

**CITY OF HAYWARD**  
**AGENDA REPORT**

AGENDA DATE 06/28/05  
AGENDA ITEM 7  
WORK SESSION ITEM \_\_\_\_\_

**TO:** Mayor and City Council  
**FROM:** Director of Community and Economic Development  
**SUBJECT:** The 2004 California Electrical Code

**RECOMMENDATION:**

It is recommended that Council adopt the attached resolution of findings and introduce the attached ordinance adopting the 2004 edition of the California Electric Code.

**BACKGROUND:**

The State of California tri-annually reviews the full body of Codes for adoption at the State level. Hearings are conducted at the State Building Standards Commission and local building departments are mandated to enforce the State adopted code at the local level. In turn, every three years the Council reviews and adopts the State revisions to the Codes. At this tri-annual review, the State is only adopting the California Electrical Code.

The California Electrical Code governs all electrical installations in the City. Local jurisdictions are allowed to make reasonable amendments, with express findings, that such modifications or changes are necessary because of local climatic, geological or topographical conditions. This action is exempt from CEQA review pursuant to Section 15378(b)(1) of the CEQA Guidelines.

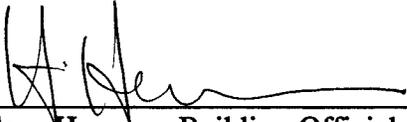
In 2002, Council reviewed and adopted as amended, the 2001 edition of the California Electrical Code. The purpose of this evening's item is to hear public input and introduce the Ordinance adopting the 2004 edition of the Code and any City amendments.

The California Electrical Code and City of Hayward amendments proposed for adoption this evening are exactly the same as the Electrical Code and City of Hayward amendments adopted by Council in 2002. The Administrative Provisions, however, are now authored by the International Code Council rather than the International Conference of Building Officials.

Given there were no new amendments and no comments were received on the Electrical Code during the previous review, the members of the Building Code Review Committee were sent a copy of the proposed Ordinance for review. To date no comment has been received from any member of the Committee.

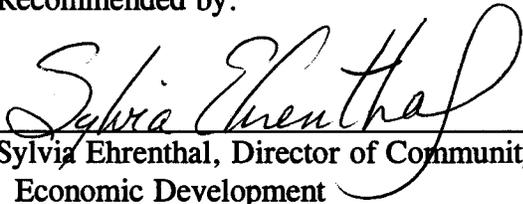
Public notice has been sent for the introduction of the Ordinances at the June 28, 2005 Council Meeting and published in the Daily Review on June 18, 2005. Notices were sent to building trade organizations, labor organizations, developers, construction companies, architects, contractors and other interested parties.

Prepared by:



Hilary Herman, Building Official

Recommended by:



Sylvia Ehrental, Director of Community & Economic Development

Approved by:



Jesús Armas, City Manager

Exhibits: Proposed Electrical Code Ordinance and Resolution

# DRAFT

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

*Mue*  
*6/22/05*

AN ORDINANCE TO BE KNOWN AND DESIGNATED AS THE ELECTRICAL CODE OF THE CITY OF HAYWARD; REGULATING THE INSTALLATION, ALTERATION, REPAIR, AND MAINTENANCE OF ELECTRICAL WIRING, ELECTRICAL FIXTURES, AND OTHER ELECTRICAL APPLIANCES AND EQUIPMENT; PROVIDING FOR THE ISSUANCE OF PERMITS AND COLLECTION OF FEES; AND REPEALING ORDINANCE NO. 02-16 AND ALL AMENDMENTS THERETO.

THE CITY COUNCIL OF THE CITY OF HAYWARD DOES ORDAIN AS FOLLOWS:

Section 1. Ordinance No. 02-16, and all amendments thereto, are hereby repealed and, in substitution thereof, a new Electrical Code for the City of Hayward is hereby enacted to read as follows:

**ELECTRICAL CODE  
OF THE CITY OF HAYWARD**

**SEC. 100. CALIFORNIA ELECTRICAL CODE, ADOPTION BY REFERENCE.** (Addition) The 2004 Triennial Edition of the California Electrical Code, Part 3, Title 24, California Code of Regulations (which is based upon the National Electrical Code, 2002 Edition, published by the National Fire Protection Association) and the International Code Council Electrical Code Administrative Provisions, 2003 Edition published by the International Code Council, as contained in the 2002 National Electrical Code, as modified by the amendments, additions, and deletions set forth hereinafter, are hereby adopted by reference as the Electrical Code of the City of Hayward, regulating the installation, alteration, repair, and maintenance of electrical wiring, electrical fixtures, and other electrical appliances and equipment in the City of Hayward.

