RESOLUTION NO. RES-13-0101

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LONG BEACH ADOPTING AND MAKING EXPRESS FINDINGS AND DETERMINATIONS RELATING TO THE ENACTMENT OF ADMINISTRATIVE AMENDMENTS, AND, WHERE APPROPRIATE, MORE RESTRICTIVE BUILDING STANDARDS CODE PROVISIONS THAN THOSE OF THE CALIFORNIA BUILDING CODE, CALIFORNIA RESIDENTIAL CODE, CALIFORNIA PLUMBING CODE, CALIFORNIA GREEN BUILDING STANDARDS CODE, CALIFORNIA FIRE CODE AND UNIFORM HOUSING CODE; FINDING THAT SAID AMENDMENTS AND MODIFICATIONS TO THE CODES ARE REASONABLY NECESSARY BECAUSE OF THE LOCAL CLIMATIC, GEOLOGICAL OR TOPOGRAPHICAL CONDITIONS EXISTING IN LONG BEACH; AND INSTRUCTING THE DIRECTOR OF DEVELOPMENT SERVICES AND THE FIRE CHIEF TO TRANSMIT SAID FINDINGS AND DETERMINATIONS TO THE CALIFORNIA BUILDING STANDARDS COMMISSIONS IN ACCORDANCE WITH CALIFORNIA HEALTH AND SAFETY CODE SECTIONS 13143.5, 17922, 17958.7 AND 18941.5

WHEREAS, California Health and Safety Code Sections 13143.5, 17922, and 18941.5 require all cities to adopt, as the City of Long Beach Building Standards Code, the California Building Standards Code adopted pursuant to the provisions of Chapter 4 of Part 2.5 of Division 13 of the California Health and Safety Code and the

OFFICE OF THE CITY ATTORNEY
CHARLES PARKIN, City Attorney
333 West Ocean Boulevard, 11th Floor
Long Beach, CA 90802-4664

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1997 Edition of the Uniform Housing Code adopted pursuant to the California Code of Regulations, Title 25, Division 1, Chapter 1, Subchapter 1, Article 5, Section 32; and

WHEREAS, Section 17958.5 of the California Health and Safety Code provides, in pertinent part, as follows:

> "...a city or county may make those changes or modifications in the requirements contained in the provisions published in the California Building Standards Code and the other regulations adopted pursuant to Section 17922, including, but not limited to, green building standards, as it determines, pursuant to the provisions of Section 17958.7, are reasonably necessary..."; and

WHEREAS, Section 17958.7 of the California Health and Safety Code provides, in pertinent part, as follows:

> "...before making any modifications or changes pursuant to Section 17958.5, shall make an express finding that such modifications or changes are reasonably necessary because of local climatic, geological or topographical conditions..."; and

WHEREAS, the City of Long Beach is traversed by the Newport-Inglewood Fault System, is near the San Andreas Fault, and is surrounded by other earthquake faults; and

WHEREAS, the Newport-Inglewood Fault System is a right lateral, local reverse slip type of faulting, approximately 75 km in length extending from Culver City to the north to Costa Mesa to the south of the City, has a slip rate of 0.6 mm/yr with a probable magnitude of 6.0 to 7.2, and is generally considered a major Southern California earthquake fault which may experience rupture at any time; and

WHEREAS, the City is located by the International Building Code in Seismic Design Category D, E or F, and the International Residential Code in Seismic Design Category D_2 or E, which is considered by experts to be one of the most active seismic regions in the world; and

OFFICE OF THE CITY ATTORNEY
CHARLES PARKIN, City Attorney
333 West Ocean Boulevard, 11th Floor
Long Beach, CA 90802-4664

WHEREAS, the Northridge Earthquake that occurred on January 17, 1994, was only a moderate Richter Magnitude 6.8 earthquake, yet caused damage in the Los Angeles Basin area to more than 115,000 buildings and the vacation of 21,000 residential units including 2,000 homes; and

WHEREAS, there were 57 persons who lost their lives in this earthquake, but there could have been several thousand more casualties, if the earthquake had occurred at midday during the workweek when most buildings would be occupied instead of at 4:31 a.m. on a holiday; and

WHEREAS, seismic experts report a significantly high probability for a larger earthquake occurring in the greater Los Angeles Basin area within the next 30 years; and

WHEREAS, unusually large earthquakes cause extraordinary stresses on buildings and structures and Fire Department resources which require more stringent building and fire life-safety regulations than would otherwise be required; and

WHEREAS, the City requires the extra margin of safety due to the necessity of providing on site fire protection in a seismic emergency when Fire Department resources could be greatly delayed or overwhelmed; and

WHEREAS, the Northridge Earthquake provided valuable insight into the vulnerabilities of some building systems, designs and materials to the unanticipated level of damage; and

WHEREAS, the City, in cooperation with other major jurisdictions within the region, are continuing efforts to protect the community from the hazards of future earthquakes through the Los Angeles Regional Uniform Code Program (LARUCP) which creates uniformity of building regulations adopted by the cities and county of the Los Angeles region; and

WHEREAS, the California Building Code, California Residential Code and California Fire Code has not yet fully addressed the lessons learned from the Northridge Earthquake; and

OFFICE OF THE CITY ATTORNEY
CHARLES PARKIN, City Attorney
333 West Ocean Boulevard, 11th Floor
Long Beach, CA 90802-4664

WHEREAS, the City is located within the Los Angeles Basin, one of the most polluted metropolitan areas and one of the most heavily modified watersheds in the nation, with a climate system capable of producing major winds, fire and rain related disasters and is a densely populated area having residential and nonresidential buildings constructed within a region where environmental resources are scarce; and

WHEREAS, the City is located within a Mediterranean, semi-arid climate system that produces warm dry summers and cool wet winters and thus receives approximately 13 inches of rain water per year on average; and

WHEREAS, the City is impacted by impermeable layer of clay that lies between the City's surface and the groundwater basin underneath the City, preventing precipitations that falls locally from replenishing the basin; and

WHEREAS, the City's groundwater pumping activities meets only half of the water demand of five hundred thousand Long Beach residents; and

WHEREAS, in February 2010, the Long Beach City Council adopted a Sustainable City Action Plan, which includes initiatives, goals and actions to create a more sustainable Long Beach, and specifically calls out goals for green building and sustainable development, urban nature, waste reduction, and water and energy conservation.

NOW, THEREFORE, in order to provide adequate protection under the unique local climatic and geological conditions set forth above, the City of Long Beach makes the following findings and determinations relative to the adoption of administrative amendments, and where appropriate, the adoption of more restrictive building standards code provisions than those of the California Building Code, California Residential Code, California Plumbing Code, California Fire Code and the Uniform Housing Code:

Section 1. Findings for more restrictive building standards code provisions amendments to the California Building Code, Part 2, Title 24 of the California Code of Regulations.

Section 18.40.010 – Amendment is necessary for administrative clarification, and

OFFICE OF THE CITY ATTORNEY
CHARLES PARKIN, City Attorney
333 West Ocean Boulevard, 11th Floor
Long Beach, CA 90802-4664

does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code. This amendment adopts the latest edition of the California Building Code and makes minor editorial changes.

Section 18.40.020 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code. This amendment makes minor editorial changes to reflect the state agencies and the applicable referenced sections.

Section 18.40.030 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code. This amendment reference the various amendments proposed to the California Building Code.

Section 18.40.040 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code. This amendment makes minor editorial changes to reflect that certain chapter, appendices, and/or sections deleted are non-mandatory provisions.

Section 18.40.050 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code. This amendment makes minor editorial changes to reference to a dictionary to be used for words not defined in the code since the IBC does not have such a reference.

Section 18.40.060 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code. This amendment makes minor editorial changes to clarify that the Building Official is authorized to make the final determination on the proposed occupancy of a structure where such use is not specifically provided for in the code.

Section 18.40.070 – Amendment is necessary for administrative clarification, and

OFFICE OF THE CITY ATTORNEY
CHARLES PARKIN, City Attorney
333 West Ocean Boulevard, 11th Floor
Long Beach, CA 90802-4664

does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code. This amendment makes minor editorial changes to reflect the appropriate reference to the City's Municipal Code for submission of construction documents.

Section 18.40.080 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code. This amendment makes minor editorial changes to reference the appropriate flood hazard information.

Section 18.40.090 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code. This amendment makes minor editorial changes to reflect the appropriate reference to the City's Municipal Code for flood related inspections.

