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RESOLUTION NO. RES-13-0101

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3 A RESOLUTION OF THE CITY COUNCIL OF THE
4 CITY OF LONG BEACH ADOPTING AND MAKING
5 EXPRESS FINDINGS AND DETERMINATIONS RELATING
6 TO THE ENACTMENT OF ADMINISTRATIVE
7 AMENDMENTS, AND, WHERE APPROPRIATE, MORE
8 RESTRICTIVE BUILDING STANDARDS CODE
9 PROVISIONS THAN THOSE OF THE CALIFORNIA
10 BUILDING CODE, CALIFORNIA RESIDENTIAL CODE,
11 CALIFORNIA PLUMBING CODE, CALIFORNIA GREEN
12 BUILDING STANDARDS CODE, CALIFORNIA FIRE CODE
13 AND UNIFORM HOUSING CODE; FINDING THAT SAID
14 AMENDMENTS AND MODIFICATIONS TO THE CODES
15 ARE REASONABLY NECESSARY BECAUSE OF THE
16 LOCAL CLIMATIC, GEOLOGICAL OR TOPOGRAPHICAL
17 CONDITIONS EXISTING IN LONG BEACH; AND
18 INSTRUCTING THE DIRECTOR OF DEVELOPMENT
19 SERVICES AND THE FIRE CHIEF TO TRANSMIT SAID
20 FINDINGS AND DETERMINATIONS TO THE CALIFORNIA
21 BUILDING STANDARDS COMMISSIONS IN ACCORDANCE
22 WITH CALIFORNIA HEALTH AND SAFETY CODE
23 SECTIONS 13143.5, 17922, 17958.7 AND 18941.5
24

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

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

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

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

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

13 "...before making any modifications or changes pursuant to Section
14 17958.5, shall make an express finding that such modifications or changes
15 are reasonably necessary because of local climatic, geological or
16 topographical conditions..."; and

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

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

25 WHEREAS, the City is located by the International Building Code in
26 Seismic Design Category D, E or F, and the International Residential Code in Seismic
27 Design Category D₂ or E, which is considered by experts to be one of the most active
28 seismic regions in the world; and

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

28 Section 18.40.010 – Amendment is necessary for administrative clarification, and

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

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

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

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

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

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

28 Section 18.40.070 – Amendment is necessary for administrative clarification, and

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

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

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

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

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

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

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

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

1 property following a local emergency.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

1 behavior as the nailed wood structural shear panels. The test results of the stapled wood
2 structural shear panels appeared much lower in strength and drift than the nailed wood
3 structural shear panel test results. Therefore, the use of staples as fasteners to resist or
4 transfer seismic forces shall not be permitted without being substantiated by cyclic
5 testing. The amendment makes modification and changes to better limit personal injury
6 and property damage as a result of seismic activity and to establish criteria for repair of
7 damaged property following a local emergency.

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

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

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

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

1 buildings or structures.

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

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

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

15
16 Section 2. Findings for more restrictive building standards code
17 provisions amendments to the California Residential Code, Part 2.5, Title 24 of the
18 California Code of Regulations.

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

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

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

1 of the California Health and Safety Code. This amendment makes minor editorial
2 changes to reference the various amendments proposed to the California Residential
3 Code.

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

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

14 Section 18.41.060 – Amendment is necessary on the basis of a local geologic
15 condition. After the 1994 Northridge Earthquake, the Wood Frame Construction Joint
16 Task Force recommended that the quality of wood frame construction needed to be
17 greatly improved. One such recommendation identified by the Task Force is to improve
18 the quality and organization of structural plans prepared by the engineer or architect so
19 that plan examiners, building inspectors, contractors and special inspectors may logically
20 follow and construct the presentation of the seismic force-resisting systems in the
21 construction documents. For buildings or structures located in Seismic Design Category
22 D₀, D₁, D₂ or E that are subject to a greater level of seismic forces, the requirement to
23 have a California licensed architect or engineer prepare the construction documents is
24 intended to minimize or reduce structural deficiencies that may cause excessive damage
25 or injuries in wood frame buildings. Structural deficiencies such as plan and vertical
26 irregularities, improper shear transfer of the seismic force-resisting system, missed
27 details or connections important to the structural system, and the improper application of
28 the prescriptive requirements of the California Residential Code can be readily addressed

1 by a registered design professional. The amendment makes modification and changes to
2 better limit personal injury and property damage as a result of seismic activity and to
3 establish criteria for repair of damaged property following a local emergency.

