facilities.)

**16.52.100. Explosives.**

California Fire Code Section 105.6.14 is hereby amended by deleting the following provision:

**105.6.14. Exception**

California Fire Code Section 105.6.14 is hereby amended by adding the following provisions:

**105.6.14.1 Explosives permit.** An operational permit is required to manufacture, possess, store, sell or otherwise dispose of gunpowder when in quantities of over 20 pounds (9.1 kg) of smokeless powder or 1 pound (0.45 kg) of black sporting powder.

**105.6.14.2 Limits established by law.** The storage of explosives and blasting agents is permitted only within those zoning districts established in Title 19 of the Sunnyvale Municipal Code (Zoning) and described as the Industrial and Service Zone (M-S), M-3 and M-4 General Industrial Districts except for temporary storage for use in connection with approved blasting operations; provided, however, this prohibition shall not apply to wholesale and retail stocks of small arms ammunition, explosive bolts, explosive rivets or cartridges for explosive actuated power tools in quantities involving less than 500 pounds (226.8 kg) of explosive material.

**16.52.110. Owner/occupant responsibility.**

California Fire Code Section 107.5 is hereby amended by adding the following provisions:

**107.5.1 Hazard abatement.** Any act or condition that presents a fire, panic, or life safety hazard, or would contribute to the rapid spread of fire or inhibit mitigation or increase the chance of release of hazardous material, or would interfere with, hinder, or delay the egress of occupants or response of emergency personnel and which is not otherwise addressed in the code, shall be abated, eliminated, corrected as directed by the fire code official.

**16.52.120. Board of appeals.**

California Fire Code Section 108.1 is hereby amended by adding the following provision:

**108.1.1. Board of appeals.** The Office of the City Clerk maintains guidelines and procedures for the Board of appeals.

**16.52.130. Violation penalties.**

California Fire Code Section 109.3 is hereby amended to read:

**109.3 Violation penalties.** Any person, property owner, firm or corporation who shall violate a provision of this code or shall fail to comply with any of the requirements thereof or who shall erect, install, alter, repair or do work in violation of the approved construction documents or directive of the fire code official, or of a permit or certificate used under the provisions of this code, shall be guilty of a misdemeanor, unless an infraction is specified, and upon conviction thereof shall be punishable as provided in Chapter 1.04 of the Sunnyvale Municipal Code.

California Fire Code Section 109.3 is hereby amended by adding the following provision:

**109.3.2 Civil penalties.** Any person, property owner, firm or corporation who shall violate a provision of this code or shall fail to comply with any of the requirements thereof or who shall erect, install, alter, repair or do work in violation of the approved construction documents or directive of the fire code official, or of a permit or certificate used under the provisions of this code shall be liable for a civil penalties as described in Chapter 1 of the Sunnyvale Municipal Code.

In any civil action brought to seek such civil penalties, and/or to obtain injunctive relief for violation of any provision of the code, in which action the city prevails, the court shall determine and impose reasonable expenses, including attorney's fees, incurred by the city in the investigation and prosecution of the action.

Such remedies are in addition to and do not supersede or limit any and all other remedies, civil or criminal.

#### **16.52.140. General definitions.**

California Fire Code Section 202 is hereby amended by adding the following provisions:

**CARCINOGEN.** 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 as 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. .

**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.

**FIRE DEPARTMENT.** The Fire department is the Department of Public Safety.

**OTHER HEALTH HAZARD MATERIAL.** 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 on 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.

**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.

California Fire Code Section 202 is hereby amended by amending following:

**FIRE CHIEF.** The Fire Chief is the Director of Public Safety.

### **16.52.150. Vacant premises.**

California Fire Code Section 311.5 – 311.5.5 is hereby amended by deleting the following provisions:

#### **311.5 Placards.**

##### **311.5.1 Placard location.**

##### **311.5.2 Placard size and color.**

##### **311.5.3 Placard date.**

##### **311.5.4 Placard symbols.**

##### **311.5.5 Informational use.**

### **16.52.160. Hazards to firefighters**

California Fire Code Section 316 is hereby amended by adding the following provisions:

**316.6 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.

### **16.52.170. Fire safety**

California Fire Code Section 401.7 is hereby amended to read:

**401.7 Unplanned evacuation.** Evacuations made necessary by unplanned activation of a fire alarm system or by any other emergency may be substituted for a required evacuation drill only when approved by the fire code official.

California Fire Code Section 404.2 is hereby amended to read:

**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.
3. Group E see regulations in Title 19 California Code of Regulations §3.13.
4. Group F buildings having an occupant load of 500 or more persons or more than 100 persons above or below the lowest level of exit discharge.
5. Group H
6. Group I see regulations in Title 19 California Code of Regulations §3.09.
7. Group R-1 see regulations in Title 19 California Code of Regulations §3.09.
8. Group R-2 college and university buildings.
9. High-rise buildings see regulations in Title 19 California Code of Regulations §3.09.
10. Group M buildings having an occupant load of 500 or more persons.
11. Covered malls exceeding 50,000 square feet (4645 m<sup>2</sup>) in aggregate floor area.
12. Underground buildings.

California Fire Code Section 404.3.1 is hereby amended to read:

**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.

California Fire Code Table 405.2 is hereby amended to read:

**TABLE 405.2  
FIRE AND EVACUATION DRILL  
FREQUENCY AND PARTICIPATION**

a <b>GROUP OR OCCUPANCY</b>	<b>FREQUENCY</b>	<b>PARTICIPATION</b>
Group A	Quarterly	Employees
Group B <sup>a</sup>	Annually	Employees
Group E	See §3.13 Title 19, CCR	
Group F	Annually	Employees
Group I	See §3.09 Title 19, CCR	
Group R-1	See §3.09 Title 19, CCR	
Group R-2 <sup>b</sup>	Two annually	All occupants
Group R-4	Quarterly on each shift	Employees <sup>d</sup>
High-rise buildings <sup>c</sup>	See §3.09 Title 19, CCR	

<sup>a</sup> Group B buildings having an occupant load of 500 or more persons.

<sup>b</sup> Applicable to Group R-2 college and university buildings only.

<sup>c</sup> Applicable to high-rise office buildings only.

<sup>d</sup> Fire and evacuation drills in residential care assisted living facilities shall include complete evacuation of the premises in accordance with Section 408.10.5. Where occupants receive habilitation or rehabilitation training, fire prevention and fire safety practices shall be included as part of the training program.

**16.52.180. Use and occupancy-related requirements.**

California Fire Code Sections 408 is hereby amended by deleting the following provisions:

- 408.2.2 Announcements.**
- 408.3.1 First emergency evacuation drill.**
- 408.3.2 Emergency evacuation drill deferral.**
- 408.3.3 Time of day.**
- 408.3.4 Assembly points.**
- 408.5.1 Fire safety and evacuation plan.**
- 408.5.2 Staff training.**
- 408.5.3 Resident training.**
- 408.5.4 Drill frequency.**
- 408.5.5 Resident participation.**
- 408.6 Group I-2 occupancies.**
- 408.6.1 Evacuation not required.**
- 408.6.2 Coded alarm signal.**
- 408.7 Group I-3 occupancies.**
- 408.7.1 Employee training.**
- 408.7.2 Staffing.**
- 408.7.3 Notification.**
- 408.8 Group R-1 occupancies.**
- 408.8.2 Emergency duties.**
- 408.8.3 Fire safety and evacuation instructions.**

California Fire Code Section 408.9 is hereby amended to read:

**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.

California Fire Code Section 408.9 is hereby amended by adding the following provisions:

**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 intervals as prescribed in California Code of Regulations Title 19, Section 3.13. 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. In Group R-2 college and university buildings, one required drill shall be held during hours after sunset or before sunrise.

California Fire Code Sections 408.10 is hereby amended by deleting the following provisions:

- 408.10 Group R-4 occupancies.**
- 408.10.1 Fire safety and evacuation plan.**
- 408.10.2 Staff training.**
- 408.10.3 Resident training.**
- 408.10.4 Drill frequency.**
- 408.10.5 Resident participation.**

California Fire Code Section 408.11.1.2 is hereby amended to read:

**408.11.1.2 Revisions.** The lease plans shall be revised annually or as often as necessary to keep them current.

**16.52.190. Fire apparatus access roads.**

California Fire Code Section 503.1 is hereby amended to read:

**503.1 Where required.** Fire apparatus access roads shall be provided and maintained in accordance with Sections 503.1.1 through 503.1.3 and as per the Fire Department access road standards.

California Fire Code Section 503.1.1 is hereby amended to read:

**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 shall extend within 150 feet (45,720 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.

**Exceptions:**

The fire code official is authorized to increase the dimension of 150 feet (45,720 mm) where:

1. The building is equipped throughout with an approved automatic fire sprinkler system, installed in accordance with Section 903.3.1.1, 903.3.1.2 or 903.3.1.3.
2. Fire apparatus roads cannot be installed because of topography, waterways, nonnegotiable grades or other similar conditions, an approved alternative means of fire protection shall be provided.

California Fire Code Section 503.2 is hereby amended by adding the following provisions:

**503.2.1 Dimensions.** Fire apparatus access roads shall have an unobstructed width of not less than 20 feet (6096 mm), exclusive of shoulders, except for approved security gates in accordance with Section 503.6, an unobstructed vertical clearance of not less than 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.

California Fire Code Section 503.2 is hereby amended by adding the following provisions:

**503.2.1.1 Width.** Fire apparatus access widths shall be increased to 24 feet (7315.2 mm) when in the opinion of the fire code official, widths are not adequate to provide fire apparatus access. Fire apparatus access roads serving buildings or portions of buildings or facilities exceeding 30 feet (9144 mm) in height above the lowest level of fire department vehicle shall have a minimum unobstructed width of 26 feet (7924.8 mm).

**503.2.1.2 Vertical clearance.** Vertical clearances shall be increased when in the opinion of the fire code official, vertical clearances are not adequate to provide fire apparatus access.

California Fire Code Section 503.2.3 is hereby amended to read:

**503.2.3 Surface.** Fire apparatus access roads shall be designed and maintained to support the imposed loads of fire apparatus and shall be provided with a surface so as to provide all-weather driving capabilities. Calculations for apparatus access road design shall be submitted for review prior to construction. The minimum traffic index for the access road design shall be 5.0 and shall bear the stamp and signature of a State of California engineer licensed for such design work.

California Fire Code Section 503.2.5 is hereby amended by adding the following provisions:

**503.2.5.1 Cul-de-sacs.** For the purposes of fire protection and fire apparatus accessibility, cul-de-sac streets shall not exceed 400 feet (121920 mm) maximum length. If it is determined that a longer cul-de-sac is essential for the property to be developed, the fire code official may impose additional requirements to ensure protection of life and property, including, but not limited to:

1. Additional fire hydrants
2. Increased turnaround ability
3. Increased sprinkler density and coverage
4. Emergency access easements.

California Fire Code Section 503.3 is hereby amended by adding the following provisions:

**503.3.1 Signs.** A sign of a size, type and design approved by the fire code official shall be located on the right side of the fire lane within the first 25 feet (7620-mm) of entry. The sign shall be permanently mounted with the bottom of the sign to be at least 6 feet (1828.8 mm) above grade but not greater than 10 feet (3048 mm) above grade.

**503.3.2 Curbs.** Curbs along fire access roads shall be painted traffic red. Such curbs shall have the words 'FIRE LANE' (all capital letters) stenciled each 50 feet (15240 mm) on both the face and top edges. The stenciled letters shall be 3 inches (76.2 mm) high with a stroke of ½ inch (12.7 mm) and be white in color.

Fire access lanes not having curbs shall have a 6 inches (152.4 mm) red stripe painted along the edge(s). This red stripe shall have the words 'FIRE LANE' (all capital letters) stenciled each 50 feet (15240 mm). The stenciled letters shall be 3 inches (76.2 mm) high with a stroke of 1/2 inch (12.7 mm) and be white in color.

**503.3.3 Compliance with orders and notices.** It shall be unlawful for any owner, lessee, or person in charge of such private property to fail to install and then maintain such access signage and markings after having been given proper notice for such installation.

When such areas are marked and signed as provided herein, it shall be unlawful for any person to park or leave standing a vehicle adjacent to any signed or marked area.

**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.

**16.52.200. Access to building openings and roofs.**

California Fire Code Section 504 is hereby amended by adding the following provisions:

**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.

**16.52.210. Premises identification.**

California Fire Code Section 505 is hereby amended by adding the following provisions:

**505.1.1 Site directories.** Site directories for building complexes shall be installed and maintained when required by the fire code official.

**16.52.220. Fire protection water supplies.**

California Fire Code Section 507.5.1 is hereby amended to read:

**507.5.1 Where required.** Where a portion of the facility or building hereafter constructed or moved into or within the jurisdiction is more than 300 feet from a hydrant on a fire apparatus access road, as measured by an approved route around the exterior of the facility or building, on-site fire hydrants and mains shall be provided where required by the fire code official. The location, number and type of fire hydrants shall be approved by the fire code official.

**Delete exceptions 1 and 2.**

California Fire Code Section 507.5.1 is hereby amended by adding the following provision:

**507.5.1.1 Fire protection equipment and fire hydrants.** Fire protection equipment and fire hydrants shall be clearly identified in a manner approved by the fire code official to prevent obstruction by parking and other obstructions. All fire department connections, post indicator valves and on-site fire hydrants shall be painted an approved 'safety' yellow. Hydrant locations shall be identified by the installation of blue reflective markers.

**16.52.230. Emergency Responder Radio Coverage**

California Fire Code Section 510.1 is hereby amended to read:

**510.1** 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.

California Fire Code Section 510.1 is hereby amended by adding the following provision:

**510.1.1 Obstruction by new buildings.** When in the opinion of the fire code official, a new structure obstructs the line of sight emergency radio communications to existing buildings or to any other locations, the developer of the structure shall provide and install radio retransmission equipment necessary to restore communications capabilities. The equipment shall be located in an approved space or area within the new structure.

**16.52.240. Firefighters' safety systems.**

California Fire Code Section 511 is hereby amended by adding the following provision:

**511 Firefighters' safety systems.** A firefighters' breathing air refill system, firefighters' designated elevator, or another alternate system designed to meet firefighter safety needs as determined and approved by the fire code official, shall be installed in any building classified as a high-rise by the California Building Code. Firefighter breathing air systems shall provide an adequate pressurized fresh air supply for filling breathing air bottles carried by fire suppression, rescue, and other personnel in the performance of their duties. Mobile refill stations will generally be located away from the building. Interior refill stations shall generally be located inside vestibules or rooms within close proximity to a stairway enclosure. Fill station locations, additional design criteria and specifications shall be in accordance with the Fire Department Firefighters' air system standard.

**511.1 Firefighters' air systems maintenance.** Existing firefighters' air systems shall be maintained in an operable condition and shall be tested in accordance with nationally recognized fire safety standards.

**16.52.250. Immersion heaters.**

California Fire Code Section 605 is hereby amended by adding the following provision:

**605.11 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.

**16.52.260. Stationary storage battery systems.**

California Fire Code Section 608.6 is hereby amended by adding the following provision:

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

**16.52.270. Decorative vegetation in new and existing buildings.**

California Fire Code Section 806.1.1 is hereby amended to read:

**806.1.1 Display inside buildings.** The display of Christmas trees and other decorative vegetation 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.

**Delete Exception #1**

**16.52.280. Automatic sprinkler systems.**

California Fire Code Section 903.1 is hereby amended by adding the following provision:

**903.1.2 Residential sprinkler systems.** Residential fire sprinkler systems as required by California Residential Code Section R313 shall be regulated under the authority of the fire code official.

California Fire Code Section 903.2 is hereby amended to read as follows:

**903.2 Where required.** Approved automatic sprinkler systems in new and existing buildings and structures shall be provided in the locations described in this Section or in Sections 903.2.1 through 903.2.18, whichever is the more restrictive.

For the purposes of this Section, firewalls 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:**

Buildings and structures, other than group R-3 occupancies and Townhouses, that do not exceed 1000 square feet of building area.