Section 18.40.100 – Amendment is necessary on the basis of a local geologic condition. The modification to omit the importance factor from Equation 12.12-1 will ensure that a safe seismic separation distance is maintained for important facilities from adjoining structures. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

Section 18.40.110 – Amendment is necessary on the basis of a local geologic condition. Observed damages to one and two family dwellings of light frame construction after the Northridge Earthquake may have been partially attributed to vertical irregularities common to this type of occupancy and construction. In an effort to improve quality of construction and incorporate lesson learned from studies after the Northridge Earthquake, the modification to ASCE 7-10 Section 12.2.3.1 Exception 3 limits the number of stories and height of the structure to two stories will significantly minimize the impact of vertical irregularities and concentration of inelastic behavior from mixed structural systems. The amendment makes modification and changes to better limit

OFFICE OF THE CITY ATTORNEY
CHARLES PARKIN, City Attorney
333 West Ocean Boulevard, 11th Floor
Long Beach, CA 90802-4664

personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

Section 18.40.120 – Amendment is necessary on the basis of a local geologic condition. A joint Structural Engineers Association of Southern California (SEAOSC), Los Angeles County and Los Angeles City Task Force investigated the performance of concrete and masonry construction with flexible wood diaphragm failures after the Northridge earthquake. It was concluded at that time that continuous ties are needed at specified spacing to control cross grain tension in the interior of the diaphragm. Additionally, there was a need to limit subdiaphragm allowable shear loads to control combined orthogonal stresses within the diaphragm. Recognizing the importance and need to continue the recommendation made by the task force while taking into consideration the improve performances and standards for diaphragm construction today, this amendment require continuous tie spacing limit to 40 ft and to use 75% of the allowable code diaphragm shear to determine the depth of the sub-diaphragm in lieu of the 300 plf and is deemed appropriate and acceptable. Due to the frequency of this type of failure during the past significant earthquakes, various jurisdictions within the Los Angeles region have taken this additional step to prevent roof or floor diaphragms from pulling away from concrete or masonry walls. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

Section 18.40.130 – Amendment is necessary on the basis of a local geologic condition. The California Building Code has little to no information regarding the safe design and construction requirements for ceiling suspension systems subject to seismic loads. It is through the experience of prior earthquakes, such as the Northridge Earthquake, that this amendment is proposed so as to minimize the amount of bodily and building damage within the spaces in which this type of ceiling will be installed. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged

OFFICE OF THE CITY ATTORNEY
CHARLES PARKIN, City Attorney
333 West Ocean Boulevard, 11th Floor
Long Beach, CA 90802-4664

property following a local emergency.

Section 18.40.140 – Amendment is necessary on the basis of a local geologic condition. Results from studies after the 1994 Northridge Earthquake indicated that a lot of the damages were attributed to lack of quality control during construction resulting in poor performance of the building or structure. Therefore, this amendment requires special inspection for concrete with a compressive strength greater than 2,500 pounds per square inch. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

Section 18.40.150 – Amendment is necessary on the basis of a local geologic condition. In southern California, very few detached one- or two-family dwellings not exceeding two stories above grade plane are built as "box-type" structures, specially for those in hillside areas and near the oceanfront. Many steel moment frames or braced frames and/or cantilevered columns within buildings can still be shown as "regular" structures by calculations. With the higher seismic demand placed on buildings and structures in this region, the language in Sections 1705.11 Exception 3 of the California Building Code would permit many detached one- or two-family dwellings not exceeding two stories above grade plane with complex structural elements to be constructed without the benefit of special inspections. By requiring special inspections, the quality of major structural elements and connections that affect the vertical and lateral load resisting systems of the structure will greatly be increased. The exception should only be allowed for detached one- or two-family dwellings not exceeding two stories above grade plane assigned to Seismic Design category A, B and C. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

Section 18.40.160 – Amendment is necessary on the basis of a local geologic condition. The language in Section 1704.5 of the California Building Code permits the

OFFICE OF THE CITY ATTORNEY
CHARLES PARKIN, City Attorney
333 West Ocean Boulevard, 11th Floor
Long Beach, CA 90802-4664

owner to employ any registered design professional to perform structural observations with minimum guideline. However, it is important to recognize that the registered design professional responsible for the structural design has thorough knowledge of the building he/she designed. By requiring the registered design professional responsible for the structural design or their designee who were involved with the design to observe the construction, the quality of the observation for major structural elements and connections that affect the vertical and lateral load resisting systems of the structure will greatly be increased. Additional requirements are provided to help clarify the role and duties of the structural observer and the method of reporting and correcting observed deficiencies to the building official. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

Section 18.40.170 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code. This amendment makes minor editorial changes to reflect the appropriate reference to the City's Municipal Code for alternate test procedure.

Section 18.40.180 – Amendment is necessary on the basis of a local geologic and climatic condition. No substantiating data has been provided to show that wood foundation is effective in supporting buildings and structures during a seismic event while being subject to deterioration caused by the combined detrimental effect of constant moisture in the soil and wood-destroying organisms. Wood foundation systems, when they are not properly treated and protected against deterioration, have performed very poorly and have led to slope failures. Most contractors are typically accustomed to construction in dry and temperate weather in the Southern California region and are not generally familiar with the necessary precautions and treatment of wood that makes it suitable for both seismic event and wet applications. The proposed amendment takes the precautionary steps to reduce or eliminate potential problems that may result in using

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CHARLES PARKIN, City Attorney
333 West Ocean Boulevard, 11th Floor
Long Beach, CA 90802-4664

wood foundation systems that experience relatively rapid decay due to the fact that the region does not experience temperatures cold enough to destroy or retard the growth and proliferation of wood-destroying organisms. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic or climatic activity and to establish criteria for repair of damaged property following a local emergency.

Section 18.40.190 – Amendment is necessary on the basis of a local geologic condition. With the higher seismic demand placed on buildings and structures in this region, it is deemed necessary to take precautionary steps to reduce or eliminate potential problems that may result by following prescriptive design provisions that does not take into consideration the surrounding environment. Plain concrete performs poorly in withstanding the cyclic forces resulting from seismic events. In addition, no substantiating data has been provided to show that under-reinforced foundation walls are effective in resisting seismic loads and may potentially lead to a higher risk of failure. It is important that the benefit and expertise of a registered design professional be obtained to properly analyze the structure and take these issues into consideration. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

Section 18.40.200 – Amendment is necessary on the basis of a local geologic condition. With the higher seismic demand placed on buildings and structures in this region, precautionary steps are proposed to reduce or eliminate potential problems that may result for under reinforced footings located on sloped surfaces. Requiring minimum reinforcement for stepped footings is intended to address the problem of poor performance of plain or under-reinforced footings during a seismic event. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

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CHARLES PARKIN, City Attorney
333 West Ocean Boulevard, 11th Floor
Long Beach, CA 90802-4664

Section 18.40.210 – Amendment is necessary on the basis of a local geologic condition. No substantiating data has been provided to show that under-reinforced footings are effective in resisting seismic loads and may potentially lead to a higher risk of failure. Therefore, the amendment requires minimum reinforcement in continuous footings to address the problem of poor performance of plain or under-reinforced footings during a seismic event. With the higher seismic demand placed on buildings and structures in this region, precautionary steps are proposed to reduce or eliminate potential problems that may result by following prescriptive design provisions for footing that does not take into consideration the surrounding environment. It was important that the benefit and expertise of a registered design professional be obtained to properly analyse the structure and take these issues into consideration. This amendment reflects the recommendations by the Structural Engineers Association of Southern California (SEAOSC) and the Los Angeles City Task Force that investigated the poor performance observed in 1994 Northridge Earthquake. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

Section 18.40.220 – Amendment is necessary on the basis of a local geologic and climatic condition. No substantiating data has been provided to show that timber footings is effective in supporting buildings and structures during a seismic event while being subject to deterioration caused by the combined detrimental effect of constant moisture in the soil and wood-destroying organisms. Timber footings, when they are not properly treated and protected against deterioration, have performed very poorly. Most contractors are typically accustomed to construction in dry and temperate weather in the Southern California region and are not generally familiar with the necessary precautions and treatment of wood that makes it suitable for both seismic event and wet applications. The proposed amendment takes the precautionary steps to reduce or eliminate potential problems that may result by using timber footings that experience relatively rapid decay due to the fact that the region does not experience temperatures cold enough to destroy

OFFICE OF THE CITY ATTORNEY
CHARLES PARKIN, City Attorney
333 West Ocean Boulevard, 11th Floor
Long Beach, CA 90802-4664

or retard the growth and proliferation of wood-destroying organisms. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic or climatic activity and to establish criteria for repair of damaged property following a local emergency.

Section 18.40.230 – Amendment is necessary on the basis of a local geologic and climatic condition. No substantiating data has been provided to show that timber deep foundation is effective in supporting buildings and structures during a seismic event while being subject to deterioration caused by the combined detrimental effect of constant moisture in the soil and wood-destroying organisms. Timber deep foundation, when they are not properly treated and protected against deterioration, has performed very poorly. Most contractors are typically accustomed to construction in dry and temperate weather in the Southern California region and are not generally familiar with the necessary precautions and treatment of wood that makes it suitable for both seismic event and wet applications. The proposed amendment takes the precautionary steps to reduce or eliminate potential problems that may result by using timber deep foundation that experience relatively rapid decay due to the fact that the region does not experience temperatures cold enough to destroy or retard the growth and proliferation of wood-destroying organisms. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic or climatic activity and to establish criteria for repair of damaged property following a local emergency.