A copy of the California Electrical Code is on file in the office of the City Clerk, to which reference is hereby made for further particulars. Reference is also made to the State's Matrix Adoption Tables which identify local Building Official's responsibilities and enforce certain amendments.

Reference is further made to the Administrative provisions of the Uniform Housing Code and Building Code of the City of Hayward. Whenever there is a conflict in the administrative portions of the various standards referenced the more restrictive shall govern.

**CHAPTER 1  
GENERAL**

**SEC. 101 TITLE.** (Amendment) This ordinance may be cited and shall be known as the "Electrical Code of the City of Hayward."

**CHAPTER 2  
ORGANIZATION AND ENFORCEMENT**

**SEC. 201.3 RIGHT OF ENTRY.** (Amendment) Upon presentation of proper credentials, the Building Official or the Building Official's duly authorized representative, after having obtained the consent of the owner or occupant, may enter at reasonable times during daylight hours and for probable cause, any structure, building, or premises in the City to perform any duty imposed upon the owner or occupant by this code. Except in emergency situations, the Building Official or the Building Official's duly authorized representative shall not enter any building, structure, or premises without the consent of the owner or occupant thereof, unless he possesses an inspection warrant obtained and issued in the manner provided by section 1822.50 et seq. of the Code of Civil Procedure of the State of California or any amendments to or replacements thereof.

Except as hereinabove permitted, no person shall hinder or prevent the Building Official or his or her duly authorized representative, while in the performance of the duties described above, from entering upon and into any building, structure, or premises under the Building Official's jurisdiction, at all reasonable hours during daylight hours and for probable cause, for the purpose of inspecting the same to determine whether or not the provisions of the Code are observed therein.

**SEC. 203 BUILDING ADVISORY COMMITTEE - ORGANIZATION.**

(Amendment) In order to review the determinations made by the Building Official concerning the suitability of alternate materials and methods of construction and to make recommendations to the City Council concerning amendments to this or any other applicable Code, a Building Advisory Committee consisting of five members qualified by experience and training to pass upon matters pertaining to building construction shall be appointed by the City Manager as the occasion arises. The committee shall be the Board of Appeals.

The Building Official shall be an ex-officio member of the Building Advisory Committee and shall act as secretary. The Building Advisory Committee shall adopt reasonable rules and regulations for conducting its hearings and investigations.

Any person directly affected by a determination of the Building Official relative to the suitability of alternate materials and methods of construction may request a review of the determination by the Building Advisory Committee. The appeal shall be in writing and filed at the office of the Building Official within 30 days of the Building Official's determination. The appellant shall agree to bear the expense of any tests required by the Committee in connection with the appeal. The Committee shall render its findings and decisions to the Building Official with a copy to the appellant. The Committee's decision shall be final. Any reference in this code to "Board of Appeals" shall mean the Building Advisory Committee and its decision shall be final.

**SEC. 204 VIOLATIONS AND PENALTIES.** (Amendment) It shall be unlawful for any person, firm, or corporation, whether as owner, lessee, sublessee, or occupant, to erect, construct, enlarge, alter, repair, move, improve, remove, demolish, equip, use, occupy, or maintain any building or premises, or cause or permit the same to be done contrary to or in violation of the provisions of this Code or any order issued by the Building Official hereunder.

Any person, firm, or corporation violating any of the provisions of this code shall be guilty of a criminal offense and subject to the penalties set forth in Chapter 1, Article 3, Section 1-3.00 et seq. of the Hayward Municipal Code.