2. An automatic sprinkler system shall be provided throughout existing buildings and structures less than 3600 square feet, other than group R-3 occupancies and Townhouses, when additions are made that increase the building area to 3600 square feet or greater, or that create conditions described in Sections 903.2.1 through 903.2.18.

**Exception:**

One-time additions to existing buildings that do not total more than 500 square feet of building area.

3. An automatic sprinkler system shall be provided throughout existing buildings and structures 3600 square feet or greater, other than group R-3 occupancies and Townhouses, when any addition is made, or that create conditions described in Sections 903.2.1 through 903.2.18.

**Exception:**

One-time additions to existing buildings that do not total more than 500 square feet of building area.

4. An automatic sprinkler system shall be provided throughout existing buildings and structures 3600 square feet or greater, other than group R-3 occupancies and Townhouses, when alterations or repairs are made that are in excess of 50 percent of the existing building area within a 12-month period, or that create conditions described in Sections 903.2.1 through 903.2.18 or Chapter 46.

For the purposes of this chapter, alterations and repairs shall be determined by the fire code official and include, but not be limited to; changes in T-bar ceiling, changes in the means of egress system, extending travel distances that would otherwise require the addition of automatic fire sprinklers, and extended distances from fire apparatus access roads.

5. An automatic sprinkler system shall be provided when there is any change in the character of occupancy or in the use of any existing building or structure 3600 square feet or greater, when the fire code official determines the change would place the building into a more hazardous division of the same occupancy group, or into a different occupancy group, which constitutes a greater life safety exposure or increased fire risk.
6. An automatic sprinkler system shall be provided in all accessible combustible and noncombustible sub-floors, attic space, or areas above ceilings, which are greater than 6 inches (152.4 mm) in height and contain electrical or mechanical components, in a fire-sprinklered structure.

**Exception:**

1. NFPA 13D systems shall comply with California Residential Code R313 and local standards.
2. The fire code official may permit the use of smoke detection in lieu of fire sprinklers in noncombustible and non assessable floor spaces and when construction materials do not exceed a flame spread rating of 25.
7. 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 percent.
8. Automatic sprinkler protection shall be provided in all storage areas that are within 5 feet (3048 mm) of the exterior building walls, roof overhangs, canopies or constitute an exposure to adjacent property.

Such sprinklers may be connected to the domestic water supply if the structure is not otherwise required to be fire sprinklered. Systems using domestic water supply shall not be less than 1-inch (25.4-mm) diameter pipe. Sufficient coverage of the area shall be provided and an approved accessible shut-off valve is to be provided for each room or area. Where valves are subject to possible vandalism, an approved means of securing the valve in the open position shall be provided. Where there are no ceilings, an 18 square inch (11,613 square mm) heat baffle shall be provided not more than 6 inches (152.4 mm) above the sprinkler head. All exposed piping shall be brazed copper or steel.

California Fire Code Section 903.3.1.1 is hereby amended to read as follows:

**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 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.

California Fire Code Section 903.3.1.2 is hereby amended to read:

**903.3.1.2 NFPA 13R sprinkler systems.** NFPA 13R sprinkler systems are not permitted. Additional references to NFPA 13R systems in this Section are not applicable.

## **16.52.280. Standpipes.**

California Fire Code Section 905.1 is hereby amended by adding the following provisions:

**905.1.2 Fire department connections.** All 4 inch (101.6 mm) fire lines shall be equipped with a two-way fire department connection. All 6 inch (152.4 mm) fire lines shall be equipped with a four-way fire department connection. All fire department connections shall be located within 25 feet (7620 mm) of the street or approved fire access lane, not less than 30 inches (762 mm) nor more than 3 feet (914.4 mm) above the finished grade, and shall be equipped with an approved check valve and plugs or caps.

All connections shall be protected against mechanical or vehicular damage and shall be visible and accessible. The number of fire department connections shall be determined by the fire code official.

**905.1.3 Riser shut-off valve.** Each individual riser shall be equipped with a post indicator valve located outside the structure. The post indicator valve locations shall be determined upon plan review. Post indicator valves shall be a minimum of 20 feet (6096 mm) from any building openings. All valves shall be secured with a non case-hardened lock. For single-use fire laterals, a backflow preventer may be used in lieu of a post indicator valve.

**905.3.1.1 Required installations.** The fire code official may require the installation of Class I or II standpipes when the size or configuration of the building would not allow for the advancement of fire hose lines from the exterior of the building.

## **16.52.300. Fire department connection location.**

California Fire Code Section 912.2 is hereby amended to read:

**912.2 Location.** With respect to hydrants, driveways, buildings and landscaping, fire department connections shall be so located that fire apparatus and hose connected to supply the system will not obstruct access to the building for other fire apparatus. The location of fire department connections shall be approved by the fire code official.

## **16.52.310. Maintenance of the Means of Egress.**

California Fire Code Section 1030.3 is hereby amended by adding the following provisions:

**1003.3.1 Vehicular obstructions.** Where means of egress doors are located so that they could be obstructed by the parking of vehicles, vehicular barriers shall be provided as required by the fire code official.

California Fire Code Section 1030.6 is hereby amended by adding the following provisions:

**1030.6.1 Seismic supports for storage shelves.** All storage shelves, cabinets, and other furnishings within a means of egress shall be adequately secured for seismic forces as required by the California Building Code. Storage shelves, cabinets, and other furnishings within a means of egress not controlled by the California Building Code may require securing, as determined by the fire code official.

**16.52.320. Precautions against fire during construction.**

California Fire Code Section 1404 is hereby amended by adding the following provisions:

**1404.8 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).

**16.52.330. Means of egress during construction.**

California Fire Code Section 1411.1 is hereby amended to read:

**1411.1 Required means of egress.** Each level above the first story in new multi-story buildings that require two exit stairways 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.).

California Fire Code Section 1411.1 is hereby amended by adding the following provision:

**1411.1.1 Required means of egress.** All new buildings under construction shall have at least one unobstructed means of egress. All means of egress shall be identified in the Prefire Plan as outlined in Section 1408.2.

**16.52.340. Semiconductor fabrication facilities definitions.**

California Fire Code Section 1802 is hereby amended to read:

**1802 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 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.

**16.52.350. Lumber yards and woodworking facilities.**

California Fire Code Section 1907 is hereby amended by adding the following provision:

**1907.6 Fire protection water supply system.** An approved fire protection water supply and hydrant system suitable for the fire hazard involved shall be provided for open storage yards and processing areas. Hydrant systems shall be installed in accordance with the State of California adopted edition of NFPA 24.

California Fire Code Section 1908 is hereby amended by adding the following provision:

**1908.11 Fire Protection Water Supply System.** An approved fire protection water supply and hydrant system suitable for the fire hazard involved shall be provided for open storage yards and processing areas. Hydrant systems shall be installed in accordance with NFPA 24.

**16.52.360. Hazardous materials general provisions.**

California Fire Code Section 2701.2.2.2 is hereby amended to read:

**2701.2.2.2 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. Other health hazards including carcinogens, irritants and sensitizers.

California Fire Code Section 2702 is hereby amended by adding the following:

**2702. 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.

California Fire Code Section 2703.1.3 is hereby amended by adding the following provision:

**2703.1.3.1 Toxic, Highly Toxic, Moderately Toxic Gases and Similarly Used Or Handled Materials.** The storage, use and handling of highly toxic, toxic and moderately toxic gases (Class I, II, III as defined in Title 16.53 Sunnyvale Municipal Code) shall comply with the provision of the California Fire Code and Title 16.53 Sunnyvale Municipal Code, whichever is more restrictive.

California Fire Code Section 2703.1 is hereby amended by adding the following provision:

**2703.1.5 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 2703.

California Fire Code Section 2703.1 is hereby amended by adding the following provision:

**2703.1.6 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. Monitoring of secondary containment shall be accordance with Section 2704.2.2.5.

California Fire Code Section 2703.2.2.1 is hereby amended to read:

**2703.2.2.1 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 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:
  1. The point of use.
  2. 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 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 3704.2 and 3704.3. 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.

California Fire Code Section 2703.2.2.2 is hereby amended to read:

**2703.2.2.2 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 shall be 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 a 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 as defined in Title 16.53 of the Sunnyvale Municipal Code shall pass a helium leak test of  $1 \times 10^{-9}$  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.

California Fire Code Section 2703.3.1 is hereby amended to read:

**2703.3.1 Unauthorized discharges.** When hazardous materials are released in quantities reportable under state, federal or local regulations or when there is release or 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 2703.3.1.1 through 2703.3.1.4.

California Fire Code Section 2703.5 is hereby amended by adding the following provisions:

**2703.5.2 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.

**2703.5.3 "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.

California Fire Code Section 2703.9.8 is hereby amended to read:

**2703.9.8 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 2703.8.5 and 2703.8.6. Materials that are incompatible shall not be stored within the same cabinet or exhausted enclosure.

California Fire Code Section 2703.9 is hereby amended by adding the following provisions:

**2703.9.11 Fire Extinguishing Systems for Workstations Dispensing, Handling or Using Hazardous Materials.** Combustible and non-combustible workstations, 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 500ml.

**16.52.370 Hazardous materials storage**

California Fire Code Section 2704.2.1 is hereby amended to read:

**2704.2.1 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.

California Fire Code Section 2704.2.2 is hereby amended to read:

**2704.2.2 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.

California Fire Code Section 2704.2.2 is hereby amended by deleting the following table:

**2704.2.2 Required secondary containment for hazardous materials solid and liquids storage.**

**16.52.380 Use, dispensing, and handling of hazardous materials.**

California Fire Code Section 2705.4.4 is hereby amended to read:

**2705.4.4 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.

**16.52.390. Corrosive materials definitions.**

California Fire Code Section 3102.1 is hereby amended by adding the following provision:

**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.

**16.52.400. Explosives and fireworks**

California Fire Code Section 3301.1 is hereby amended to read:

**3301.1 Scope.** For explosives requirements see Title 19 California Code of Regulations Chapter 10 and Section 3301.1.1 of this Chapter. For fireworks requirements see Title 19 California Code of Regulations Chapter 6 and Section 3301.1.2 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.
3. The possession, storage and use of small arms ammunition when packaged in accordance with DOTn packaging requirements.
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.

California Fire Code Section 3301.1 is hereby amended by adding the following provision:

**3301.1.1. 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 are 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 are allowed with permit and approval of the fire code official.

California Fire Code Section 3301.1.3 is hereby amended to read:

**3301.1.3 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 when handled and used by a licensed pyrotechnic operator in accordance with Title 19 of the California Code of Regulations and permitted in accordance with this Chapter.
2. Storage, handling and use of pyrotechnic special effects fireworks inside of buildings, equipped throughout with an approved fire sprinkler system, when used for proximate audience displays or special effects in theatrical, television, motion picture and group entertainment productions and when handled and used by a licensed pyrotechnic operator in accordance with Title 19 of the California Code of Regulations and permitted in accordance with this Chapter.

California Fire Code Section 3301.1.3 is hereby amended by adding the following provision:

**3301.1.4 Model 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.

California Fire Code Section 3301.1.5 is hereby amended by adding the following provision:

**3301.5 Small Arms Ammunition-General.** Indoor storage and display of black powder, smokeless propellants and small arms ammunition shall comply with Sections 3301.5.1 through 3301.5.4.2.3.

**3301.5.1 Packages.** Smokeless propellants shall be stored in approved shipping containers conforming to DOTn 49 CFR, Part 173.

**3301.5.1.1 Repackaging.** The bulk repackaging of smokeless propellants, black powder and small arms primers shall not be performed in retail establishments.

**3301.5.1.2 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.

**3301.5.2 Storage in Group R occupancies.** The storage of small arms ammunition in Group R occupancies shall comply with Sections 3301.5.2.1 through 3301.5.2.3.

**3301.5.2.1 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.

**3301.5.2.2 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

**3301.5.2.3 Small arms primers.** No more than 10,000 small arms primers shall be stored in Group R-3 occupancies.

**3301.5.3 Display and storage in Group M occupancies.** The display and storage of small arms ammunition in Group M occupancies shall comply with Sections 3301.5.3.1 through 3301.5.3.2.3.

**3301.5.3.1 Display.** The display of small arms ammunition in Group M occupancies shall comply with Sections 3301.5.3.1.1 through 3301.5.3.1.3.

**3301.5.3.1.1 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.

**3301.5.3.1.2 Black powder.** No more than 1 pound (0.454 kg) of black powder shall be displayed in Group M occupancies.

**3301.5.3.1.3 Small arms primers.** No more than 10,000 small arms primers shall be displayed in Group M occupancies.

**3301.5.3.2 Storage.** The storage of small arms ammunition in Group M occupancies shall comply with Sections 3301.5.3.2.1 through 3301.5.3.2.3.

**3301.5.3.2.1 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.

**3301.5.3.2.2 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.

**3301.5.3.2.3 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.

#### **16.52.410. Locations where aboveground tanks are prohibited.**

California Fire Code Section 3404.2.9.5.1 is hereby amended to read:

**3404.2.9.5.1 Locations where aboveground tanks are prohibited.** Storage of Class I and II liquids in aboveground tanks outside buildings is prohibited within zoning districts established in Title 19 of the Sunnyvale Municipal Code unless such installations are permitted.

When permitted, the following restrictions shall apply:

1. Double wall steel aboveground tanks used for the storage of Class II liquids, including integral diesel fuel storage tanks for generators or fire pumps, which are listed and limited to individual or aggregate capacity of 660 gallons. Tanks shall be located a minimum of ten (10) feet from any building and property line which is or can be built upon unless protected by an unpierced two (2) hour fire resistive wall extending not less than 30 inches above and to the sides of the storage area.
2. Protected aboveground storage tanks storing diesel fuel that is used to power generators or fire pumps shall not exceed 4,000 gallons individual capacity and 16,000 gallon aggregate capacity. Tanks with capacities of 661-4000 gallons shall be located a minimum of ten (10) feet from any building and fifteen (15) feet from a property line which is or can be built upon unless protected by an unpierced two (2) hour fire resistive wall extending not less than 30 inches above and to the sides of the storage area. Tanks shall be installed in accordance with Chapter 22 of the California Fire Code.
3. As approved by the fire code official, aboveground storage tanks used for dispensing fuel for motor vehicles shall be installed and maintained in accordance with Chapter 34 as amended.
4. General. Protected aboveground tanks shall be listed and shall meet the requirements specified in 3404.2.9.6 and shall be labeled accordingly.
5. Size. Primary tanks for other uses shall not exceed a 2,000 gallon or 6,000 gallon aggregate capacity.

California Fire Code Section 3404.2.9.5.1.1 is hereby amended by adding the following provision:

**3404.2.9.5.1.1.1 Separation distances.** Protected aboveground tanks shall be located a minimum of 5 feet (1524 mm) from any structure and a minimum of 15 feet (4572 mm) from property lines. Where multiple tanks are installed, a 3 foot (914.4 mm) minimum tank to tank separation shall be maintained.

**16.52.420. Protected aboveground tanks.**

California Fire Code Sections 3404.2.7.5.8 is hereby amended to read:

**3404.2.7.5.8 Overfill Prevention.** An approved means or method in accordance with Section 3404.2.9.6.6 shall be provided to prevent the overfill of all Class I, II and IIIA liquid storage tanks. Storage tanks in refineries, bulk plants or terminals regulated by Sections 3406.4 or 3406.7 shall have overfill protection in accordance with API 2350.

An approved means or method in accordance with Section 3404.2.9.7.6 shall be provided to prevent the overfilling of Class IIIB liquid storage tanks connected to fuel-burning equipment inside buildings.

**Delete Exception:**

California Fire Code Section 3404.2.9.5.1.1 is hereby amended by adding the following provision:

**3404.2.7.5.9 Automatic filling of tanks.** Systems that automatically fill flammable or combustible liquid tanks shall be equipped with overfill protection, approved by the fire code official 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.

