

Culver City SWOF Ordinance Draft

Chapter 15.02.500 Mandatory Seismic Strengthening Provisions For Existing Wood-Frame Buildings With Soft, Weak or Open-Front Walls.

15.02.501 Purpose.

The provisions of this Chapter are intended to promote the public welfare and safety by reducing the risk of death or injury that may result from the effects of earthquakes on existing wood-framed multi-story buildings with Soft, Weak or Open-Front Walls. Generally, this type of structure consists of partial tuck-under parking on the first floor level with single or multifamily living space in the floors above. In past earthquakes many of these types of structures have performed poorly and collapsed causing loss of life, personal injury, and substantial property damage. This Chapter is considered an amendment to the California Building Code and creates minimum standards intended to reduce the risk of collapse and improve the performance of these buildings during earthquakes, but not necessarily prevent, the loss of life, injury and damage to property.

15.02.502 Scope.

The provisions of this Chapter shall apply to all existing buildings of wood-frame construction, or wood-frame portions thereof, where:

1. A permit for construction of a new building was applied for before October 23, 1978, or if no permit can be located, the structure is determined by the Building Official to have been built under Building Code standards enacted prior to October 23, 1978, and
2. The Ground Floor or basement portion of the structure contains parking or other similar open floor space that causes Soft, Weak, Open-Front Wall Lines, or the majority of the Ground Floor or basement portion of the structure contains an open floor space, and there exists one or more stories above.

Exceptions:

1. The provisions of this chapter shall not apply to detached single-family dwelling unit and detached single-family dwelling unit with ADU.

Notwithstanding any provision of the Building Code, compliance with this Chapter shall not require existing electrical, plumbing, mechanical or fire-safety systems to be altered to comply with the current Building Code unless they constitute a hazard to life or property as determined by the Building Official.

15.02.503 Definitions.

Notwithstanding the applicable definitions, symbols and notations in the Building Code, the following definitions shall apply for the purposes of this Chapter: .

Building Code is the Building Code of the City of Culver City in effect at the time of submittal retrofit plan for plan review.

Cripple Wall is a wood-framed stud wall extending from the top of the foundation wall to the underside of the lowest floor framing.

Design Criteria is a document that outlines the design professional's alternative analysis or Retrofit approach and methodology to satisfy the design intent and performance objective of the Ordinance. This document is intended to be used when the code and seismic Ordinance language does not address the proposed analysis or Retrofit approach or methodology.

Ground Floor is any floor within the wood-frame portion of a building whose elevation is immediately accessible from an adjacent grade by vehicles or pedestrians. The ground floor portion of the structure does not include any floor that is completely below adjacent grades.

Historical Building is any building designated as a "qualified historical building" as defined in Part 8, Title 24 of the California Code of Regulations.

Open-Front Wall Line is an exterior Wall Line, without vertical elements of the lateral force-resisting system, which requires tributary seismic forces to be resisted by diaphragm rotation or contains an excessive cantilever beyond parallel lines of shear walls. Diaphragms that cantilever more than 25 percent of the distance between lines of lateral force resisting elements from which the diaphragm cantilevers shall be considered excessive. Diaphragm cantilevers or exterior balconies of 6 feet or less in width shall not be considered excessive cantilevers.

Owner or Building Owner is the individual(s), agent, firm, corporation, or entity having legal possession, equitable interest in the property, or rights to sanction evaluation or Retrofit of a building.

Retrofit is an improvement of the lateral force resisting system by alteration of existing structural elements or addition of new structural elements.

Seismic Design Guidelines are framework guidelines developed by the Building Official which are intended to calibrate, delineate and detail technical requirements to be used for the retrofitting of buildings subject to this Chapter.

Soft Wall Line is a deficiency in a Wall Line in which the lateral stiffness is less than what is required by story drift limitations and deformation compatibility requirements of this Chapter. In lieu of the engineering analysis required by this Chapter to determine whether a wall line's lateral stiffness is less than the aforementioned story drift limitations and deformation compatibility requirements, a Soft Wall Line deficiency may be defined as a Wall Line in a Story where the wall stiffness is less than 70 percent of the stiffness of the exterior wall above for the direction under consideration.

Story is as defined in the Building Code, but includes any basement or under-floor space of a building with Cripple Walls exceeding four feet in height.

Story Strength is the total strength of all seismic-resisting elements sharing the same Story shear in the direction under consideration.

Wall Line is any length of a wall along a principal axis of the building used to provide resistance to lateral loads.

Weak Wall Line is a deficiency of a Wall Line at the Ground Floor in which the wall strength is less than 80 percent of the strength of the wall above in the direction under consideration or is an exterior wall where the majority of the Ground Floor or basement portion of the structure contains an open floor space and the Ground Floor Story Strength is less than 80 percent of the Story Strength above.