CHAPTER 3  
PERMITS AND INSPECTIONS

APPLICATION FOR PERMITS

**SEC. 302.4 TO WHOM PERMITS MAY BE ISSUED.** (Addition) Permit may be issued only to a person holding a valid, unexpired State of California Electrical Contractor's license except when otherwise provided in this section.

Any permit required by this code may be issued to any person to do any work regulated by this code in a single family dwelling used exclusively for living purposes, including the usual accessory buildings and quarters in connection with such buildings, provided the applicant is the owner and occupant of such buildings, accessory buildings, or quarters.

**SEC. 304.1 PERMIT FEES.** (Amendment) Before any permit required by this code is issued, the applicant shall pay to the Building Official the fees for each building or structure as established from time to time by resolution of the City Council, except as otherwise provided for herein.

**EXCEPTION:** The Building Official is hereby authorized to waive electrical permit fees for minor repairs and rehabilitation for single family dwellings where the applicant's total verified household income is consistent with "State of California Department of Housing and Community Development Low Income Level of Alameda County" established in the City of Hayward Master Fee Schedule, Chapter One, Part E: Gross Household Income.

**SEC. 304.2 PLAN REVIEW FEES.** (Amendment) When a plan or other data is required to be submitted by subsection (b) of section 302 and not otherwise included in the plan review of a new building or addition, a plan review fee shall be paid at the time of issuance of the permit. When plans are incomplete or changed so as to require additional plan review, an additional plan review fee shall be charged at the rate established for labor costs from time to time by applicable resolution of the City Council.

**SEC. 304.4.2. FEE.** (Amendment) An investigation fee, in addition to the permit fee, shall be collected whether or not a permit is then or subsequently issued. The investigation fee shall be equal to the amount of the permit fee required by this code. The minimum investigation fee shall be the same as the minimum fee set forth in section 304 (b). The payment of such investigation fee shall not exempt any person from compliance with all other provisions of this Code nor from any penalty prescribed by law.

**SEC. 304.6 PENALTY FEE.** (Addition) Any person who begins any electrical work for which a permit is required without first having applied for a permit, if subsequently permitted to obtain a permit, shall pay double the permit fee, with a minimum of \$86.00. Notwithstanding the foregoing, the payment of such double fee shall not relieve any person from fully complying with the requirements of this Code in the execution of the work nor from any other penalties prescribed herein.

**SEC. 305.5 REINSPECTION.** (Amend the second to last paragraph to read as follows):

To obtain a reinspection, the applicant shall pay the prescribed fee as set forth in the City Council resolution establishing fees. Payment shall be made prior to reinspection.

**SEC. 305.6 INSPECTION RECORD CARD.** (Addition) Work requiring a permit shall not be commenced until the permit holder or their agent shall have posted an inspection record card in a conspicuous place on the premises and in such position as to allow the Building Official conveniently to make the required entries thereon regarding inspection of the work. This card shall be maintained in such position by the permit holder until final approval has been granted by the Building Official.

There shall be a final inspection and approval on all buildings and structures when completed and ready for occupancy or use.

TABLE 3-A  
ELECTRICAL PERMIT FEES

(Delete Schedule and Add the Following Note)

NOTE: Fees are as established from time to time by City Council resolution.

**AMENDMENTS, ADDITIONS, AND DELETIONS TO CALIFORNIA ELECTRICAL CODE.** Set forth below are the local amendments, additions, and deletions to the California Electrical Code, 2004 Edition. Chapter and section numbers used herein are those of the California Electrical Code.

CHAPTER 1  
GENERAL

ARTICLE 100  
DEFINITIONS

C. ADDITIONAL WORDS AND PHRASES (Addition)

CITY or THE CITY: "City" or "The City" shall mean the City of Hayward unless the context requires otherwise.

CITY COUNCIL: "City Council" shall mean the City Council of the City of Hayward.

ELECTRICAL CONTRACTOR: "Electrical Contractor" means a contractor in possession of a valid license issued in accordance with the provisions of the State of California Contractors License Law.

ELECTRICAL INSPECTOR: The "Electrical Inspector" is the Building Official of the City of Hayward or his or her authorized representative.