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

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

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

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

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

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

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

1 event. The amendment makes modification and changes to better limit personal injury
2 and property damage as a result of seismic activity and to establish criteria for repair of
3 damaged property following a local emergency.

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

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

1 modification and changes to better limit personal injury and property damage as a result
2 of seismic activity and to establish criteria for repair of damaged property following a local
3 emergency.

4 Section 18.41.150 – Amendment is necessary on the basis of a local geologic
5 condition. The Structural Engineers Association of Southern California (SEAOSC) and
6 the Los Angeles City Joint Task Force that investigated the damages to buildings and
7 structures during the 1994 Northridge Earthquake recommended reducing allowable
8 shear values in wood structural panel shear walls or diaphragms that were not
9 substantiated by cyclic testing. That recommendation was consistent with a report to the
10 Governor from the Seismic Safety Commission of the State of California recommending
11 that code requirements be "more thoroughly substantiated with testing." The allowable
12 shear values for wood structural panel shear walls or diaphragms fastened with staples
13 are based on monotonic testing and does not take into consideration that earthquake
14 forces load shear wall or diaphragm in a repeating and fully reversible manner. In
15 September 2007, limited cyclic testing was conducted by a private engineering firm to
16 determine if wood structural panels fastened with staples would exhibit the same
17 behavior as the wood structural panels fastened with common nails. The test result
18 revealed that wood structural panel fastened with staples appeared to be much lower in
19 strength and stiffness than wood structural panels fastened with common nails. It was
20 recommended that the use of staples as fasteners for wood structural panel shear walls
21 or diaphragms not be permitted to resist seismic forces in structures assigned to Seismic
22 Design Category D₀, D₁ and D₂ unless it can be substantiated by cyclic testing. The
23 amendment makes modification and changes to better limit personal injury and property
24 damage as a result of seismic activity and to establish criteria for repair of damaged
25 property following a local emergency.

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

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

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

1 revealed that wood structural panel fastened with staples appeared to be much lower in
2 strength and stiffness than wood structural panels fastened with common nails. It was
3 recommended that the use of staples as fasteners for wood structural panel shear walls
4 or diaphragms not be permitted to resist seismic forces in structures assigned to Seismic
5 Design Category D₀, D₁ and D₂ unless it can be substantiated by cyclic testing. The
6 amendment makes modification and changes to better limit personal injury and property
7 damage as a result of seismic activity and to establish criteria for repair of damaged
8 property following a local emergency.

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

18 Section 18.41.190 – Amendment is necessary on the basis of a local geologic
19 condition. Due to the high geologic activities in the Southern California area and the
20 expected higher level of performance on buildings and structures, this proposed local
21 amendment increases the length and limits the location where shear walls sheathed with
22 lath, plaster or gypsum board are used in multi-level buildings. In addition, shear walls
23 sheathed with other materials are prohibited in Seismic Design Category D₀, D₁ and D₂ to
24 be consistent with the design limitation for similar shear walls found in the California
25 Building Code. The poor performance of such shear walls in the 1994 Northridge
26 Earthquake was investigated by the Structural Engineers Association of Southern
27 California (SEAOSC) and the Los Angeles City Task Force and formed the basis for this
28 amendment. Considering that shear walls sheathed with lath, plaster or gypsum board

1 are less ductile than steel moment frames or wood structural panel shear walls, the cities
2 and county of the Los Angeles region has taken the necessary measures to limit the
3 potential structural damage that may be caused by the use of such walls at the lower
4 level of multi-level building that are subject to higher levels of seismic loads. The
5 amendment makes modification and changes to better limit personal injury and property
6 damage as a result of seismic activity and to establish criteria for repair of damaged
7 property following a local emergency.