15.02.504 Compliance Requirements.

The Owner of each building within the scope of this Chapter shall cause an investigation of the existing construction and a structural analysis to be performed on the building by a Registered Civil or Structural Engineer licensed in the State of California, and if the building does not meet the minimum standards specified in this Chapter, the Owner shall cause it to be structurally altered to conform to such standards.

Each building within the scope of this Chapter which has been analyzed to demonstrate compliance or has been structurally altered to comply with the minimum standards in this Chapter shall be maintained in conformity with the requirements of this Chapter in effect at the time of such analysis or structural alteration.

Notwithstanding any other provisions of this Chapter to the contrary, a building that is found to be within the scope of this Chapter and is not brought into compliance in the time frame indicated in Table A, may be deemed unsafe and subject to the requirements of Section 102 of the Building Code.

15.02.505 Time Period for Compliance/Priority Designation.

- a. Screening Report. Within the time limits allowed in Table A, the Owner of any building subject to the provisions of this Chapter shall submit a screening report to the Building and Safety Division. The report shall demonstrate whether the structure conforms to the earthquake design provisions contained in this Chapter; minimum form requirements shall be as specified by the Building Official. .
- b. Plan, Permits and Construction. If the screening report concludes the structure does not comply with the provisions of this Chapter, the structure shall be strengthened to comply with the standards of this Chapter within the time periods shown in Table A. Minimum plan requirements shall be as specified by the Building Official.

TABLE A
TIME PERIOD FOR COMPLIANCE

Required Action by Owner	Submit Screening Report	Submit Retrofit Plans	Obtain Permit	Commence Construction	Complete Construction
	1 year	2 years	3 years	4 years	5 years
Milestone	from notice to the Owner	from notice to the Owner	from notice to the Owner	from notice to the Owner	from notice to the Owner

- c. Priority Designations. The Building Official shall prioritize enforcement of this Chapter as defined in Table B.

TABLE B
PRIORITY DESIGNATION .

Priority	Description
Priority I.	Buildings containing more than 12 units, or 3 stories with more than 6 units
Priority II.	Buildings containing between 5-12 units not falling within the definition of Priority I.
Priority III.	Buildings not falling within the definition of Priority I or II, including but not limited to duplexes, triplex, and townhouses.

15.02.506 Administration.

- a. Issuance of Order. The Building Official shall, in accordance with the priorities set forth in Table B, issue an order as provided in this Section to the Owner of each building that is expected to be within the scope of this Chapter. .
- b. Contents of Order. The order shall be in writing and shall be served either personally or by certified mail to the Owner as shown on the last equalized Los Angeles County assessment roll of the building. The order shall specify that the building has been determined by the Building Official to be within the scope of this Chapter and, therefore, is required to meet the standards of this Chapter..
- c. Service of Order. Proper service of a notice shall be by certified mail, It shall be deemed a reasonable effort has been made to serve such notice when registered or certified letters have been mailed to the address of the interested party as shown on the official record. The designated period within which the Owner or person in charge is required to comply with such notice shall begin as of the date the Owner or person in charge receives such notice by personal service or certified mail.
- d. Failure to Receive Order. Failure of any Owner, party concerned or other person to receive such notice shall not affect the validity of any proceedings taken thereunder.
- e. Appeal from Order. Once the Building Owner has submitted a screening report in accordance with Section 15.02.505a and the Building Official has determined that the building is within the scope of this Chapter, the Owner may appeal the decision per Section 1.8.8.3 of the Building Code.
- f. Extensions. The Building Owner may request an extension to the time period for compliance set forth in Table A of section 15.02.505. An application for extension may only be filed after the Owner has submitted a Screening Report to the City and the Retrofit Plans have been approved by the City. The Building Owner has the burden of proof to establish with substantial evidence that good cause for the extension exists. The Building Owner must also provide a new proposed schedule for compliance, and plan to comply with the provisions of this chapter during that timeframe. Upon good cause shown, the Building Official may approve, approve with modifications or deny the extension request for an extension that is commensurate with the justification for the extension. The Owner of the building may appeal the Building Official's decision on the extension per Section 1.8.8.3 of the Building Code.

g. Recordation. Once a building that was determined to be within the scope of this Article has failed to comply with the requirements of this Chapter within the time limits provided in Table A, the Building Official may record in the office of the Los Angeles County recorder a certificate stating that the subject building is within the scope of this Article and requires seismic retrofit. The Certificate shall also state that the Owner thereof has been notified of the need to retrofit the building. Once the building has been retrofitted to comply with this Chapter, the Building Official shall record a Certificate indicating that the subject building no longer is in violation of this Chapter.

h. The Building Official may promulgate implementing regulations and policies consistent with this Chapter.