**16.52.430. Underground tanks.**

California Fire Code Section 3404.2.11 is hereby amended to read:

**3404.2.11. Underground tanks.** Underground storage of flammable and combustible liquids in tanks shall comply with Section 3404.2, Sections 3404.11.1 through 3404.11.5.2 and Title 20 of the Sunnyvale Municipal Code.

California Fire Code Section 3404.2.11.3.1 is hereby amended by adding the following provision:

**3404.2.11.3.1. Buoyancy calculation.** Buoyancy calculations bearing the signature of a state registered engineer will be required for all tank installations at the time of plan review.

California Fire Code Section 3404.2.13.1.4 is hereby amended to read:

**3404.2.13.1.4. Tanks abandoned in place.** When approved by the fire code official, tanks abandoned in place shall be as follows:

1. Flammable and combustible liquids shall be removed from the tank and connected piping.
2. The suction, inlet, gauge, vapor return and vapor lines shall be disconnected.
3. The tank shall be filled completely with an approved inert solid material.

**Delete Exceptions**

**16.52.440. Permanent and temporary tanks.**

California Fire Code Section 3406.2.4 is hereby amended to read:

**3406.2.4 Permanent and temporary tanks.** The capacity of permanent above-ground tanks containing Class I or II liquids shall not exceed 1,100 gallons (4164 L). Tanks shall be of the single-compartment design.

**Exception:** Permanent above-ground tanks of greater capacity which meet the requirements of Section 3404.2.

**16.52.450. Location of bulk plants or terminals.**

California Fire Code Section 3406.4.11 is hereby amended by adding the following provision:

**3406.4.11 Location of bulk plants or terminals.** No new bulk plants or terminals shall be constructed within any zoning districts established in Title 19 of the Sunnyvale Municipal Code unless such installations are permitted.

**16.52.460. Toxic Materials.**

California Fire Code Section 3704.2.2.7 is hereby amended to read:

**3704.2.2.7 Treatment Systems.** The exhaust ventilation from gas cabinets, exhausted enclosures, gas rooms and local exhaust systems required in Section 3704.2.2.4 and 3704.2.2.5 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 3704.2.2.7.1 through 3704.2.2.7.5 and Section 505 of the California Mechanical Code.

**Exceptions:**

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:
  - 1.1. Valve outlets are equipped with gas-tight outlet plug or caps.
  - 1.2. Hand wheel-operated valves have handles secured to prevent movement.
  - 1.3. Approved containment vessels or containment systems are provided in accordance with Section 3704.2.2.3.

**Delete Exception 2**

California Fire Code Section 3704.2.2.10.1 is hereby amended to read:

**3704.2.2.10.1. 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.

**Delete Exception**

**ORDINANCE NO. \_\_\_\_\_**

**AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF SUNNYVALE AMENDING TITLE 16 (BUILDING AND CONSTRUCTION) OF THE SUNNYVALE MUNICIPAL CODE TO ADOPT BY REFERENCE THE 2010 CALIFORNIA FIRE CODE AS THE FIRE CODE OF THE CITY OF SUNNYVALE**

WHEREAS, the public health, safety and welfare will be served by the adoption of the "2009 International Fire Code" as amended by the "2010 California Fire Code" including appendixes Chapter B, C, and J, as amended by the State of California and local amendments, hereby are adopted by reference as the Fire Code of the City of Sunnyvale.

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

SECTION 1. REPEAL. Ordinance No. 2849-07 and all prior ordinances pertaining to this subject are hereby repealed.

SECTION 2. CHAPTER 16.52 ADDED. Sunnyvale Municipal Code Chapter 16.52 is hereby added to read as set forth in Appendix "C" attached and incorporated.

SECTION 3. STATUTORY REFERENCES, INCLUSIONS OF AMENDMENTS AND ADDITIONS. Whenever reference is made to any portion of this ordinance, or of any other chapter or section of the Sunnyvale Municipal Code, or of any other ordinance of the City of Sunnyvale, or of any law of the State of California, the reference applies to all amendments and additions now or thereafter made.

SECTION 4. INTERPRETATIONS. In interpreting and applying the provisions of this ordinance, the requirements contained herein are declared to be minimum requirements for he purposes set forth. The provisions of this ordinance, insofar as they are substantially the same as existing statutory provisions relating to the same subject matter, shall be construed as restatements and continuations and not as new enactments. This ordinance shall not nullify the more restrictive provisions of covenants, agreements or other ordinances or laws, but shall prevail as to such provisions which are less restrictive.

SECTION 5. CONSTITUTIONALITY, SEVERABILITY. If any section, subsection, sentence, clause or phrase of this ordinance is for any reason held by a court of competent jurisdiction to be unconstitutional or invalid, such decision shall not affect the validity of the remaining portions of this ordinance. The City Council of the City of Sunnyvale declares that it would have passed this ordinance and every section, subsection, clause and phrase thereof, irrespective of the fact that any one or more sections, subsections, sentences, clauses or phrases be declared unconstitutional.

SECTION 6. FINDINGS. The deletions, additions, and/or amendments to the California Fire Code as set out in Appendix "C" and which are the subject of this ordinance, are

based upon the General and Specific findings by the City Council of the City of Sunnyvale, which findings are set forth in the accompanying resolution

SECTION 7. EXEMPTION FROM CEQA. The City Council finds, pursuant to Title 14 of the California Code of Regulations, Section 15061(b)(3), that this ordinance is exempt from the requirements of the California Environmental Quality Act (CEQA) in that it is not a Project which has the potential for causing a significant effect on the environment.

SECTION 8. EFFECTIVE DATE. This ordinance shall be in full force and effect on January 1, 2011.

SECTION 9. POSTING AND PUBLICATION. The City Clerk is directed to cause copies of this ordinance to be posted in three (3) prominent places in the City of Sunnyvale and to cause publication of a notice once in The Sun, the official newspaper for publication of legal notices of the City of Sunnyvale, setting forth the date of adoption, the title of this ordinance, and a list of places where copies of this ordinance are posted, within fifteen (15) days after adoption of this ordinance.

Introduced at a regular meeting of the City Council held, \_\_\_\_\_, 2010, and adopted as an ordinance of the City of Sunnyvale at a regular meeting of the City Council held on \_\_\_\_\_, 2010, by following vote:

AYES:  
NOES:  
ABSTAIN:  
ABSENT:

ATTEST:

APPROVED:

\_\_\_\_\_  
City Clerk

\_\_\_\_\_  
Mayor

APPROVED AS TO FORM AND LEGALITY:

\_\_\_\_\_  
David Kahn, City Attorney

**Chapter 16.52  
FIRE CODE**

<b>16.52.010</b>	<b>Title</b>
<b>16.52.020</b>	<b>Adoption by reference</b>
<b>16.52.030</b>	<b>Fire district designated</b>
<b>16.52.040</b>	<b>Storage of hazardous materials</b>
<b>16.52.050</b>	<b>Duties are discretionary</b>
<b>16.52.060</b>	<b>Reference to codes</b>
<b>16.52.070</b>	<b>Permit required</b>
<b>16.52.080</b>	<b>Inspection authorized</b>
<b>16.52.090</b>	<b>Conditions of permits</b>
<b>16.52.100</b>	<b>Explosives</b>
<b>16.52.110</b>	<b>Owner/occupant responsibility</b>
<b>16.52.120</b>	<b>Board of appeals</b>
<b>16.52.130</b>	<b>Violation penalties</b>
<b>16.52.140</b>	<b>General definitions</b>
<b>16.52.150</b>	<b>Vacant premises</b>
<b>16.52.160</b>	<b>Hazard to firefighters</b>
<b>16.52.170</b>	<b>Fire safety</b>
<b>16.52.180</b>	<b>Use and occupancy related requirements</b>
<b>16.52.190</b>	<b>Fire apparatus access roads</b>
<b>16.52.200</b>	<b>Access to building openings and roofs</b>
<b>16.52.210</b>	<b>Premise identification</b>
<b>16.52.220</b>	<b>Fire protection water supplies</b>
<b>16.52.230</b>	<b>Emergency responder radio coverage</b>
<b>16.52.240</b>	<b>Firefighters' air system</b>
<b>16.52.250</b>	<b>Immersion heaters</b>
<b>16.52.260</b>	<b>Stationary storage battery systems</b>
<b>16.52.270</b>	<b>Decorative vegetation in new and existing buildings</b>
<b>16.52.280</b>	<b>Automatic sprinkler systems</b>
<b>16.52.290</b>	<b>Standpipes</b>
<b>16.52.300</b>	<b>Fire department connection location</b>
<b>16.52.310</b>	<b>Maintenance of means of egress</b>
<b>16.52.320</b>	<b>Precautions against fire during construction</b>
<b>16.52.330</b>	<b>Means of egress during construction</b>
<b>16.52.340</b>	<b>Semiconductor fabrication facilities definitions</b>
<b>16.52.350</b>	<b>Lumber yards and wood working facilities</b>
<b>16.52.360</b>	<b>Hazardous materials general provisions</b>
<b>16.52.370</b>	<b>Hazardous materials storage</b>
<b>16.52.380</b>	<b>Use, dispensing, handling of hazardous materials</b>
<b>16.52.390</b>	<b>Corrosive materials definition</b>
<b>16.52.400</b>	<b>Explosives and fireworks</b>
<b>16.52.410</b>	<b>Locations where aboveground tanks are prohibited</b>
<b>16.52.420</b>	<b>Protected aboveground tanks</b>
<b>16.52.430</b>	<b>Underground tanks</b>
<b>16.52.440</b>	<b>Permanent and temporary tanks</b>
<b>16.52.450</b>	<b>Location of bulk plants or terminals</b>
<b>16.52.460</b>	<b>Toxic Materials</b>
<b>16.52.470</b>	<b>Location of containers</b>

**16.52.010. Title.**

This chapter shall be known and may be cited and referred to as the "Fire Code for the City of Sunnyvale." *No change in wording.*

**16.52.020. Adoption by reference.**

The book entitled "2009 International Fire Code" as amended by the "2010 California Fire Code", including appendixes Chapter B, C, and J, as amended by the State of California, and local amendments, hereby are adopted by reference as the Fire Code of the City of Sunnyvale. Copies are on file in the Fire Prevention Office. *Changed code editions and appendixes.*

~~—The book entitled "2006 International Fire Code" as amended by the "2007 California Fire Code, including appendixes Chapter 1, B, and C, as amended by the State of California, and local amendments, hereby are adopted by reference as the Fire Code of the City of Sunnyvale. Copies are on file in the Fire Prevention Office.~~

**16.52.030. Fire district designated.**

The entire City of Sunnyvale is designated as a fire district. *No change in wording.*

**16.52.040. Storage of hazardous materials.**

Whenever any provision of this chapter conflicts with any provision of Title 16.53 or Title 20 of the Sunnyvale Municipal Code, the stricter provision shall govern. *No change in wording.*

**16.52.050. Duties are discretionary.**

Notwithstanding any other provision of this chapter or any provision of the California Fire Code, whenever the words "shall" or "must" are used in establishing a responsibility or duty of the City, its elected or appointed officers, employees, or agents, it is the legislative intent that such words establish discretionary responsibility or duty requiring the exercise of judgment and discretion.

All inspections specified herein shall be at the discretion of the fire code official and nothing in the California Fire Code or in the Sunnyvale Municipal Code shall be construed as requiring the city to conduct any such inspection nor shall any actual inspection made imply a duty to conduct any other inspection. Furthermore, neither the California Fire Code nor the Sunnyvale Municipal Code shall be construed to hold the city or any officers, employees or representatives of the city responsible for any damage to persons or property by reason of making inadequate or negligent inspection or by reason of any failure to make an inspection or reinspection. *No change in wording.*

**16.52.060. Reference to codes.**

California Fire Code Section 1.1.8 is hereby amended by adding the following provision:

**101.1.8.2. Reference to codes.** Whenever reference is made in this code to a building, mechanical, plumbing, or electrical code, such reference shall mean the version of such code as amended and adopted by the city of Sunnyvale. *No change in wording.*

**16.52.070. Permit required.**

California Fire Code Section 105.1.1 is hereby amended to read:

**105.1.1 Permits required.** Permits required by this code shall be obtained from the fire code official or hazardous materials compliance unit. Permit fees, if any, shall be paid prior to issuance of the permit. Issued permits shall be kept on the premises designated therein at all times and shall be readily available for inspection by the fire code official or hazardous materials compliance unit. Where a permit for storage of a hazardous material, as defined by Title 20 and/or Chapter 16.53 of the Sunnyvale Municipal Code, is obtained pursuant to those provisions, notwithstanding Section 105.2.2, there shall be no requirement for an additional permit for the storage of such hazardous materials under the California Fire Code. *Updated wording to match new code, added hazardous materials compliance unit as permit issuer.*

~~**105.1.1 Permit required.** It is unlawful for any person, firm, or corporation to use a building or premises or engage in any activities for which a permit is required by this code without first having obtained a permit from the fire code official. Permit fees, if any shall be paid prior to issuance of the permit. Issued permits shall be kept on premises designated therein at all times and shall be readily available for inspection by the fire code official. Where a permit for storage of a hazardous material, as defined by Title 20 and/or Chapter 16.53 of the Sunnyvale Municipal Code, is obtained pursuant to those provisions, notwithstanding Section 105.2.2, there shall be no requirement for an additional permit for the storage of such hazardous materials under the California Fire Code.~~

**16.52.080. Inspection authorized.**

California Fire Code Section 105.2.2 is hereby amended by adding the following provisions:

**105.2.2 Inspection authorized.** Before a new operational permit is approved, the fire code official is authorized to inspect the receptacles, vehicles, buildings, devices, premises, storage spaces or areas to be used to determine compliance with this code or any operational constraints required. In instances where laws or regulations are enforceable by agencies or departments other than the Department of Public Safety, joint approval shall be obtained from all agencies or departments involved. *No change in wording.*

~~**105.2.2.1 Enclosure before inspection.** No portion of any appliance, device, equipment or system intended to be covered by earth or by structure shall be enclosed until inspected and approved. An inspection shall be requested prior to the covering or enclosing of any such equipment. Such request shall be made not less than forty eight (48) hours prior to the estimated time of inspection. *No longer required, standard operating procedure in the industry.*~~

~~**105.2.2.2 Exposure for inspection.** Whenever any such appliance, device, equipment or system is covered or concealed without first having been inspected, the fire code official may require, by written notice, that such work shall be exposed for inspection. The work of exposing and recovering shall not result in any expense to the city. *No longer required, standard operating procedure in the industry.*~~

~~**105.2.2.3 Request for inspection.** When the construction or installation work is completed and such appliance, device, equipment or system is ready for operation or use, a final inspection shall be requested before operation or use. Requests for inspection shall be given not less than forty eight (48) hours prior to the requested inspection time. No such appliance, device, equipment or system shall be used until final acceptance has been granted by the fire code official. *No longer required, standard operating procedure in the industry.*~~

#### **16.52.90. Conditions of permits.**

California Fire Code Section 105.3.3 is hereby amended to read:

~~**105.3.3 Occupancy prohibited before approval.** It shall be unlawful for any person to conduct or maintain any business, occupancy or activity that requires a permit by this code, without first securing the proper permit from the fire code official. No person shall continue to conduct or maintain any such business, occupancy or activity when such permit becomes invalid or revoked. *No longer required, covered under 105.1.1*~~

California Fire Code Section 105.3 is hereby amended by adding the following provisions:

**105.3.9 Permits for institutions.** It shall be unlawful to operate, maintain or use any institution until all state and local laws and regulations governing safety from fire and panic have been satisfactorily complied with and a permit from the fire code official has been obtained for that occupancy. (For the purpose of this section, an institution shall be, but is not limited to, hospitals, children's homes or institutions, home or institution for insane or mentally retarded persons, home or institution for the care of aged or senile persons, sanitariums, nursing or convalescent homes, certified family care homes, out-of-home placement facilities, halfway houses and day care nurseries, or similar facilities.) *No change in wording, code number change.*

#### **16.52.100. Explosives.**

California Fire Code Section 105.6.14 is hereby amended by deleting the following provision:

~~**105.6.14. Exception** *No change in wording.*~~

California Fire Code Section 105.6.14 is hereby amended by adding the following provisions:

**105.6.14.1 Explosives permit.** An operational permit is required to manufacture, possess, store, sell or otherwise dispose of gunpowder when in quantities of over 20 pounds (9.1 kg) of smokeless powder or 1 pound (0.45 kg) of black sporting powder. *No change in wording.*

**105.6.14.2 Limits established by law.** The storage of explosives and blasting agents is permitted only within those zoning districts established in Title 19 of the Sunnyvale Municipal Code (Zoning) and described as the Industrial and Service Zone (M-S), M-3 and M-4 General Industrial Districts except for temporary storage for use in connection with approved blasting operations; provided, however, this prohibition shall not apply to wholesale and retail stocks of small arms ammunition, explosive bolts, explosive rivets or cartridges for explosive actuated power tools in quantities involving less than 500 pounds (226.8 kg) of explosive material.

