Office of the City Manager

CONSENT CALENDAR
November 12, 2013

To: Honorable Mayor and Members of the City Council

From: Christine Daniel, City Manager

Submitted by: Eric Angstadt, Director, Planning and Development Department

Subject: Adoption of Berkeley Building Codes

RECOMMENDATION

1. Adopt first reading of an Ordinance repealing and reenacting the Berkeley Building Code including Appendix J, Residential Code including Appendix H, Electrical, Mechanical, Plumbing including Appendices A, B, D, I, Energy and Green Building Standards Codes in BMC Chapters 19.28, 19.29, 19.30, 19.32, 19.34, 19.36 and 19.37, and adopting related procedural and stricter provisions, and schedule a Public Hearing for the second reading on December 3, 2013 pursuant to state law

2. Adopt a Resolution setting forth findings of local conditions that require more stringent regulations than those provided by the 2013 California Building Code and rescinding Resolution No. 65,083–N.S.

SUMMARY

The purpose of the report is to provide background on the adoption of the California and Berkeley Codes, identify key changes from 2010 to 2013 code editions and summarize proposed local amendments.

FISCAL IMPACTS OF RECOMMENDATION

The recommended Codes provide for adoption of fees by a separate City Council resolution to pay for costs related to administration and enforcement. As part of Enterprise Fund 833, revenues pay for expenditures for building and development related services provided in the Planning and Development Department.

Adoption of the substantially revised 2013 Building, Energy, and Green Building Standards (CALGreen) Codes will increase the plan check and inspection workload. In particular, the expanded application of the CALGreen standards to all residential and commercial buildings including additions and alterations, increased energy efficiency standards in the Energy Code, and incorporation of federal accessibility standards into the Building Code will increase plan check and inspection requirements. The potential need for additional staff, all of which would be fee-supported, will be addressed in the next budget cycle.

CURRENT SITUATION AND ITS EFFECTS

As part of a regular three-year cycle, the State Building Standards Commission has promulgated the 2013 State Codes that must be adopted and go into effect no later than January 1, 2014. The City's building-related codes also include local amendments reflecting operations and local conditions that will need to be maintained as part of the adoption of the new code. The State Codes include Building, Plumbing, Electrical, Mechanical, Residential, Energy and Green Building Standards known as CALGreen. The Codes provide for minimum uniform standards for health and safety related to construction and for their enforcement through a system of permits, plan review, and inspections.

Under state law, local jurisdictions may adopt other administrative provisions appropriate to the locality and may adopt stricter code provisions if justified by local topographic, geologic or climatic conditions. The proposed local administrative amendments are required for the effective administration of the City's operations. Other proposed amendments provide stricter standards necessitated by particular conditions in Berkeley, which are described in the proposed findings.

The ordinance supported by the resolution of findings provides for the adoption of the State Codes with certain local amendments as the Berkeley Codes, effective January 1, 2014. If this ordinance does not become effective by January 1, 2014, the 2013 California Codes will automatically become effective on that date, and the City will not be able to maintain the local amendments tailored to Berkeley. The last day to file for a building permit to be reviewed under the current Codes will be Tuesday, December 31, 2013.

BACKGROUND

The Council last adopted new State Codes and local amendments that became effective on January 1, 2011. The most significant changes in the California and Berkeley Code in this code cycle include the all-inclusive expansion of the California Green Building Standards Code, the substantial increase in energy efficiency in the California Energy Code and the incorporation of the ADA federal standards into the California Building Code.

As with the last code adoption, staff is providing as much outreach as possible to let applicants know that all permit applications submitted before or on December 31, 2013 will be reviewed under the current codes. After that date, when the Department reopens on January 2, 2014, new applications will be reviewed for conformance to the 2013 State Codes and Berkeley amendments.

Codes recommended for adoption are the Berkeley Building Code (Chapter 19.28), the Berkeley Residential Code (Chapter 19.29), the Berkeley Electrical Code (Chapter 19.30), the Berkeley Mechanical Code (Chapter 19.32), the Berkeley Plumbing Code (Chapter 19.34), the Berkeley Energy Code (Chapter 19.26) and the Berkeley Green Code (Chapter 19.37).

The 2013 California Building Code, among other changes, includes new accessibility provisions that have been completely revised and expanded to follow the format and organization of the 2010 ADA Standards but with the addition of California amendments to maintain the enhanced levels of accessibility. The new access standards reconcile over 2,500 items where the existing California standards differ from the federal standards set forth in Titles II and III of the Americans with Disabilities Act. This change results in the full incorporation and implementation of the 2010 ADA Standards within the California Building Code and effectively means that beginning January 1, 2014, the Building and Safety Division will start reviewing and inspecting for both the required state and federal accessibility standards.

The 2013 California Green Building Standards Code (CALGreen) has been significantly expanded to apply to all residential and commercial buildings including additions and alterations to existing buildings and single family homes. The 2010 California Green Building Code had a much narrower scope, applying only to new construction of commercial buildings and low-rise residential buildings three stories or less in height. Effectively this means that beginning January 1, 2014, the Building and Safety Division will be required to review and inspect for compliance with the CALGreen in the vast majority of the construction projects.

The 2013 California Energy Code implements substantially revised building energy efficiency standards that will increase efficiency requirements by 25 percent for residential construction and 30 percent for nonresidential construction from the previous standards. These changes affect all construction including alterations to existing buildings. The new standards require more efficient windows, insulation, lighting, ventilation systems and other features that reduce energy consumption in homes and businesses. The 2013 Energy Code has been extensively rewritten to conform with California's policy that all new residential buildings by 2020, and all new commercial buildings by 2030, have a "zero net energy" footprint (i.e., buildings should either produce on site all the energy required by the buildings' systems for heating, cooling, water heating, and lighting or else return to utility companies an amount of energy equivalent to the amount of any electricity or natural gas that the buildings use). Among many notable provisions, the new standards will require new homes and businesses to be built “solar ready”, allowing for an easier installation of photovoltaic systems at a later time. Effectively this means that beginning January 1, 2014, the Building and Safety Division will be required to review added energy compliance documentation and certifications and inspect for additional energy measures to verify compliance with the more stringent energy standards.

The 2013 California Plumbing Code implements extensive changes and additions to the standards applicable to alternate sources for non-potable applications, graywater systems, non-potable rainwater catchment systems, etc.

The 2013 California Electrical Code includes 20 significant changes to grounding and bonding requirements, 19 significant changes to wiring methods, and several changes to the solar photovoltaic (PV) system requirements.

Previous local amendments, with some revisions in code language and code sections, that are recommended for continuance in the reenacted Berkeley Building Code (BMC Chapter 19.28) include:

- Article 1. Administrative Provisions amendments concerning appeals, unsafe buildings, permits, work exempt from permits violations, fees and plan review.

- Article 2. Restrictions in Fire Zones enacting fire protection areas not covered by the state-mandated areas.

- Article 3. Wood Burning Appliances amendment to reduce the health risks caused by wood smoke based upon Berkeley's climatic conditions.

- Article 4. Projection into Public Right of Way, an administrative amendment concerning revocation, removal and indemnification regarding construction in the Right of Way.

- Article 5. Existing Buildings amendment adopting certain chapters of the 2012 International Existing Building Code to reduce the risk from earthquakes.

- Article 6. Repairs to Existing Buildings and Structures establishing regulations for the repairs of damaged structures to comply with the Stafford Act, which authorizes the Federal Emergency Management Agency (FEMA) to fund the repair and restoration of eligible facilities damaged in a declared disaster and requires that the repair and restoration be "on the basis of the design of such facility as it existed immediately prior to the major disaster and in conformity with current applicable codes, specifications and standards."

- Article 7. Technical Amendments to Structural Standards needed because of changes in the new code and Berkeley's close proximity to major earthquake faults. The Berkeley Building Official has actively participated in meetings of the Tri-chapter Uniform Code Committee, which is part of the International Code Council East Bay Chapter. The Tri-chapter Uniform Code Committee recommended four structural amendments to the California Building and Residential Codes, which are included in the proposed local amendments for Berkeley.

RATIONALE FOR RECOMMENDATION

Local Codes must be adopted every three years or State Codes go into effect without local amendments. Adoption of local amendments and findings are needed to adapt the State Codes to Berkeley's particular administrative, topographic, geologic and climatic conditions. The purpose of the non-administrative local amendments is to provide a higher level of safety than is reflected in the State-adopted 2013 Codes. The fire and seismic danger and other local conditions, as described in detail in the attached resolution of findings, justify the Berkeley Code provisions that are stricter than the State Code.

ALTERNATIVE ACTIONS CONSIDERED

Adopt the State Codes with fewer, or no, local amendments; or take no action, and let the state mandated codes take effect without local amendments designed for Berkeley.

CONTACT PERSON

Eric Angstadt, Director, Planning and Development, 981-7401
Alex Roshal, Building Official, Building and Safety Division, 981-7445

Attachments:

1. Ordinance
2. Resolution

ORDINANCE NO. –N.S.

REPEALING AND REENACTING BERKELEY MUNICIPAL CODE CHAPTERS 19.28 BERKELEY BUILDING CODE) INCLUDING APPENDIX J, 19.29 (BERKELEY RESIDENTIAL CODE) INCLUDING APPENDIX H, 19.30 (BERKELEY ELECTRICAL CODE), 19.32 (BERKELEY MECHANICAL CODE), 19.34 (BERKELEY PLUMBING CODE) INCLUDING APPENDICES A, B, D, AND I, 19.36 (BERKELEY ENERGY CODE), AND 19.37 (BERKELEY GREEN CODE)

BE IT ORDAINED by the Council of the City of Berkeley as follows:

Section 1. That Berkeley Municipal Code Chapter 19.28, is hereby repealed and reenacted to read as follows:

Chapter 19.28

BERKELEY BUILDING CODE*

Sections:

19.28.010 Adoption of the California Building Code

Article 1. Scope and Administrative Provisions
19.28.020 Adoption of Chapter 1 Scope and Administration

Article 2. Restrictions in Fire Zones
19.28.030 Chapter 7A Materials and Construction Methods for Exterior Wildlife Exposure

Article 3. Wood Burning Appliances
19.28.040 Wood Burning Appliances

Article 4. Construction in the Right of Way
19.28.050 Projection into Public Right of Way - Revocation and Removal Indemnification and Hold Harmless

Article 5. Existing Buildings
19.28.060 Adoption of Certain Chapters of the 2012 International Existing Building Code by Reference

Article 6. Repairs to Existing Buildings and Structures
19.28.070 Adoption of Regulations for the Repairs of Existing Structures

Article 7. Amendments to Structural Standards
19.28.080 Technical Amendments to Structural Standards

Notes:
* See Chapter 1.24 for abatement of nuisances by City.

19.28.010 Adoption of the California Building Code.

A. The California Building Code, 2013 edition, as adopted in Title 24 Part 2 of the California Code of Regulations, including Appendix J, is hereby adopted and made a part of this Chapter as though fully set forth herein, subject to the modifications thereto which are set forth in this Chapter. One copy of this Code is on file in the office of the City Clerk of the City of Berkeley.