Section 18.40.240 – Amendment is necessary on the basis of a local geologic and climatic condition. No substantiating data has been provided to show that wood used in retaining or crib walls are effective in supporting buildings and structures during a seismic event while being subject to deterioration caused by the combined detrimental effect of constant moisture in the soil and wood-destroying organisms. Wood used in retaining or crib walls, when they are not properly treated and protected against deterioration, have performed very poorly. Most contractors are typically accustomed to construction in dry and temperate weather in the Southern California region and are not generally familiar

OFFICE OF THE CITY ATTORNEY
CHARLES PARKIN, City Attorney
333 West Ocean Boulevard, 11th Floor
Long Beach, CA 90802-4664

with the necessary precautions and treatment of wood that makes it suitable for both seismic event and wet applications. The proposed amendment takes the precautionary steps to reduce or eliminate potential problems that may result by using wood in retaining or crib walls that experience relatively rapid decay due to the fact that the region does not experience temperatures cold enough to destroy or retard the growth and proliferation of wood-destroying organisms. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic or climatic activity and to establish criteria for repair of damaged property following a local emergency.

Section 18.40.250 – Amendment is necessary on the basis of a local geologic condition. The overdriving of nails into the structural wood panel still remains a concern when pneumatic nail guns are used for wood structural panel shear wall nailing. Box nails were observed to cause massive and multiple failures of the typical 3/8-inch thick plywood during the 1994 Northridge Earthquake. The use of clipped head nails continues to be restricted from being used in wood structural panel shear walls where the minimum nail head size must be maintained in order to minimize nails from pulling through sheathing materials. Clipped or mechanically driven nails used in wood structural panel shear wall construction were found to perform much less in previous wood structural panel shear wall testing done at the University of California Irvine. The existing test results indicated that, under cyclic loading, the wood structural panel shear walls were less energy absorbent and less ductile. The panels reached ultimate load capacity and failed at substantially less lateral deflection than those using same size hand-driven nails. This amendment reflects the recommendations by the Structural Engineers Association of Southern California (SEAOSC) and the Los Angeles City Joint Task Force that investigated the poor performance observed in 1994 Northridge Earthquake. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

Section 18.40.260 – Amendment is necessary on the basis of a local geologic

OFFICE OF THE CITY ATTORNEY
CHARLES PARKIN, City Attorney
333 West Ocean Boulevard, 11th Floor
Long Beach, CA 90802-4664

condition. ICC-ES AC 155 Acceptance Criteria for Hold-downs (Tie-Downs) Attached to Wood Members is widely used to establish allowable values for hold-down connectors in evaluation reports. AC 155 uses monotonic loading to establish allowable values. Yet, cyclic and dynamic forces imparted on buildings and structures by seismic activity cause more damage than equivalent forces that are applied in a monotonic manner. However, the engineering, regulatory and manufacturing industries have not reached consensus on the appropriate cyclic or dynamic testing protocols. This condition is expected to continue for some time. This amendment continues to limit the allowable capacity to 75% of the acceptance report value to provide an additional factor of safety for statically tested anchorage devices. Steel plate washers will reduce the additional damage that can result when hold-down connectors are fastened to wood framing members. This amendment reflects the recommendations by the Structural Engineers Association of Southern California (SEAOSC) and the Los Angeles City Joint Task Force that investigated the poor performance observed in 1994 Northridge Earthquake. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

Section 18.40.270 – Amendment is necessary on the basis of a local geologic condition. The Structural Engineers Association of Southern California (SEAOSC) and the Los Angeles City Joint Task Force that investigated the damages to buildings and structures during the 1994 Northridge Earthquake recommended reducing allowable shear values in wood structural panel shear walls or diaphragms that were not substantiated by cyclic testing. That recommendation was consistent with a report to the Governor from the Seismic Safety Commission of the State of California recommending that code requirements be "more thoroughly substantiated with testing." The allowable shear values for wood structural panel shear walls or diaphragms fastened with staples are based on monotonic testing and does not take into consideration that earthquake forces load shear wall or diaphragm in a repeating and fully reversible manner. In

OFFICE OF THE CITY ATTORNEY
CHARLES PARKIN, City Attorney
333 West Ocean Boulevard, 11th Floor
Long Beach, CA 90802-4664

September 2007, limited cyclic testing was conducted by a private engineering firm to determine if wood structural panels fastened with staples would exhibit the same behavior as the wood structural panels fastened with common nails. The test result revealed that wood structural panel fastened with staples appeared to be much lower in strength and stiffness than wood structural panels fastened with common nails. It was recommended that the use of staples as fasteners for wood structural panel shear walls or diaphragms not be permitted to resist seismic forces in structures assigned to Seismic Design Category D, E and F unless it can be substantiated by cyclic testing. Furthermore, the cities and county within the Los Angeles region has taken extra measures to maintain the structural integrity of the framing of shear walls and diaphragms designed for high levels of seismic forces by requiring wood sheathing be applied directly over the framing members and prohibiting the use of panels placed over gypsum sheathing. This amendment is intended to prevent the undesirable performance of nails when gypsum board softens due to cyclic earthquake displacements and the nail ultimately does not have any engagement in a solid material within the thickness of the gypsum board. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

Section 18.40.280 – Amendment is necessary on the basis of a local geologic condition. The Structural Engineers Association of Southern California (SEAOSC) and the Los Angeles City Joint Task Force that investigated the damages to buildings and structures during the 1994 Northridge Earthquake recommended reducing allowable shear values in wood structural panel shear walls or diaphragms that were not substantiated by cyclic testing. That recommendation was consistent with a report to the Governor from the Seismic Safety Commission of the State of California recommending that code requirements be "more thoroughly substantiated with testing." The allowable shear values for wood structural panel shear walls or diaphragms fastened with stapled nails are based on monotonic testing and does not take into consideration that

OFFICE OF THE CITY ATTORNEY
CHARLES PARKIN, City Attorney
333 West Ocean Boulevard, 11th Floor
Long Beach, CA 90802-4664

earthquake forces load shear wall or diaphragm in a repeating and fully reversible manner. In September 2007, limited cyclic testing was conducted by a private engineering firm to determine if wood structural panels fastened with stapled nails would exhibit the same behavior as the wood structural panels fastened with common nails. The test result revealed that wood structural panel fastened with stapled nails appeared to be much lower in strength and stiffness than wood structural panels fastened with common nails. It was recommended that the use of stapled nail as fasteners for wood structural panel shear walls or diaphragms not be permitted to resist seismic forces in structures assigned to Seismic Design Category D, E and F unless it can be substantiated by cyclic testing. Furthermore, the cities and county within the Los Angeles region has taken extra measures to maintain the structural integrity of the framing of shear walls and diaphragms designed for high levels of seismic forces by requiring wood sheathing be applied directly over the framing members and prohibiting the use of panels placed over gypsum sheathing. This amendment is intended to prevent the undesirable performance of nails when gypsum board softens due to cyclic earthquake displacements and the nail ultimately does not have any engagement in a solid material within the thickness of the gypsum board. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

Section 18.40.290 – Amendment is necessary on the basis of a local geologic condition. The Structural Engineers Association of Southern California (SEAOSC) and the Los Angeles City Joint Task Force that investigated the damages to buildings and structures during the 1994 Northridge Earthquake recommended reducing allowable shear values in wood structural panel shear walls or diaphragms that were not substantiated by cyclic testing. That recommendation was consistent with a report to the Governor from the Seismic Safety Commission of the State of California recommending that code requirements be "more thoroughly substantiated with testing." The allowable shear values for wood structural panel shear walls or diaphragms fastened with stapled

OFFICE OF THE CITY ATTORNEY
CHARLES PARKIN, City Attorney
333 West Ocean Boulevard, 11th Floor
Long Beach, CA 90802-4664

nails are based on monotonic testing and does not take into consideration that earthquake forces load shear wall or diaphragm in a repeating and fully reversible manner. In September 2007, limited cyclic testing was conducted by a private engineering firm to determine if wood structural panels fastened with stapled nails would exhibit the same behavior as the wood structural panels fastened with common nails. The test result revealed that wood structural panel fastened with stapled nails appeared to be much lower in strength and stiffness than wood structural panels fastened with common nails. It was recommended that the use of stapled nail as fasteners for wood structural panel shear walls or diaphragms not be permitted to resist seismic forces in structures assigned to Seismic Design Category D, E and F unless it can be substantiated by cyclic testing. Furthermore, the cities and county within the Los Angeles region has taken extra measures to maintain the structural integrity of the framing of shear walls and diaphragms designed for high levels of seismic forces by requiring wood sheathing be applied directly over the framing members and prohibiting the use of panels placed over gypsum sheathing. This amendment is intended to prevent the undesirable performance of nails when gypsum board softens due to cyclic earthquake displacements and the nail ultimately does not have any engagement in a solid material within the thickness of the gypsum board. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