*No change in wording.*

**16.52.110. Owner/occupant responsibility.**

California Fire Code Section 107.5 is hereby amended by adding the following provisions:

**107.5.1 Hazard abatement.** Any act or condition that presents a fire, panic, or life safety hazard, or would contribute to the rapid spread of fire or inhibit mitigation or increase the chance of release of hazardous material, or would interfere with, hinder, or delay the egress of occupants or response of emergency personnel and which is not otherwise addressed in the code, shall be abated, eliminated, corrected as directed by the fire code official. *No change in wording.*

**16.52.120. Board of appeals.**

California Fire Code Section 108.1 is hereby amended by adding the following provision:

**108.1.1. Board of appeals.** The Office of the City Clerk maintains guidelines and procedures for the Board of appeals. *No change in wording.*

**16.52.130. Violation penalties.**

California Fire Code Section 109.3 is hereby amended to read:

**109.3 Violation penalties.** Any person, property owner, firm or corporation who shall violate a provision of this code or shall fail to comply with any of the requirements thereof or who shall erect, install, alter, repair or do work in violation of the approved construction documents or directive of the fire code official, or of a permit or certificate used under the provisions of this code, shall be guilty of a misdemeanor, unless an infraction is specified, and upon conviction thereof shall be punishable as provided in Chapter 1.04 of the Sunnyvale Municipal Code. *Moved from 16.52.130 to the more appropriate location in 109.3 CFC. Misdemeanor reworded to match model code language.*

California Fire Code Section 109.3 is hereby amended by adding the following provision:

**109.3.2 Civil penalties.** Any person, property owner, firm or corporation who shall violate a provision of this code or shall fail to comply with any of the requirements thereof or who shall erect, install, alter, repair or do work in violation of the approved construction documents or directive of the fire code official, or of a permit or certificate used under the provisions of this code shall be liable for a civil penalties as described in Chapter 1 of the Sunnyvale Municipal Code.

In any civil action brought to seek such civil penalties, and/or to obtain injunctive relief for violation of any provision of the code, in which action the city prevails, the court shall determine and impose reasonable expenses, including attorney's fees, incurred by the city in the investigation and prosecution of the action.

Such remedies are in addition to and do not supersede or limit any and all other remedies, civil or criminal. *Moved from 16.52.130 to the more appropriate location in 109.3 CFC. Civil reworded to specify all of Chapter 1 SMC and allow for administrative citations.*

**16.52.140. General definitions.**

**16.52.130. General definitions.**

California Fire Code Section 202 is hereby amended by adding the following provisions:

**CARCINOGEN.** 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 as 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. *Revised SMC section number, new definition, not addressed in the model code, countywide standard.*

**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. *No change in wording.*

**FIRE DEPARTMENT.** The Fire department is the Department of Public Safety. *No change in wording.*

**OTHER HEALTH HAZARD MATERIAL.** 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 on 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). *New definition, not addressed in the model code, countywide standard.*

**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. *New definition, not addressed in the model code, countywide standard.*

**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. *No change in wording.*

California Fire Code Section 202 is hereby amended by amending following:

**FIRE CHIEF.** The Fire Chief is the Director of Public Safety. *No change in wording.*

**16.52.150. Vacant premises.**

~~**16.52.140. Vacant premises.**~~

California Fire Code Section 311.5 – 311.5.5 is hereby amended by deleting the following provisions:

**311.5 Placards.**

**311.5.1 Placard location.**

**311.5.2 Placard size and color.**

**311.5.3 Placard date.**

**311.5.4 Placard symbols.**

**311.5.5 Informational use.** *Revised SMC section number, no change in wording.*

**16.52.160. Hazards to firefighters**

~~**16.52.150. Hazards to firefighters**~~

California Fire Code Section 316 is hereby amended by adding the following provisions:

**316.6 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 *Revised SMC section number. Moved from 16.52.200, code section changed from 507.4 to 316.6. No change in wording other than code numbers.*

**16.52.170. Fire safety**

~~**16.52.150. Fire safety**~~

California Fire Code Section 401.7 is hereby amended to read:

**401.7 Unplanned evacuation.** Evacuations made necessary by unplanned activation of a fire alarm system or by any other emergency may be substituted for a required evacuation drill only when approved by the fire code official. *Revised SMC section number. New section to allow the fire code official the option to allow an unplanned evacuation to be substituted for a drill, countywide standard.*

California Fire Code Section 404.2 is hereby amended to read:

**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.
3. Group E see regulations in Title 19 California Code of Regulations §3.13.
4. Group F buildings having an occupant load of 500 or more persons or more than 100 persons above or below the lowest level of exit discharge.
5. Group H
6. Group I see regulations in Title 19 California Code of Regulations §3.09.
7. Group R-1 see regulations in Title 19 California Code of Regulations §3.09.

8. Group R-2 college and university buildings.
9. High-rise buildings see regulations in Title 19 California Code of Regulations §3.09.
10. Group M buildings having an occupant load of 500 or more persons.
11. Covered malls exceeding 50,000 square feet (4645 m<sup>2</sup>) in aggregate floor area.
12. Underground buildings. *Updated entire section, countywide standard.*

California Fire Code Section 404.3.1 is hereby amended to read:

**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. *No change in wording.*

California Fire Code Table 405.2 is hereby amended to read:

**TABLE 405.2  
FIRE AND EVACUATION DRILL  
FREQUENCY AND PARTICIPATION**

a <b>GROUP OR OCCUPANCY</b>	<b>FREQUENCY</b>	<b>PARTICIPATION</b>
Group A	Quarterly	Employees
Group B <sup>a</sup>	Annually	Employees
Group E	See §3.13 Title 19, CCR	
Group F	Annually	Employees
Group I	See §3.09 Title 19, CCR	
Group R-1	See §3.09 Title 19, CCR	
Group R-2 <sup>b</sup>	Two annually	All occupants
Group R-4	Quarterly on each shift	Employees <sup>d</sup>
High-rise buildings <sup>c</sup>	See §3.09 Title 19, CCR	

<sup>a</sup> Group B buildings having an occupant load of 500 or more persons.

<sup>b</sup> Applicable to Group R-2 college and university buildings only.

<sup>c</sup> Applicable to high-rise office buildings only.

<sup>d</sup> Fire and evacuation drills in residential care assisted living facilities shall include complete evacuation of the premises in accordance with Section 408.10.5. Where occupants receive habilitation or rehabilitation training, fire prevention and fire safety practices shall be included as part of the training program.

*Added Group F, changed R-2 to 2 annually, countywide standard.*

**TABLE 405.2  
FIRE AND EVACUATION DRILL  
FREQUENCY AND PARTICIPATION**

<b>GROUP OR OCCUPANCY</b>	<b>FREQUENCY</b>	<b>PARTICIPATION</b>
Group A	Quarterly	Employees
Group B <sup>a</sup>	Annually	Employees
Group E	See §3.13 Title 19, CCR	
Group I	See §3.09 Title 19, CCR	
Group R-1	See §3.09 Title 19, CCR	
Group R-2 <sup>b</sup>	Four annually	All occupants
Group R-4	See §3.09 Title 19, CCR	
High-rise buildings <sup>c</sup>	See §3.09 Title 19, CCR	

<sup>a</sup>-Group B buildings having an occupant load of 500 or more persons.

<sup>b</sup>-Applicable to Group R-2 college and university buildings only.

<sup>c</sup>-Applicable to high rise office buildings only.

**16.52.180. Use and occupancy-related requirements.**

~~**16.52.160. Use and occupancy-related requirements.**~~

California Fire Code Sections 408 is hereby amended by deleting the following provisions:

**408.2.2 Announcements.**

**408.3.1 First emergency evacuation drill.**

**408.3.2 Emergency evacuation drill deferral.**

**408.3.3 Time of day.**

**408.3.4 Assembly points.**

**408.5.1 Fire safety and evacuation plan.**

**408.5.2 Staff training.**

**408.5.3 Resident training.**

**408.5.4 Drill frequency.**

**408.5.5 Resident participation.**

**408.6 Group I-2 occupancies.**

**408.6.1 Evacuation not required.**

**408.6.2 Coded alarm signal.**

**408.7 Group I-3 occupancies.**

**408.7.1 Employee training.**

**408.7.2 Staffing.**

**408.7.3 Notification.**

**408.8 Group R-1 occupancies.**

**408.8.2 Emergency duties.**

**408.8.3 Fire safety and evacuation instructions.**

*change in wording.*

*Revised SMC section number, no*

California Fire Code Section 408.9 is hereby amended to read:

**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. *No change in wording.*

California Fire Code Section 408.9 is hereby amended by adding the following provisions:

**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 intervals as prescribed in California Code of Regulations Title 19, Section 3.13. 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. In Group R-2 college and university buildings, one required drill shall be held during hours after sunset or before sunrise. *No change in wording.*

California Fire Code Sections 408.10 is hereby amended by deleting the following provisions:

**408.10 Group R-4 occupancies.**

**408.10.1 Fire safety and evacuation plan.**

**408.10.2 Staff training.**

**408.10.3 Resident training.**

**408.10.4 Drill frequency.**

**408.10.5 Resident participation.** *No change in wording.*

California Fire Code Section 408.11.1.2 is hereby amended to read:

**408.11.1.2 Revisions.** The lease plans shall be revised annually or as often as necessary to keep them current. *No change in wording.*

**16.52.190. Fire apparatus access roads.**

~~**16.52.170. Fire apparatus access roads.**~~

California Fire Code Section 503.1 is hereby amended to read:

**503.1 Where required.** Fire apparatus access roads shall be provided and maintained in accordance with Sections 503.1.1 through 503.1.3 and as per the Fire Department access road standards. *Revised SMC section number, new to include the Santa Clara County standardized policy.*

California Fire Code Section 503.1.1 is hereby amended to read:

**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 shall extend within 150 feet (45,720 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.

**Exceptions:**

The fire code official is authorized to increase the dimension of 150 feet (45,720 mm) where:

1. The building is equipped throughout with an approved automatic fire sprinkler system, installed in accordance with Section 903.3.1.1, 903.3.1.2 or 903.3.1.3.
2. Fire apparatus roads cannot be installed because of topography, waterways, nonnegotiable grades or other similar conditions, an approved alternative means of fire protection shall be provided.

*Deletes the condition of "location on property" from exception #2 as a reason for non-compliance. This is because developers could use this reason in many cases when the building is purposely sited far off the roadway. Deleted Exemption #3, doesn't exempt R-3 or U occupancies from the required distance if there are not more than two buildings served by the road. Countywide standard.*

California Fire Code Section 503.2 is hereby amended by adding the following provisions:

**503.2.1 Dimensions.** Fire apparatus access roads shall have an unobstructed width of not less than 20 feet (6096 mm), exclusive of shoulders, except for approved security gates in accordance with Section 503.6, an unobstructed vertical clearance of not less than 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.

*New exception to allow for alternate means for 1 or 2 single family dwellings, countywide standard..*

California Fire Code Section 503.2 is hereby amended by adding the following provisions:

**503.2.1.1 Width.** Fire apparatus access widths shall be increased to 24 feet (7315.2 mm) when in the opinion of the fire code official, widths are not adequate to provide fire apparatus access. Fire apparatus access roads serving buildings or portions of buildings or facilities exceeding 30 feet (9144 mm) in height above the lowest level of fire department vehicle shall have a minimum unobstructed width of 26 feet (7924.8 mm).

~~**503.2.1.1 Width.** Fire apparatus access widths shall be increased to 24 feet (7315.2 mm) when in the opinion of the fire code official, widths are not adequate to provide fire apparatus access. Fire apparatus access roads serving buildings of four or more stories in height, or 50 feet (15240 mm) or greater in height from the fire apparatus access point, shall have an unobstructed width of 26 feet (7924.8 mm).~~ *Reduced building height from 50 feet to 30 feet to match the Santa Clara County standardized policy.*

**503.2.1.2 Vertical clearance.** Vertical clearances shall be increased when in the opinion of the fire code official, vertical clearances are not adequate to provide fire apparatus access. *No change in wording.*

California Fire Code Section 503.2.3 is hereby amended to read:

**503.2.3 Surface.** Fire apparatus access roads shall be designed and maintained to support the imposed loads of fire apparatus and shall be provided with a surface so as to provide all-weather driving capabilities. Calculations for apparatus access road design shall be submitted for review prior to construction. The minimum traffic index for the access road design shall be 5.0 and shall bear the stamp and signature of a State of California engineer licensed for such design work. *No change in wording.*

California Fire Code Section 503.2.5 is hereby amended by adding the following provisions:

**503.2.5.1 Cul-de-sacs.** For the purposes of fire protection and fire apparatus accessibility, cul-de-sac streets shall not exceed 400 feet (121920 mm) maximum length. If it is determined that a longer cul-de-sac is essential for the property to be developed, the fire code official may impose additional requirements to ensure protection of life and property, including, but not limited to:

1. Additional fire hydrants
2. Increased turnaround ability
3. Increased sprinkler density and coverage
4. Emergency access easements. *No change in wording.*

California Fire Code Section 503.3 is hereby amended by adding the following provisions:

**503.3.1 Signs.** A sign of a size, type and design approved by the fire code official shall be located on the right side of the fire lane within the first 25 feet (7620-mm) of entry. The sign shall be permanently mounted with the bottom of the sign to be at least 6 feet (1828.8 mm) above grade but not greater than 10 feet (3048 mm) above grade. *Changed ‘ to “feet”*

**503.3.2 Curbs.** Curbs along fire access roads shall be painted traffic red. Such curbs shall have the words ‘FIRE LANE’ (all capital letters) stenciled each 50 feet (15240 mm) on both the face and top edges. The stenciled letters shall be 3 inches (76.2 mm) high with a stroke of ½ inch (12.7 mm) and be white in color.

Fire access lanes not having curbs shall have a 6 inches (152.4 mm) red stripe painted along the edge(s). This red stripe shall have the words ‘FIRE LANE’ (all capital letters) stenciled each 50 feet (15240 mm). The stenciled letters shall be 3 inches (76.2 mm) high with a stroke of 1/2 inch (12.7 mm) and be white in color. *Changed ‘ to “feet” changed “ to inch(es)*

~~It shall be unlawful for any owner, lessee, or person in charge of such private property to fail to install and then maintain such access signage and markings after having been given proper notice for such installation.~~

~~When such areas are marked and signed as provided herein, it shall be unlawful for any person to park or leave standing a vehicle adjacent to any signed or marked area. *This is duplicate wording of 503.3.3*~~

**503.3.3 Compliance with orders and notices.** It shall be unlawful for any owner, lessee, or person in charge of such private property to fail to install and then maintain such access signage and markings after having been given proper notice for such installation.