B. The California Historical Building Code, 2013 edition, as adopted in Title 24 Part 8 of the California Code of Regulations, is hereby adopted and made a part of this Chapter as though fully set forth herein, subject to the modifications thereto which are set forth in this Chapter. One copy of this Code is on file in the office of the City Clerk of the City of Berkeley.

C. The California Existing Building Code, 2013 edition, as adopted in Title 24 Part 10 of the California Code of Regulations, is hereby adopted and made a part of this Chapter as though fully set forth herein, subject to the modifications thereto which are set forth in this Chapter. One copy of this Code is on file in the office of the City Clerk of the City of Berkeley.

D. This chapter shall be known as the "Berkeley Building Code" and shall be referred to in this Chapter as "this code." Article 1 provides for the local administration of all California Codes.

E. This chapter will become effective on January 1, 2014, and shall not apply to any building permit submitted by December 31, 2013.

Article 1. Administrative Provisions and Definitions

19.28.020 Adoption of Chapter 1 Scope and Administration

Chapter 1 of the 2013 California Building Code is adopted in its entirety subject to the modifications thereto which are set forth below.

CHAPTER 1 SCOPE AND ADMINISTRATION
SECTION 101 – GENERAL

101.1 Title. These regulations shall be known as the Berkeley Building Code, hereinafter referred to as “this code”.

101.4 Referenced codes*.* The other codes listed in Sections 101.4.1 through 101.4.8, and referenced elsewhere in this code, shall be considered part of the requirements of this code to the prescribed extent of each such reference.

> **101.4.1 Gas.** The provisions of the Berkeley Mechanical Code, based on the 2013 California Mechanical Code, and the Berkeley Plumbing Code, based on the 2013 California Plumbing Code, as amended herein, shall apply to the installation of gas piping from the point of delivery, gas appliances and related

accessories as covered in this code. These requirements apply to gas piping systems extending from the point of delivery to the inlet connections of appliances and the installation and operation of residential and commercial gas appliances and related accessories.

101.4.2 Mechanical. The provisions of the Berkeley Mechanical Code, based on the 2013 California Mechanical Code, as amended herein, shall apply to the installation, alterations, repairs and replacement of mechanical systems, including equipment, appliances, fixtures, fittings and/or appurtenances, including ventilating, heating, cooling, air-conditioning and refrigeration systems, incinerators and other energy-related systems.

101.4.3 Plumbing. The provisions of the Berkeley Plumbing Code, based on the 2013 California Plumbing Code, as amended herein, shall apply to the installation, alteration, repair and replacement of plumbing systems, including equipment, appliances, fixtures, fittings and appurtenances, and where connected to a water or sewage system and all aspects of a medical gas system. The provisions of the Berkeley Plumbing Code shall apply to private sewage disposal systems.

101.4.4 Property maintenance*. The provisions of the Berkeley Housing Code, based on the 1997 Uniform Housing code, as amended in Chapter 19.40, shall apply to existing structures and premises; equipment and facilities; light, ventilation, space heating, sanitation, life and fire safety hazards; responsibilities of owners, operators and occupants; and occupancy of existing premises and structures.

Notwithstanding any provisions contrary in this chapter, any building or portion thereof constructed in compliance with the Berkeley Building Code shall not be deemed to be in violation of the Housing Code provisions that may conflict.

101.4.5 Fire prevention. The provisions of the Berkeley Fire Code based on the 2013 California Fire Code shall apply to matters affecting or relating to structures, processes and premises from the hazard of fire and explosion arising from the storage, handling or use of structures, materials or devices; from conditions hazardous to life, property or public welfare in the occupancy of structures or premises; and from the construction, extension, repair, alteration or removal of fire suppression and alarm systems or fire hazards in the structure or on the premises from occupancy or operation.

101.4.6 Energy. The provisions of the Berkeley Energy Code, based on the 2013 California Energy Code, as amended herein, Berkeley Municipal Code Chapter 19.16 and Chapter 19.72 shall apply to matters governing the design and construction of buildings for energy efficiency.

101.4.7 Electrical. The provisions of the Berkeley Electrical Code, based on the 2013 California Electrical Code, as amended herein, shall apply to the installation of electrical systems, including alterations, repairs, replacement, equipment, appliances, fixtures, fittings and appurtenances thereto.

101.4.8 Green. The provisions of the Berkeley Green Code, based on the 2013 California Green Building Standards Code, as amended herein, shall apply to enhanced design and construction of buildings through the use building concepts having a reduced negative impact or the positive environmental impact and encouraging sustainable construction practices.

101.5 References to prior codes. Unless superseded and expressly repealed, references in City forms, documents and regulations to the chapters and sections of former Berkeley Building Code editions, shall be construed to apply to the corresponding provisions contained within the 2013 Berkeley Building Code. Ordinance No. 7158–N.S. and all other ordinances or parts of ordinances in conflict herewith are hereby superseded and expressly repealed.

SECTION 103 – DIVISION OF BUILDING AND SAFETY

103.1 Creation of enforcement agency. The Division of Building and Safety is hereby created and the official in charge thereof shall be known as the building official.

103.2 Appointment. The building official shall be appointed by the City Manager.

SECTION 104 – DUTIES AND POWERS OF BUILDING OFFICIAL

104.7 Division records. The building official shall keep official records of applications received, permits and certificates issues, fees collected, reports of inspections, and notices and orders issued. Such records shall be retained in the official records for the period required for retention of public records.

SECTION 105 - PERMITS

105.3.2 Expiration of application. An application for a permit for any proposed work shall expire 180 days after the date of filing, unless it can be demonstrated by the applicant that such application has been pursued in good faith or a permit has been issued; except that the building official or the permit service center coordinator are authorized to grant one or more extensions of time for additional periods not exceeding a 180 days per extension. The extension shall be requested in writing and justifiable cause demonstrated. Prior to the application being deemed abandoned, further extensions of time for a period of one year may be granted by the building official or the permit service center on a case-by-case basis if demonstrated in writing by the applicant that such application has been pursued in good faith.

105.5 Expiration of Permit. Permits issued by the building official shall expire one year from the date of issuance. Prior to expiration of the permit, the building official may grant an extension of time of one year to complete the work, upon receipt of a written request from the permit holder. On a case-by-case basis, permits may be extended more than once when accompanied by a written request demonstrating good cause for the request. Written requests for time extensions shall be accompanied by the payment of a fee set by resolution of the City Council.

When a permit is expired and a new permit is required to complete the work, a new permit application and plans shall be filed describing the remaining work to be done. If a site visit or other review is required to determine the extent of the remaining work, a fee may be charged to make such determination.

105.7 Placement of permit. The building permit or copy shall be posted on the site of the work in a location that is visible from the street until the completion of the project.

SECTION 109 – FEES

109.1 Payment of fees. Except when fees are deferred, a permit shall not be valid until the fees as set forth by resolution of City Council have been paid, nor shall an amendment to a permit be released until the additional fee, if any, has been paid.

109.2 Schedule of permit fees. On building, structures, electrical, gas, mechanical, and plumbing systems or alterations requiring a permit, a fee for each permit shall be paid as required, in accordance with the fee as set forth by resolution of the City Council. Fees for permits and inspections and other related services under this Code shall be assessed and paid as set forth by resolution of the City Council. Unless waived or deferred as provided by local regulations, a plan review fee and other fees as specified in the resolution shall be paid at the time of submitting any documents for review and additional fees as specified in the resolution shall be paid at issuance of the permit.

109.4 Work commencing before permit issuance. Any person who commences any work on a building, structure, electrical, gas, mechanical or plumbing system before obtaining the necessary permit shall be subject to a fee as set forth by resolution of the City Council equal to and in addition to the permit fees.

109.7 Re-inspection fees. A re-inspection fee, as set forth by resolution of the City Council, may be assessed for each inspection or re-inspection when such portion of work for which inspection is called for under Section 110 is not complete or when corrections called for are not made.

This section is not to be interpreted as requiring re-inspection fees the first time a job is rejected for failure to comply with the requirements of this code, but as controlling the practice of calling for inspections before the job is ready for such inspection, or when the inspection record card is not available on the work site, the approved plans are not

readily available to the inspector, or for failure to provide access on the date for which inspection is requested, or for deviating from plans requiring the approval of the building official or when corrections required by the inspector are not made.

To obtain a re-inspection, the applicant shall pay the re-inspection fee as set forth by resolution of the City Council. In instances where re-inspection fees have been assessed, no additional inspection of the work will be performed until the required fees have been paid.

SECTION 112 – SERVICE UTILITIES

112.4 Authority to connect utilities. Clearance for connection of one utility, either gas or electrical, will be withheld until final building, electrical, plumbing, heating and/or air conditioning inspections are made and approval has been given for any new building or change in occupancy classification to an existing building (as defined in Section 301 of the Berkeley Building Code) for which connection to such utilities is sought, unless approval has been first obtained from the building official, as provided by a Temporary Certificate of Occupancy or Final Certificate of Occupancy.

112.5 Unsafe service utilities. Unsafe service utilities are hereby declared to be public nuisances and shall be abated, repaired, rehabilitated, demolished or removed in accordance with the procedures set forth in Chapter 19.40 of the BMC for residential buildings and Berkeley Building Code for all other buildings, or any alternate procedure that may be adopted by the City of Berkeley. In addition, the City Attorney may pursue other appropriate action to prevent, restrain, correct or abate the violation as provided for in the BMC. Remedies under this section are cumulative. When service utilities are maintained in violation of this code and in violation of a notice issued pursuant to the provisions of this section, the building official shall institute appropriate action to prevent, restrain, correct or abate the violation.

112.6 Authority to disconnect utilities in emergencies. The building official or his or her authorized representative shall have the authority to disconnect electrical power or other energy service supplied to the building, structure or building service equipment therein regulated by this code in case of emergency where necessary to eliminate an immediate hazard to life or property. The building official or his or her authorized representative shall, whenever possible, notify the serving utility, and the owner of the building, structure or electrical system or equipment and any building occupants of the decision to disconnect prior to taking such action and shall notify them, in writing, of the disconnection as soon as possible thereafter.

112.7 Authority to condemn electrical system and equipment. Whenever the building official determines that an electrical system or electrical equipment regulated by this code is hazardous to life, health or property, the building official may order in writing that such electrical system or equipment either be removed or restored to a safe condition. The written notice shall fix a reasonable time limit for compliance with such

order. Persons shall not use or maintain defective electrical systems or equipment after receiving such notice except as may be provided therein.

When equipment or an installation is to be disconnected, a written notice of such disconnection and the reasons therefore shall be given within 24 hours of the order to disconnect to the serving utility, the owner and occupants of the building, structure or premises.

When equipment or an installation is maintained in violation of this code and in violation of a notice issued pursuant to the provisions of this section, the building official shall institute appropriate action to prevent, restrain, correct or abate the violation.