ELECTRICAL WORK: "Electrical Work" means and includes the installation, construction, maintenance, and repair of electrical equipment.

EXPOSED WIRING: "Exposed Wiring" means electric wiring not rendered inaccessible by the structure or finish of the building. Open wiring within basements or under floors rendered accessible by means of doors or openings shall be considered as exposed wiring.

H.E.C.: "H.E.C." means Hayward Electrical Code.

PERSON: "Person" is a natural person, his or her heirs, executors, administrators, or assignees, and also includes a firm, partnership, or corporation, its or their successors or assignees, or the agent of any of the aforesaid.

SINGLE FAMILY DWELLING: "Single Family Dwelling" shall mean a building designed for the occupancy of one family.

## ARTICLE 210 BRANCH CIRCUITS

SEC. 210.5 (c) UNGROUNDED CONDUCTORS OF MULTIWIRE BRANCH CIRCUITS IN RACEWAY. (Addition) Ungrounded conductors of a multiwire branch circuit shall each be of a color or other distinguishing marking to identify the feeder phase by which it is supplied and each conductor of the same identification shall be connected to the same feeder.

Required colors for identification are as follows:

120/240 volt 3 wire conductors: Black, Red

120/240 volt 4 wire conductors: Black, Orange, Red or Blue  
120/208 volt 4 wire conductors: Black, Red, Blue  
277/480 volt 4 wire conductors: Brown, Purple, Yellow

This subsection (c) applies to industrial and commercial construction only.

#### ARTICLE 230 SERVICES

SEC. 230.70 (a) LOCATION. (Amendment) The service disconnecting means shall be installed on the exterior of any residential structure or within a cabinet or electrical equipment room with Fire Department access provided.

#### ARTICLE 250

SEC. 250.66. (Amendment) Amended by deleting Sections No. (a) and (b)

#### ARTICLE 300

SEC. 300.11 (a). (Addition) Low voltage (50 volts and less) communications, alarm, signaling systems, and similar systems shall be supported as provided above at not to exceed 4-1/2 foot intervals within buildings.

EXCEPTION: In suspended ceilings, low voltage (50 volts and less) systems referred to above shall be supported at intervals not to exceed eight feet.

#### ARTICLE 770 OPTICAL FIBER CABLE AND RACEWAYS

SEC. 770-8. (Add) Optical fiber cables shall be supported at intervals not to exceed 4-1/2 feet.

EXCEPTION: See Section 300-11 (a) exception

SECTION 2. In accordance with the provisions of Section 620 of the City Charter, this ordinance shall become effective 30 days from and after the date of its adoption.

INTRODUCED at a regular meeting of the City Council of the City of Hayward, held the \_\_\_\_ day of \_\_\_\_\_ 2005, by Council Member \_\_\_\_\_.

ADOPTED at a regular meeting of the City Council of the City of Hayward held the \_\_\_\_ day of \_\_\_\_\_, 2005, by the following votes of members of said City Council.

AYES:

NOES:

ABSTAIN:

ABSENT:

APPROVED: \_\_\_\_\_  
Mayor of the City of Hayward

DATE: \_\_\_\_\_

ATTEST: \_\_\_\_\_  
City Clerk of the City of Hayward

APPROVED AS TO FORM:

\_\_\_\_\_  
City Attorney of the City of Hayward

# DRAFT

HAYWARD CITY COUNCIL

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

*me*  
*6/22/05*

**RESOLUTION FINDING AND DETERMINING THE NEED  
FOR CHANGES OR MODIFICATIONS TO THE  
CALIFORNIA ELECTRICAL CODE, 2004 TRIENNIAL  
EDITION**

WHEREAS, section 17958 of the California Health and Safety Code requires the adoption by the City of Hayward of regulations imposing the same requirements of certain National Industry Codes as specified in Health and Safety Code section 17922 and Housing and Community Development Commission regulations promulgated there under; and

WHEREAS, Health and Safety Code section 17958.5 permits a city to make changes or modifications to the National Industry Codes as deemed reasonably necessary.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Hayward hereby finds and determines that, in addition to administrative changes, there is a need to adopt the modifications of the following sections of the California Electrical Code, 2004 Triennial Edition, by reason of local climatic, geological, and topographical conditions.