15.02.507 Occupancy and Tenant Advisory.

a. Notification to Tenants and Occupants. The Owner shall notify in writing all current and prospective residential and non-residential tenants, subtenants, lessees, sublessees, or any other person(s) entitled to the use and/or occupancy of the building of a proposed project submitted pursuant to this Chapter. The notice shall include the information for the project, as determined by the City, including the scope of work, expected duration, and contact information for a representative of the contractor. The form of notice shall be supplied by the Community Development Department and Building and Safety Division.

b. Tenant Impact Mitigation Plan. If required, the property Owner shall submit to the Building Official a Tenant Impact Mitigation Plan.

15.02.508 Historical Buildings.

Historical Buildings shall comply with the California Historical Building Code and the provisions of this Chapter. Modifications to the standards set forth in this Chapter may be permitted when such modifications are consistent with the provision of the California Historical Building Code. Such modifications shall be clearly specified in the screening report.

15.02.509 Analysis and Design.

a. Scope of Analysis. This Chapter requires the alteration, repair, replacement or addition of structural elements and their connections to meet the strength and stiffness in conformance with the Building Code except as modified herein. The lateral-load-path analysis shall include the resisting elements and connections from the wood diaphragm immediately above any Soft, Weak or Open—Front Wall lines to and including the foundation. Stories above the Weak Wall Line shall be considered in the analysis but need not be modified. The Engineer shall investigate existing conditions as applicable for

the required analysis, including performing initial material testing and verification of existing conditions.

b. Design Base Shear and Design Parameters. The design force in a given direction shall not be less than 75% of that derived from the Base Shear as determined from the seismic provisions of ASCE 7 and design provisions as specified by the current Seismic Design Guidelines. The structure shall be analyzed and/or strengthened in order to mitigate the Weak and/or Soft Wall Line deficiencies defined in Section 15.02.503.

Exception: Alternatively, the structure may be retrofitted per Appendix A4 of the California Existing Building Code, provided the entire Story is analyzed and/or strengthened in order to mitigate the Weak and/or Soft Wall Line deficiencies defined in Section 15.02.503.

c. Lateral Vertical Systems. Strengthening systems with concrete walls or masonry walls, or steel braced frames shall be not be permitted unless a full building analysis considering diaphragm stiffness and torsional behavior is performed.

d. Horizontal Structural Irregularities in Buildings with Three or More Stories. Structures with three or more stories having horizontal structural irregularities of either type 2, 3, 4, or 5 listed in ASCE 7, "Horizontal Structural Irregularities", shall be altered to meet the additional requirements of those sections referenced in the table for the Weak, Soft or Open-Front Wall lines being considered.

e. Alternate Analysis, Base Shear and Design Parameters. The Building Official may approve alternate analysis and/or design methodologies that meet the same performance intent as those prescribed by this Chapter and that achieve the objectives established by this Chapter. A Design Criteria shall be submitted to the City for review and approval prior to submission of plans. Peer review shall be required when advanced systems, such as damped systems are utilized.

f. Additional Anchorage Requirements for Buildings on Hillsides. Where any portion of a building within the scope of this Chapter is constructed on or into a slope steeper than one-unit vertical in three units horizontal (33-percent slope), the lateral-force-resisting system, at and below the base level diaphragm, shall also be analyzed for the effects of concentrated lateral loads caused at the building base from the hillside conditions and comply with the provisions of the Building Code.

g. Story Drift Limitations. The calculated story drift for each retrofitted Story shall not exceed the allowable deformation compatible with all vertical load-resisting elements and meet the requirements of the current Seismic Design Guidelines. The calculated story drift shall not be reduced by the effects of horizontal diaphragm stiffness, but shall be increased when these effects produce rotation. Drift calculations shall be in accordance with ASCE 7 requirements.

h. Cantilever Column Systems. The effects of rotation and soil stiffness shall be included in the calculated story drift where lateral loads are resisted by vertical elements whose required depth of embedment is determined by pole formulas. The coefficient of subgrade reaction used in deflection calculations shall be based on an approved geotechnical investigation conducted in accordance with approved geotechnical engineering reports.

i. P-Delta Effect. The requirements of the Building Code shall apply, except as modified herein. All structural framing elements and their connections not required by the design to be part of the lateral force resisting system shall be designed and detailed to be adequate to maintain support of design dead plus live loads when subject to the expected deformations caused by seismic forces. The stress analysis of cantilever columns shall use an effective length factor of 2.1 for the direction normal to the axis of the beam.

j. Ties, Continuity and Collectors. All parts of the structure included in the scope of analysis shall be interconnected and the connection shall be capable of resisting the seismic force created by the parts being connected as required per the Building Code.