Unsafe electrical systems or equipment are hereby declared to be public nuisances and shall be abated by repair, rehabilitation, demolition or removal in accordance with the procedures set forth in Chapter 19.40 of the BMC for residential buildings and Berkeley Building Code for all other buildings, or any alternate procedure that may be adopted by the City of Berkeley. In addition, the City Attorney may pursue other appropriate action to prevent, restrain, correct or abate the violation as provided for in the BMC. Remedies under this section are cumulative.

112.8 Connection after order to disconnect. Persons shall not make connections to a service utility system or equipment that has been disconnected or ordered to be disconnected by the building official, or the use of which has been ordered to be discontinued by the building official, until the building official authorizes the reconnection and use of the electrical system or equipment.

SECTION 113 – BOARD OF APPEALS

113.1 General. In order to hear and decide appeals of orders, decisions, or determinations made by the building official relative to the application and interpretation of this code, there shall be and is hereby created a board of appeals consisting of the Housing Advisory Commission pursuant to Section 19.44.020 of the Berkeley Housing Code. The building official may convene and consult with an advisory panel of qualified individuals. This advisory panel is intended to help the building official in formulating and making staff recommendations to the Housing Advisory Commission. The advisory panel may provide written and/or oral presentations to the Housing Advisory Commission as needed.

113.3 Qualifications. The board of appeals shall consist of members meeting the qualifications required for the Housing Advisory Commission. The advisory panel shall consist of individuals found by the building official to be qualified by experience and training in the specific area of the appeal who are not employees of the jurisdiction.

SECTION 114 – VIOLATIONS

114.4 Violation penalties. Any person who violates a provision of this code or fails to comply with any of the requirements thereof or who erects, constructs, alters or repairs

a building or structure in violation of the approved construction documents or directive of the building official, or of a permit or certificate issued under the provisions of this code, shall be subject to penalties as prescribed by law. Violations of this Code are misdemeanors, but may be cited or charged, at the election of the enforcing officer, building official, or City Attorney, as infractions, subject to an election by the defendant under Penal Code Subsection 17(d). Nothing in this Section shall prevent any other remedy afforded by law.

SECTION 116 - UNSAFE STRUCTURES AND EQUIPMENT

116.1 Conditions. Structures or existing equipment that are or hereafter become structurally unsafe, insanitary or deficient because of inadequate means of egress facilities, inadequate light and ventilation, or which constitute a fire hazard, or are otherwise dangerous to human life or the public welfare, or that involve illegal or improper occupancy or inadequate maintenance shall be deemed an unsafe condition. Unsafe structures shall be taken down and removed or made safe, as the building official deems necessary and as provided for in this section. A vacant structure that is not secured against entry shall be deemed unsafe.

All such unsafe buildings, equipment, structures or appendages are hereby declared to be public nuisances and shall be abated by repair, rehabilitation, demolition or removal in accordance with the procedures set forth in Chapters 1.24, 19.28, 19.40 and 19.44 of the BMC as applicable. As an alternative, the building official, or other employee or official of this jurisdiction as designated by the City Council, may institute any other appropriate action to prevent, restrain, correct or abate the violation.

116.6 Safety Assessment Placards.

116.6.1 Intent. This section establishes standard placards to be used to indicate the condition of a structure for occupancy after a natural disaster and a rapid evaluation by authorized personnel. The building official and his or her authorized representatives post the appropriate placard at each entry point to a building or structure upon completion of a safety assessment.

116.6.2 Application of provisions. The provisions of this section are applicable to all buildings and structures of all occupancies regulated by the City of Berkeley. The Council may extend the provisions as necessary.

116.6.3 Definitions.

116.6.3.1 "Safety Assessment" is a visual, non-destructive examination of a building or structure for the purpose of determining the condition for continued occupancy.

116.6.3.2 Placards. Following are titles and descriptions of the official jurisdiction placards to be used to designate the condition of a building structure for continued

occupancy, partial or conditional occupancy, or unsafe to enter. Copies of placards are on file in the Building and Safety Division of the Planning and Development Department.

INSPECTED – Lawful Occupancy Permitted is to be posted on any building or structure wherein no apparent hazard has been found. This placard is not intended to mean there is no damage to the building or structure, but that any damage that occurred does not present a hazard to occupants.

RESTRICTED USE is to be posted on each building or structure that has been damaged wherein the damage has resulted in some form of restriction to the continued occupancy. The individual who posts this placard will note in general terms the type of damage encountered and will clearly and concisely note the restrictions on continued occupancy.

UNSAFE – Do Not Enter or Occupy is to be posted on each building or structure that has been damaged such that continued occupancy poses a threat to life safety. Building or structures posted with this placard shall not be entered under any circumstances except as authorized in writing by the building official, or his or her authorized representative. Safety assessment teams shall be authorized to enter these building at any time. This placard is not to be used or considered as a demolition order. The individual who posts this placard will note in general terms the type of damage encountered.

116.6.4 Content of placard. The BMC Section number and the words "City of Berkeley" shall be permanently affixed to each placard.

116.6.5 Unlawful to remove. Once a placard has been attached to a building or structure, it is not to be removed, altered or covered until done so by an authorized representative of the Building Official. It shall be unlawful for any person, firm or corporation to alter, remove, cover or deface a placard unless authorized pursuant to this section. (Ord. 7076-NS § 1, 4/21/2009; Ord. 7005-NS § 1, 11/27/2007).

Article 2. Restrictions in Fire Zones

19.28.030 CBC Chapter 7A Materials and Construction Methods for Exterior Wildlife Exposure.

Chapter 7A of the 2013 California Building Code is adopted in its entirety subject to the modifications thereto which are set forth below.

701A – SCOPE, PURPOSE AND APPLICATION

701A.1 Scope. This chapter applies to building materials, systems and or assemblies used in the exterior design and construction of new buildings <u>and structures, additions, alterations, repairs and re-roofs</u> located within a Wildland-Urban Interface Fire Area as defined in Section 702A.

701A.2 Purpose. The purpose of this Chapter is to establish minimum standards for the protection of life and property by increasing the ability of a building located in any Fire Hazard Severity Zone within State Responsibility Areas or any building or structure in the Wildland-Urban Interface Fire Area to resist the intrusion of flame or burning embers projected by a vegetation fire and contributes to a systematic reduction in conflagration losses.

701A.3 Application. New buildings located in any Fire Hazard Severity Zone or new buildings and structures, additions, alterations, repairs and re-roofs located in any Wildland-Urban Interface Fire Area designated by the enforcing agency constructed after the application date shall comply with the provisions of this Chapter.

Exceptions:

1. Buildings or structures of an accessory character classified as a Group U occupancy and not exceeding 120 square feet in floor area, when located at least 30 feet from an applicable building or property lines.

701A.3.1 Application date and where required. New buildings for which an application for a building permit is submitted on or after July 1, 2008 located in any Fire Hazard Severity Zone or buildings and structures, additions, alterations, repairs and re-roofs for which an application for a building permit is submitted on or after July 1, 2008 located in the Wildland Interface Fire Area shall comply with all sections of this Chapter.

702A – DEFINITIONS

FIRE ZONE ONE shall encompass the entire City of Berkeley except for Fire Zones Two and Three.

FIRE ZONE TWO encompasses those areas designated as Combined Hillside District in the Official Zoning map of the City of Berkeley and those areas designated as Very High in the official Fire Hazard Severity Zones (FHSZ) map of The Department of Forestry and Fire Protection (CAL FIRE), as they may be amended from time to time. The following properties, not part of the Combined Hillside District, are included in Fire Zone Two under the Very High designation of the FHSZ map: The eastern section of the University of California, Berkeley main campus, block number 2042 (Alameda County Accessory's parcel numbering (APN) system), to the east city line and all of the Clark-Kerr campus, block number 7690, to the east city line. All of block number 7680 in the City of Berkeley and portions of block number 1702 in the City of Berkeley. See Exhibit A for the specific parcels by Assessor's Parcel Number and addresses.

FIRE ZONE 3 encompasses those areas designated as Environmental Safety – Residential Districts on the Official Zoning Map of the City of Berkeley, as it may be amended from time to time.

LOCAL AGENCY VERY HIGH FIRE HAZARD SEVERITY ZONE means an area designated by a local agency upon the recommendation of the CDF Director pursuant to Government Code Sections 51177(c), 51178 and 51189 that is not a state responsibility

area and where a local agency, city, county, city and county, or district is responsible for fire protection. Fire Zones 2 and 3 are designated as Local Agency High Fire Hazard Severity Zone.

WILDLAND-URBAN INTERFACE FIRE AREA is a geographical area identified by the state as a "Fire Hazard Severity Zone" in accordance with the Public Resources Code Sections 4201 through 4204 and Government Code Sections 51175 through 51189, or other areas designated by the enforcing agency to be at a significant risk from wildfires. Fire Zones 2 and 3 are designated as Wildland-Urban Interface Fire Area.

705A – ROOFING

705A.1 General. Roofs shall be a Class A minimum and shall comply with the requirements of Chapter 7A and Chapter 15. Roofs shall have a roofing assembly installed in accordance with its listing and the manufacturer's installation instructions. Wooden shakes and shingles are prohibited roof coverings regardless of the assembly rating of the roof system.

> **Exception:** Replacement of less than 50% of the roof area within a 5 year period.

705A.5 Spark Arrestors. All chimneys of fireplaces, stoves, barbecues or heating appliances using solid fuel shall be provided with an approved spark arrestor whenever modification has been made to any of these appliances, or whenever a structure is re-roofed. The net free area of the spark arrestor shall be not less than four times the net free area of the outlet of the chimney. The spark arrestor shall have heat and corrosion resistance equivalent to twelve-gauge wire, nineteen gauge galvanized wire, or twenty-four-gauge stainless steel. Openings shall not permit the passage of spheres having a diameter larger than one-half inch and shall not block the passage of spheres having a diameter of less than three-eighths inch. The arrestor shall be securely attached to the chimney or stovepipe and shall be adequately supported. The use of bands, mollies, masonry anchors or mortar ties are recommended depending upon the individual need.

707A – EXTERIOR COVERING

707A.3.2 Replacement of Exterior Wall Covering. Materials for replacement of existing exterior wall covering shall meet or exceed the standards set forth in this Chapter.

> **Exception:** Where less than 50% of any wall surface is being replaced or repaired, and the matching of the new plane to the existing plane on that wall is not possible.

711A – UNDERGROUND UTILITY CONNECTIONS

711A.1 Underground utility connections. For new construction, provisions shall be made for the undergrounding of all utilities serving the property, including but not limited

to electrical, telephone and cable television, by the installation of appropriately sized underground conduits extending from the street property.

712A – ADDITONAL REQUIREMENTS IN FIRE ZONE THREE

712A.1 General. In addition to meeting the other requirements of this Chapter, buildings or structures hereinafter erected, constructed, moved, altered, added, or repaired within Fire Zone Three shall comply with the following requirements for buildings and structures.