Section 18.40.300 – Amendment is necessary on the basis of a local geologic condition. With the higher seismic demand placed on buildings and structures in this region, interior walls can easily be called upon to resist over half of the seismic loading imposed on simple buildings or structures. Without a continuous foundation to support the braced wall line, seismic loads would be transferred through other elements such as non-structural concrete slab floors, wood floors, etc. The change is to limit the use of the exception to structures assigned to Seismic Design Category A, B or C where lower seismic demands are expected. Requiring interior braced walls be supported by

OFFICE OF THE CITY ATTORNEY
CHARLES PARKIN, City Attorney
333 West Ocean Boulevard, 11th Floor
Long Beach, CA 90802-4664

continuous foundations is intended to reduce or eliminate the poor performance of buildings or structures. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

Section 18.40.310 – Amendment is necessary on the basis of a local geologic condition. This amendment specifies minimum sheathing thickness and nail size and spacing so as to provide a uniform standard of construction for designers and buildings to follow. This is intended to improve the performance level of buildings and structures that are subject to the higher seismic demands placed on buildings or structure in this region. This amendment reflects the recommendations by the Structural Engineers Association of Southern California (SEAOSC) and the Los Angeles City Joint Task Force that investigated the poor performance observed in 1994 Northridge Earthquake. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

Section 18.40.320 – Amendment is necessary on the basis of a local geologic condition. This amendment specifies minimum sheathing thickness and nail size and spacing so as to provide a uniform standard of construction for designers and buildings to follow. This is intended to improve the performance level of buildings and structures that are subject to the higher seismic demands placed on buildings or structure in this region. This amendment reflects the recommendations by the Structural Engineers Association of Southern California (SEAOSC) and the Los Angeles City Joint Task Force that investigated the poor performance observed in 1994 Northridge Earthquake. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

Section 18.40.330 – Amendment is necessary on the basis of a local geologic condition. This amendment specifies minimum sheathing thickness and nail size and

OFFICE OF THE CITY ATTORNEY
CHARLES PARKIN, City Attorney
333 West Ocean Boulevard, 11th Floor
Long Beach, CA 90802-4664

spacing so as to provide a uniform standard of construction for designers and buildings to follow. This is intended to improve the performance level of buildings and structures that are subject to the higher seismic demands placed on buildings or structure in this region. This amendment reflects the recommendations by the Structural Engineers Association of Southern California (SEAOSC) and the Los Angeles City Joint Task Force that investigated the poor performance observed in 1994 Northridge Earthquake. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

Section 18.40.340 – Amendment is necessary on the basis of a local geologic condition. Due to the high geologic activities in the Southern California area and the expected higher level of performance on buildings and structures, this amendment limit the use of staple fasteners in resisting or transferring seismic forces. In September 2007, limited cyclic testing data was provided to the ICC Los Angeles Chapter Structural Code Committee showing that stapled wood structural shear panels do not exhibit the same behavior as the nailed wood structural shear panels. The test results of the stapled wood structural shear panels appeared much lower in strength and drift than the nailed wood structural shear panel test results. Therefore, the use of staples as fasteners to resist or transfer seismic forces shall not be permitted without being substantiated by cyclic testing. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

Section 18.40.350 – Amendment is necessary on the basis of a local geologic condition. Due to the high geologic activities in the Southern California area and the expected higher level of performance on buildings and structures, this amendment limit the use of staple fasteners in resisting or transferring seismic forces. In September 2007, limited cyclic testing data was provided to the ICC Los Angeles Chapter Structural Code Committee showing that stapled wood structural shear panels do not exhibit the same

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CHARLES PARKIN, City Attorney
333 West Ocean Boulevard, 11th Floor
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behavior as the nailed wood structural shear panels. The test results of the stapled wood structural shear panels appeared much lower in strength and drift than the nailed wood structural shear panel test results. Therefore, the use of staples as fasteners to resist or transfer seismic forces shall not be permitted without being substantiated by cyclic testing. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

Section 18.40.360 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code. This amendment makes minor editorial changes to reflect the appropriate reference to the City's Municipal Code for inspection related requirements.

Section 18.40.370 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code. This amendment makes administrative changes to reflect the noticing requirement of adjacent property owners due to excavation that meets certain conditions as stipulated in Section 832 of the California Civil Code. Administrative procedures are provided to clarify to permit applicants regarding how this provision is to be satisfied.

Section 18.40.380 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code. This amendment makes minor editorial changes to clarify the requirement for changes in occupancy and to reflect the appropriate reference to the City's Municipal Code.

Section 18.40.390 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code. This amendment makes minor editorial changes to reflect the appropriate reference to the City's Municipal Code for moving

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CHARLES PARKIN, City Attorney
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buildings or structures.

Section 18.40.400 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code. This amendment makes minor editorial changes by deleting a non-mandatory provision.

Section 18.40.410 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code. This amendment makes minor editorial changes to reflect the appropriate reference to the City's Municipal Code for permit related requirements.

Section 18.40.420 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code. This amendment makes minor editorial changes by deleting the last two sentences that are non-mandatory provisions.

Section 2. Findings for more restrictive building standards code provisions amendments to the California Residential Code, Part 2.5, Title 24 of the California Code of Regulations.

Section 18.41.010 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code. This amendment adopts the latest edition of the California Residential Code and makes minor editorial changes.

Section 18.41.020 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code. This amendment makes minor editorial changes to reflect the state agencies and the applicable referenced sections.

Section 18.41.030 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7

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CHARLES PARKIN, City Attorney
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of the California Health and Safety Code. This amendment makes minor editorial changes to reference the various amendments proposed to the California Residential Code.

Section 18.41.040 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code. This amendment makes minor editorial changes to reflect that certain chapter, appendices, and/or sections deleted are non-mandatory provisions.

Section 18.41.050 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code. This amendment makes minor editorial changes to reference to a dictionary to be used for words not defined in the code since the IRC does not have such a reference.

Section 18.41.060 – Amendment is necessary on the basis of a local geologic condition. After the 1994 Northridge Earthquake, the Wood Frame Construction Joint Task Force recommended that the quality of wood frame construction needed to be greatly improved. One such recommendation identified by the Task Force is to improve the quality and organization of structural plans prepared by the engineer or architect so that plan examiners, building inspectors, contractors and special inspectors may logically follow and construct the presentation of the seismic force-resisting systems in the construction documents. For buildings or structures located in Seismic Design Category D_0, D_1, D_2 or E that are subject to a greater level of seismic forces, the requirement to have a California licensed architect or engineer prepare the construction documents is intended to minimize or reduce structural deficiencies that may cause excessive damage or injuries in wood frame buildings. Structural deficiencies such as plan and vertical irregularities, improper shear transfer of the seismic force-resisting system, missed details or connections important to the structural system, and the improper application of the prescriptive requirements of the California Residential Code can be readily addressed

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CHARLES PARKIN, City Attorney
333 West Ocean Boulevard, 11th Floor
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by a registered design professional. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

Section 18.41.070 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code. This amendment makes minor editorial changes to reflect the appropriate climatic and geographic design criteria for buildings and structures within the City.

Section 18.41.080 – Amendment is necessary on the basis of a local geologic condition. With the higher seismic demand placed on buildings and structures in this region, precautionary steps are proposed to reduce or eliminate potential problems that may result by limiting the type of irregular conditions specified in the International Residential Code. Such limitations are intended to reduce the potential structural damage expected in the event of an earthquake. The cities and county of the Los Angeles region has taken extra measures to maintain the structural integrity of the framing of the shear walls and all associated elements when designed for high levels of seismic loads. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

Section 18.41.090 – Amendment is necessary on the basis of a local geologic and climatic condition. No substantiating data has been provided to show that wood foundation is effective in supporting buildings and structures during a seismic event while being subject to deterioration caused by the combined detrimental effect of constant moisture in the soil and wood-destroying organisms. Wood foundation, when they are not properly treated and protected against deterioration, have performed very poorly and have led to slope failures. Most contractors are typically accustomed to construction in dry and temperate weather in the Southern California region and are not generally familiar with the necessary precautions and treatment of wood that makes it suitable for

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CHARLES PARKIN, City Attorney
333 West Ocean Boulevard, 11th Floor
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both seismic event and wet applications. The proposed amendment takes the precautionary steps to reduce or eliminate potential problems that may result in using wood foundation that experience relatively rapid decay due to the fact that the region does not experience temperatures cold enough to destroy or retard the growth and proliferation of wood-destroying organisms. However, an exception is made for non-occupied, single-story storage structures that pose significantly less risk to human safety and may utilize the wood foundation guidelines specified in this Chapter. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic and climatic activity and to establish criteria for repair of damaged property following a local emergency.