8 Section 18.41.200 – Amendment is necessary on the basis of a local geologic
9 condition. 3/8" thick 3-ply plywood shear walls experienced many failures during the
10 Northridge Earthquake. Box nails were observed to cause massive and multiple failures
11 of the typical 3/8" thick 3-ply plywood during the Northridge Earthquake. This amendment
12 specifies minimum sheathing thickness, nail size and spacing so as to provide a uniform
13 standard of construction for designers and buildings to follow. This is intended to improve
14 the performance level of buildings and structures that are subject to the higher seismic
15 demands and reduce and limit potential damages to property. This amendment reflects
16 the recommendations by the Structural Engineers Association of Southern California
17 (SEAOSC) and the Los Angeles City Joint Task Force that investigated the poor
18 performance observed in 1994 Northridge Earthquake. In September 2007, limited cyclic
19 testing was conducted by a private engineering firm to determine if wood structural
20 panels fastened with staples would exhibit the same behavior as the wood structural
21 panels fastened with common nails. The test result revealed that wood structural panel
22 fastened with staples appeared to be much lower in strength and stiffness than wood
23 structural panels fastened with common nails. It was recommended that the use of
24 staples as fasteners for wood structural panel shear walls or diaphragms not be permitted
25 to resist seismic forces in structures assigned to Seismic Design Category D₀, D₁ and D₂
26 unless it can be substantiated by cyclic testing. The amendment makes modification and
27 changes to better limit personal injury and property damage as a result of seismic activity
28 and to establish criteria for repair of damaged property following a local emergency.

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

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

1 Section 18.41.230 – Amendment is necessary on the basis of a local geologic
2 condition. 3/8” thick 3-ply plywood shear walls experienced many failures during the
3 Northridge Earthquake. Box nails were observed to cause massive and multiple failures
4 of the typical 3/8” thick 3-ply plywood during the Northridge Earthquake. This amendment
5 specifies minimum sheathing thickness, nail size and spacing so as to provide a uniform
6 standard of construction for designers and buildings to follow. This is intended to improve
7 the performance level of buildings and structures that are subject to the higher seismic
8 demands and reduce and limit potential damages to property. This amendment reflects
9 the recommendations by the Structural Engineers Association of Southern California
10 (SEAOSC) and the Los Angeles City Joint Task Force that investigated the poor
11 performance observed in 1994 Northridge Earthquake. In September 2007, limited cyclic
12 testing was conducted by a private engineering firm to determine if wood structural
13 panels fastened with staples would exhibit the same behavior as the wood structural
14 panels fastened with common nails. The test result revealed that wood structural panel
15 fastened with staples appeared to be much lower in strength and stiffness than wood
16 structural panels fastened with common nails. It was recommended that the use of
17 staples as fasteners for wood structural panel shear walls or diaphragms not be permitted
18 to resist seismic forces in structures assigned to Seismic Design Category D₀, D₁ and D₂
19 unless it can be substantiated by cyclic testing. The amendment makes modification and
20 changes to better limit personal injury and property damage as a result of seismic activity
21 and to establish criteria for repair of damaged property following a local emergency.

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

1 demands and reduce and limit potential damages to property. This amendment reflects
2 the recommendations by the Structural Engineers Association of Southern California
3 (SEAOSC) and the Los Angeles City Joint Task Force that investigated the poor
4 performance observed in 1994 Northridge Earthquake. The amendment makes
5 modification and changes to better limit personal injury and property damage as a result
6 of seismic activity and to establish criteria for repair of damaged property following a local
7 emergency.

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

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

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

1 been observed to be inadequate during major earthquakes. The lack of anchorage to the
2 foundation can result in the overturning or displacement of the fireplace/chimney. The
3 amendment makes modification and changes to better limit personal injury and property
4 damage as a result of seismic activity and to establish criteria for repair of damaged
5 property following a local emergency.

6
7 Section 3. Findings for more restrictive building standards code
8 provisions amendments to the California Electrical Code, Part 3, Title 24 of the California
9 Code of Regulations.

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

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

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

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

28

1 Section 4. Findings for more restrictive building standards code
2 provisions amendments to the California Plumbing Code, Part 4, Title 24 of the California
3 Code of Regulations.

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

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

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

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

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

1 undiluted urine as well as reducing potential problem of odors. This amendment makes
2 modification and changes to better limit personal injury and property damage.

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

10
11 Section 5. Findings for more restrictive building standards code
12 provisions amendments to the California Mechanical Code, Part 5, Title 24 of the
13 California Code of Regulations.

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

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

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

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

1 of the California Health and Safety Code. This amendment makes minor editorial
2 changes to reflect that certain chapter, appendices, and/or sections deleted are non-
3 mandatory provisions.

4

5 Section 6. Findings for more restrictive building standards code
6 provisions amendments to the Uniform Housing Code, Section 32, Article 5, Subchapter
7 1, Division 1, of Title 25 of the California Code of Regulations.

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

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

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

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

1 Part 1.5, Section 17960 and Section 17922 of the California Health and Safety Code.
2 This amendment makes minor editorial changes to reflect that certain chapter,
3 appendices, and/or sections deleted are non-mandatory provisions.