712A.2 Fire Warning System. All residential units shall be equipped with a Fire Warning System as specified by the residential smoke detector requirements of the current edition of the California Building Code and with an audible exterior alarm. The exterior alarm must meet the requirements of NFPA 72 or equivalent and generate 45 decibels ten feet from the alarm, or more.

712A.3 Automatic Fire Sprinklers, Berkeley Fire Code Section 903.2.21. Any new construction or new additions to existing structures requiring a permit determined to be $100,000 or more in construction costs shall be required to install automatic fire sprinklers throughout the existing structure.

712A.4 Utilities. Utilities, pipes, furnaces, water heaters or other mechanical devices located in an exposed underfloor area of a building or structure shall be enclosed with material as required for exterior one hour fire resistive construction. Adequate covered access openings for servicing and ventilation of such facilities shall be provided as required by appropriate codes.

712A.5 Control of brush or vegetation. Brush and vegetation shall be controlled as required in the Berkeley Fire Code.

712A.6 Special Conditions. The following additional conditions must be met:

1. Public access roads and fire trails. No person(s) shall use any public access road or fire trail for the storage of any construction material, stationary construction equipment, construction office, portable refuse container, or earth from any grading or excavating.
2. Water Service. The water service to the site shall be installed with a ¾" hose bib connection prior to beginning any wood framing. The person responsible for the construction shall have at the site a 75 ft ¾" hose available.

Exhibit A
Parcels in Addition to the Combined Hillside District

The following additional parcels by Assessor's Parcel Number and address are included in Fire Zone Two:

Parcel Number (APN)	Address

048-7680-001-02	3 Tanglewood Road
048-7680-002-01	5 Tanglewood Road
048-7680-031-00	7 Tanglewood Road
048-7680-019-00	11 Tanglewood Road
048-7680-014-00	19 Tanglewood Road
048-7680-032-01	25 Tanglewood Road
048-7680-027-00	29 Tanglewood Road
054-1702-067-00	10 Tanglewood Road
054-1702-068-00	18 Tanglewood Road
054-1702-069-00	22 Tanglewood Road
054-1702-070-00	28 Tanglewood Road
054-1702-063-00	2701 Belrose Avenue
054-1702-076-00	2715 Belrose Avenue
054-1702-075-00	2721 Belrose Avenue
054-1702-074-00	2729 Belrose Avenue
054-1702-073-00	2737 Belrose Avenue
054-1702-112-00	2801 Claremont Boulevard
054-1702-123-01	2811 Claremont Boulevard
054-1702-122-00	2815 Claremont Boulevard
054-1702-120-01	2821 Claremont Boulevard
054-1702-114-01	2816 Claremont Avenue
054-1702-115-00	2820 Claremont Avenue
054-1702-072-00	3005 Garber Street
054-1702-071-00	3015 Garber Street
054-1702-113-00	3020 Garber Street
054-1702-116-00	3017 Avalon Avenue

Article 3. Wood Burning Appliances

19.28.040 Wood Burning Appliances.

Chapter 31 of the 2013 California Building Code is adopted in its entirety subject to the modifications thereto which are set forth below.

3112 Wood Burning Appliances.

A. The purpose of this section is to reduce the health risks caused by wood smoke under the climatic conditions applicable to Berkeley.

B. For purposes of this section the following terms shall be defined as set forth below.

1. “EPA” means the United States Environmental Protection Agency.

2. “EPA Certified” means any wood heater that is labeled “EPA Certified” in accordance with the standards in Title 40, Part 60, Subpart AAA, of the Code

of Federal Regulations or equivalent, in effect at the time the wood heater is installed.

3. "Pellet heater" means wood heaters that burn pellet fuel exclusively and are either EPA-certified or exempted under EPA requirements set forth in Part 60 Title 40, Subpart AAA, of the Code of Federal Regulations, February 26, 1988.

4. "Wood-burning" means an appliance that burns wood or any wood-based solid fuel, including but not limited to wood pellets.

5. "Wood burning cooking device" means any wood-burning device that is designed or primarily used for cooking.

6. "Wood-burning fireplace" means any permanently-installed masonry or factory-built wood-burning appliance, either open or with doors in front of the combustion chamber, which is neither a wood heater as defined in 40 CFR 60.531 nor designed and used for cooking.

C. No wood-burning fireplace or wood heater as defined in 40 CFR 60.531, that is not EPA certified or exempted by under EPA requirements may be installed in any occupancy.

Exception: Existing masonry fireplaces may be repaired in accordance with the applicable codes in effect at the time of the proposed repair or reconstruction. For purposes of this exception, the term repair includes resurfacing the combustion chamber, but does not include replacing any other part of the combustion chamber.

D. Wood burning cooking devices are not prohibited by this section.

E. Any person planning to install a wood-burning fireplace or heating stove must submit verifiable documentation to the City showing that the appliance conforms to the requirements of this section.

Article 4. Projection into Public Right of Way

19.28.050 Encroachments into the Public Right of Way – Revocation, Removal, Indemnification and Hold Harmless.

Chapter 32 of the 2013 California Building Code is adopted in its entirety subject to the modifications thereto which are set forth below.

3202 – ENCROACHMENTS

3202.5 Projection into Public Right of Way – Revocation, Removal, Indemnification and Hold Harmless.

Any permits granted pursuant to this Code which allow any projection upon, over, or under the public right of way may be revoked by the City at any time. Upon such revocation, the permittee or his or her successor(s) or assignee(s) shall forthwith remove such projection at his or her cost and expense and without any cost or expense whatsoever to the City.

Any person who is granted a permit pursuant to the provisions of this Code which allows a projection upon, over or under the public right of way shall by the issuance of such permit thereby indemnify and hold harmless the City of Berkeley, its officers and employees of and from any and all liabilities, claims, demands, actions or causes of action for injury or injuries to any person or persons or death or deaths of any person or persons or damage to property arising out of or occasioned in any way by the issuance of said permit, the work performed pursuant to such permit, or the existence of such projection. The obligation of such indemnification and hold harmless provision shall be applicable to the successor(s) and assignee(s) of the permittee.

Article 5. Existing Buildings

19.28.060 Adoption of Certain Chapters of the 2012 International Existing Building Code by reference

Chapter 34 of the 2013 California Building Code is adopted in its entirety subject to the modifications thereto which are set forth below.

3401.10 Adoption of Certain Chapters of the 2012 International Existing Building Code by reference.

When seismic retrofit is not otherwise required by this code, the following Chapters of the 2012 International Existing Building Code (IEBC) published by the International Code Council contained in the Appendix A are hereby adopted by reference as applicable to the types of buildings as designated therein as though fully set forth herein:

Chapter A2, Earthquake Hazard Reduction in Existing Reinforced Concrete and Reinforced Masonry Wall Buildings with Flexible Diaphragms,

Chapter A4, Earthquake Hazard Reduction in Existing Wood-framed Residential Buildings with Soft, Weak or Open Front Walls, and

Chapter A5, Earthquake Hazard Reduction in Existing Concrete Buildings.

Article 6. Repairs to Existing Buildings and Structures

19.28.070 Adoption of Regulations for the Repairs of Existing Structures.

3405.6 Seismic Evaluation and Design Procedures for Repairs. The seismic evaluation and design shall be based on the procedures specified in the California Building Code, ASCE 31 *Seismic Evaluation of Existing Buildings* (for evaluation only) or ASCE 41 *Seismic Rehabilitation of Existing Buildings*. The procedures contained in Appendix A of the *International Existing Building Code* shall be permitted to be used as specified in Section 3405.6.2.

3405.6.1 Compliance with CBC level seismic forces. Where compliance with the seismic design provisions of the California Building Code is required, the procedures shall be in accordance with one of the following:

1. One-hundred percent of the values in the California Building Code. Where the existing seismic force-resisting system is a type that can be designated as "Ordinary," the values of R, Ωo, and Cd used for analysis in accordance with Chapter 16 of the California Building Code shall be those specified for structural systems classified as "Ordinary" in accordance with Table 12.2-1 of ASCE 7, unless it is demonstrated that the structural system will provide performance equivalent to that of a "Detailed," "Intermediate" or "Special" system.

2. Compliance with ASCE 41 using both BSE-1 and BSE-2 earthquake hazard levels and the corresponding performance levels in Table 3405.6.1.

Table 3405.6.1
PERFORMANCE CRITERIA FOR CBC LEVEL SEISMIC FORCES

OCCUPANCY CATEGORY (BASED ON CBC TABLE 1604.5)	PERFORMANCE LEVEL FOR USE WITH ASCE 41 BSE-1 EARTHQUAKE HAZARD LEVEL	PERFORMANCE LEVEL FOR USE WITH ASCE 41 BSE-2 EARTHQUAKE HAZARD LEVEL
I	Life Safety (LS)	Collapse Prevention (CP)
II	Life Safety (LS)	Collapse Prevention (CP)
III	Note a	Note a
IV	Immediate Occupancy (IO)	Life Safety (LS)

a. Acceptance criteria for Occupancy Category III shall be taken as 80 percent of the acceptance criteria specified for Occupancy Category II performance levels, but need not be less than the acceptance criteria specified for Occupancy Category IV performance levels.

3405.6.2 Compliance with reduced CBC level seismic forces. Where seismic evaluation and design is permitted to meet reduced California Building Code seismic force levels, the procedures used shall be in accordance with one of the following:

1. The California Building Code using 75 percent of the prescribed forces. Values of R, Ωo, and Cd used for analysis shall be as specified in Section 3405.6.1 Item 1.

2. Structures or portions of structures that comply with the requirements of the applicable chapter in Appendix A of the *International Existing Building Code* as specified in Items 2.1 through 2.5 below shall be deemed to comply with this section.

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

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

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

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

   2.5. Seismic evaluation and design of concrete buildings in all Occupancy Categories are permitted to be based on the procedures specified in Appendix Chapter A5.

3. Compliance with ASCE 31 based on the applicable performance level as shown in Table 3405.6.2. It shall be permitted to use the BSE-1 earthquake hazard level as defined in ASCE 41 and subject to the limitations in item 4 below.

4. Compliance with ASCE 41 using the BSE-1 Earthquake Hazard Level defined in ASCE 41 and the performance level as shown in Table 3405.6.2. The design spectral response acceleration parameters Sxs and Sx1 specified in ASCE 41 shall not be taken less than 75 percent of the respective design spectral response acceleration parameters SDS and SD1 defined by the *California Building Code* and its reference standards.