Section 18.41.100 – Amendment is necessary on the basis of a local geologic condition. With the higher seismic demand placed on buildings and structures in this region, precautionary steps are proposed to reduce or eliminate potential problems that may result for under-reinforced footings located on sloped surfaces. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

Section 18.41.110 – Amendment is necessary on the basis of a local geologic condition. The amendment limit the use of the exception to structures assigned to Seismic Design Category A, B or C where lower seismic demands are expected. Requiring interior braced walls be supported by continuous foundations is intended to reduce or eliminate the poor performance of buildings or structures. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

Section 18.41.120 – Amendment is necessary on the basis of a local geologic condition. Requiring minimum reinforcement for stepped footings is intended to address the problem of poor performance of plain or under-reinforced footings during a seismic

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CHARLES PARKIN, City Attorney
333 West Ocean Boulevard, 11th Floor
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event. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

Section 18.41.130 – Amendment is necessary on the basis of a local geologic and climatic condition. No substantiating data has been provided to show that wood foundation wall is effective in supporting buildings and structures during a seismic event while being subject to deterioration caused by the combined detrimental effect of constant moisture in the soil and wood-destroying organisms. Wood foundation walls, when they are not properly treated and protected against deterioration, have performed very poorly and have led to slope failures. Most contractors are typically accustomed to construction in dry and temperate weather in the Southern California region and are not generally familiar with the necessary precautions and treatment of wood that makes it suitable for both seismic event and wet applications. The proposed amendment takes the precautionary steps to reduce or eliminate potential problems that may result in using wood foundation walls that experience relatively rapid decay due to the fact that the region does not experience temperatures cold enough to destroy or retard the growth and proliferation of wood-destroying organisms. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic and climatic activity and to establish criteria for repair of damaged property following a local emergency.

Section 18.41.140 – Amendment is necessary on the basis of a local geologic condition. Section R502.10 of the Code does not provide any prescriptive criteria to limit the maximum floor opening size nor does Section R503 provide any details to address the issue of shear transfer near larger floor openings. With the higher seismic demand placed on buildings and structures in this region, it is important to ensure that a complete load path is provided to reduce or eliminate potential damages caused by seismic forces. Requiring blocking with metal ties around larger floor openings and limiting opening size is consistent with the requirements of Section R301.2.2.2.5. The amendment makes

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CHARLES PARKIN, City Attorney
333 West Ocean Boulevard, 11th Floor
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modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

Section 18.41.150 – Amendment is necessary on the basis of a local geologic condition. The Structural Engineers Association of Southern California (SEAOSC) and the Los Angeles City Joint Task Force that investigated the damages to buildings and structures during the 1994 Northridge Earthquake recommended reducing allowable shear values in wood structural panel shear walls or diaphragms that were not substantiated by cyclic testing. That recommendation was consistent with a report to the Governor from the Seismic Safety Commission of the State of California recommending that code requirements be "more thoroughly substantiated with testing." The allowable shear values for wood structural panel shear walls or diaphragms fastened with staples are based on monotonic testing and does not take into consideration that earthquake forces load shear wall or diaphragm in a repeating and fully reversible manner. In September 2007, limited cyclic testing was conducted by a private engineering firm to determine if wood structural panels fastened with staples would exhibit the same behavior as the wood structural panels fastened with common nails. The test result revealed that wood structural panel fastened with staples appeared to be much lower in strength and stiffness than wood structural panels fastened with common nails. It was recommended that the use of staples as fasteners for wood structural panel shear walls or diaphragms not be permitted to resist seismic forces in structures assigned to Seismic Design Category D_0, D_1 and D_2 unless it can be substantiated by cyclic testing. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

Section 18.41.160 – Amendment is necessary on the basis of a local geologic condition. The cities and county of the Los Angeles region have taken extra measures to maintain the structural integrity of the framing of the shear wall system for buildings and

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CHARLES PARKIN, City Attorney
333 West Ocean Boulevard, 11th Floor
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structures subject to high seismic loads by eliminating single top plate construction. The performance of modern day braced wall panel construction is directly related to an adequate load path extending from the roof diaphragm to the foundation system. A single top plate is likely to be over nailed due to the nailing requirements at a rafter, stud, top plate splice, and braced wall panel edge in a single location. In addition, notching on a single top plate for plumbing, ventilation and electrical wiring may reduce the load transfer capacity of the plate without proper detailing. Majority of buildings and structures designed and built per the California Residential Code with a single top plate may not need structural observation and special inspections. The potential construction mistakes mentioned above could not be caught and corrected by knowledgeable engineers and inspectors, and could jeopardize structural performance of buildings and structures located in high seismic areas. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

Section 18.41.170 – Amendment is necessary on the basis of a local geologic condition. The Structural Engineers Association of Southern California (SEAOSC) and the Los Angeles City Joint Task Force that investigated the damages to buildings and structures during the 1994 Northridge Earthquake recommended reducing allowable shear values in wood structural panel shear walls or diaphragms that were not substantiated by cyclic testing. That recommendation was consistent with a report to the Governor from the Seismic Safety Commission of the State of California recommending that code requirements be "more thoroughly substantiated with testing." The allowable shear values for wood structural panel shear walls or diaphragms fastened with staples are based on monotonic testing and does not take into consideration that earthquake forces load shear wall or diaphragm in a repeating and fully reversible manner. In September 2007, limited cyclic testing was conducted by a private engineering firm to determine if wood structural panels fastened with staples would exhibit the same behavior as the wood structural panels fastened with common nails. The test result

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CHARLES PARKIN, City Attorney
333 West Ocean Boulevard, 11th Floor
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revealed that wood structural panel fastened with staples appeared to be much lower in strength and stiffness than wood structural panels fastened with common nails. It was recommended that the use of staples as fasteners for wood structural panel shear walls or diaphragms not be permitted to resist seismic forces in structures assigned to Seismic Design Category D_0, D_1 and D_2 unless it can be substantiated by cyclic testing. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

Section 18.41.180 – Amendment is necessary on the basis of a local geologic condition. The greater Los Angeles region is a densely populated area having buildings and structures constructed over and near a vast array of fault systems capable of producing major earthquakes, including but not limited to the recent 1994 Northridge Earthquake. The proposed modification reduces the aspect ratio help to maintain minimum quality of construction and performance standards of structures. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

Section 18.41.190 – Amendment is necessary on the basis of a local geologic condition. Due to the high geologic activities in the Southern California area and the expected higher level of performance on buildings and structures, this proposed local amendment increases the length and limits the location where shear walls sheathed with lath, plaster or gypsum board are used in multi-level buildings. In addition, shear walls sheathed with other materials are prohibited in Seismic Design Category D_0, D_1 and D_2 to be consistent with the design limitation for similar shear walls found in the California Building Code. The poor performance of such shear walls in the 1994 Northridge Earthquake was investigated by the Structural Engineers Association of Southern California (SEAOSC) and the Los Angeles City Task Force and formed the basis for this amendment. Considering that shear walls sheathed with lath, plaster or gypsum board

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CHARLES PARKIN, City Attorney
333 West Ocean Boulevard, 11th Floor
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are less ductile than steel moment frames or wood structural panel shear walls, the cities and county of the Los Angeles region has taken the necessary measures to limit the potential structural damage that may be caused by the use of such walls at the lower level of multi-level building that are subject to higher levels of seismic loads. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

Section 18.41.200 – Amendment is necessary on the basis of a local geologic condition. 3/8" thick 3-ply plywood shear walls experienced many failures during the Northridge Earthquake. Box nails were observed to cause massive and multiple failures of the typical 3/8" thick 3-ply plywood during the Northridge Earthquake. This amendment specifies minimum sheathing thickness, nail size and spacing so as to provide a uniform standard of construction for designers and buildings to follow. This is intended to improve the performance level of buildings and structures that are subject to the higher seismic demands and reduce and limit potential damages to property. This amendment reflects the recommendations by the Structural Engineers Association of Southern California (SEAOSC) and the Los Angeles City Joint Task Force that investigated the poor performance observed in 1994 Northridge Earthquake. In September 2007, limited cyclic testing was conducted by a private engineering firm to determine if wood structural panels fastened with staples would exhibit the same behavior as the wood structural panels fastened with common nails. The test result revealed that wood structural panel fastened with staples appeared to be much lower in strength and stiffness than wood structural panels fastened with common nails. It was recommended that the use of staples as fasteners for wood structural panel shear walls or diaphragms not be permitted to resist seismic forces in structures assigned to Seismic Design Category D_0, D_1 and D_2 unless it can be substantiated by cyclic testing. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

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333 West Ocean Boulevard, 11th Floor
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Section 18.41.210 – Amendment is necessary on the basis of a local geologic condition. 3/8" thick 3-ply plywood shear walls experienced many failures during the Northridge Earthquake. Box nails were observed to cause massive and multiple failures of the typical 3/8" thick 3-ply plywood during the Northridge Earthquake. This amendment specifies minimum sheathing thickness, nail size and spacing so as to provide a uniform standard of construction for designers and buildings to follow. This is intended to improve the performance level of buildings and structures that are subject to the higher seismic demands and reduce and limit potential damages to property. This amendment reflects the recommendations by the Structural Engineers Association of Southern California (SEAOSC) and the Los Angeles City Joint Task Force that investigated the poor performance observed in 1994 Northridge Earthquake. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