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

10

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

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

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

22

23 Section 8. Findings for more restrictive building standards code
24 provisions amendments to the California Green Building Standards Code, Part 11, Title
25 24 of the California Code of Regulations.

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

1 California Green Building Standards Code and makes minor editorial changes.

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

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

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

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

1 overall resource consumption. The amendment makes modification and changes to
2 better preserve and protect the community where environmental resources are scarce
3 due to varying and occasional immoderate temperatures and weather conditions and to
4 realize a healthier, cleaner and more viable environment for the City's residents, its
5 workforce and visitors.

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

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

28 Section 18.48.010 – Amendment is necessary for administrative clarification, and

1 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
2 18941.5(b) of the California Health and Safety Code. This amendment adopts the latest
3 edition of the California Fire Code and makes minor editorial changes.

4 Section 18.48.020 – Amendment is necessary for administrative clarification, and
5 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
6 18941.5(b) of the California Health and Safety Code. This amendment makes minor
7 editorial changes to reflect the state agencies and the applicable referenced sections.

8 Section 18.48.030 – Amendment is necessary for administrative clarification, and
9 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
10 18941.5(b) of the California Health and Safety Code. This amendment reference the
11 various amendments proposed to the California Fire Code.

12 Section 18.48.040 – Amendment is necessary for administrative clarification, and
13 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
14 18941.5(b) of the California Health and Safety Code. This amendment makes minor
15 editorial changes to reflect that certain chapter, appendices, and/or sections deleted are
16 non-mandatory provisions.

17 Section 18.48.050 – Amendment is necessary for administrative clarification, and
18 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
19 18941.5(b) of the California Health and Safety Code. This amendment names this code
20 as the Fire Code for the City of Long Beach.

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

24 Section 18.48.070 – Amendment is necessary for administrative clarification, and
25 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
26 18941.5(b) of the California Health and Safety Code. This amendment adds
27 supplemental rules and regulations to carry out the intent of the code.

28 Section 18.48.080 – Amendment is necessary for administrative clarification, and

1 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
2 18941.5(b) of the California Health and Safety Code. This amendment clarifies the
3 appointment of the fire code official.

4 Section 18.48.090 – Amendment is necessary for administrative clarification, and
5 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
6 18941.5(b) of the California Health and Safety Code. This amendment provides special
7 requirements for ocean areas and the vessels that operate there.

8 Section 18.48.100 – Amendment is necessary for administrative clarification, and
9 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
10 18941.5(b) of the California Health and Safety Code. This amendment clarifies length of
11 time records shall be retained.

12 Section 18.48.110 – Amendment is necessary for administrative clarification, and
13 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
14 18941.5(b) of the California Health and Safety Code. This amendment expands language
15 to provide for three types of permits.

16 Section 18.48.120 – Amendment is necessary for administrative clarification, and
17 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
18 18941.5(b) of the California Health and Safety Code. This amendment expands language
19 to include inspections permits.

20 Section 18.48.130 – Amendment is necessary for administrative clarification, and
21 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
22 18941.5(b) of the California Health and Safety Code. This amendment provides for a
23 declaration of intended use.

24 Section 18.48.140 – Amendment is necessary for administrative clarification, and
25 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
26 18941.5(b) of the California Health and Safety Code. This amendment expands language
27 to include inspections permits

28 Section 18.48.150 – Amendment is necessary for administrative clarification, and

1 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
2 18941.5(b) of the California Health and Safety Code. This amendment expands language
3 to include additional operational permits.

4 Section 18.48.160 – Amendment is necessary for administrative clarification, and
5 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
6 18941.5(b) of the California Health and Safety Code. This amendment expands language
7 to include additional operational permits.

8 Section 18.48.170 – Amendment is necessary for administrative clarification, and
9 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
10 18941.5(b) of the California Health and Safety Code. This amendment clarifies applicable
11 code reference.

12 Section 18.48.180 – Amendment is necessary for administrative clarification, and
13 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
14 18941.5(b) of the California Health and Safety Code. This amendment expands language
15 to include inspection permits.

16 Section 18.48.190 – Amendment is necessary for administrative clarification, and
17 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
18 18941.5(b) of the California Health and Safety Code. This amendment expands language
19 to include additional construction and inspection permits.