When such areas are marked and signed as provided herein, it shall be unlawful for any person to park or leave standing a vehicle adjacent to any signed or marked area. *No change in wording.*

~~503.4.1 Traffic calming devices.~~ The fire code official shall approve the design and installation of all traffic calming devices within the fire apparatus access roads. *Moved to 503.7. Reworded to match County standard.*

~~503.4.2 Runway spikes.~~ The use of roadway spikes within the fire apparatus access roads is prohibited. *No longer required.*

**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. *Moved from 503.4.1, reworded to match countywide standard. This amendment requires that any type of traffic calming device used to slow traffic along an access road to be approved by the fire code official prior to installation. This requirement for approval will allow the fire code official to determine if the device type and/or location will adversely affect emergency response times.*

**16.52.200. Access to building openings and roofs.**

~~16.52.190. Access to building openings and roofs.~~

California Fire Code Section 504 is hereby amended by adding the following provisions:

**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. *Revised SMC section number, no change in wording. Countywide standard is intended to mitigate concerns shared by all county fire departments regarding emergency access to buildings that have installed security devices and systems that could impede the emergency access by the fire department.*

**16.52.210. Premises identification.**

~~16.52.200. Premises identification.~~

California Fire Code Section 505 is hereby amended by adding the following provisions:

~~505.1.1 Unit numbers.~~ Multi unit residential and commercial buildings shall have units identified as approved. *No longer required, redundant with 505.1*

**505.1.1 Site directories.** Site directories for building complexes shall be installed and maintained when required by the fire code official. *Revised SMC section number, cleaned up wording.*

~~505.1.2 Site directories.~~ Site directories for building complexes shall be located and maintained as approved.

~~16.52.200. Hazards to fire fighters~~

California Fire Code Section 507 is hereby amended by adding the following provisions:

~~507.4 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 *Moved to 16.52.150*

**16.52.220. Fire protection water supplies.**

~~**16.52.210. Fire protection water supplies.**~~

California Fire Code Section 507.5.1 is hereby amended to read:

**507.5.1 Where required.** Where a portion of the facility or building hereafter constructed or moved into or within the jurisdiction is more than 300 feet from a hydrant on a fire apparatus access road, as measured by an approved route around the exterior of the facility or building, on-site fire hydrants and mains shall be provided where required by the fire code official. The location, number and type of fire hydrants shall be approved by the fire code official.

~~**Delete exceptions 1 and 2.** *Revised SMC section number, renumbered code section, wording now follows actual section, reduced distance from 400-300. Deleted additional non essential wording.*~~

California Fire Code Section 508.5.1 is hereby amended to read:

~~**508.5.1 Where required.** The location, number and type of fire hydrants connected to a water supply capable of delivering the required fire flow shall be provided on the public street or on the site of the premises or both to be protected as required and approved by the fire code official. A hydrant valve shall be provided for all on-site fire hydrants. The valve shall be located a minimum of 6 feet (1828.8 mm) from the hydrant. Fire hydrants shall be accessible to the fire department apparatus by roads meeting the requirements of Section 16.52.170 of the Sunnyvale Municipal Code.~~

~~Delete exceptions 1 and 2.~~

California Fire Code Section 507.5.1 is hereby amended by adding the following provision:

**507.5.1.1 Fire protection equipment and fire hydrants.** Fire protection equipment and fire hydrants shall be clearly identified in a manner approved by the fire code official to prevent obstruction by parking and other obstructions. All fire department connections, post indicator valves and on-site fire hydrants shall be painted an approved 'safety' yellow. Hydrant locations shall be identified by the installation of blue reflective markers. *Renumbered code section, added word 'safety' to the color*

California Fire Code Section 508.5.1.1 is hereby amended by adding the following provision:

~~**508.5.1.1 Fire protection equipment and fire hydrants.** Fire protection equipment and fire hydrants shall be clearly identified in a manner approved by the fire code official to prevent obstruction by parking and other obstructions. All fire department connections, post indicator valves and on-site fire hydrants shall be painted an approved yellow. Hydrant locations shall be identified by the installation of blue reflective markers.~~

**16.52.230. Emergency Responder Radio Coverage**

~~16.52.220. Emergency Responder Radio Coverage~~

California Fire Code Section 510.1 is hereby amended to read:

**510.1** 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. *Revised SMC section number. 510.1 is a new section to the CFC. This amendment requires that emergency responder radio equipment be installed in accordance with this section and Appendix J of the Fire Code.*

California Fire Code Section 510.1 is hereby amended by adding the following provision:

**510.1.1 Obstruction by new buildings.** When in the opinion of the fire code official, a new structure obstructs the line of sight emergency radio communications to existing buildings or to any other locations, the developer of the structure shall provide and install radio retransmission equipment necessary to restore communications capabilities. The equipment shall be located in an approved space or area within the new structure.

*Reworded, removed section 2, which is now covered in 510 and Appendix J. Countywide standard. This amendment requires that if a new building is constructed that interrupts radio communications to other locations in the jurisdiction, the building developer is required to install the necessary retransmission equipment in the new building to remedy the problem.*

~~16.52.220. Radio retransmission equipment.~~

~~California Fire Code Section 511 is hereby amended by adding:~~

~~**511.1** (1) When in the opinion of the public safety emergency communications division, the structure obstructs line of sight emergency radio communications to any portion of the city, an approved space with an adequate power source shall be provided for necessary retransmission equipment. (2) Buildings and structures which cannot support the required level of radio coverage shall meet public safety department radio system coverage policy.~~

**16.52.240. Firefighters' air systems.**

~~16.52.230. Fire fighter's air systems.~~

California Fire Code Section 511 is hereby amended by adding the following provision:

**511 Firefighters' safety systems.** A firefighters' breathing air refill system, firefighters' designated elevator, or another alternate system designed to meet firefighter safety needs as determined and approved by the fire code official, shall be installed in any building classified as a high-rise by the California Building Code. Firefighters' breathing air systems shall provide an adequate pressurized fresh air supply for filling breathing air bottles carried by fire suppression, rescue, and other personnel in the performance of their duties. Mobile refill stations will generally be located away from the building. Interior refill stations shall generally be located inside vestibules or rooms within close proximity to a stairway enclosure. Fill station locations, additional design criteria and specifications shall be in accordance with the Fire Department Firefighters' air system standard. *Changed code section. Changed requirement from 6 floors above fire department access to highrise. This clarifies the definition especially related to*

*podium construction. Refers to Fire Dept. standards for additional guidelines, which is a countywide standard.*

**511.1 Firefighters' air systems maintenance.** Existing firefighters' air systems shall be maintained in an operable condition and shall be tested in accordance with nationally recognized fire safety standards. *New, we have never had a written requirement to maintain and test existing systems.*

California Fire Code Section 512 is hereby amended by adding the following provision:

~~**512.1 Fire fighter's air systems.** Approved fire fighters breathing air refill systems shall be installed when any building has six (6) or more floors used for human occupancy above the lowest floor level having building access. This system shall provide an adequate pressurized fresh air supply for filling breathing air bottles carried by fire suppression, rescue, and other personnel in the performance of their duties. Mobile refill stations will generally be located away from the building. Interior refill stations will generally be located inside vestibules or rooms within close proximity to a stairway enclosure or as approved.~~

**16.52.240. Portable unvented heaters.**

California Fire Code Section 603.4 is hereby amended by adding the following provision:

~~**603.4.2 Portable unvented heaters used in other occupancies and outside locations.** Use of portable fuel fired unvented heaters in other occupancies and outside locations shall be approved by the fire code official. *No longer required, covered under 603.4.2*~~

**16.52.250. Immersion heaters.**

California Fire Code Section 605 is hereby amended by adding the following provision:

**605.11 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. *No change in wording..*

**16.52.260. Stationary storage battery systems.**

California Fire Code Section 608.6 is hereby amended by adding the following provision:

**608.6.4 Failure of Ventilation System.** Failure of the ventilation system shall automatically disengage the charging system. *Renumbered code section, no other changes.*

~~**608.6.3 Failure of Ventilation System.** Failure of the ventilation system shall automatically disengage the charging system.~~

**16.52.270. Decorative vegetation in new and existing buildings.**

California Fire Code Section 806.1.1 is hereby amended to read:

**806.1.1 Display inside buildings.** The display of Christmas trees and other decorative vegetation 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.

**Delete Exception #1**

*New countywide amendment to clarify/follow Title 19 CCR, added to 806.2 but left out of 806.1.*

## 16.52.280. Automatic sprinkler systems.

California Fire Code Section 903.1 is hereby amended by adding the following provision:

**903.1.2 Residential sprinkler systems.** Residential fire sprinkler systems as required by California Residential Code Section R313 shall be regulated under the authority of the fire code official. *H&S sections 13145 and 13146(a) authorizes the jurisdiction to give authority to the Building or Fire Department. Since 1987, DPS has had jurisdiction.*

California Fire Code Section 903.2 is hereby amended to read as follows:

**903.2 Where required.** Approved automatic sprinkler systems in new and existing buildings and structures shall be provided in the locations described in this Section or in Sections 903.2.1 through 903.2.18, whichever is the more restrictive.

For the purposes of this Section, firewalls 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:**

Buildings and structures, other than group R-3 occupancies and Townhouses, that do not exceed 1000 square feet of building area.

2. An automatic sprinkler system shall be provided throughout existing buildings and structures less than 3600 square feet, other than group R-3 occupancies and Townhouses, when additions are made that increase the building area to 3600 square feet or greater, or that create conditions described in Sections 903.2.1 through 903.2.18.

**Exception:**

One-time additions to existing buildings that do not total more than 500 square feet of building area.

3. An automatic sprinkler system shall be provided throughout existing buildings and structures 3600 square feet or greater, other than group R-3 occupancies and Townhouses, when any addition is made, or that create conditions described in Sections 903.2.1 through 903.2.18.

**Exception:**

One-time additions to existing buildings that do not total more than 500 square feet of building area.

4. An automatic sprinkler system shall be provided throughout existing buildings and structures 3600 square feet or greater, other than group R-3 occupancies and Townhouses, when alterations or repairs are made that are in excess of 50 percent of the existing building area within a 12-month period, or that create conditions described in Sections 903.2.1 through 903.2.18 or Chapter 46.

For the purposes of this chapter, alterations and repairs shall be determined by the fire code official and include, but not be limited to; changes in T-bar ceiling, changes in the means of egress system, extending travel distances that would otherwise require the addition of automatic fire sprinklers, and extended distances from fire apparatus access roads.

5. An automatic sprinkler system shall be provided when there is any change in the character of occupancy or in the use of any existing building or structure 3600 square feet or greater, when the fire code official determines the change would place the building into a more hazardous division of the same occupancy group, or into a different occupancy group, which constitutes a greater life safety exposure or increased fire risk.
6. An automatic sprinkler system shall be provided in all accessible combustible and noncombustible sub-floors, attic space, or areas above ceilings, which are greater than 6 inches (152.4 mm) in height and contain electrical or mechanical components, in a fire-sprinklered structure.

**Exception:**

1. NFPA 13D systems shall comply with California Residential Code R313 and local standards.
2. The fire code official may permit the use of smoke detection in lieu of fire sprinklers in noncombustible and non assessable floor spaces and when construction materials do not exceed a flame spread rating of 25.
7. 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 percent.
8. Automatic sprinkler protection shall be provided in all storage areas that are within 5 feet (3048 mm) of the exterior building walls, roof overhangs, canopies or constitute an exposure to adjacent property.

Such sprinklers may be connected to the domestic water supply if the structure is not otherwise required to be fire sprinklered. Systems using domestic water supply shall not be less than 1-inch (25.4-mm) diameter pipe. Sufficient coverage of the area shall be provided and an approved accessible shut-off valve is to be provided for each room or area. Where valves are subject to possible vandalism, an approved means of securing the valve in the open position shall be provided. Where there are no ceilings, an 18 square inch (11,613 square mm) heat baffle shall be provided not more than 6 inches (152.4 mm) above the sprinkler head. All exposed piping shall be brazed copper or steel.

California Fire Code Section 903.3.1.1 is hereby amended to read as follows:

**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 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.

California Fire Code Section 903.3.1.2 is hereby amended to read:

**903.3.1.2 NFPA 13R sprinkler systems.** NFPA 13R sprinkler systems are not permitted. Additional references to NFPA 13R systems in this Section are not applicable.

*Revised SMC section number. Completely revised wording. Shut off valve section not required. FDC section not required. Design density reworded to match County standard. Sprinkler requirements changed from 3600 square feet to 1000 square feet. Removed condo conversion since it did not meet the original intent. Added the new basement section. Residential sections moved to IRC amendment R313 and city standards. 13R requirement remains the same.*

California Fire Code Section 903.1.1 is hereby amended to read:

**903.1.1 Alternative protection.** ~~Alternative automatic fire extinguishing systems complying with Section 904 shall be permitted in lieu of automatic sprinkler protection where recognized by the applicable standard and approved by the fire code official.~~

**Exception:** ~~Voluntary alternative automatic fire extinguishing systems installed in rooms may supplement, but not replace required automatic sprinkler systems.~~

California Fire Code Section 903.1 is hereby amended by adding the following provisions:-

**903.1.2 Riser shut-off valve.** ~~Unless otherwise approved, each individual riser shall be equipped with a post indicator valve located outside the structure. The post indicator valve locations shall be determined upon plan review. Post indicator valves shall be a minimum of 20 feet (6,096 mm) from any building opening. All valves shall be secured with non-case-hardened locks.~~

**903.1.3 Fire department connections.** ~~All fire department connections shall be located as approved by the fire code official within 25 feet (7620 mm) of the street or approved fire apparatus access. Fire department connections shall not be less than 30 inches (762 mm) nor more than 3 feet (914.4 mm) above the finished grade, and shall be equipped with an approved check valve and approved plugs or caps. All fire department connections shall be protected against mechanical or vehicular damage and shall be visible and accessible. The fire code official shall determine the number of fire department connections.~~

**903.1.4 Minimum sprinkler design density.** ~~Unless otherwise approved, the minimum sprinkler design density for commercial and industrial buildings shall be 17 gpm/sq. ft. over the most remote sq. ft.~~

California Fire Code Section 903.2 is hereby amended by adding the following provisions:

**903.2 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 903.2.17 and as follows, whichever is the more restrictive:~~

- ~~1. An automatic sprinkler system shall be provided throughout all new buildings that have a gross floor area in excess of 3,600 square feet or that are three (3) or more stories in height.~~
- ~~2. An automatic sprinkler system shall be provided throughout all existing buildings when modifications are made that increases the gross floor area to more than 3,600 square feet or increases the number of stories to three (3) or more.~~

**Exception:** ~~One-time additions to existing buildings made after 01/01/2008 that do not exceed 500 square feet in gross floor area.~~

~~3. An automatic sprinkler system shall be provided throughout all existing buildings greater than 3600 square feet when additions, alterations or repairs are made in excess of 50 percent of the gross floor area within a 12 month period.~~

~~**Exception:** One time additions to existing buildings made after 01/01/2008 that do not exceed 500 square feet in gross floor area.~~

~~4. An automatic sprinkler system shall be provided when there is any change in the character of occupancy or in the use of any existing building greater than 3,600 square feet which, in the opinion of the fire code official, would place the building into a more hazardous division of the same occupancy group, or into a different occupancy group which constitutes a greater life safety exposure or increased fire risk. A condominium conversion (residential, commercial, or industrial) greater than 3,600 square feet shall be classified as a change in use.~~

~~5. In all noncombustible attic space or areas above ceilings which are greater than 6 inches (152.4 mm) in a fire sprinklered structure.~~

~~6. In all noncombustible floor spaces or areas below floors in a fire sprinklered structure which are used as an air plenum.~~

~~**Exceptions:**~~

~~a. The fire code official may permit the use of smoke detection in lieu of fire sprinklers in noncombustible floor spaces and when construction materials do not exceed a flame spread rating of 25.~~

~~b. Noncombustible floor spaces in computer rooms constructed in accordance with NFPA 75.~~

~~7. Automatic sprinkler protection shall be provided in all storage areas that are within 5 feet (3048 mm) of the exterior building walls, roof overhangs, canopies or constitute an exposure to adjacent property.~~