Section 18.41.220 – Amendment is necessary on the basis of a local geologic condition. 3/8" thick 3-ply plywood shear walls experienced many failures during the Northridge Earthquake. Box nails were observed to cause massive and multiple failures of the typical 3/8" thick 3-ply plywood during the Northridge Earthquake. This amendment specifies minimum sheathing thickness, nail size and spacing so as to provide a uniform standard of construction for designers and buildings to follow. This is intended to improve the performance level of buildings and structures that are subject to the higher seismic demands and reduce and limit potential damages to property. This amendment reflects the recommendations by the Structural Engineers Association of Southern California (SEAOSC) and the Los Angeles City Joint Task Force that investigated the poor performance observed in 1994 Northridge Earthquake. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

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333 West Ocean Boulevard, 11th Floor
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Section 18.41.230 – Amendment is necessary on the basis of a local geologic condition. 3/8" thick 3-ply plywood shear walls experienced many failures during the Northridge Earthquake. Box nails were observed to cause massive and multiple failures of the typical 3/8" thick 3-ply plywood during the Northridge Earthquake. This amendment specifies minimum sheathing thickness, nail size and spacing so as to provide a uniform standard of construction for designers and buildings to follow. This is intended to improve the performance level of buildings and structures that are subject to the higher seismic demands and reduce and limit potential damages to property. This amendment reflects the recommendations by the Structural Engineers Association of Southern California (SEAOSC) and the Los Angeles City Joint Task Force that investigated the poor performance observed in 1994 Northridge Earthquake. In September 2007, limited cyclic testing was conducted by a private engineering firm to determine if wood structural panels fastened with staples would exhibit the same behavior as the wood structural panels fastened with common nails. The test result revealed that wood structural panel fastened with staples appeared to be much lower in strength and stiffness than wood structural panels fastened with common nails. It was recommended that the use of staples as fasteners for wood structural panel shear walls or diaphragms not be permitted to resist seismic forces in structures assigned to Seismic Design Category D_0, D_1 and D_2 unless it can be substantiated by cyclic testing. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

Section 18.41.240 – Amendment is necessary on the basis of a local geologic condition. 3/8" thick 3-ply plywood shear walls experienced many failures during the Northridge Earthquake. Box nails were observed to cause massive and multiple failures of the typical 3/8" thick 3-ply plywood during the Northridge Earthquake. This amendment specifies minimum sheathing thickness, nail size and spacing so as to provide a uniform standard of construction for designers and buildings to follow. This is intended to improve the performance level of buildings and structures that are subject to the higher seismic

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CHARLES PARKIN, City Attorney
333 West Ocean Boulevard, 11th Floor
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demands and reduce and limit potential damages to property. This amendment reflects the recommendations by the Structural Engineers Association of Southern California (SEAOSC) and the Los Angeles City Joint Task Force that investigated the poor performance observed in 1994 Northridge Earthquake. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

Section 18.41.250 – Amendment is necessary on the basis of a local geologic condition. Reinforcement using longitudinal wires for buildings and structures located in high seismic areas are deficient and not as ductile as deformed rebar. Having vertical reinforcement closer to the ends of masonry walls helps to improve the seismic performance of masonry buildings and structures. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

Section 18.41.260 – Amendment is necessary on the basis of a local geologic condition. Section R802 of the Code does not provide any prescriptive criteria to limit the maximum roof opening size nor does Section R803 provide any details to address the issue of shear transfer near larger roof openings. With the higher seismic demand placed on buildings and structures in this region, it is important to ensure that a complete load path is provided to reduce or eliminate potential damages caused by seismic forces. Requiring blocking with metal ties around larger roof openings and limiting opening size is consistent with the requirements of Section R301.2.2.2.5. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

Section 18.41.270 – Amendment is necessary on the basis of a local geologic condition. The performance of fireplace/chimney without anchorage to the foundation has

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CHARLES PARKIN, City Attorney
333 West Ocean Boulevard, 11th Floor
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been observed to be inadequate during major earthquakes. The lack of anchorage to the foundation can result in the overturning or displacement of the fireplace/chimney. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

Section 3. Findings for more restrictive building standards code provisions amendments to the California Electrical Code, Part 3, Title 24 of the California Code of Regulations.

Section 18.42.010 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code. This amendment adopts the latest edition of the California Electrical Code and makes minor editorial changes.

Section 18.42.020 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code. This amendment makes minor editorial changes to reflect the state agencies and the applicable referenced sections.

Section 18.42.030 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code. This amendment makes minor editorial changes to reference the various amendments proposed to the California Electrical Code.

Section 18.42.040 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code. This amendment makes minor editorial changes to reflect that certain chapter, appendices, and/or sections deleted are non-mandatory provisions.

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CHARLES PARKIN, City Attorney
333 West Ocean Boulevard, 11th Floor
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Section 4. Findings for more restrictive building standards code provisions amendments to the California Plumbing Code, Part 4, Title 24 of the California Code of Regulations.

Section 18.43.010 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code. This amendment adopts the latest edition of the California Plumbing Code and makes minor editorial changes.

Section 18.43.020 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code. This amendment makes minor editorial changes to reflect the state agencies and the applicable referenced sections.

Section 18.43.030 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code. This amendment makes minor editorial changes to reference the various amendments proposed to the California Plumbing Code.

Section 18.43.040 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code. This amendment makes minor editorial changes to reflect that certain chapter, appendices, and/or sections deleted are non-mandatory provisions.

Section 18.43.050 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code. This amendment makes an administrative change to delete the reference to HCD to clarify that the provision of this section is applicable to all occupancies, not just occupancies regulated by the California Department of Housing and Community Development, involving the installation of non water urinals. This provision helps to prevent pipe corrosion and build up resulting from

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CHARLES PARKIN, City Attorney
333 West Ocean Boulevard, 11th Floor
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undiluted urine as well as reducing potential problem of odors. This amendment makes modification and changes to better limit personal injury and property damage.

Section 18.43.060 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code. This amendment makes an administrative change to clarify that all plumbing fixtures and equipment that are used to convey potable water are to be "lead free" as defined and required by Section 116875 of the California Health and Safety Code. This amendment makes modification and changes to better limit personal injury and to establish criteria for lead free content as required by State law.

Section 5. Findings for more restrictive building standards code provisions amendments to the California Mechanical Code, Part 5, Title 24 of the California Code of Regulations.

Section 18.44.010 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code. This amendment adopts the latest edition of the California Mechanical Code and makes minor editorial changes.

Section 18.44.020 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code. This amendment makes minor editorial changes to reflect the state agencies and the applicable referenced sections.

Section 18.44.030 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code. This amendment makes minor editorial changes to reference the various amendments proposed to the California Mechanical Code.

Section 18.44.040 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7

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CHARLES PARKIN, City Attorney
333 West Ocean Boulevard, 11th Floor
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of the California Health and Safety Code. This amendment makes minor editorial changes to reflect that certain chapter, appendices, and/or sections deleted are non-mandatory provisions.

Section 6. Findings for more restrictive building standards code provisions amendments to the Uniform Housing Code, Section 32, Article 5, Subchapter 1, Division 1, of Title 25 of the California Code of Regulations.

Section 18.45.010 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code or State Housing Law pursuant to Division 13, Part 1.5, Section 17960 and Section 17922 of the California Health and Safety Code. This amendment adopts the latest edition of the Uniform Housing Code and makes minor editorial changes.

Section 18.45.020 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code or State Housing Law pursuant to Division 13, Part 1.5, Section 17960 and Section 17922 of the California Health and Safety Code. This amendment makes minor editorial changes to reflect the state agencies and the applicable referenced sections.

Section 18.45.030 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code or State Housing Law pursuant to Division 13, Part 1.5, Section 17960 and Section 17922 of the California Health and Safety Code. This amendment makes minor editorial changes to reference the various amendments proposed to the Uniform Housing Code.

Section 18.45.040 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code or State Housing Law pursuant to Division 13,

OFFICE OF THE CITY ATTORNEY
CHARLES PARKIN, City Attorney
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Part 1.5, Section 17960 and Section 17922 of the California Health and Safety Code. This amendment makes minor editorial changes to reflect that certain chapter, appendices, and/or sections deleted are non-mandatory provisions.

Section 18.45.050 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code or State Housing Law pursuant to Division 13, Part 1.5, Section 17960 and Section 17922 of the California Health and Safety Code. This amendment makes minor editorial changes to prohibit certain uses and provide provisions for the maintenance and repair of existing building and structures.

Section 7. Findings for more restrictive building standards code provisions amendments to the California Energy Code, Part 6, Title 24 of the California Code of Regulations.

Section 18.46.010 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code. This amendment adopts the latest edition of the California Energy Code.

Section 18.46.020 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code. This amendment makes minor editorial changes to reflect the state agencies and the applicable referenced sections.

Section 8. Findings for more restrictive building standards code provisions amendments to the California Green Building Standards Code, Part 11, Title 24 of the California Code of Regulations.