20 Section 18.48.200 – Amendment is necessary for administrative clarification, and
21 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
22 18941.5(b) of the California Health and Safety Code. This amendment expands language
23 for the responsibility of keeping an accurate count of building occupants.

24 Section 18.48.210 – Amendment is necessary for administrative clarification, and
25 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
26 18941.5(b) of the California Health and Safety Code. This amendment clarifies language
27 for violation penalties.

28 Section 18.48.220 – Amendment is necessary for administrative clarification, and

1 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
2 18941.5(b) of the California Health and Safety Code. This amendment clarifies language
3 for stop work orders.

4 Section 18.48.230 – Amendment is necessary for administrative clarification, and
5 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
6 18941.5(b) of the California Health and Safety Code. This amendment clarifies language
7 for permit fees.

8 Section 18.48.240 – Amendment is necessary for administrative clarification, and
9 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
10 18941.5(b) of the California Health and Safety Code. This amendment expands language
11 for cost recovery and reporting requirements.

12 Section 18.48.250 – Amendment is necessary for administrative clarification, and
13 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
14 18941.5(b) of the California Health and Safety Code. This amendment defines a “high
15 rise structure”.

16 Section 18.48.260 – Amendment is necessary for administrative clarification, and
17 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
18 18941.5(b) of the California Health and Safety Code. This amendment provides
19 definitions for fire chief and fire code official.

20 Section 18.48.270 – Amendment is necessary for administrative clarification, and
21 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
22 18941.5(b) of the California Health and Safety Code. This amendment provides
23 definitions for boat yard, safety container and small craft.

24 Section 18.48.280 – Amendment is necessary for administrative clarification, and
25 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
26 18941.5(b) of the California Health and Safety Code. This amendment clarifies
27 responsibility of property owners to maintain alleys free of hazards.

28 Section 18.48.290 – Amendment is necessary for administrative clarification, and

1 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
2 18941.5(b) of the California Health and Safety Code. This amendment establishes
3 conditions for open burning.

4 Section 18.48.300 – Amendment is necessary for administrative clarification, and
5 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
6 18941.5(b) of the California Health and Safety Code. This amendment establishes
7 conditions for recreational burning.

8 Section 18.48.310 – Amendment is necessary for administrative clarification, and
9 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
10 18941.5(b) of the California Health and Safety Code. This amendment expands language
11 for installation of guard posts.

12 Section 18.48.320 – Amendment is necessary for administrative clarification, and
13 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
14 18941.5(b) of the California Health and Safety Code. This amendment establishes
15 conditions for fire safety officer.

16 Section 18.48.330 – Amendment is necessary for administrative clarification, and
17 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
18 18941.5(b) of the California Health and Safety Code. This amendment expands language
19 for fire access roads.

20 Section 18.48.340 – Amendment is necessary for administrative clarification, and
21 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
22 18941.5(b) of the California Health and Safety Code. This amendment expands language
23 for fire access roads.

24 Section 18.48.350 – Amendment is necessary for administrative clarification, and
25 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
26 18941.5(b) of the California Health and Safety Code. This amendment expands language
27 to clarify location and illumination of address numbers.

28 Section 18.48.360 – Amendment is necessary for administrative clarification, and

1 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
2 18941.5(b) of the California Health and Safety Code. This amendment expands language
3 for key box maintenance.

4 Section 18.48.370 – Amendment is necessary on the basis of local geological
5 conditions. The City of Long Beach is located by the International Building Code in
6 Seismic Design Category D, E or F, and by the International Residential Code in Seismic
7 Design Category D₂ or E, which is considered by experts to be one of the most active
8 seismic regions in the world, and therefore requires these densely populated
9 occupancies have this added means of escape.

10 Section 18.48.380 – Amendment is necessary for administrative clarification, and
11 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
12 18941.5(b) of the California Health and Safety Code. This amendment directs the code
13 user to the proper section for protection of vehicular damage.

14 Section 18.48.390 – Amendment is necessary on the basis of local geological
15 conditions. The City of Long Beach is located by the International Building Code in
16 Seismic Design Category D, E or F, and by the International Residential Code in Seismic
17 Design Category D₂ or E, which is considered by experts to be one of the most active
18 seismic regions in the world, and therefore requires these extra margins of safety due to
19 the necessity of providing on site fire protection in a seismic emergency when fire
20 department resources could be greatly delayed and overwhelmed. This amendment
21 provides clarifications for fire sprinkler systems.