~~Such sprinklers may be connected to the domestic water supply if the structure is not otherwise required to be fire sprinklered. Systems using domestic water supply shall not be less than 1 inch (25.4 mm) diameter pipe. Sufficient coverage of the area shall be provided and an approved accessible shut-off valve is to be provided for each room or area. Where valves are subject to possible vandalism an approved means of securing the valve in the open position shall be provided. Where there are no ceilings, an 18 square inch (11,613 square mm) heat baffle shall be provided not more than 6 inches (152.4 mm) above the sprinkler head. All exposed piping shall be brazed copper or steel.~~

~~**Exception:** The fire code official may amend this requirement where:~~

~~a. Exterior structure walls are four hour fire resistance; and~~

~~b. There are no roof or structure projections within 10 feet (3,048 mm); and~~

~~c. There are no wall openings within 10 feet (3,048 mm) of such locations.~~

~~California Fire Code Section 903.2 is hereby amended by deleting the following provision:~~

~~**903.2 Exception 1.**~~

~~California Fire Code Section 903.2 is hereby amended by adding the following provisions:~~

## **Exceptions.**

a. ~~In existing Group R-3 occupancies, an approved automatic sprinkler system shall be required to be installed only when additions to the Group R portion of the structure are made in excess of 50 percent of the total existing Group R-3 occupancy gross floor area.~~

b. ~~The fire code official may require an automatic fire sprinkler installation for that portion that is added to an existing structure. The fire code official may also require an area separation wall between sprinklered and non-sprinklered portions of an existing structure, which has been modified less than 50 percent of the gross floor area.~~

California Fire Code Section 903.2.7 is hereby amended by deleting the following provision:

### **903.2.7 Exception 1.**

California Fire Code Section 903.2.7 is hereby amended by adding the following provisions:

~~**903.2.7.1 New group R-3 occupancies.** An automatic sprinkler system shall be installed in all new group R-3 occupancies.~~

~~**903.2.7.2 Existing group R-3 occupancies.** In existing Group R-3 occupancies, an automatic sprinkler system shall be required to be installed when an addition is made to the Group R-3 portion of the structure in excess of 50 percent of the total existing Group R-3 occupancy.~~

~~**Exception:** When the gross floor area of the Group R-3 portion of the existing structure in less than 1000 square feet, an addition of up to 500 square feet will be permitted without the provision of an automatic sprinkler system.~~

~~**903.2.7.3 Design requirements.** Automatic sprinkler system installed within Group R-3 occupancies shall be in accordance with the State of California adopted edition of NFPA Standard 13D.~~

~~**903.2.7.3.1 GPM addition.** Five gallons per minute shall be added to the sprinkler system demand at the point of connection to the domestic water piping.~~

~~**903.2.7.3.2 Garage spaces.** Where living units are directly over garage spaces, automatic fire sprinklers shall be required in the garage space.~~

California Fire Code Section 903.3.1.2 is hereby amended to read:

~~**903.3.1.2 NFPA 13R sprinkler systems.** NFPA 13R sprinkler systems are not permitted. Additional references to NFPA 13R systems in this Section are not applicable.~~

(Ord. 2849-07 § 2).

## **16.52.280. Standpipes.**

California Fire Code Section 905.1 is hereby amended by adding the following provisions:

~~**905.1.1 Fire hose threads.** Fire hose threads used in connection with fire extinguishing systems shall be national standard hose thread or as approved by the fire code official. *No longer required.*~~

**905.1.2 Fire department connections.** All 4 inch (101.6 mm) fire lines ~~standpipes~~ shall be equipped with a two-way fire department connection. All 6 inch (152.4 mm) fire lines ~~standpipes~~ shall be equipped with a four-way fire department connection. All fire department connections shall be located within 25 feet (7620 mm) of the street or approved fire access lane, not less than 30 inches (762 mm) nor more than 3 feet (914.4 mm) above the finished grade, and shall be equipped with an approved check valve and plugs or caps. *Changed word 'standpipe' to fire line.*

All connections shall be protected against mechanical or vehicular damage and shall be visible and accessible. The number of fire department connections shall be determined by the fire code official.

**905.1.3 Riser shut-off valve.** Each individual riser shall be equipped with a post indicator valve located outside the structure. The post indicator valve locations shall be determined upon plan review. Post indicator valves shall be a minimum of 20 feet (6096 mm) from any building openings. All valves shall be secured with a non case-hardened lock. For single-use fire laterals, a backflow preventer may be used in lieu of a post indicator valve. *Added the use of a backflow preventer in lieu of PIV, standard operating procedure for many years, previous wording conflicts with procedure.*

**905.3.1.1 Required installations.** The fire code official may require the installation of Class I or II standpipes when the size or configuration of the building would not allow for the advancement of fire hose lines from the exterior of the building. *No change in wording.*

## **16.52.300. Fire department connection location.**

California Fire Code Section 912.2 is hereby amended to read:

**912.2 Location.** With respect to hydrants, driveways, buildings and landscaping, fire department connections shall be so located that fire apparatus and hose connected to supply the system will not obstruct access to the building for other fire apparatus. The location of fire department connections shall be approved by the fire code official. *New in model code, wording change from fire chief to fire code official to be consistent throughout the code.*

## **16.52.310. Maintenance of the Means of Egress.**

### ~~**16.52.290. Maintenance of the Means of Egress.**~~

California Fire Code Section 1030.3 is hereby amended by adding the following provisions:

**1003.3.1 Vehicular obstructions.** Where means of egress doors are located so that they could be obstructed by the parking of vehicles, vehicular barriers shall be provided as required by the fire code official. *Revised SMC section number.*

~~**1003.6.2 Vehicular obstructions.** Where means of egress doors are located so that they could be obstructed by the parking of vehicles, vehicular barriers shall be provided as required by the fire code official.~~

California Fire Code Section 1030.6 is hereby amended by adding the following provisions:

**1030.6.1 Seismic supports for storage shelves.** All storage shelves, cabinets, and other furnishings within a means of egress shall be adequately secured for seismic forces as required by the California Building Code. Storage shelves, cabinets, and other furnishings within a means of egress not controlled by the California Building Code may require securing, as determined by the fire code official. *Renumbered code section, wording change – added shelving, cabinets, and other furnishings.*

~~California Fire Code Section 1003.6 is hereby amended by adding the following provisions:—~~

~~**1003.6.1 Seismic supports for storage shelves.** All storage shelves shall be adequately secured as to seismic forces as required by the California Building Code. Storage shelves not controlled by the California Building Code may be required to be secured to prevent obstruction of means of egress as determined by the fire code official.~~

**16.52.320. Precautions against fire during construction.**

~~**16.52.300. Precautions against fire during construction.**~~

California Fire Code Section 1404 is hereby amended by adding the following provisions:

**1404.8 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). *Revised SMC section number, no change in wording.*

**16.52.330. Means of egress during construction.**

~~**16.52.310. Means of egress during construction.**~~

California Fire Code Section 1411.1 is hereby amended to read:

**1411.1 Required means of egress.** Each level above the first story in new multi-story buildings that require two exit stairways 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.). *Revised SMC section number. Cleaned up wording, countywide standard..*

~~**[B] 1411.1 Stairways required.** All floor levels above the first story in new multi-story buildings that require 2 exit stairs shall be provided with at least two usable exit stairways (temporary or permanent) 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.).~~

California Fire Code Section 1411.1 is hereby amended by adding the following provision:

**1411.1.1 Required means of egress.** All new buildings under construction shall have at least one unobstructed means of egress. All means of egress shall be identified in the Prefire Plan as outlined in Section 1408.2. *Cleaned up wording to be consistent with 1408.2*

~~**1411.1.1 Required means of egress.** All new buildings under construction shall have at least one unobstructed means of egress. All means of egress shall be identified in the Fire Protection Plan.~~

**16.52.340. Semiconductor fabrication facilities definitions.**  
~~**16.52.320. Semiconductor fabrication facilities definitions.**~~

California Fire Code Section 1802 is hereby amended to read:

**1802 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 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. *Revised SMC section number, no change in wording, countywide standard.*

**16.52.350. Lumber yards and woodworking facilities.**  
~~**16.52.330. Lumber yards and woodworking facilities.**~~

California Fire Code Section 1907 is hereby amended by adding the following provision:

**1907.6 Fire protection water supply system.** An approved fire protection water supply and hydrant system suitable for the fire hazard involved shall be provided for open storage yards and processing areas. Hydrant systems shall be installed in accordance with the State of California adopted edition of NFPA 24. *Revised SMC section number, renumbered code section, countywide standard.*

~~California Fire Code Section 1908 is hereby amended by adding the following provision:~~

~~**1908.11 Fire protection water supply system.** An approved fire protection water supply and hydrant system suitable for the fire hazard involved shall be provided for open storage yards and processing areas. Hydrant systems shall be installed in accordance with the State of California adopted edition of NFPA 24.~~

California Fire Code Section 1908 is hereby amended by adding the following provision:

**1908.11 Fire Protection Water Supply System.** An approved fire protection water supply and hydrant system suitable for the fire hazard involved shall be provided for open storage yards and processing areas. Hydrant systems shall be installed in accordance with NFPA 24. *New amendment, same requirement as 1907.6, covers expanded facility, requiring fire hydrant system, countywide standard.*

~~16.52.340. Motor vehicle fuel dispensing stations.~~

~~California Fire Code Section 2206.7.6 is hereby amended to read:~~

~~2206.7.6 Nozzles.~~ A listed automatic closing type nozzle valve with a latch open device shall be provided on island type dispensers used for dispensing Class I, II, or III A liquids.

~~California Fire Code Section 2208.3 is hereby amended by adding the following provision:~~

~~2208.3.2 Bulk storage.~~ The bulk storage of CNG shall not be permitted in any zoning districts except those districts established by Title 19 of the Sunnyvale Municipal Code for such installations. *No longer required.*

~~16.52.350. Tire rebuilding and storage.~~

~~Chapter 25 of the 2006 International Fire Code is adopted in its entirety. No longer required, State Fire Marshal adopts the entire chapter.~~

**16.52.360. Hazardous materials general provisions.**

California Fire Code Section 2701.2.2.2 is hereby amended to read:

**2701.2.2.2 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. Other health hazards including carcinogens, irritants and sensitizers. *Added moderately toxic to #1 and all of section #3, countywide standard.*

California Fire Code Section 2702 is hereby amended by adding the following:

**2702. 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. *No change in wording, countywide standard.*

California Fire Code Section 2703.1.3 is hereby amended by adding the following provision:

**2703.1.3.1 Toxic, Highly Toxic, Moderately Toxic Gases and Similarly Used Or Handled Materials.** The storage, use and handling of highly toxic, toxic and moderately toxic gases (Class I, II, III as defined in Title 16.53 Sunnyvale Municipal Code) shall comply with the provision of the California Fire Code and Title 16.53 Sunnyvale Municipal Code, whichever is more restrictive. *New amendment toxic definitions, countywide standard.*

California Fire Code Section 2703.1 is hereby amended by adding the following provision:

**2703.1.5 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 2703. *New amendment, countywide standard.*

California Fire Code Section 2703.1 is hereby amended by adding the following provision:

**2703.1.6 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. Monitoring of secondary containment shall be accordance with Section 2704.2.2.5. *Renumbered, no other change, countywide standard.*

~~California Fire Code Section 2703.1 is hereby amended by adding the following provision:~~

~~**2703.1.5 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. Monitoring of secondary containment shall be accordance with Section 2704.2.2.5.~~

California Fire Code Section 2703.2.2.1 is hereby amended to read:

**2703.2.2.1 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 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:
  1. The point of use.
  2. 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 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 3704.2 and 3704.3. 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. *Revision to #7, added #8, countywide standard.*

California Fire Code Section 2703.2.2.1 is hereby amended to read:

**2703.2.2.1 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 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:~~

- ~~The point of use~~
- ~~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 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. 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.~~

California Fire Code Section 2703.2.2.2 is hereby amended to read:

**2703.2.2.2 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 shall be 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 a 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 as defined in Title 16.53 of the Sunnyvale Municipal Code shall pass a helium leak test of  $1 \times 10^{-9}$  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.  
*Revision to #1, countywide standard.*

California Fire Code Section 2703.2.2.2 is hereby amended to read:

**2703.2.2.2 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 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 Class I, II, or III toxic gases as defined in Title 16.53 of the Sunnyvale Municipal Code shall pass a helium leak test of 1x10<sup>-9</sup> 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.~~

California Fire Code Section 2703.3.1 is hereby amended to read:

**2703.3.1 Unauthorized discharges.** When hazardous materials are released in quantities reportable under state, federal or local regulations or when there is release or 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 2703.3.1.1 through 2703.3.1.4. *No change in wording.*

California Fire Code Section 2703.5 is hereby amended by adding the following provisions:

**2703.5.2 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. *No change in wording, countywide standard.*

**2703.5.3 "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. *No change in wording, countywide standard.*

California Fire Code Section 2703.9.8 is hereby amended to read:

**2703.9.8 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 2703.8.5 and 2703.8.6. Materials that are incompatible shall not be stored within the same cabinet or exhausted enclosure. *No change in wording, countywide standard.*

California Fire Code Section 2703.9 is hereby amended by adding the following provisions:

**2703.9.11 Fire Extinguishing Systems for Workstations Dispensing, Handling or Using Hazardous Materials.** Combustible and non-combustible workstations, 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 500ml. *Renumbered section, no other changes, countywide standard.*

~~California Fire Code Section 2703.9 is hereby amended by adding the following provisions:~~

~~**2703.9.10 Fire extinguishing systems for workstations dispensing, handling or using hazardous materials.** Combustible and non-combustible workstations, 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 500ml.~~

**16.52.370 Hazardous materials storage**

California Fire Code Section 2704.2.1 is hereby amended to read:

**2704.2.1 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. *No change in wording, countywide standard.*

California Fire Code Section 2704.2.2 is hereby amended to read:

**2704.2.2 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. *No change in wording, countywide standard.*

California Fire Code Section 2704.2.2 is hereby amended by deleting the following table:

**2704.2.2 Required secondary containment for hazardous materials solid and liquids storage.** *No change in wording, countywide standard.*

#### **16.52.380 Use, dispensing, and handling of hazardous materials.**

California Fire Code Section 2705.4.4 is hereby amended to read:

**2705.4.4 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. *No change in wording, countywide standard.*

#### **16.52.390. Corrosive materials definitions.**

#### **~~16.52.370. Corrosive materials definitions.~~**

California Fire Code Section 3102.1 is hereby amended by adding the following provision:

**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. *Revised SMC section number, new definition, and countywide standard.*

#### **16.52.400. Explosives and fireworks**

California Fire Code Section 3301.1 is hereby amended to read:

**3301.1 Scope.** For explosives requirements see Title 19 California Code of Regulations Chapter 10 and Section 3301.1.1 of this Chapter. For fireworks requirements see Title 19 California Code of Regulations Chapter 6 and Section 3301.1.2 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.
3. The possession, storage and use of small arms ammunition when packaged in accordance with DOTn packaging requirements.
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. *No change in wording, countywide standard.*

California Fire Code Section 3301.1 is hereby amended by adding the following provision:

**3301.1.1. 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 are 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 are allowed with permit and approval of the fire code official. *No change in wording.*

California Fire Code Section 3301.1.3 is hereby amended to read:

**3301.1.3 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 when handled and used by a licensed pyrotechnic operator in accordance with Title 19 of the California Code of Regulations and permitted in accordance with this Chapter.
2. Storage, handling and use of pyrotechnic special effects fireworks inside of buildings, equipped throughout with an approved fire sprinkler system, when used for proximate audience displays or special effects in theatrical, television, motion picture and group entertainment productions and when handled and used by a licensed pyrotechnic operator in accordance with Title 19 of the California Code of Regulations and permitted in accordance with this Chapter. *No change in wording, countywide standard.*

California Fire Code Section 3301.1.3 is hereby amended by adding the following provision:

**3301.1.4 Model 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. *No change in wording, countywide standard.*

California Fire Code Section 3301.1.5 is hereby amended by adding the following provision:

**3301.5 Small Arms Ammunition-General.** Indoor storage and display of black powder, smokeless propellants and small arms ammunition shall comply with Sections 3301.5.1 through 3301.5.4.2.3.