Section 18.47.010 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code. This amendment adopts the latest edition of the

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333 West Ocean Boulevard, 11th Floor
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California Green Building Standards Code and makes minor editorial changes.

Section 18.47.020 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code. This amendment makes minor editorial changes to reflect the state agencies and the applicable referenced sections.

Section 18.47.030 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code. This amendment makes minor editorial changes to reference the various amendments proposed to the California Green Building Standards Code.

Section 18.47.040 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code. This amendment makes minor editorial changes to reflect that certain chapter, appendices, and/or sections deleted are non-mandatory provisions.

Section 18.47.050 – Amendment is necessary on the basis of a local climatic and environmental condition. In 2006, the City was able to divert 69% of its waste into recycling or reuse. Among large cities, this diversion rate was the second highest in the nation. Through various programs such as residential curbside recycling, household hazard waste roundups, consistent public outreach, elementary school recycling education, and classes for at-home composting, the City has been able to remain at the forefront of sustainable practices. To this extent, construction and demolition waste contributes to about 25 to 30% of the entire waste in the United States according to the Sustainable Cities Institute. The amendment references the City's Construction and Demolition Recycling Program Ordinance adopted on May 15, 2007 in lieu of the CalGreen Code provisions, stipulating a diversion rate of 60% (10% more than the CalGreen Code), and expanding the recycling efforts the City has previously enacted that helps continue to keep landfills from prematurely reaching capacity and by reducing

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CHARLES PARKIN, City Attorney
333 West Ocean Boulevard, 11th Floor
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overall resource consumption. The amendment makes modification and changes to better preserve and protect the community where environmental resources are scarce due to varying and occasional immoderate temperatures and weather conditions and to realize a healthier, cleaner and more viable environment for the City's residents, its workforce and visitors.

Section 18.47.060 – Amendment is necessary on the basis of a local climatic and environmental condition. In 2006, the City was able to divert 69% of its waste into recycling or reuse. Among large cities, this diversion rate was the second highest in the nation. Through various programs such as residential curbside recycling, household hazard waste roundups, consistent public outreach, elementary school recycling education, and classes for at-home composting, the City has been able to remain at the forefront of sustainable practices. To this extent, construction and demolition waste contributes to about 25 to 30% of the entire waste in the United States according to the Sustainable Cities Institute. The amendment references the City's Construction and Demolition Recycling Program Ordinance adopted on May 15, 2007 in lieu of the CalGreen Code provisions, stipulating a diversion rate of 60% (10% more than the CalGreen Code), and expanding the recycling efforts the City has previously enacted that helps continue to keep landfills from prematurely reaching capacity and by reducing overall resource consumption. The amendment makes modification and changes to better preserve and protect the community where environmental resources are scarce due to varying and occasional immoderate temperatures and weather conditions and to realize a healthier, cleaner and more viable environment for the City's residents, its workforce and visitors.

Section 9. Findings for more restrictive building standards code provisions amendments to the California Fire Code, Part 9, Title 24 of the California Code of Regulations.

Section 18.48.010 – Amendment is necessary for administrative clarification, and

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CHARLES PARKIN, City Attorney
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does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment adopts the latest edition of the California Fire Code and makes minor editorial changes.

Section 18.48.020 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment makes minor editorial changes to reflect the state agencies and the applicable referenced sections.

Section 18.48.030 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment reference the various amendments proposed to the California Fire Code.

Section 18.48.040 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment makes minor editorial changes to reflect that certain chapter, appendices, and/or sections deleted are non-mandatory provisions.

Section 18.48.050 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment names this code as the Fire Code for the City of Long Beach.

Section 18.48.060 – Amendment is necessary on the basis of local topography conditions. This amendment adds ocean waters under Long Beach jurisdiction to the Fire Code.

Section 18.48.070 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment adds supplemental rules and regulations to carry out the intent of the code.

Section 18.48.080 – Amendment is necessary for administrative clarification, and

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CHARLES PARKIN, City Attorney
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does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment clarifies the appointment of the fire code official.

Section 18.48.090 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment provides special requirements for ocean areas and the vessels that operate there.

Section 18.48.100 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment clarifies length of time records shall be retained.

Section 18.48.110 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment expands language to provide for three types of permits.

Section 18.48.120 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment expands language to include inspections permits.

Section 18.48.130 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment provides for a declaration of intended use.

Section 18.48.140 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment expands language to include inspections permits

Section 18.48.150 – Amendment is necessary for administrative clarification, and

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CHARLES PARKIN, City Attorney
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does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment expands language to include additional operational permits.

Section 18.48.160 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment expands language to include additional operational permits.

Section 18.48.170 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment clarifies applicable code reference.

Section 18.48.180 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment expands language to include inspection permits.

Section 18.48.190 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment expands language to include additional construction and inspection permits.

Section 18.48.200 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment expands language for the responsibility of keeping an accurate count of building occupants.

Section 18.48.210 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment clarifies language for violation penalties.

Section 18.48.220 – Amendment is necessary for administrative clarification, and

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CHARLES PARKIN, City Attorney
333 West Ocean Boulevard, 11th Floor
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does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment clarifies language for stop work orders.

Section 18.48.230 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment clarifies language for permit fees.

Section 18.48.240 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment expands language for cost recovery and reporting requirements.

Section 18.48.250 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment defines a "high rise structure".

Section 18.48.260 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment provides definitions for fire chief and fire code official.

Section 18.48.270 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment provides definitions for boat yard, safety container and small craft.

Section 18.48.280 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment clarifies responsibility of property owners to maintain alleys free of hazards.

Section 18.48.290 – Amendment is necessary for administrative clarification, and

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CHARLES PARKIN, City Attorney
333 West Ocean Boulevard, 11th Floor
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does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment establishes conditions for open burning.

Section 18.48.300 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment establishes conditions for recreational burning.

Section 18.48.310 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment expands language for installation of guard posts.

Section 18.48.320 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment establishes conditions for fire safety officer.

Section 18.48.330 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment expands language for fire access roads.

Section 18.48.340 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment expands language for fire access roads.

Section 18.48.350 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment expands language to clarify location and illumination of address numbers.

Section 18.48.360 – Amendment is necessary for administrative clarification, and

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CHARLES PARKIN, City Attorney
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does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment expands language for key box maintenance.

Section 18.48.370 – Amendment is necessary on the basis of local geological conditions. The City of Long Beach is located by the International Building Code in Seismic Design Category D, E or F, and by the International Residential Code in Seismic Design Category D_2 or E, which is considered by experts to be one of the most active seismic regions in the world, and therefore requires these densely populated occupancies have this added means of escape.

Section 18.48.380 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment directs the code user to the proper section for protection of vehicular damage.

Section 18.48.390 – Amendment is necessary on the basis of local geological conditions. The City of Long Beach is located by the International Building Code in Seismic Design Category D, E or F, and by the International Residential Code in Seismic Design Category D_2 or E, which is considered by experts to be one of the most active seismic regions in the world, and therefore requires these extra margins of safety due to the necessity of providing on site fire protection in a seismic emergency when fire department resources could be greatly delayed and overwhelmed. This amendment provides clarifications for fire sprinkler systems.

Section 18.48.400 – Amendment is necessary on the basis of local geological conditions. The City of Long Beach is located by the International Building Code in Seismic Design Category D, E or F, and by the International Residential Code in Seismic Design Category D_2 or E, which is considered by experts to be one of the most active seismic regions in the world, and therefore requires these extra margins of safety due to the necessity of providing on site fire protection in a seismic emergency when fire department resources could be greatly delayed and overwhelmed. This amendment

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CHARLES PARKIN, City Attorney
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provides clarifications for fire sprinkler systems.

Section 18.48.410 – Amendment is necessary on the basis of local geological conditions. The City of Long Beach is located by the International Building Code in Seismic Design Category D, E or F, and by the International Residential Code in Seismic Design Category D_2 or E, which is considered by experts to be one of the most active seismic regions in the world, and therefore requires these extra margins of safety due to the necessity of providing on site fire protection in a seismic emergency when fire department resources could be greatly delayed and overwhelmed. This amendment provides clarifications for fire sprinkler systems.

Section 18.48.420 – Amendment is necessary on the basis of local geological conditions. The City of Long Beach is located by the International Building Code in Seismic Design Category D, E or F, and by the International Residential Code in Seismic Design Category D_2 or E, which is considered by experts to be one of the most active seismic regions in the world, and therefore requires these extra margins of safety due to the necessity of providing on site fire protection in a seismic emergency when fire department resources could be greatly delayed and overwhelmed. This amendment provides fire sprinkler requirements for non residential buildings.

Section 18.48.430 – Amendment is necessary on the basis of local geological conditions. The City of Long Beach is located by the International Building Code in Seismic Design Category D, E or F, and by the International Residential Code in Seismic Design Category D_2 or E, which is considered by experts to be one of the most active seismic regions in the world, and therefore requires these extra margins of safety due to the necessity of providing on site fire protection in a seismic emergency when fire department resources could be greatly delayed and overwhelmed. This amendment provides fire sprinkler requirements for residential buildings.