Table 3405.6.2
PERFORMANCE CRITERIA FOR REDUCED CBC LEVEL SEISMIC FORCES

OCCUPANCY CATEGORY (BASED ON CBC TABLE 1604.5)	PERFORMANCE LEVEL FOR USE WITH ASCE 31	PERFORMANCE LEVEL FOR USE WITH ASCE 41 BSE-1 EARTHQUAKE HAZARD LEVEL
I	Life Safety (LS)	Life Safety (LS)
II	Life Safety (LS)	Life Safety (LS)
III	Note a, Note b	Note a
IV	Immediate Occupancy (IO)	Immediate Occupancy (IO)

a. Acceptance criteria for Occupancy Category III shall be taken as 80 percent of the acceptance criteria specified for Occupancy Category II performance levels, but need not be less than the acceptance criteria specified for Occupancy Category IV performance levels.
b. For Occupancy Category III, the ASCE screening phase checklists shall be based on the life safety performance level.

3405.6.3 Referenced Standards

Standard Reference Number	Title	Referenced in Code Section Number
ASCE 31-03	Seismic Evaluation of Existing Buildings	3405.6.1 Table 3405.6.1 3405.6.2 Table 3405.6.2
ASCE 41-06 Including Supplement No.1	Seismic Rehabilitation of Existing Buildings	3405.6.1 Table 3405.6.1 3405.6.2 Table 3405.6.2

Article 7. Technical Amendments to Structural Standards

19.28.080 Various Technical Amendments to Structural Standards.

Chapter 17 of the 2013 California Building Code is adopted in its entirety subject to the modifications thereto which are set forth below.

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

Exception: Special inspections shall not be required for: 1. Isolated spread concrete footings of buildings three stories or less above grade plane that are fully supported on earth or rock, where the structural design of the footing is based on a specified compressive strength, f'c, no greater than 2,500 pound per square inch (psi) (17.2 Mpa).

Chapter 19 of the 2013 California Building Code is adopted in its entirety subject to the modifications thereto which are set forth below.

1905.1.8 ACI 318, section 22.10. Delete ACI 318, Section 22.10, and replace with the following:

22.10 - Plain concrete in structures assigned to Seismic Design Category C, D, E or F.
22.10.1- Structures assigned to Seismic Design Category C, D, E or F shall not have elements of structural plain concrete, except as follows:
~~(a) Structural plain concrete basement, foundation or other walls below the base are permitted in detached one and two-family dwellings three stories or less in height constructed with stud bearing walls. In dwellings assigned to seismic design category D or E, the height of the wall shall not exceed 8 feet (2438 mm), the thickness shall not be less than 7 1/2 inches (190 mm), and the wall shall retain no more than 4 feet (1219 mm) of unbalanced fill. Walls shall have reinforcement in accordance with 22.6.6.5~~.

(a) Isolated footings of plain concrete supporting pedestals or columns are permitted, provided the projection of the footing beyond the face of the supported member does not exceed the footing thickness.

Exception: In detached one- and two-family dwelling three stories or less in height, the projection of the footing beyond the face of the supported member is permitted to exceed the footing thickness.

(b) Plain concrete footing supporting walls are permitted, provided the footings have at least two continuous longitudinal reinforcing bars. Bars shall not be smaller than No. 4 and shall have a total area of not less than 0.002 times the gross cross-sectional area of the footing. ~~For footings that exceed 8" inches (203 mm) in thickness,~~ A minimum of one bar shall be provided at the top and bottom of the footing. Continuity of reinforcement shall be provided at corners and intersections.

Exceptions:

1. In ~~seismic design categories A, B and C,~~ detached one- and two-family dwellings three stories or less in height and constructed with stud bearing walls, ~~are permitted to have~~ plain concrete footings ~~without longitudinal reinforcement.~~ with at least two continuous longitudinal reinforcing bars not smaller than No. 4 are permitted to have a total

area of less than 0.002 times the gross cross–sectional area of the footing.

2. ~~For foundation systems consisting of a plain concrete footing and a plain concrete stem wall, a minimum of one bar shall be provided at the top of the stem wall and at the bottom of the footing.~~
3. ~~Where a slab on ground is cast monolithically with the footing, one no. 5 bar is permitted to be located at either the top of the slab or bottom of the footing.~~

Chapter 23 of the 2013 California Building Code is adopted in its entirety subject to the modifications thereto which are set forth below.

TABLE 2308.12.4
WALL BRACING IN SEISMIC DESIGN CATEGORIES D AND E
(Minimum Percentage of Wall Bracing per each Braced Wall Line[a])

CONDITION	SHEATHING TYPE[b]	$S_{DS} < 0.50$	$0.50 \le S_{DS} < 0.75$	$0.75 \le S_{DS} \le 1.00$	$S_{DS} > 1.00$
One Story	~~G-P[c]~~	~~43~~	~~59~~	~~75~~	~~100~~
	S-W	21	32	37	48

a. Minimum length of panel bracing of one face of the wall for S-W sheathing ~~or both faces of the wall for G-P sheathing~~; h/w ratio shall not exceed 2:1. For S-W panel bracing of the same material on two faces of the wall, the minimum length is permitted to be one-half the tabulated value but the h/w ratio shall not exceed 2:1 and design for uplift is required. The 2:1 h/w ratio limitation does not apply to alternate braced wall panels constructed in accordance with Section 2308.9.3.1 or 2308.9.3.2.
b. ~~G-P = gypsum board, fiberboard, particleboard, lath and plaster or gypsum sheathing boards;~~ S-W = wood structural panels and diagonal wood sheathing.
c. ~~Nailing as specified below shall occur at all panel edges at studs, at top and bottom plates and, where occurring, at blocking:~~
~~For 1/2-inch gypsum board, 5d (0.113 inch diameter) cooler nails at 7 inches on center;~~
~~For 5/8-inch gypsum board, No. 11 gage (0.120 inch diameter) at 7 inches on center;~~
~~For gypsum sheathing board, 1 3/4 inches long by 7/16-inch head, diamond point galvanized nails at 4 inches on center;~~
~~For gypsum lath, No 13 gage (0.092 inch) by 1 1/8 inches long, 19/64-inch head, plasterboard at 5 inches on center;~~
~~For Portland cement plaster, No 11 gage (0 120 inch) by 1 1/2 inches long, 7/16 inch head at 6 inches on center,~~
~~For fiberboard and particleboard, No 11 gage (0.120 inch) by 1 1/2 inches long, 7/16-inch head, galvanized nails at 3 inches on center~~

Section 2. That Berkeley Municipal Code Chapter 19.29, is hereby repealed and reenacted to read as follows:

Chapter 19.29

BERKELEY RESIDENTIAL CODE

Sections:

19.29.010 Adoption of California Residential Code.
19.29.020 Title.
19.29.030 Administrative provisions.
19.29.040 Subsection R301.2 Climatic and geographic design criteria.
19.29.050 Section R327 Materials and Construction Methods for Exterior Wildlife Exposure.
19.29.060 Technical Amendments to Structural Standards.

19.29.010 Adoption of California Residential Code.
The California Residential Code, 2013 Edition, as adopted by the California Code of Regulations, Title 24, Part 2.5, including Appendix H, is hereby adopted and made a part of this Chapter as though fully set forth herein, subject to the modifications thereto which are set forth in this Chapter. A copy of this code is on file for use and examination by the public in the office of the City Clerk of the City of Berkeley.

19.29.020 Title.
This code shall be known as the "Berkeley Residential Code" and may be cited as "this code".

19.29.030 Administrative provisions.
All of the administrative provisions contained in Article 1 of Chapter 19.28, the Berkeley Building Code, shall apply to this code as well and take precedence over any CRC administrative provisions that may conflict.

For regulations governing wood burning appliances see BMC 19.28.040.

19.29.040 CRC Subsection R301.2 Climatic and geographic design criteria.

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

GROUND SNOW LOAD	WIND DESIGN		SEISMIC DESIGN CATEGORY[f]	SUBJECT TO DAMAGE FROM		
	Speed[d] (mph)	Topographic Effects [k]		Weathering[a]	Frost line depth[b]	Termite[c]
ZERO	85	NO	D_2 or E	NEGLIGIBLE	N/A	VERY HEAVY

WINTER DESIGN TEMP [e]	ICE BARRIER UNDERLAYMENT REQUIRED [h]	FLOOD HAZARDS [g]	AIR FREEZING INDEX [i]	MEAN ANNUAL TEMP [j]
See footnote 'm'	NO	See Footnote 'l'	ZERO	57.2°F

For SI: 1 pound per square foot = 0.0479 kPa, 1 mile per hour = 0.447 m/s.

a. Weathering may require a higher strength concrete or grade of masonry than necessary to satisfy the structural requirements of this code. The weathering column shall be filled in with the weathering index (i.e., "negligible," "moderate" or "severe") for concrete as determined from the Weathering Probability Map [Figure R301.2.(3)]. The grade of masonry units shall be determined from ASTM C 34, C 55, C 62, C 73, C 90, C 129, C 145, C 216 or C652.
b. The frost line depth may require deeper footings than indicated in Figure R403.1(1). The jurisdiction shall fill in the frost line depth column with the minimum depth of footing below finish grade.
c. The jurisdiction shall fill in this part of the table to indicate the need for protection depending on whether there has been a history of local subterranean termite damage.
d. The jurisdiction shall fill in this part of the table with the wind speed from the basic wind speed map [Figure R301.2(4)A]. Wind exposure category shall be determined on a site-specific basis in accordance with Section R301.2.1.4.
e. Temperatures shall be permitted to reflect local climates or local weather experience as determined by the building official.
f. The jurisdiction shall fill in this part of the table with the seismic design category determined from Section R301.2.2.1.
g. The jurisdiction shall fill in this part of the table with (a) the date of the jurisdiction's entry into the National Flood Insurance Program (date of adoption of the first code or ordinance for management of flood hazard areas), (b) the date(s) of the Flood Insurance Study and (c) the panel numbers and dates of all currently effective FIRMs and FBFMs or other flood hazard map adopted by the authority having jurisdiction, as amended.
h. In accordance with Sections R905.2.7.1, R905.4.3.1, R905.5.3.1, R905.6.3.1, R905.7.3.1 and R905.8.3.1, where there has been a history of local damage from the effects of ice damming, the jurisdiction shall fill in this part of the table with "YES." Otherwise, the jurisdiction shall fill in this part of the table with "NO."
i. The jurisdiction shall fill in this part of the table with the 100-year return period air freezing index (BF-days) from Figure R403.3.(2) or from the 100-year (99%)value on the National Climatic Data Center data table "Air Freezing Index- USA Method (Base 32°)".

j. The jurisdiction shall fill in this part of the table with the mean annual temperature from the National Climatic Data Center data table “Air Freezing Index- USA Method (Base 32°F)”.

k. In accordance with Section R301.2.1.5, where there is local historical data documenting structural damage to buildings due to topographic wind speed-up effects, the jurisdiction shall fill in this part of the table with “YES.” Otherwise, the jurisdiction shall indicate “NO” in this part of the table.

l. Flood Hazard Data for the City of Berkeley:

Date of Jurisdiction’s Entry into the NFIP: December 7, 1973;
Date of adoption of the first code or ordinance for management of flood hazards: Ordinance No. 5085-N.S., July 25, 1978;
Date of Flood Insurance study: Aug 3, 2009;
Panel numbers and dates of all currently effective maps adopted by the AHJ (Ordinance 7108-NS 9/29/09):

- FEMA’s “Use of Digital Flood Hazard Data” establishes that paper and digital maps are equivalent. Policy and related information are available from FEMA. The policy implements section 107 of Public Law 108-264, 118 Stat. 724 (2004)
- Panel 13 (not available in printed form)
- Panel 14 of 725, Map Number 06001C0014G, August 3, 2009
- Panel 18 of 725, Map Number 06001C0018G, August 3, 2009
- Panel 19 of 725, Map Number 06001C0019G, August 3, 2009
- Panel 38 (not available in printed form)
- Panel 51 (not available in printed form)
- Panel 52 of 725, Map Number 06001C0052G, August 3, 2009
- Panel 53 (not available in printed form)
- Panel 54 of 725, Map Number 06001C0054G, August 3, 2009
- Panel 56 of 725, Map Number 06001C0056G, August 3, 2009
- Panel 57 of 725, Map Number 06001C0057G, August 3, 2009
- Panel 80 of 725, Map Number 06001C0080G, August 3, 2009

m. Heating Load Calculation Data for the City of Berkeley:

- 33 degrees F “Winter Median of Extremes"
- 37 degrees F “Design Drybulb (0.2%)
- 40 degrees F “Design Drybulb (0.6%)

19.29.050 CRC Section R327 Materials and Construction Methods for Exterior Wildlife Exposure.

Chapter 3 of the 2013 California Residential Code is adopted in its entirety subject to the modifications thereto which are set forth below.