**3301.5.1 Packages.** Smokeless propellants shall be stored in approved shipping containers conforming to DOTn 49 CFR, Part 173.

**3301.5.1.1 Repackaging.** The bulk repackaging of smokeless propellants, black powder and small arms primers shall not be performed in retail establishments.

**3301.5.1.2 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.

**3301.5.2 Storage in Group R occupancies.** The storage of small arms ammunition in Group R occupancies shall comply with Sections 3301.5.2.1 through 3301.5.2.3.

**3301.5.2.1 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.

**3301.5.2.2 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

**3301.5.2.3 Small arms primers.** No more than 10,000 small arms primers shall be stored in Group R-3 occupancies.

**3301.5.3 Display and storage in Group M occupancies.** The display and storage of small arms ammunition in Group M occupancies shall comply with Sections 3301.5.3.1 through 3301.5.3.2.3.

**3301.5.3.1 Display.** The display of small arms ammunition in Group M occupancies shall comply with Sections 3301.5.3.1.1 through 3301.5.3.1.3.

**3301.5.3.1.1 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.

**3301.5.3.1.2 Black powder.** No more than 1 pound (0.454 kg) of black powder shall be displayed in Group M occupancies.

**3301.5.3.1.3 Small arms primers.** No more than 10,000 small arms primers shall be displayed in Group M occupancies.

**3301.5.3.2 Storage.** The storage of small arms ammunition in Group M occupancies shall comply with Sections 3301.5.3.2.1 through 3301.5.3.2.3.

**3301.5.3.2.1 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.

**3301.5.3.2.2 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.

**3301.5.3.2.3 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. *Entirely new amendments for small arms ammunition, countywide standard.*

#### **16.52.410. Locations where aboveground tanks are prohibited.**

California Fire Code Section 3404.2.9.5.1 is hereby amended to read:

**3404.2.9.5.1 Locations where aboveground tanks are prohibited.** Storage of Class I and II liquids in aboveground tanks outside buildings is prohibited within zoning districts established in Title 19 of the Sunnyvale Municipal Code unless such installations are permitted.

When permitted, the following restrictions shall apply:

1. Double wall steel aboveground tanks used for the storage of Class II liquids, including integral diesel fuel storage tanks for generators or fire pumps, which are listed and limited to individual or aggregate capacity of 660 gallons. Tanks shall be located a minimum of ten (10) feet from any building and property line which is or can be built upon unless protected by an unpierced two (2) hour fire resistive wall extending not less than 30 inches above and to the sides of the storage area.
2. Protected aboveground storage tanks storing diesel fuel that is used to power generators or fire pumps shall not exceed 4,000 gallons individual capacity and 16,000 gallon aggregate capacity. Tanks with capacities of 661-4000 gallons shall be located a minimum of ten (10) feet from any building and fifteen (15) feet from a property line which is or can be built upon unless protected by an unpierced two (2) hour fire resistive wall extending not less than 30 inches above and to the sides of the storage area. Tanks shall be installed in accordance with Chapter 22 of the California Fire Code.
3. As approved by the fire code official, aboveground storage tanks used for dispensing fuel for motor vehicles shall be installed and maintained in accordance with Chapter 34 as amended.
4. General. Protected aboveground tanks shall be listed and shall meet the requirements specified in 3404.2.9.6 and shall be labeled accordingly.
5. Size. Primary tanks for other uses shall not exceed a 2,000 gallon or 6,000 gallon aggregate capacity. *No change in wording.*

California Fire Code Section 3404.2.9.5.1.1 is hereby amended by adding the following provision:

**3404.2.9.5.1.1.1 Separation distances.** Protected aboveground tanks shall be located a minimum of 5 feet (1524 mm) from any structure and a minimum of 15 feet (4572 mm) from property lines. Where multiple tanks are installed, a 3 foot (914.4 mm) minimum tank to tank separation shall be maintained. *No change in wording.*

#### **16.52.420. Protected aboveground tanks.**

California Fire Code Sections 3404.2.7.5.8 is hereby amended to read:

**3404.2.7.5.8 Overfill Prevention.** An approved means or method in accordance with Section 3404.2.9.6.6 shall be provided to prevent the overfill of all Class I, II and IIIA liquid storage tanks. Storage tanks in refineries, bulk plants or terminals regulated by Sections 3406.4 or 3406.7 shall have overfill protection in accordance with API 2350.

An approved means or method in accordance with Section 3404.2.9.7.6 shall be provided to prevent the overfilling of Class IIIB liquid storage tanks connected to fuel-burning equipment inside buildings.

#### **Delete Exception:**

*Added the approved means/method and deleted the exception, countywide standard.*

~~California Fire Code Sections 3404.2.7.5.8 is hereby amended to read:~~

~~**3404.2.7.5.8 Overfill prevention.** An approved means or method in accordance with Section 3404.2.9.6.6 shall be provided to prevent the overfill of all Class I, II and IIIA liquid storage tanks. Storage tanks in refineries, bulk plants or terminals regulated by Sections 3406.4 or 3406.7 shall have overfill protection in accordance with API 2350.~~

California Fire Code Section 3404.2.9.5.1.1 is hereby amended by adding the following provision:

**3404.2.7.5.9 Automatic filling of tanks.** Systems that automatically fill flammable or combustible liquid tanks shall be equipped with overfill protection, approved by the fire code official 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. *No change in wording, countywide standard.*

~~California Fire Code Sections 3404.2.9.6 and 3404.2.9.6.1 are hereby amended to read:~~

~~**3404.2.9.6 Additional requirements for protected above-ground tanks.** In addition to the requirements of this chapter for above-ground tanks, the installation of protected above-ground tanks shall be in accordance with Sections 3404.2.9.6.1 through 3404.2.9.6.10. In addition, storage of Class I liquids in protected above-ground tanks outside of buildings is prohibited unless installed for motor vehicle fuel dispensing stations in accordance with Chapter 22 of the California Fire Code. Unless installed for motor vehicle dispensing stations in accordance with Chapter 22, the storage of Class II and III liquids in protected above-ground tanks is permitted for the following uses only:~~

~~Waste oil storage.~~

~~Diesel fuel storage for emergency generators and fire pumps.~~

~~Motor vehicle fuel located at construction sites.~~ *No longer required.*

~~**3404.2.9.6.1 Tank construction.** The construction of protected above-ground tanks and its primary tank shall be listed per UL 2085 or listed equivalent and in accordance with section 3404.2.7. *No longer required, redundant.*~~

**16.52.430. Underground tanks.**

California Fire Code Section 3404.2.11 is hereby amended to read:

**3404.2.11. Underground tanks.** Underground storage of flammable and combustible liquids in tanks shall comply with Section 3404.2, Sections 3404.11.1 through 3404.11.5.2 and Title 20 of the Sunnyvale Municipal Code. *No change in wording.*

California Fire Code Section 3404.2.11.3.1 is hereby amended by adding the following provision:

**3404.2.11.3.1. Buoyancy calculation.** Buoyancy calculations bearing the signature of a state registered engineer will be required for all tank installations at the time of plan review. *No change in wording.*

California Fire Code Section 3404.2.13.1.4 is hereby amended to read:

**3404.2.13.1.4. Tanks abandoned in place.** When approved by the fire code official, tanks abandoned in place shall be as follows:

1. Flammable and combustible liquids shall be removed from the tank and connected piping.
2. The suction, inlet, gauge, vapor return and vapor lines shall be disconnected.
3. The tank shall be filled completely with an approved inert solid material.

**Delete Exceptions** *No longer need the exceptions.*

~~California Fire Code Section 3404.2.13.1.4 is hereby amended to read:~~

~~**3404.2.13.1.4. Tanks abandoned in place.** When approved by the fire code official, tanks abandoned in place shall be as follows:~~

- ~~1. Flammable and combustible liquids shall be removed from the tank and connected piping.~~
- ~~2. The suction, inlet, gauge, vapor return and vapor lines shall be disconnected.~~
- ~~3. The tank shall be filled completely with an approved inert solid material.~~

~~**Exception:** Residential heating oil tanks of 1,100 gallons (4146L) or less, provided the fill line is permanently removed to a point below grade to prevent refilling of the tank.~~

- ~~1. Remaining underground piping shall be capped or plugged.~~
- ~~2. A record of tank size, location and date of abandonment shall be retained.~~
- ~~3. All exterior above-grade fill piping shall be permanently removed when tanks are abandoned or removed.~~

**16.52.440. Permanent and temporary tanks.**

California Fire Code Section 3406.2.4 is hereby amended to read:

**3406.2.4 Permanent and temporary tanks.** The capacity of permanent above-ground tanks containing Class I or II liquids shall not exceed 1,100 gallons (4164 L). Tanks shall be of the single-compartment design.

**Exception:** Permanent above-ground tanks of greater capacity which meet the requirements of Section 3404.2. *No change in wording.*

**16.52.450. Location of bulk plants or terminals.**

California Fire Code Section 3406.4.11 is hereby amended by adding the following provision:

**3406.4.11 Location of bulk plants or terminals.** No new bulk plants or terminals shall be constructed within any zoning districts established in Title 19 of the Sunnyvale Municipal Code unless such installations are permitted. *No change in wording.*

**16.52.460. Toxic Materials.**

California Fire Code Section 3704.2.2.7 is hereby amended to read:

**3704.2.2.7 Treatment Systems.** The exhaust ventilation from gas cabinets, exhausted enclosures, gas rooms and local exhaust systems required in Section 3704.2.2.4 and 3704.2.2.5 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 3704.2.2.7.1 through 3704.2.2.7.5 and Section 505 of the California Mechanical Code.

**Exceptions:**

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:
  - 1.1. Valve outlets are equipped with gas-tight outlet plug or caps.
  - 1.2. Hand wheel-operated valves have handles secured to prevent movement.
  - 1.3. Approved containment vessels or containment systems are provided in accordance with Section 3704.2.2.3.

**Delete Exception 2** *New section, delete exception, countywide standard.*

California Fire Code Section 3704.2.2.10.1 is hereby amended to read:

**3704.2.2.10.1. 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.

**Delete Exception** *New section, delete exception, countywide standard.*

California Fire Code Section 3704.2.2.10.1 is hereby amended to read:

**3704.3.3 Outdoor Storage Weather Protection for Portable Tanks and Cylinders.**

Weather protection in accordance with Section 2704.13 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 2704.5.

**Delete Exceptions** *New section, provide sprinklers for portable tanks/cylinders, countywide standard*

**16.52.470. Location of containers.**

California Fire Code Section 3804.1.1 is hereby amended by adding the following provision:

**3804.1.1 Bulk Storage.** The bulk storage of LP-gas shall not be permitted in any zoning districts except those districts established by Title 19 of the Sunnyvale Municipal Code for such installations. *No change in wording.*

**16.52.460. Civil penalties.**

~~Any Person, property owner, firm or corporation who intentionally or negligently violates and provision of the California Fire Code or International Fire Code as adopted by this chapter, or who fails to comply with any order issued thereunder, shall be liable for a civil penalty which shall not be less than one hundred dollars nor more than five hundred dollars per day for each violation, which shall be assessed and recovered in a civil action brought by the city attorney.~~

~~In any civil action brought to seek such civil penalties, and/or to obtain injunctive relief for violation of any provision of the code, in which action the city prevails, the court shall determine and impose reasonable expenses, including attorney's fees, incurred by the city in the investigation and prosecution of the action.~~

~~Such remedies are in addition to and do not supersede or limit any and all other remedies, civil or criminal.~~ *Moved to 16.52.130, the more appropriate location in 109.3 CFC. Civil reworded to specify all of Chapter 1 SMC and allow for administrative citations.*

**16.52.470. Violations.**

~~Any person, property owner, firm or corporation violating any of the provisions of this chapter by failing to comply with the requirements of 2007 California Fire Code or the 2006 International Fire Code shall be guilty of a misdemeanor, unless an infraction is specified, and upon conviction thereof shall be punishable as provided in Chapter 1.04 of the Sunnyvale Municipal Code.~~ *Moved to 16.52.130, the more appropriate location in 109.3 CFC. Misdemeanor reworded to match model code language.*

**16.52.480. High rise buildings.**

~~Sunnyvale Municipal Code Chapters 16.52, 16.54 and the California Fire Code shall govern high rise buildings. Whenever provisions of these Chapters and the California Fire Code conflict, the stricter provision shall govern as determined by the fire code official.~~ *No longer required.*

## Chapter 16.54

## STANDARDS FOR HIGH-RISE BUILDINGS

- 16.54.010. Scope.**
- 16.54.020. Certificate of occupancy.**
- 16.54.030. Automatic sprinkler system.**
- 16.54.040. Fire command center.**
- 16.54.050. Fire department equipment rooms.**
- 16.54.060. Emergency helicopter landing facility.**
- 16.54.070. Firefighter's air system.**

**16.54.010. Scope.**

This chapter applies to all high-rise buildings as defined in Section 403.1.1 of the California Building Code.

In addition to this chapter, Sunnyvale Municipal Code Chapter 16.52, the California Fire and Building Codes shall govern high-rise buildings. Whenever provisions of Municipal Code Chapters and the California Fire and Building Codes conflict, the stricter provision shall govern, as determined by the fire code official.

**16.54.020. Certificate of occupancy.**

All mechanical and electrical equipment and other required life safety systems shall be approved and installed in accordance with approved plans and specifications pursuant to this section and shall be tested and proved to be in proper working condition to the satisfaction of the fire code official and building official before issuance of the certificate of occupancy. Such system shall be maintained in accordance with Title 19, California Code of Regulations and the California Fire Code.

**16.54.030. Automatic sprinkler system.**

In addition to the requirements of Chapter 9 of the California Fire Code, the following provisions shall apply to automatic sprinkler systems:

Buildings having floors used for human occupancy located more than 150 feet above the lowest floor level having building access shall have a minimum of two independently driven fire pumps which shall be provided and sized for fire sprinkler demand and fire department standpipe operation.

**16.54.040. Fire command center.**

In addition to the requirements of Section 508 of the California Fire Code, a fire command center shall be provided with the following:

- (a) Chairs for the work table.
- (b) Independent ventilation system with manual shut-off capabilities.

- (c) Building security systems controls and related equipment.
- (d) All control panels shall be permanently identified as to function.
- (e) Other fire protection equipment and system controls as required by the fire code official.

**16.54.050. Fire department equipment rooms.**

Fire Department equipment rooms shall be provided at intervals of every fifth story beginning with the third story above fire department building access. The floor intervals may be changed as required by the fire code official. Equipment storage rooms shall generally be located inside vestibules or rooms within close proximity to a stairway enclosure, or as approved. Equipment rooms shall be of one hour construction. The fire code official shall determine the amount and type of equipment to be supplied based upon the size, configuration and location of the structure. The equipment shall be purchased by the developer or owner and shall meet the equipment specifications for current in-service equipment utilized by the Department of Public Safety. The equipment shall be maintained at the expense of the owner in accordance with fire code official guidelines.

**16.54.060. Emergency helicopter landing facility.**

A helistop, in compliance with Section 1107 of the California Fire Code, shall be provided for every high-rise building having floors used for human occupancy located more than 150 feet above the lowest floor level having building access. All helistops shall be designed as required by the Department of Transportation, Federal Aviation Administration, Helicopter Design Advisory Circular 150/5390-2, and Title 21, Division of Aeronautics. Helistops shall be designed to support a minimum ten thousand pounds.

**Exceptions:**

1: When approved by the fire code official, a Helistop may be omitted when a permanent enclosed stairway is provided for public safety department use. This stairway shall access all floors of the building. The stairway shall be a minimum of thirty-six inches wide. Stair landings shall be a minimum of forty-eight inches at the head and bottom of stair flights. Access to this stairway shall be by public safety department personnel only. The public safety department stairway shall meet all of the requirements of Chapters 10 and 11 of the California Building Code, except manual pull stations, public telephones and exit signs will not be required. The locking of stairway doors shall be on a separate switch located in the fire command center and not tied into the fire alarm system.