1. CHAPTERS 1, 2, and 3. GENERAL AND ADMINISTRATIVE PROVISIONS. The California Electrical Code, as printed, does include detailed administrative provisions, however, the City of Hayward elects to adopt the 2003 International Code Council Electrical Code Administrative Provisions.

2. ARTICLE 210. BRANCH CIRCUITS. Many neutral conductors of multiwire branch circuits are overloaded due to improper phasing of conductors, splices, and connection of devices. Color coding of the ungrounded conductors of a multiwire branch circuit is a safety as well as a design consideration of safe and proper wiring. Many electrical installations are installed with the NEC minimum requirements as the only design criteria. Failure to connect the proper conductor to devices supplied by multiwire branch circuits can result in overloading of the unprotected neutral conductor to as much as three times its allowable ampacity or, in the case of two four-wire circuits, to as much as six times its allowable ampacity. The resultant over-heating of a neutral wire is no less a hazard than that of an ungrounded conductor.

The identification of ungrounded conductors of a multiwire branch circuit permits the electrician to install devices in a manner that will result in a balancing of the phase loadings and neutral load. Detection of improper phasing of a multiwire branch circuit by the inspecting authority is extremely difficult without conductor identification and virtually

impossible when making a final inspection of work that is not energized, as is often the case. The proposal, as written, would offer a simple means for the electrician, inspector, and subsequent electricians to determine and maintain correct circuit phasing in industrial and commercial construction where this is likely to occur.

These amendments are enacted pursuant to earthquake vulnerability as a result of having a substantial portion of the residential, commercial, and industrial areas of the City of Hayward within the Alquist-Priolo Act Special Studies Zone, requiring special geologic studies prior to development. This fact increases the likelihood of seismic disturbances of substantial magnitude occurring and causing consequent damage.

3. ARTICLE 230. SERVICES. The need for this addition to the model code requirements is justified by safety considerations. The need to disconnect all current carrying conductors within a structure by occupants or Fire Department personnel in case of fire or other emergency, and the replacement of wire seals by locking rings on meter bases by Pacific Gas and Electric, make this requirement necessary.

4. ARTICLE 300. WIRING METHODS. The need for this addition to the model code is for the purpose of increasing safety within buildings in an active seismic area. By requiring that these systems be supported, the proposal as written, should increase safety in low voltage circuits and avoid the problem of cables falling through the ceiling in case of seismic activity. It should also provide easier response for emergency personnel as they conduct rescue operations through the building.

5. ARTICLE 770. OPTICAL FIBER CABLES (See UPS). The proposal, as written, will bring it into conformity with Article 300 requirements, and should also provide the increased safety needed in an active seismic area as a result of these cables being supported.

BE IT FURTHER RESOLVED that the aforementioned amendments to the California Electrical Code, 2004 Triennial Edition, are based on local climatic, geological, or topographical conditions. The "Findings of Facts" contained herein address present local conditions which either singularly or in combination cause the aforementioned amendments to be adopted. The following local conditions have an adverse effect on the prevention and control of major loss fires, thereby making necessary the above changes or modifications in the National Electrical Code and the California Electrical Code in order to provide a reasonable degree of fire and life safety in this community.

1. CLIMATIC
  - a. Precipitation: Precipitation ranges from 15 to 24 inches per year with an average of approximately 17.58 inches per year. 95 percent falls during the months of October through April, and 5 percent from May through September.