R327.1 – SCOPE, PURPOSE AND APPLICATION

R327.1.1 Scope. This Chapter applies to building materials, systems and/or assemblies used in the exterior design and construction of new buildings <u>and structures, additions,</u>

alterations, repairs and re-roofs located within a Wildland-Urban Interface Fire Area as defined in Section R327.2.

R327.1.2 Purpose. The purpose of this Chapter is to establish minimum standards for the protection of life and property by increasing the ability of a building located in any Fire Hazard Severity Zone within State Responsibility Areas or any building or structure in the Wildland-Urban Interface Fire Area to resist the intrusion of flame or burning embers projected by a vegetation fire and contributes to a systematic reduction in conflagration losses.

R327.1.3 Application. New buildings located in any Fire Hazard Severity Zone or new buildings and structures, additions, alterations, repairs and re-roofs located in any Wildland-Urban Interface Fire Area designated by the enforcing agency constructed after the application date shall comply with the provisions of this Chapter.

Exceptions:

1. Buildings or structures of an accessory character classified as a Group U occupancy and not exceeding 120 square feet in floor area, when located at least 30 feet from an applicable building or property lines.

R327.1.3.1 Application date and where required. New buildings for which an application for a building permit is submitted on or after July 1, 2008 located in any Fire Hazard Severity Zone or buildings and structures, additions, alterations, repairs and re-roofs for which an application for a building permit is submitted on or after July 1, 2008 located in the Wildland Interface Fire Area shall comply with all sections of this Chapter.

R327.2 – DEFINITIONS

For the purposes of this Chapter, certain terms are defined below:

FIRE ZONE ONE shall encompass the entire City of Berkeley except for Fire Zones Two and Three.

FIRE ZONE TWO encompasses those areas designated as Combined Hillside District in the Official Zoning map of the City of Berkeley and those areas designated as Very High in the official Fire Hazard Severity Zones (FHSZ) map of The Department of Forestry and Fire Protection (CAL FIRE), as they may be amended from time to time. The following properties, not part of the Combined Hillside District, are included in Fire Zone Two under the Very High designation of the FHSZ map: The eastern section of the University of California, Berkeley main campus, block number 2042 (Alameda County Accessory's parcel numbering (APN) system), to the east city line and all of the Clark-Kerr campus, block number 7690, to the east city line. All of block number 7680 in the City of Berkeley and portions of block number 1702 in the City of Berkeley. See Exhibit A for the specific parcels by Assessor's Parcel Number and addresses.

FIRE ZONE 3 encompasses those areas designated as Environmental Safety – Residential Districts on the Official Zoning Map of the City of Berkeley, as it may be amended from time to time.

LOCAL AGENCY VERY HIGH FIRE HAZARD SEVERITY ZONE means an area designated by a local agency upon the recommendation of the CDF Director pursuant to Government Code Sections 51177(c), 51178 and 51189 that is not a state responsibility area and where a local agency, city, county, city and county, or district is responsible for fire protection. Fire Zones 2 and 3 are designated as Local Agency High Fire Hazard Severity Zone.

WILDLAND-URBAN INTERFACE FIRE AREA is a geographical area identified by the state as a "Fire Hazard Severity Zone" in accordance with the Public Resources Code Sections 4201 through 4204 and Government Code Sections 51175 through 51189, or other areas designated by the enforcing agency to be at a significant risk from wildfires. Fire Zones 2 and 3 are designated as Wildland-Urban Interface Fire Area.

R327.5 – ROOFING

R327.5.1 General. Roofs shall be a Class A minimum and shall comply with the requirements of Sections R327 and R902. Roofs shall have a roofing assembly installed in accordance with its listing and the manufacturer's installation instructions. Wooden shakes and shingles are prohibited roof coverings regardless of the assembly rating of the roof system.

> **Exception:** Replacement of less than 50% of the roof area within a 5 year period.

R327.5.5 Spark Arrestors. All chimneys of fireplaces, stoves, barbecues or heating appliances using solid fuel shall be provided with an approved spark arrestor whenever modification has been made to any of these appliances, or whenever a structure is re-roofed. The net free area of the spark arrestor shall be not less than four times the net free area of the outlet of the chimney. The spark arrestor shall have heat and corrosion resistance equivalent to twelve-gauge wire, nineteen gauge galvanized wire, or twenty-four-gauge stainless steel. Openings shall not permit the passage of spheres having a diameter larger than one-half inch and shall not block the passage of spheres having a diameter of less than three-eighths inch. The arrestor shall be securely attached to the chimney or stovepipe and shall be adequately supported. The use of bands, mollies, masonry anchors or mortar ties are recommended depending upon the individual need.

R327.7 – EXTERIOR COVERING

R327.7.3.2 Replacement of Exterior Wall Covering. Materials for replacement of existing exterior wall covering shall meet or exceed the standards set forth in this chapter.

> **Exception:** Where less than 50% of any wall surface is being replaced or repaired, and the matching of the new plane to the existing plane on that wall is not possible.

R327.11 – UNDERGROUND UTILITY CONNECTIONS

R327.11.1 Underground utility connections. For new construction, provisions shall be made for the undergrounding of all utilities serving the property, including but not limited to electrical, telephone and cable television, by the installation of appropriately sized underground conduits extending from the street property.

R327.12 – ADDITONAL REQUIREMENTS IN FIRE ZONE THREE

R327.12.1 General. In addition to meeting the other requirements of this Chapter, buildings or structures hereinafter erected, constructed, moved, altered, added, or repaired within Fire Zone Three shall comply with the following requirements for buildings and structures.

R327.12.2 Fire Warning System. All residential units shall be equipped with a Fire Warning System as specified by the residential smoke detector requirements of the current edition of the California Building Code and with an audible exterior alarm. The exterior alarm must meet the requirements of NFPA 72 or equivalent and generate 45 decibels ten feet from the alarm, or more.

R327.12.3 Automatic Fire Sprinklers, Berkeley Fire Code Section 903.2.21. Any new construction or new additions to existing structures requiring a permit determined to be $100,000 or more in construction costs shall be required to install automatic fire sprinklers throughout the existing structure.

R327.12.4 Utilities. Utilities, pipes, furnaces, water heaters or other mechanical devices located in an exposed underfloor area of a building or structure shall be enclosed with material as required for exterior one hour fire resistive construction. Adequate covered access openings for servicing and ventilation of such facilities shall be provided as required by appropriate codes.

R327.12.5 Control of brush or vegetation. Brush and vegetation shall be controlled as required in the Berkeley Fire Code.

R327.12.6 Special Conditions. The following additional conditions must be met:

1. Public access roads and fire trails. No person(s) shall use any public access road or fire trail for the storage of any construction material, stationary construction equipment, construction office, portable refuse container, or earth from any grading or excavating.
2. Water Service. The water service to the site shall be installed with a ¾" hose bib connection prior to beginning any wood framing. The person responsible for the construction shall have at the site a 75 ft ¾" hose available.

Exhibit A
Parcels in Addition to the Combined Hillside District

The following additional parcels by Assessor's Parcel Number and address are included in Fire Zone Two:

Parcel Number (APN)	Address
048-7680-001-02	3 Tanglewood Road
048-7680-002-01	5 Tanglewood Road
048-7680-031-00	7 Tanglewood Road
048-7680-019-00	11 Tanglewood Road
048-7680-014-00	19 Tanglewood Road
048-7680-032-01	25 Tanglewood Road
048-7680-027-00	29 Tanglewood Road
054-1702-067-00	10 Tanglewood Road
054-1702-068-00	18 Tanglewood Road
054-1702-069-00	22 Tanglewood Road
054-1702-070-00	28 Tanglewood Road
054-1702-063-00	2701 Belrose Avenue
054-1702-076-00	2715 Belrose Avenue
054-1702-075-00	2721 Belrose Avenue
054-1702-074-00	2729 Belrose Avenue
054-1702-073-00	2737 Belrose Avenue
054-1702-112-00	2801 Claremont Boulevard
054-1702-123-01	2811 Claremont Boulevard
054-1702-122-00	2815 Claremont Boulevard
054-1702-120-01	2821 Claremont Boulevard
054-1702-114-01	2816 Claremont Avenue
054-1702-115-00	2820 Claremont Avenue
054-1702-072-00	3005 Garber Street
054-1702-071-00	3015 Garber Street
054-1702-113-00	3020 Garber Street
054-1702-116-00	3017 Avalon Avenue

19.29.060 Technical Amendments to Structural Standards

Chapter 4 of the 2013 California Residential Code is adopted in its entirety subject to the modifications thereto which are set forth below.

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

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

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

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

> Exception: In detached one- and two-family dwellings which are three stories or less in height and constructed with stud bearing walls, isolated plain concrete footings supporting columns or pedestals are permitted.

Chapter 6 of the 2013 California Residential Code is adopted in its entirety subject to the modifications thereto which are set forth below.

Table R602.10.3(3) Bracing Requirements based on Seismic Design Category
Add a new footnote "e" to the end of CRC Table R602.10.3(3)[e] to read:

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

R602.10.4.4 Limits on methods GB and PCP. In Seismic Design Categories D_0, D_1, and D_2, Method GB is not permitted for use as intermittent braced wall panels, but gypsum board is permitted to be installed when required by this Section to be placed on the opposite side of the studs from other types of braced wall panel sheathing. In Seismic Design Categories D_0, D_1, and D_2, the use of Method PCP is limited to one-story single family dwellings and accessory structures.