2: When approved by the fire code official, a Helistop may be omitted when the building is equipped with a freight elevator that serves all floors and is separated from all other elevators. This elevator shaft and its lobbies shall be protected by a minimum of two-hour fire-resistance construction with all openings protected by a minimum of one and one-half hour fire-resistive construction and the elevator shall meet the requirements of an emergency elevator.

**16.54.070. Firefighters' air systems.**

**Firefighters' air systems.** An approved firefighters' breathing air refill system shall be installed and maintained as required by Section 16.52.240 of the Sunnyvale Municipal Code.

ORDINANCE NO. \_\_\_\_\_

**AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF SUNNYVALE AMENDING TITLE 16 (BUILDING AND CONSTRUCTION) OF THE SUNNYVALE MUNICIPAL CODE TO ADOPT BY REFERENCE THE 2010 CALIFORNIA STANDARDS FOR HIGH-RISE BUILDINGS AS THE STANDARDS FOR HIGH-RISE BUILDINGS OF THE CITY OF SUNNYVALE**

WHEREAS, the public health, safety and welfare will be served by the adoption of the 2010 California Standards for High-Rise Buildings for the City of Sunnyvale;

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

SECTION 1. REPEAL. Ordinance No. 2850-07 and all prior ordinances pertaining to this subject are hereby repealed.

SECTION 2. CHAPTER 16.54 ADDED. Sunnyvale Municipal Code Chapter 16.54 is hereby added to read as set forth in Appendix "E," attached and incorporated.

SECTION 3. STATUTORY REFERENCES, INCLUSIONS OF AMENDMENTS AND ADDITIONS. Whenever reference is made to any portion of this ordinance, or of any other chapter or section of the Sunnyvale Municipal Code, or of any other ordinance of the City of Sunnyvale, or of any law of the State of California, the reference applies to all amendments and additions now or thereafter made.

SECTION 4. INTERPRETATIONS. In interpreting and applying the provisions of this ordinance, the requirements contained herein are declared to be minimum requirements for he purposes set forth. The provisions of this ordinance, insofar as they are substantially the same as existing statutory provisions relating to the same subject matter, shall be construed as restatements and continuations and not as new enactments. This ordinance shall not nullify the more restrictive provisions of covenants, agreements or other ordinances or laws, but shall prevail as to such provisions which are less restrictive.

SECTION 5. CONSTITUTIONALITY. SEVERABILITY. If any section, subsection, sentence, clause or phrase of this ordinance is for any reason held by a court of competent jurisdiction to be unconstitutional or invalid, such decision shall not affect the validity of the remaining portions of this ordinance. The City Council of the City of Sunnyvale declares that it would have passed this ordinance and every section, subsection, clause and phrase thereof, irrespective of the fact that any one or more sections, subsections, sentences, clauses or phrases be declared unconstitutional.

SECTION 6. FINDINGS. The deletions, additions and/or amendments to the California Fire Code and Standards for High Rise Buildings as set out in Appendix "E" and which are the subject of this ordinance, are based upon the General and Specific findings by the City Council of the City of Sunnyvale, which findings are set forth in the accompanying resolution.

SECTION 7. EXEMPTION FROM CEQA. The City Council finds, pursuant to Title 14 of the California Code of Regulations, Section 15061(b)(3), that this ordinance is exempt from the requirements of the California Environmental Quality Act (CEQA) in that it is not a Project which has the potential for causing a significant effect on the environment.

SECTION 8. EFFECTIVE DATE. This ordinance shall be in full force and effect on January 1, 2011.

SECTION 9. POSTING AND PUBLICATION. The City Clerk is directed to cause copies of this ordinance to be posted in three (3) prominent places in the City of Sunnyvale and to cause publication of a notice once in The Sun, the official newspaper for publication of legal notices of the City of Sunnyvale, setting forth the date of adoption, the title of this ordinance, and a list of places where copies of this ordinance are posted, within fifteen (15) days after adoption of this ordinance.

Introduced at a regular meeting of the City Council held, \_\_\_\_\_, 2010, and adopted as an ordinance of the City of Sunnyvale at a regular meeting of the City Council held on \_\_\_\_\_, 2010, by following vote:

AYES:  
NOES:  
ABSTAIN:  
ABSENT:

ATTEST:

APPROVED:

\_\_\_\_\_  
City Clerk

\_\_\_\_\_  
Mayor

APPROVED AS TO FORM AND LEGALITY:

\_\_\_\_\_  
David E. Kahn, City Attorney

## Chapter 16.54

### STANDARDS FOR HIGH-RISE BUILDINGS ~~BUILDING STANDARDS FOR BUILDINGS EXCEEDING SEVENTY-FIVE FEET IN HEIGHT~~

- 16.54.010. Scope.
- 16.54.020. Certificate of occupancy.
- 16.54.030. Automatic sprinkler system.
- 16.54.040. Fire command center.
- ~~16.54.050. Standby power, light, emergency and uninterruptible power supply systems.~~
- ~~16.54.050. Means of egress stairways.~~
- 16.54.050. Fire department equipment rooms.
- ~~16.54.080. Building access keys and plans.~~
- 16.54.060. Emergency helicopter landing facility.
- 16.54.070. Firefighter's air system.

#### 16.54.010. Scope.

This chapter applies to all high-rise buildings as defined in Section 403.1.1 of the California Building Code.

In addition to this chapter, Sunnyvale Municipal Code Chapter 16.52, the California Fire and Building Codes shall govern high-rise buildings. Whenever provisions of Municipal Code Chapters and the California Fire and Building Codes conflict, the stricter provision shall govern, as determined by the fire code official. *Changed 403.1 to 403.1.1. Cleaned up wording for paragraph 2.*

#### 16.54.010. Scope.

~~This chapter applies to all high rise buildings as defined in Section 403.1 of the California Building Code.~~

~~In addition to this chapter, Sunnyvale Municipal Code Chapter 16.52 and the California Fire Code shall govern high rise buildings. Whenever provisions of these Chapters and the California Fire Code conflict, the stricter provision shall govern, as determined by the fire code official.~~

#### 16.54.020. Certificate of occupancy.

All mechanical and electrical equipment and other required life safety systems shall be approved and installed in accordance with approved plans and specifications pursuant to this section and shall be tested and proved to be in proper working condition to the satisfaction of the fire code official and building official before issuance of the certificate of occupancy. Such system shall be maintained in accordance with Title 19, California Code of Regulations and the California Fire Code. *No wording changes.*

### **16.54.030. Automatic sprinkler system.**

In addition to the requirements of Chapter 9 of the California Fire Code, the following provisions shall apply to automatic sprinkler systems:

Buildings having floors used for human occupancy located more than 150 feet above the lowest floor level having building access shall have a minimum of two independently driven fire pumps which shall be provided and sized for fire sprinkler demand and fire department standpipe operation. *No wording changes.*

### **16.54.040. Fire command center.**

In addition to the requirements of Section 508 of the California Fire Code, a fire command center shall be provided with the following:

- (a) Chairs for the work table.
- (b) Independent ventilation system with manual shut-off capabilities.
- (c) Building security systems controls and related equipment.
- (d) All control panels shall be permanently identified as to function.
- (e) Other fire protection equipment and system controls as required by the fire code official.

### **16.54.040. Fire command center.**

~~In addition to the requirements of Section 509 of the California Fire Code, a fire command center shall be provided with the following:~~ *Changed from 509 to 508 CFC.*

- ~~(a) Elevator control switches for switching of emergency power;~~ *Now in 508.1.5 (17)*
- ~~(b) Chairs for the work table~~
- ~~(c) Independent ventilation system with manual shut-off capabilities;~~
- ~~(d) Toilet facility in an area as approved by the fire code official;~~ *Not necessary*
- ~~(e) Sufficient illuminated desk surfaces to accomplish necessary control functions;~~ *Not necessary*
- ~~(f) Building security systems controls and related equipment.~~
- ~~(g) All control panels shall be permanently identified as to function; and~~
- ~~(h) Other fire protection equipment and system controls as required by the fire code official.~~

### **16.54.050. Standby power, light, emergency and uninterruptible power supply systems.**

~~The following section shall replace California Fire Code section 604.2.15.1.1:~~

- ~~(a) An on premises fuel supply, sufficient for not less than 6 hour full demand operation of the system shall be provided.~~
- ~~(b) Where fire pumps are required, an 8 hour fuel supply shall be provided.~~

~~—All other provisions of 604.2.15 of the California Fire Code shall apply.~~

*No longer required, section now covers fire pumps, requiring a minimum of 8.0 hours fuel.*

**16.54.060. Means of egress stairways.**

~~—When stairway doors are locked from the stairway side, a telephone or other two-way communications system connected to an approved emergency service which operates continuously shall be provided at not less than every fifth floor in each required stairway where other provisions of this code permit the doors to be locked. *No longer needed.*~~

**16.54.050. Fire department equipment rooms.**

**16.54.070. Fire department equipment rooms.**

Fire Department equipment rooms shall be provided at intervals of every fifth story beginning with the third story above fire department building access. The floor intervals may be changed as required by the fire code official. Equipment storage rooms shall generally be located inside vestibules or rooms within close proximity to a stairway enclosure, or as approved. Equipment rooms shall be of one hour construction. The fire code official shall determine the amount and type of equipment to be supplied based upon the size, configuration and location of the structure. The equipment shall be purchased by the developer or owner and shall meet the equipment specifications for current in-service equipment utilized by the Department of Public Safety. The equipment shall be maintained at the expense of the owner in accordance with fire code official guidelines. *Minor wording changes, added the option to change the floor intervals of the rooms.*

**16.54.070. Fire department equipment rooms.**

~~—Approved storage rooms shall be provided at intervals of every fifth story beginning with the third story above fire department building access. Equipment storage rooms shall generally be located inside vestibules or rooms within close proximity to a stairway enclosure, or as approved. Equipment rooms shall be of one hour construction. The fire code official shall determine the amount and type of equipment to be supplied based upon the size, configuration and location of the structure. The equipment shall be purchased by the developer or owner and shall meet the equipment specifications for current in-service equipment utilized by the department of public safety. The equipment shall be maintained at the expense of the owner in accordance with fire code official guidelines.~~

**16.54.080. Building access keys and plans.**

~~—In all buildings covered by this chapter a lock box system as approved by the fire code official shall be installed in approved locations. The lock box system shall contain building keys and diagrams as specified by the fire code official. *Key box covered by 506 CFC. Plans are located in the fire command center.*~~

**16.54.060. Emergency helicopter landing facility.**

**16.54.090. Emergency helicopter landing facility.**

A helistop, in compliance with Section 1107 of the California Fire Code, shall be provided for every highrise building having floors used for human occupancy located more than 150 feet

above the lowest floor level having building access. All helistops shall be designed as required by the Department of Transportation, Federal Aviation Administration, Helicopter Design Advisory Circular 150/5390-2, and Title 21, Division of Aeronautics. Helistops shall be designed to support a minimum ten thousand pounds.

**Exceptions:**

1: When approved by the fire code official, a Helistop may be omitted when a permanent enclosed stairway is provided for public safety department use. This stairway shall access all floors of the building. The stairway shall be a minimum of thirty-six inches wide. Stair landings shall be a minimum of forty-eight inches at the head and bottom of stair flights. Access to this stairway shall be by public safety department personnel only. The public safety department stairway shall meet all of the requirements of Chapters 10 and 11 of the California Building Code, except manual pull stations, public telephones and exit signs will not be required. The locking of stairway doors shall be on a separate switch located in the fire command center and not tied into the fire alarm system.

2: When approved by the fire code official, a Helistop may be omitted when the building is equipped with a freight elevator that serves all floors and is separated from all other elevators. This elevator shaft and its lobbies shall be protected by a minimum of two-hour fire-resistance construction with all openings protected by a minimum of one and one-half hour fire-resistive construction and the elevator shall meet the requirements of an emergency elevator. *Changed SMC section number. Reworded to match existing terminology with the CFC. Added the wording, 'when approved by the fire code official', otherwise no changes in actual requirements.*

**16.54.090. Emergency helicopter landing facility.**

~~An emergency helistop, in compliance with helistop requirements of Section 1107 of the California Fire Code shall be provided for every highrise building in which there are habitable floors above one hundred fifty feet in height. All helistops shall be designed as required by the Department of Transportation, Federal Aviation Administration, Helicopter Design Advisory Circular 150/5390-2, and Title 21, Division of Aeronautics. Helistops shall be designed to support a minimum ten thousand pounds. Helistops for other than emergency use shall be provided with a fuel containment system capable of holding two hundred gallons and shall be designed so that no fuel shall enter the building drain system.~~

**Exceptions:**

~~— #1: Helistop may be omitted when a permanent enclosed stairway is provided for public safety department use. This stairway shall access all floors of the building. The stairway shall be a minimum of thirty six inches wide. Stair landings shall be a minimum of forty eight inches at the head and bottom of stair flights. Access to this stairway shall be by public safety department personnel only. The public safety department stairway shall meet all of the requirements of Chapters 10 and 11 of the California Building Code, except manual pull stations, public telephones and exit signs will not be required. The locking of stairway doors shall be on a separate switch located in the fire command center and not tied into the fire alarm system.~~

~~— #2: Helistop may be omitted when the building is equipped with a freight elevator that serves all floors and is separated from all other elevators. This elevator shaft and its lobbies shall be protected by a minimum of two hour fire resistance construction with all openings protected by a minimum of one and one half hour fire resistive construction and the elevator shall meet the~~

~~requirements of an emergency elevator.~~

**16.54.070. Firefighters' air systems.**

**Firefighters' air systems.** An approved firefighters' breathing air refill system shall be installed and maintained as required by Section 16.52.240 of the Sunnyvale Municipal Code. *New to 16.54, required for all highrise buildings. Additional requirements specified in 16.52.*

California Fire Code Section 3704.2.2.10.1 is hereby amended to read:

**3704.3.3 Outdoor Storage Weather Protection for Portable Tanks and Cylinders.** Weather protection in accordance with Section 2704.13 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 2704.5.

**Delete Exceptions**

**16.52.470. Location of containers.**

California Fire Code Section 3804.1.1 is hereby amended by adding the following provision:

**3804.1.1 Bulk Storage.** The bulk storage of LP-gas shall not be permitted in any zoning districts except those districts established by Title 19 of the Sunnyvale Municipal Code for such installations.

## 16.17.030 – BUILDING DEPARTMENT ADOPTION

### CALIFORNIA RESIDENTIAL CODE

California Residential Code Section R313.1 is hereby amended by deleting the following provision:

#### **R313.1 Exception**

California Residential Code Section R313.1 is hereby amended by adding the following provision:

1. Existing Townhouses. An automatic residential fire sprinkler system shall be installed in existing townhouses when additions are made that are in excess of 50 percent of the original building area.

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

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

California Residential Code Section R313.1.1 is hereby amended to read:

**R313.1.1 Design and Installation.** Automatic residential fire sprinkler systems for townhouses shall be designed and installed in accordance with NFPA 13D and local standards.

California Residential Code Section R313.2 is hereby amended by deleting the following provision:

#### **R313.2 Exception**

California Residential Code Section R313.2 is hereby amended by adding the following provision:

1. Existing one and two family dwellings. An automatic residential fire sprinkler system shall be installed in existing one and two-family dwellings when additions are made that are in excess of 50 percent of the original building area.

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

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

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

## 16.17.030 – BUILDING DEPARTMENT ADOPTION

California Residential Code Section R313.2.1 is hereby amended to read:

**R313.2.1 Design and Installation.** Automatic residential fire sprinkler systems shall be designed and installed in accordance with NFPA 13D and local standards.

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

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

*The California Residential Code (CRC) is new to California this cycle. Sprinkler requirements previously held in the California Fire Code relating to residential are now located in the CRC. R313.1 and R313.2 have no new requirements from our previous code. Our amendment adds the requirement for sprinklers when additions are made, no changes from previous code cycles. Garages for residential now require fire sprinklers; however, this section is located in the CFC. R313(2) #2 addition just refers to the CFC section. Design requirements will remain using NFPA 13D rather than the sometimes less restrictive R313.3.*