- b. **Relative Humidity:** Humidity remains in the middle range most of the time. It ranges from 41 percent to 68 percent during the year.
- c. **Temperatures:** High temperatures have been recorded in the low 100's F. Average summer highs are in the 73 range with an average annual maximum temperature of 66 F.
- d. **Winds:** Prevailing winds are from the West, Northwest (WNW). However, winds are experienced from virtually every direction at one time or another. Velocities are generally in the 14 mph to 23 mph range, gusting to 25 to 35 mph. Forty mile-per-hour winds are experienced occasionally and higher have been registered. During the winter season, strong, dry, and gusty winds from the north move through the areas for several days, creating extremely dry conditions.
- e. **Summary:** These local climatic conditions affect the acceleration, intensity, and size of fires in the community. Times of little or no rainfall or of low humidity and high temperatures create extremely hazardous conditions, particularly as they relate to wood shake and shingle roof fires and fires involving buildings. During wild land and wood shake and shingle roof fires, winds can carry sparks and burning brands to other roofs, thus spreading the fire and causing conflagrations. In building fires, winds can literally force fire back into buildings and can create a blowtorch effect, in addition to preventing "natural" ventilation and cross-ventilation efforts.

## 2. GEOLOGICAL AND TOPOGRAPHIC

- a. **Vegetation:** Dry grass and brush are common in the hills and open-space areas adjacent to built-up locations during six to eight months of each year. Many of these areas frequently experience wild land fires which threaten nearby buildings, particularly those with wood roofs or sidings.
- b. **Hills, Creeks, Canals, Freeways, Railways, Housing Tracts, Large Buildings, Building Complexes, and the Airport:** These entire surface features, both natural and man-made, have a major adverse effect upon the road and street layout in the City of Hayward, including major traffic routes. These conditions limit the number, and cause indirect routing, of major arterial streets for normal traffic as well as emergency vehicle response.
- c. **Terrain:** Areas with buildings include level, sloping, and rolling terrain. This terrain is not dissimilar to terrain in other locations which have experienced

major conflagrations. The City of Hayward is in an active seismic area and may be subject to ground shaking and surface rupture.

- d. **Roads and Streets:** As noted above, the limited number and the indirect routing of roads and streets in the City of Hayward create heavy, slow traffic conditions and excessively long travel routes from point to point.
- e. **Population:** The current and rapidly growing population in the City creates two fire protection problems:
  - 1) The more people, the more emergency incidents requiring fire department response. The greater the frequency of alarms, the greater the chance there will be simultaneous emergency incidents requiring fire department response. This results in longer response times and/or few fire companies to respond to any emergency within this jurisdiction; and
  - 2) The more people, the more traffic congestion during a greater part of the day. Such traffic congestion not only slows fire department response but often restricts access to fire scenes.
- f. **Buildings, Landscaping and Clearances:** Many building complexes are of designs which greatly limit the approach to and accessibility by Fire Department and other emergency resources. Many houses and other buildings with wood roofs and/or sidings are close together and fire will readily spread from one to another by both radiation and convection of flying brands.
- g. **Summary:** Essentially, the above local geological and topographical conditions present fire frequency, magnitude, exposure, and accessibility problems and have a negative impact upon the response capability of the Fire Department and other emergency response efforts. The quantity of emergency resources that can arrive within an effective time is limited. The time in which they can respond is extended due to lengthy travel distances and traffic congestion.

3. **CONCLUSION.** Local climatic, geological and topographic conditions have a definite impact upon the frequency, spread and acceleration, intensity and size of fire and other structural threats involving buildings in Hayward. Furthermore, they have an adverse impact upon the number of Fire Department and other emergency resources which can be brought to bear in an expeditious period of time to resolve or reduce threats to life and property. Therefore, it is found to be reasonably necessary that the California Electrical Code as adopted by the City of Hayward be changed or modified to mitigate the effects of the above conditions.

BE IT FURTHER RESOLVED THAT THE City Clerk is hereby directed to cause a copy of this resolution, together with the modifications or changes to the California Electrical Code, to be filed with the state Department of Housing and Community Development.

IN COUNCIL, HAYWARD, CALIFORNIA \_\_\_\_\_, 2005

ADOPTED BY THE FOLLOWING VOTE:

AYES: COUNCIL MEMBERS:

MAYOR:

NOES: COUNCIL MEMBERS:

ABSTAIN: COUNCIL MEMBERS:

ABSENT: COUNCIL MEMBERS:

ATTEST: \_\_\_\_\_  
City Clerk of the City of Hayward

APPROVED AS TO FORM:

\_\_\_\_\_  
City Attorney of the City of Hayward