Section 3. That Berkeley Municipal Code Chapter 19.30, is hereby repealed and reenacted to read as follows:

Chapter 19.30

BERKELEY ELECTRICAL CODE

Sections:

19.30.010 Adoption of California Electrical Code.
19.30.020 Title.
19.30.030 Administrative provisions.

19.30.010 Adoption of California Electrical Code.
The California Electrical Code, 2013 Edition, as adopted by the California Code of Regulations, Title 24, Part 3 is hereby adopted and made a part of this Chapter as

though fully set forth herein subject to the modifications thereto which are set forth in this Chapter. A copy of this code is on file for use and examination by the public in the office of the City Clerk of the City of Berkeley.

19.30.020 Title.
This code shall be known as the "Berkeley Electrical Code" and may be cited as "this code".

19.30.030 Administrative provisions.
All of the administrative provisions contained in Article 1 of Chapter 19.28, the Berkeley Building Code, shall apply to this code as well and take precedence over any administrative provisions contained in Article 89 General Code Provisions that may conflict.

Section 4. That Berkeley Municipal Code Chapter 19.32 is hereby repealed and reenacted to read as follows:

Chapter 19.32

BERKELEY MECHANICAL CODE

Sections:

19.32.010 Adoption of the California Mechanical Code.
19.32.020 Title.
19.32.030 Administrative provisions.

19.32.010 Adoption of the California Mechanical Code.
The California Mechanical Code, 2013 Edition, as adopted by the California Code of Regulations, Title 24, Part 4 is hereby adopted and made a part of this Chapter as though fully set forth herein subject to the modifications thereto which are set forth in this Chapter. A copy of this code is on file for use and examination by the public in the office of the City Clerk of the City of Berkeley.

19.32.020 Title.
This Code shall be known as the “Berkeley Mechanical Code” and may be cited as "this code".

19.32.030 Administrative provisions.
All of the administrative provisions contained in Article 1 of Chapter 19.28, the Berkeley Building Code, shall apply to this Code as well and take precedence over any CMC administrative provisions that may conflict.

For regulations governing wood burning appliances, see BMC 19.28.040.

Section 5. That Berkeley Municipal Code Chapter 19.34 is hereby repealed and reenacted to read as follows:

Chapter 19.34

BERKELEY PLUMBING CODE

Sections:

19.34.010 Adoption of the California Plumbing Code.
19.34.020 Title.
19.34.030 Administrative provisions.
19.34.040 Gas Shut-Off Valves

19.34.010 Adoption of the California Plumbing Code.
The California Plumbing Code, 2013 Edition, as adopted California Code of Regulations, Title 24, Part 5 including Appendices A, B, D and I, is hereby adopted and made a part of this Chapter as though fully set forth herein subject to the modifications thereto which are set forth in this Chapter. A copy of this Code is on file for use and examination by the public in the office of the City Clerk of the City of Berkeley.

19.36.020 Title.
This Code shall be known as the “Berkeley Plumbing Code” and may be cited as "this code."

19.34.030 Administrative provisions.
All of the administrative provisions contained in Article 1 of Chapter 19.28, the Berkeley Building Code, shall apply to this Code as well and take precedence over any CPC administrative provisions that may conflict.

19.34.040 Gas Shut-Off Valves

Chapter 12 of the 2013 California Plumbing Code is adopted in its entirety subject to the modifications thereto which are set forth below.

1209.2 General Requirements for Gas Shut-Off Valves. Automatic gas shut-off valves installed either in compliance with this Section or voluntarily pursuant to a plumbing permit issued on or after the effective date of this Section, shall comply with the following:

1209.2.1 All valves shall:

1. Comply with all applicable requirements of the Berkeley Plumbing Code.

2. Be tested and listed by recognized testing agencies such as the Independent Laboratory of the International Approval Services (IAS), Underwriter's

Laboratory (UL), International Association of Plumbing and Mechanical Officials (IAPMO) or any other agency approved by the State of California Office of the State Architect (OSA).

3. Be listed by the State of California Office of the State Architect (OSA).

4. Be installed on downstream side of the gas utility meter.

5. Be installed in accordance with the manufacturer's instructions.

6. Be installed in accordance with a plumbing permit issued by the City of Berkeley.

7. Provide a method for expedient and safe gas shut-off in an emergency.

8. Provide a capability for ease of consumer or owner resetting in a safe manner.

1209.2.2 Motion activated seismic gas shut-off valves shall be mounted rigidly to the exterior of the building or structure containing the fuel gas piping, unless otherwise specified in the manufacturer's installation instructions.

1209.3 Definitions

For the purpose of this Section terms shall be defined as follows:

AUTOMATIC GAS SHUT- OFF VALVE shall mean either a motion activated gas shut-off valve or device or an excess flow gas shut-off valve or device.

DOWNSTREAM OF GAS UTILITY METER shall mean all gas piping on the property owner's side of the gas meter and after the service tee.

EXCESS FLOW GAS SHUT- OFF VALVE shall mean an approved valve or device that is activated by significant gas leaks or overpressure surges that can occur when pipes rupture inside a structure. Such valves are installed at each appliance, unless otherwise specified by the manufacturer's installation instructions.

MOTION ACTIVATED GAS SHUT OFF VALVE shall mean an approved gas valve activated by motion. Valves are set to activate in the event of a moderate or strong seismic event greater than 5.0 on the Richter scale.

UPSTREAM OF GAS UTILITY METER shall mean all gas piping installed by the utility up to and including the meter and the utility's service tee.

1209.4 Devices When Required. Approved automatic gas shut-off valves shall be installed as follows:

1209.4.1 New Construction. In any new building construction containing gas piping for which a building permit is first issued on or after the effective date of this Section.

1209.4.2 Existing Buildings. In any existing building, when any addition, alteration or repair is made for which a building permit is issued on or after the effective date of this Section and the valuation for the work exceeds $50,000.

Exceptions:

1. Buildings with individually metered residential units when the building contains 5 or more residential units, unless the units are condominiums.

2. For residential or mixed use condominium buildings, valves are required when the value of the work exceeds $50,000 in any single condominium unit or when any work done outside of the units exceeds $50,000.

3. Commercial occupancies and uses in mixed use buildings of residential and non-residential occupancies with a single gas service line larger than 1 ½ inches that serves the entire building.

4. Automatic gas shut-off valves installed with a building permit on a building prior to the effective date of this Section provided the valves remain installed on the building or structure and are adequately maintained for the life of the building or structure.

5. Automatic gas shut-off valves installed on a gas distribution system owned or operated by a public utility.

Section 6. That Berkeley Municipal Code Chapter 19.36 is hereby repealed and reenacted to read as follows:

Chapter 19.36

BERKELEY ENERGY CODE

Sections:

19.36.010 Adoption of the California Energy Code.
19.36.020 Title.
19.36.030 Administrative provisions.

19.36.010 Adoption of the California Energy Code.
The California Energy Code, 2013 Edition, as adopted by the California Code of Regulations, Title 24, Part 6 is hereby adopted and made a part of this Chapter as though fully set forth herein subject to the modifications thereto which are set forth in

this Chapter. A copy of this code is on file for use and examination by the public in the office of the City Clerk of the City of Berkeley.

19.32.020 Title.
This Code shall be known as the “Berkeley Energy Code” and may be cited as "this code”.

19.32.030 Administrative provisions.
All of the administrative provisions contained in Article 1 of Chapter 19.28, the Berkeley Building Code, shall apply to this Code as well and take precedence over any California Energy Code administrative provisions that may conflict.

For regulations governing wood burning appliances see BMC 19.28.040.

Section 7. That Berkeley Municipal Code Chapter 19.37 is hereby repealed and reenacted to read as follows:

Chapter 19.37

BERKELEY GREEN CODE

Sections:

19.37.010 Adoption of California Green Building Standards Code.
19.37.020 Title.
19.37.030 Administrative provisions.
19.37.040 Chapter 4. Residential Mandatory Measures
Division 4.4 Material Conservation and Resource Efficiency
19.37.050 Chapter 5. Nonresidential Mandatory Measures
Division 5.4 Material Conservation and Resource Efficiency

19.37.010 Adoption of California Green Building Standards Code.
The California Green Building Standards Code, 2013 Edition, California Code of Regulations, Title 24, Part 11, is hereby adopted and made a part of this Chapter as though fully set forth herein subject to the modifications thereto which are set forth in this Chapter.

19.37.020 Title.
This code shall be known as the “Berkeley Green Code” and may be cited as "this code".

19.37.030 Administrative provisions.
All of the administrative provisions contained in Article 1 of Chapter 19.28, the Berkeley Building Code, shall apply to this code as well and take precedence over any California Green Building Standards Code administrative provisions that may conflict. A copy of

this code is on file for use and examination by the public in the office of the City Clerk of the City of Berkeley.

For regulations governing wood burning appliances see BMC 19.28.040.

In the event that provisions of this code conflict with provisions of Berkeley Municipal Code Chapters 19.16, 19.24, and 19.72, the most restrictive regulation shall govern.

19.37.040 Chapter 4 Residential Mandatory Measures
Division 4.4 Material Conservation and Resource Efficiency

Chapter 4 Division 4.4 of the 2013 California Green Building Standards Code is adopted in its entirety subject to the modifications thereto which are set forth below.

Section 4.408 Construction Waste Reduction, Disposal and Recycling.
Recycle and/or salvage for reuse construction and demolition debris in accordance with Berkeley Municipal Code Chapter 19.24.

19.37.050 Chapter 5 Nonresidential Mandatory Measures
Division 5.4 Material Conservation and Resource Efficiency

Chapter 5 Division 5.4 of the 2013 California Green Building Standards Code is adopted in its entirety subject to the modifications thereto which are set forth below:

Section 5.408 Construction Waste Reduction, Disposal and Recycling.
Recycle and/or salvage for reuse construction and demolition debris in accordance with Berkeley Municipal Code Chapter 19.24.

Section 8. Copies of this Ordinance shall be posted for two days prior to adoption in the display case located near the walkway in front of Council Chambers, 2134 Martin Luther King Jr. Way. Within 15 days of adoption, copies of this Ordinance shall be filed at each branch of the Berkeley Public Library and the title shall be published in a newspaper of general circulation.

RESOLUTION NO. –N.S.