22 Section 18.48.400 – Amendment is necessary on the basis of local geological
23 conditions. The City of Long Beach is located by the International Building Code in
24 Seismic Design Category D, E or F, and by the International Residential Code in Seismic
25 Design Category D₂ or E, which is considered by experts to be one of the most active
26 seismic regions in the world, and therefore requires these extra margins of safety due to
27 the necessity of providing on site fire protection in a seismic emergency when fire
28 department resources could be greatly delayed and overwhelmed. This amendment

1 provides clarifications for fire sprinkler systems.

2 Section 18.48.410 – Amendment is necessary on the basis of local geological
3 conditions. The City of Long Beach is located by the International Building Code in
4 Seismic Design Category D, E or F, and by the International Residential Code in Seismic
5 Design Category D₂ or E, which is considered by experts to be one of the most active
6 seismic regions in the world, and therefore requires these extra margins of safety due to
7 the necessity of providing on site fire protection in a seismic emergency when fire
8 department resources could be greatly delayed and overwhelmed. This amendment
9 provides clarifications for fire sprinkler systems.

10 Section 18.48.420 – Amendment is necessary on the basis of local geological
11 conditions. The City of Long Beach is located by the International Building Code in
12 Seismic Design Category D, E or F, and by the International Residential Code in Seismic
13 Design Category D₂ or E, which is considered by experts to be one of the most active
14 seismic regions in the world, and therefore requires these extra margins of safety due to
15 the necessity of providing on site fire protection in a seismic emergency when fire
16 department resources could be greatly delayed and overwhelmed. This amendment
17 provides fire sprinkler requirements for non residential buildings.

18 Section 18.48.430 – Amendment is necessary on the basis of local geological
19 conditions. The City of Long Beach is located by the International Building Code in
20 Seismic Design Category D, E or F, and by the International Residential Code in Seismic
21 Design Category D₂ or E, which is considered by experts to be one of the most active
22 seismic regions in the world, and therefore requires these extra margins of safety due to
23 the necessity of providing on site fire protection in a seismic emergency when fire
24 department resources could be greatly delayed and overwhelmed. This amendment
25 provides fire sprinkler requirements for residential buildings.

26 Section 18.48.440 – Amendment is necessary for administrative clarification, and
27 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
28 18941.5(b) of the California Health and Safety Code. This amendment provides for a

1 safety margin when performing hydraulic calculations.

2 Section 18.48.450 – Amendment is necessary for administrative clarification, and
3 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
4 18941.5(b) of the California Health and Safety Code. This amendment clarifies remote
5 annunciators in sprinkler monitoring systems.

6 Section 18.48.460 – Amendment is necessary for administrative clarification, and
7 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
8 18941.5(b) of the California Health and Safety Code. This amendment expands language
9 to clarify fire alarm signal reporting.

10 Section 18.48.470 – Amendment is necessary for administrative clarification, and
11 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
12 18941.5(b) of the California Health and Safety Code. This amendment expands language
13 for exterior alarm device.

14 Section 18.48.480 – Amendment is necessary on the basis of local geological
15 conditions. The City of Long Beach is located by the International Building Code in
16 Seismic Design Category D, E or F, and by the International Residential Code in Seismic
17 Design Category D₂ or E, which is considered by experts to be one of the most active
18 seismic regions in the world, and therefore requires these extra margins of safety due to
19 the necessity of providing on site fire protection in a seismic emergency when fire
20 department resources could be greatly delayed and overwhelmed. This amendment adds
21 language for interior alarm device.

22 Section 18.48.490 – Amendment is necessary for administrative clarification, and
23 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
24 18941.5(b) of the California Health and Safety Code. This amendment adds language to
25 clarify minimum pressure requirements.

26 Section 18.48.500 – Amendment is necessary for administrative clarification, and
27 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
28 18941.5(b) of the California Health and Safety Code. This amendment clarifies location of

1 hose valves in stairways.

2 Section 18.48.510 – Amendment is necessary for administrative clarification, and
3 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
4 18941.5(b) of the California Health and Safety Code. This amendment adds language to
5 clarify building evacuation and fire alarm systems.

6 Section 18.48.520 – Amendment is necessary for administrative clarification, and
7 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
8 18941.5(b) of the California Health and Safety Code. This amendment clarifies duct
9 smoke detectors.

10 Section 18.48.530 – Amendment is necessary for administrative clarification, and
11 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
12 18941.5(b) of the California Health and Safety Code. This amendment clarifies duct
13 smoke detectors.