Section 18.48.440 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment provides for a

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CHARLES PARKIN, City Attorney
333 West Ocean Boulevard, 11th Floor
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safety margin when performing hydraulic calculations.

Section 18.48.450 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment clarifies remote annunciators in sprinkler monitoring systems.

Section 18.48.460 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment expands language to clarify fire alarm signal reporting.

Section 18.48.470 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment expands language for exterior alarm device.

Section 18.48.480 – Amendment is necessary on the basis of local geological conditions. The City of Long Beach is located by the International Building Code in Seismic Design Category D, E or F, and by the International Residential Code in Seismic Design Category D_2 or E, which is considered by experts to be one of the most active seismic regions in the world, and therefore requires these extra margins of safety due to the necessity of providing on site fire protection in a seismic emergency when fire department resources could be greatly delayed and overwhelmed. This amendment adds language for interior alarm device.

Section 18.48.490 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment adds language to clarify minimum pressure requirements.

Section 18.48.500 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment clarifies location of

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CHARLES PARKIN, City Attorney
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hose valves in stairways.

Section 18.48.510 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment adds language to clarify building evacuation and fire alarm systems.

Section 18.48.520 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment clarifies duct smoke detectors.

Section 18.48.530 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment clarifies duct smoke detectors.

Section 18.48.540 – Amendment is necessary on the basis of local geological conditions. The City of Long Beach is located by the International Building Code in Seismic Design Category D, E or F, and by the International Residential Code in Seismic Design Category D_2 or E, which is considered by experts to be one of the most active seismic regions in the world, and therefore requires these extra margins of safety due to the necessity of providing on site life safety systems in a seismic emergency when fire department resources could be greatly delayed and overwhelmed. This amendment adds language for fire alarm and smoke removal systems.

Section 18.48.550 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment expands language to clarify temperature ratings of smoke and heat vents.

Section 18.48.560 – Amendment is necessary on the basis of local geological conditions. The City of Long Beach is located by the International Building Code in Seismic Design Category D, E or F, and by the International Residential Code in Seismic

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CHARLES PARKIN, City Attorney
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Design Category D_2 or E, which is considered by experts to be one of the most active seismic regions in the world, and therefore requires this extra margin of safety due to the probability of damage to water supplies. This amendment provides requirements for fire department connections.

Section 18.48.570 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment expands language to clarify location of fire department connections.

Section 18.48.580 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment expands language to clarify access to fire department connections.

Section 18.48.590 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment expands language to clarify protection of exit ways from vehicular damage.

Section 18.48.600 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment expands language to clarify stairways to roof.

Section 18.48.610 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment adds language to clarify access to roof hatch or trap doors.

Section 18.48.620 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment expands language to clarify designation of stairway 1.

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CHARLES PARKIN, City Attorney
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Section 18.48.630 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment expands language to clarify this does not apply to temporary situations.

Section 18.48.640 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment expands language to clarify the protection against physical damage from vehicles.

Section 18.48.650 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment expands language for the installation and maintenance of vapor processing systems.

Section 18.48.660 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment adds language for welding and cutting aboard vessels.

Section 18.48.670 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment clarifies hose cabinet requirements.

Section 18.48.680 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment clarifies requirement for fire safety officers.

Section 18.48.690 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment expands language to clarify the City of Long Beach insurance requirements.

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CHARLES PARKIN, City Attorney
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Section 18.48.700 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment expands language to clarify the City of Long Beach prohibition of fireworks and associated insurance requirements.

Section18.48.710 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment expands language to clarify underground tank installation.

Section 18.48.720 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment expands language to clarify the amounts of flammable or combustible liquids in residential occupancies.

Section 18.48.730 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment expands language for the storage of liquefied petroleum gas in buildings.

Section 18.48.740 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment expands language for the use of liquefied petroleum gas.

Section 18.48.750 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment expands language for the installation of liquefied petroleum gas in tanks.

Section 18.48.760 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and 18941.5(b) of the California Health and Safety Code. This amendment clarifies

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CHARLES PARKIN, City Attorney
333 West Ocean Boulevard, 11th Floor
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construction document procedures.

Section 18.48.770 – Amendment is necessary on the basis of local geological conditions. The City of Long Beach is located by the International Building Code in Seismic Design Category D, E or F, and by the International Residential Code in Seismic Design Category D_2 or E, which is considered by experts to be one of the most active seismic regions in the world, and therefore requires these extra margins of safety due to the necessity of providing on site fire protection in a seismic emergency when fire department resources could be greatly delayed and overwhelmed. This amendment provides language to clarify reduction of fire flow requirements.

Section 10. Findings for more restrictive building standards code provisions amendments to the California Building Standards Code, Title 24 of the California Code of Regulations.

Chapter 18.74 – Amendment is necessary on the basis of local climatic, environmental and geologic conditions. The City's Mediterranean and semi-arid climate system produces warm dry summers and cool wet winters that results in an average of 13 inches of rain water received annually. A geologic condition resulting from impermeable layers of clay found between the City's surface and groundwater basin prevents any precipitation that falls locally from replenishing the basin. These local conditions limit the City's groundwater pumping activities from meeting the water demand of nearly half a million residents and businesses. This chapter requires the use of low impact development (LID) standards in the planning and construction of development projects. LID standards promote the goal of environmental sustainability by helping improve the quality of receiving waters, protecting the Los Angeles and San Gabriel River watersheds, maintaining natural drainage paths, and protecting potable water supplies within the City. The LID objective of controlling and maintaining flow rate is addressed through land development and stormwater management techniques that imitate the natural hydrology (or movement of water) found on the site. Using site design and best

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CHARLES PARKIN, City Attorney
333 West Ocean Boulevard, 11th Floor
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management practices that allow for storage and retention, infiltration, filtering, and flowrate adjustments achieve the goals of LID, advances sustainability and reduces the overall cost of stormwater management. The use of engineered systems, structural devices, and vegetated natural designs distributes stormwater and urban runoff across a development site maximizing the effectiveness of LID. The amendment makes modification and changes to better preserve and protect the community where environmental resources are scarce due to varying and occasional immoderate temperatures and weather conditions and to realize a healthier, cleaner and more viable environment for the City's residents, its workforce and visitors.

Chapter 18.75 – Amendment is necessary for administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code. This amendment adopts Appendix J of the California Building Code and makes minor editorial and administrative changes to properly enforce and regulate grading construction work.

Chapter 18.76 – Amendment is necessary on the basis of local climatic, environmental and geologic conditions. The City's Mediterranean and semi-arid climate system produces warm dry summers and cool wet winters that results in an average of 13 inches of rain water received annually. A geologic condition resulting from impermeable layers of clay found between the City's surface and groundwater basin prevents any precipitation that falls locally from replenishing the basin. These local conditions limit the City's groundwater pumping activities from meeting the water demand of nearly half a million residents and businesses. This requires the City to rely on imported water supplies, namely the Colorado River and the Sacramento-San Joaquin Delta, that have become much less reliable due to multiple environmental and climate-related circumstances, including frequent droughts, dramatic pumping restrictions on imported water supplies as the result of State and Federal environmental court rulings, dramatic reductions in the levels of key statewide and regional water storage reservoirs and the continued threat of a changing climate that could make the region both warmer

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CHARLES PARKIN, City Attorney
333 West Ocean Boulevard, 11th Floor
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and drier in the future. This amendment require the installation of water submeters in newly constructed multifamily and newly constructed mixed-use residential and commercial developments to assure that new buildings are designed and constructed in a way that supports the City's need for a more reliable water supply. The amendment makes modification and changes to better preserve and protect the community where environmental resources are scarce due to varying and occasional immoderate temperatures and weather conditions and to realize a healthier, cleaner and more viable environment for the City's residents, its workforce and visitors.

Section 11. The Director of Development Services and the Fire Chief of the Fire Department are instructed to, and shall, transmit a copy of this resolution together with any appropriate supporting documentation, to the California Building Standards Commission in accordance with California Health and Safety Code Section 17958.7.

Section 12. This resolution shall take effect on January 1, 2014, upon its adoption by the City Council, and the City Clerk shall certify to the vote adopting this resolution.

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OFFICE OF THE CITY ATTORNEY
CHARLES PARKIN, City Attorney
333 West Ocean Boulevard, 11th Floor
Long Beach, CA 90802-4664

I hereby certify that the foregoing resolution was adopted by the City Council of the City of Long Beach at its meeting of November 5, 2013, by the following vote:

Councilmembers: Garcia, Lowenthal, DeLong, O'Donnell, Schipske, Andrews, Johnson, Austin, Neal.

Noes: Councilmembers: None.

Absent: Councilmembers: None.

City Clerk

OFFICE OF THE CITY ATTORNEY
CHARLES PARKIN, City Attorney
333 West Ocean Boulevard, 11th Floor
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