ADOPTING FINDINGS AS TO LOCAL CLIMATIC, GEOLOGICAL AND TOPOGRAPHICAL CONDITIONS RENDERING REASONABLY NECESSARY VARIOUS ENUMERATED LOCAL BUILDING STANDARDS THAT ARE MORE STRINGENT THAN THOSE MANDATED BY THE CALIFORNIA BUILDING CODE

BE IT RESOLVED by the City Council of the City of Berkeley as follows:

WHEREAS, the City is proposing to adopt various enumerated changes and modifications to the California Building Code, as set forth below; and

WHEREAS, Health & Safety Code §17958 allows the City to make modifications or changes to the California Building Code and other regulations adopted pursuant to Health & Safety Code §17921(a) which result in more stringent local requirements; and

WHEREAS, Health & Safety Code §17958, §17958.5 and §17958.7 require that such changes be supported by findings made by the governing body that such more stringent local requirements are necessary because of "local climatic, geological, or topographical conditions"; and

WHEREAS, such findings must be made available as a public record and a copy thereof with each such modification or change shall be filed with the California Building Standards Commission:

NOW THEREFORE, BE IT RESOLVED by the Council of the City of Berkeley that it finds that each of the various proposed changes or modifications to the California Building Code which are listed enumerated below are reasonably necessary because of local conditions in the area encompassed by the City of Berkeley, as set forth below:

A. LOCAL CONDITIONS

1. Climatic Conditions.

a. Discussion.

The City of Berkeley is located at the geographic center of the Bay Area. The western limits are defined by the Bay at near sea level and the eastern limits by the abruptly rising Berkeley Hills to 1,200 feet. The eastern limit faces open parklands and open space (covered with vegetative fuel loading) to the east and is exposed to a unique danger from wild land fires during periods of hot, dry weather in the summer months. Many of the Berkeley homes in this area have wood shake and shingle roofs and are surrounded by brush type vegetation. The situation is made even worse by the negative effects of high wind conditions during the fire season. During May to October, critical climatic fire conditions occur where the temperature is greater than 80°F, the wind speed is greater than 15 mph, fuel moisture is less than or equal to 10.0 percent, wind direction is from north to the east-southeast and the ignition component is 65 or

greater. These conditions occur more frequently during the fire season but this does not preclude the possibility that a serious fire could occur during other months of the year. The critical climate fire conditions create a situation conducive to rapidly moving, high intensity fires. Fires starting in the wild land areas along the easterly border are likely to move rapidly westward into Berkeley's urban areas.

In September 1923, critical climatic fire conditions were in effect and Berkeley sustained one of the most devastating fires in California's history. A fire swept over the range of the hills to the northeast of Berkeley and within two hours was attacking houses within the City limits. A total of 130 acres of built-up territory burned. 584 Berkeley buildings were wholly destroyed and about 30 others seriously damaged. By far the greater portion were single-family dwellings, but among the number were 63 apartments, 13 fraternity, sorority and students' house clubs and 6 hotels and boarding houses.

In December of 1980, during critical climatic fire conditions, a small fire started at Berkeley's northeast limits and within minutes five homes were totally destroyed by fire.

On October 20, 1991, a disastrous firestorm swept down from the Oakland hills. Within the first few hours, thousands of people were evacuated. Ultimately over 3,000 dwelling units were destroyed, of which more than 70 were in Berkeley. This fire matched the pattern established by the fires of 1923 and 1980. Additionally, the conditions that led to it were the same as the conditions that led to a 1970 fire that destroyed 70 homes in Oakland.

In addition, Berkeley frequently experiences cold winter days with accompanying temperature inversions which trap wood smoke near the ground and increase air pollution. These stagnant air days are marked by increased acute respiratory disease, including asthma, and a small but consistent increase in deaths from heart and lung disease. During these periods the usual onshore flow of clean marine air ceases and wood smoke air pollution becomes an area-wide phenomena. Studies by the Bay Area Air Quality Management District suggest that between 20 and 50% of air polluting small particles come from residential wood burning.

b. Summary.

Local climatic conditions of limited rainfall, low humidity, high temperatures and high winds along with existing building construction create extremely hazardous fire conditions that adversely affect the acceleration intensity and size of fires in the City. The same climatic conditions may result in the concurrent occurrence of one or more fires, which may spread in the more populated areas of the City without adequate fire department personnel to protect against and control such a situation.

2. Geological Conditions.

a. Discussion.

The City of Berkeley is in a region of high seismic activity and is traversed by the Hayward fault. It has the San Andreas earthquake fault to the west and the Calaveras earthquake fault to the east. All three faults are known to be active as evidenced by the damaging earthquakes they have produced in the last 100 years and can, therefore, be expected to do the same in the future. Of primary concern to Berkeley is the Hayward Fault, which has been estimated to be capable of earthquakes exceeding a magnitude of 7.0 on the Richter scale. It extends through many residential areas and passes through a small business district and the University of California. A large number of underground utilities cross the fault, including major water supply lines. Intensified damage during an earthquake may be expected in those areas of poorer ground along the Bay, west of Interstate 80 and in known slide areas, as well as hillside areas (occupied mainly by dwellings) located within or near the fault zone; some areas are steep and have been subjected to slides.

The waterfront areas and areas in the Berkeley flatlands immediately adjacent to creeks and water streams present a major potential for soil liquefaction hazard. The Eastshore Freeway may liquefy and fail under heavy shaking or it may be inundated by a tsunami. The north hill area is most susceptible to landslides because of the presence of soft and unconsolidated sediments, extensive water content in the ground and the steepness of slopes.

Great potential damage can be related to the likely collapse of freeway overpasses. In the event of a major earthquake, Berkeley's firefighting capability could be greatly affected by loss of its main water supply. There is also the strong possibility of inundation due to failure of water reservoirs in the hill area. For the purposes of disaster response planning, Summit Reservoir at the Kensington border in Berkeley is assumed to leak badly. Design is underway for a replacement. Berryman Reservoir North has been demolished and replaced by a steel tank. Berryman Reservoir South has received a seismic upgrade. Additional potential situations following an earthquake include broken natural gas mains and ensuing fire in the streets, building fires, as the result of broken service connections, the need for rescues for collapsed structures, and the rendering of first aid and other medical attention to a large number of people.

b. Summary.

Local geological conditions include high seismic activity and large concentrations of residential type buildings as well as a major freeway. Since the City of Berkeley is located in a densely populated area having buildings and structures constructed over and near a vast array of fault systems capable of producing major earthquakes, the modifications cited herein are intended to better limit property damage as a result of a seismic activity and to establish criteria for repair of damaged properties following a local emergency.

3. Topographical Conditions.

a. Discussion.

The City of Berkeley has many homes built throughout the urban portion of the Berkeley Hills that are reached by narrow and often winding paved streets which hamper access for fire apparatus and escape routes for residents. In addition, many of the hillside homes are on the extreme eastern edge of the City and require longer response times for the total required firefighting force. Panoramic Way and other hill areas with narrow and winding streets may face the problem of isolation from the rest of the City.

In the areas north and south of the University of California, there are large concentrations of apartments, rooming houses, and fraternity and sorority houses. A number of apartments in these areas are of wood frame construction and are up to five stories in height from grade level. The fire potential is moderately high due to building congestion, heights, and wood shingle roof coverings and siding. Fires can be expected to involve large groups of buildings in these areas. It is noted that Berkeley most probably has more physically impaired people per capita than any other community in the United States. It is estimated that 14% of the approximate population of 112,580 per 2010 Census in Berkeley are physically impaired. Emergency egress and rescue for these people are more difficult during a fire or other life safety emergency.

The East Shore Freeway, running along the western edge of Berkeley, is one of the most heavily used and congested freeway sections in the state. Noted impacts have been increased rates of asthma, particularly among children. The proximity of Berkeley to this freeway and its location downwind from prevailing patterns negatively affects air quality, thus increasing the impact of wood smoke in Berkeley.

b. Summary.

Local topographical conditions include hillside housing with many narrow and winding streets with slide potential for blockage in the abruptly rising Berkeley hills. These conditions create an extremely serious problem for the Fire Department when a major fire or earthquake occurs. Many situations will result in limiting or total blockage of fire department emergency vehicular traffic, overtaxed fire department personnel and a total lack of resources for the suppression of fire in buildings and structures in the City of Berkeley. In addition, under these local conditions, the presence of wood smoke can cause increased disease, including asthma, and increased deaths from heart and lung disease.

B. REASONABLE NECESSITY

The proposed changes and modifications to the California Building Code are reasonably necessary due to the local conditions set forth above because they reduce the risks to life and property which result from the City's climate and location astride an active earthquake fault. They are further justified for the reasons set forth below.

In adopting the California Building Code as the Berkeley Building Code, the City proposes to make certain substantive modifications whose effect is to impose more stringent requirements locally than are mandated by the California Building Code.

These are (1) building standards relating to increased fire resistance in Fire Zones 2 and 3 (Berkeley Building Code Chapter 19.28 Article 2, Berkeley Residential Code Chapter 19.29 Section 19.29.050); (2) standards to reduce the risk caused by wood smoke under the climatic conditions of Berkeley (Berkeley Building Code Chapter 19.28 Article 3); (3) existing building standards for retrofit of certain building types with seismic weaknesses (Berkeley Building Code Chapter 19.28 Article 5); (4) standards for repair of buildings damaged in a disaster (Berkeley Building Code Chapter 19.28, Article 6); (5) various technical amendments to structural standards (Berkeley Building Code Chapter 19.28 Article 7, Berkeley Residential Code Chapter 19.29 Section 19.29.060); (6) provisions requiring installation of automatic gas shut-off valves (Berkeley Plumbing Code Chapter 19.34 Section 19.34.040); (7) provisions requiring retrofitting of unreinforced masonry buildings (Berkeley Building Code Chapter 19.38); and (8) provisions governing the identification and analysis of soft, weak, or open front buildings (Berkeley Building Code Chapter 19.39) These more stringent local requirements are reasonably necessary to address risks created by local conditions set forth above for the following reasons.

a. The modifications made by Chapter 19.28, Article 2, and Chapter 19.29 Section 19.29.050 reduce the risk to life and property created by wildfires in the hill areas of the City.
b. The modifications made by Chapter 19.28, Article 3, reduce the risk to life created by wood smoke throughout the City.
c. The modifications made by Chapter 19.28, Article 5, Article 6, Article 7, Chapter 19.29 Section 19.29.060, Chapter 19.34 Section 19.34.040, Chapters 19.38 and 19.39 reduce the risk to life and property of, and hasten recovery from, predictable future natural disasters.

BE IT FURTHER RESOLVED by the City Council that certain local amendments to the Codes are not more stringent than the provisions of the California Codes but rather cover matters not addressed by those Codes or are administrative in nature and do not modify building standards pursuant to Health & Safety Code §17958, §17958.5 and §17958.7. These amendments establish administrative regulations for the effective enforcement of building standards throughout the City of Berkeley as follows:

Chapter 19.28, Article 1, (Administrative provisions and definitions) and Article 4 (Construction in the Right of Way) and administrative amendments to Chapter 19.29 (California Residential Code), to Chapter 19.30 (California Electrical Code), to Chapter 19.32 (California Mechanical Code), to Chapter 19.34 (California Plumbing Code), to Chapter 19.36 (California Energy Code) and to Chapter 19.37 (California Green Building Standards Code) are local amendments to the California Codes affecting administration provisions only.

BE IT FURTHER RESOLVED that this Resolution shall go into effect on January 1, 2014.

BE IT FURTHER RESOLVED that Resolution No. 65,083–N.S. is hereby rescinded effective January 1, 2014.