14 Section 18.48.540 – Amendment is necessary on the basis of local geological
15 conditions. The City of Long Beach is located by the International Building Code in
16 Seismic Design Category D, E or F, and by the International Residential Code in Seismic
17 Design Category D₂ or E, which is considered by experts to be one of the most active
18 seismic regions in the world, and therefore requires these extra margins of safety due to
19 the necessity of providing on site life safety systems in a seismic emergency when fire
20 department resources could be greatly delayed and overwhelmed. This amendment adds
21 language for fire alarm and smoke removal systems.

22 Section 18.48.550 – Amendment is necessary for administrative clarification, and
23 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
24 18941.5(b) of the California Health and Safety Code. This amendment expands language
25 to clarify temperature ratings of smoke and heat vents.

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

1 Design Category D₂ or E, which is considered by experts to be one of the most active
2 seismic regions in the world, and therefore requires this extra margin of safety due to the
3 probability of damage to water supplies. This amendment provides requirements for fire
4 department connections.

5 Section 18.48.570 – Amendment is necessary for administrative clarification, and
6 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
7 18941.5(b) of the California Health and Safety Code. This amendment expands language
8 to clarify location of fire department connections.

9 Section 18.48.580 – Amendment is necessary for administrative clarification, and
10 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
11 18941.5(b) of the California Health and Safety Code. This amendment expands language
12 to clarify access to fire department connections.

13 Section 18.48.590 – Amendment is necessary for administrative clarification, and
14 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
15 18941.5(b) of the California Health and Safety Code. This amendment expands language
16 to clarify protection of exit ways from vehicular damage.

17 Section 18.48.600 – Amendment is necessary for administrative clarification, and
18 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
19 18941.5(b) of the California Health and Safety Code. This amendment expands language
20 to clarify stairways to roof.

21 Section 18.48.610 – Amendment is necessary for administrative clarification, and
22 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
23 18941.5(b) of the California Health and Safety Code. This amendment adds language to
24 clarify access to roof hatch or trap doors.

25 Section 18.48.620 – Amendment is necessary for administrative clarification, and
26 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
27 18941.5(b) of the California Health and Safety Code. This amendment expands language
28 to clarify designation of stairway 1.

1 Section 18.48.630 – Amendment is necessary for administrative clarification, and
2 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
3 18941.5(b) of the California Health and Safety Code. This amendment expands language
4 to clarify this does not apply to temporary situations.

5 Section 18.48.640 – Amendment is necessary for administrative clarification, and
6 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
7 18941.5(b) of the California Health and Safety Code. This amendment expands language
8 to clarify the protection against physical damage from vehicles.

9 Section 18.48.650 – Amendment is necessary for administrative clarification, and
10 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
11 18941.5(b) of the California Health and Safety Code. This amendment expands language
12 for the installation and maintenance of vapor processing systems.

13 Section 18.48.660 – Amendment is necessary for administrative clarification, and
14 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
15 18941.5(b) of the California Health and Safety Code. This amendment adds language for
16 welding and cutting aboard vessels.

17 Section 18.48.670 – Amendment is necessary for administrative clarification, and
18 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
19 18941.5(b) of the California Health and Safety Code. This amendment clarifies hose
20 cabinet requirements.

21 Section 18.48.680 – Amendment is necessary for administrative clarification, and
22 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
23 18941.5(b) of the California Health and Safety Code. This amendment clarifies
24 requirement for fire safety officers.

25 Section 18.48.690 – Amendment is necessary for administrative clarification, and
26 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
27 18941.5(b) of the California Health and Safety Code. This amendment expands language
28 to clarify the City of Long Beach insurance requirements.

1 Section 18.48.700 – Amendment is necessary for administrative clarification, and
2 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
3 18941.5(b) of the California Health and Safety Code. This amendment expands language
4 to clarify the City of Long Beach prohibition of fireworks and associated insurance
5 requirements.

6 Section 18.48.710 – Amendment is necessary for administrative clarification, and
7 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
8 18941.5(b) of the California Health and Safety Code. This amendment expands language
9 to clarify underground tank installation.

10 Section 18.48.720 – Amendment is necessary for administrative clarification, and
11 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
12 18941.5(b) of the California Health and Safety Code. This amendment expands language
13 to clarify the amounts of flammable or combustible liquids in residential occupancies.

14 Section 18.48.730 – Amendment is necessary for administrative clarification, and
15 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
16 18941.5(b) of the California Health and Safety Code. This amendment expands language
17 for the storage of liquefied petroleum gas in buildings.

18 Section 18.48.740 – Amendment is necessary for administrative clarification, and
19 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
20 18941.5(b) of the California Health and Safety Code. This amendment expands language
21 for the use of liquefied petroleum gas.

22 Section 18.48.750 – Amendment is necessary for administrative clarification, and
23 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
24 18941.5(b) of the California Health and Safety Code. This amendment expands language
25 for the installation of liquefied petroleum gas in tanks.

26 Section 18.48.760 – Amendment is necessary for administrative clarification, and
27 does not modify a Building Standard pursuant to Sections 13143.5, 17958.7 and
28 18941.5(b) of the California Health and Safety Code. This amendment clarifies

1 construction document procedures.

2 Section 18.48.770 – Amendment is necessary on the basis of local geological
3 conditions. The City of Long Beach is located by the International Building Code in
4 Seismic Design Category D, E or F, and by the International Residential Code in Seismic
5 Design Category D₂ or E, which is considered by experts to be one of the most active
6 seismic regions in the world, and therefore requires these extra margins of safety due to
7 the necessity of providing on site fire protection in a seismic emergency when fire
8 department resources could be greatly delayed and overwhelmed. This amendment
9 provides language to clarify reduction of fire flow requirements.

10

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

14 Chapter 18.74 – Amendment is necessary on the basis of local climatic,
15 environmental and geologic conditions. The City's Mediterranean and semi-arid climate
16 system produces warm dry summers and cool wet winters that results in an average of
17 13 inches of rain water received annually. A geologic condition resulting from
18 impermeable layers of clay found between the City's surface and groundwater basin
19 prevents any precipitation that falls locally from replenishing the basin. These local
20 conditions limit the City's groundwater pumping activities from meeting the water demand
21 of nearly half a million residents and businesses. This chapter requires the use of low
22 impact development (LID) standards in the planning and construction of development
23 projects. LID standards promote the goal of environmental sustainability by helping
24 improve the quality of receiving waters, protecting the Los Angeles and San Gabriel River
25 watersheds, maintaining natural drainage paths, and protecting potable water supplies
26 within the City. The LID objective of controlling and maintaining flow rate is addressed
27 through land development and stormwater management techniques that imitate the
28 natural hydrology (or movement of water) found on the site. Using site design and best

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

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

15 Chapter 18.76 – Amendment is necessary on the basis of local climatic,
16 environmental and geologic conditions. The City's Mediterranean and semi-arid climate
17 system produces warm dry summers and cool wet winters that results in an average of
18 13 inches of rain water received annually. A geologic condition resulting from
19 impermeable layers of clay found between the City's surface and groundwater basin
20 prevents any precipitation that falls locally from replenishing the basin. These local
21 conditions limit the City's groundwater pumping activities from meeting the water demand
22 of nearly half a million residents and businesses. This requires the City to rely on
23 imported water supplies, namely the Colorado River and the Sacramento-San Joaquin
24 Delta, that have become much less reliable due to multiple environmental and climate-
25 related circumstances, including frequent droughts, dramatic pumping restrictions on
26 imported water supplies as the result of State and Federal environmental court rulings,
27 dramatic reductions in the levels of key statewide and regional water storage reservoirs
28 and the continued threat of a changing climate that could make the region both warmer

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1 and drier in the future. This amendment require the installation of water submeters in
2 newly constructed multifamily and newly constructed mixed-use residential and
3 commercial developments to assure that new buildings are designed and constructed in
4 a way that supports the City's need for a more reliable water supply. The amendment
5 makes modification and changes to better preserve and protect the community where
6 environmental resources are scarce due to varying and occasional immoderate
7 temperatures and weather conditions and to realize a healthier, cleaner and more viable
8 environment for the City's residents, its workforce and visitors.

9
10 Section 11. The Director of Development Services and the Fire Chief of the Fire
11 Department are instructed to, and shall, transmit a copy of this resolution together with
12 any appropriate supporting documentation, to the California Building Standards
13 Commission in accordance with California Health and Safety Code Section 17958.7.

14
15 Section 12. This resolution shall take effect on January 1, 2014, upon its
16 adoption by the City Council, and the City Clerk shall certify to the vote adopting this
17 resolution.

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

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

7
8 Noes: Councilmembers: None.

9
10 Absent: Councilmembers: None.

11
12
13 
14 _____
15 City Clerk

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