15.02.510 Information Required On Plans.

a. General. The plans and specifications required by the Building Official shall be of sufficient clarity to indicate the nature, design methodology, and extent of the proposed work and to show in detail that it will conform to the provisions of this Chapter and the Building Code.

b. Engineers Statement. The responsible engineer shall provide the following statements on the approved plans: .

"I am responsible for designing this building's seismic strengthening in compliance with the minimum standards of the Mandatory Seismic Strengthening Provisions For Existing Wood Frame Buildings With Soft, Weak or Open-Front Walls (Chapter 15.02.500)."

c. Owner or Owner's Representative Statement. Unless the entire building has been retrofitted to meet the full intent of the current Building Code, the Owner shall provide and sign the following statement on the cover of the drawings:

"----- understand the seismic evaluation and strengthening performed under this project is limited to that specified in the Mandatory Seismic Strengthening Provisions For Existing Wood Frame Buildings With Soft, Weak or Open-Front Walls (Chapter 15.02.500) which is intended to reduce the risk under a seismic event. I understand the full building has not been evaluated nor strengthen for

other potential structural deficiencies that may cause a life safety concern, injury, or property damage risk under a seismic event."

- d. Quality Control and Assurance Requirements. General notes shall show the requirements for material testing, special inspection, structural observation and the proper installation of newly added materials.

15.02.511 Quality Assurance.

- a. Structural Observation. All structures regulated by this Chapter require structural observation during construction. The Owner shall employ the Engineer of Record responsible for the structural design, or another registered Engineer designated by the Engineer of Record to perform structural observation as defined in the Building Code.
- b. Special Inspection. Special inspections shall be provided as required by the Building Code. Additional inspections shall be noted on drawings as required by Building Official.

15.02.512 Violation/Penalty.

- a. Violation. It shall be unlawful for any person to own, use, occupy or maintain any building or structure or portion thereof, or cause the same to be done, contrary to, or in violation of, any of the provisions of this Chapter, pursuant to Section 15.02.005 of this Municipal Code, and California Building Code section 114.
- b. Penalty. Any person, firm or corporation violating any of the provisions of this Chapter shall be guilty of the misdemeanor, and each such person shall be guilty of a separate offense for each and every day or portion thereof during which any violation of any of the provisions of this Chapter is committed, continued or permitted, and upon conviction of any such violation such person shall be punishable by a fine of not more than \$1,000, (one thousand dollars) or by imprisonment for not more than six months, or by both such fine and imprisonment. The provisions of this section are in addition to and independent of any other sanctions, penalties or costs which are or may be imposed for a violation of any of the provisions of this Chapter.
- c. Recordation of violation.
 - 1. General. The Building Official may record a notice with the County Recorder's Office that a property, building or structure, or any part thereof, is in violation of any provision of this Chapter provided that the provisions of this section are complied with. The remedy provided by this section is cumulative to any other

enforcement actions permitted by this Chapter, Culver City Municipal Code, or any other applicable State or Federal laws.

2. Recordation. If (A) the Building Official determines that any property, building, or structure, or any part thereof is in violation of any provision of this Chapter; and if (B) the Building Official gives written notice as specified below of said violation; then the Building Official may have sole discretion to, at any time thereafter, record with the County Recorder's Office a notice that the property and/or any building or structure located thereon is in violation of this Chapter.

3. Notice. The written notice given pursuant to this Section shall indicate:

- A. The nature of the violation(s); and

- B. That if the violation is not remedied to the satisfaction of the Building Official, the Building Official may, at any time thereafter, record with the County Recorder's Office a notice that the property and/or any building or structure located thereon is in violation of this Chapter. The notice shall be posted on the property and shall be mailed to the Owner of the property as indicated on the last equalized County Assessment roll. The mailed notice may be by certified or first-class mail.

4. Rescission. Any person who desires to have recorded a notice rescinding the notice of violation must first obtain the necessary approvals and permit(s) to correct the violation. Once the Building Official determines that the work covered by such permit(s) has been satisfactorily completed, the Building Official may record a notice rescinding the prior notice of violation.

Following the recordation of the notice of violation the Building Official is not required to make any inspection or review of the premises to determine the continued existence of the cited violation. It is the responsibility of the property Owner, occupant or other similarly interested private party to comply with the above provisions.

- d. Costs. Any person that has violated any provision of this Chapter shall be responsible for the costs of any and all enforcement actions taken by the Building Official in response to such violations. These costs shall be based on the amounts specified by the current fee schedule.

15.02.513 Applicability.

- a. Internal conflict. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall be applicable. Where, in any specific case, different Sections of this Chapter specify different materials, methods of construction, or other requirements, the most restrictive shall govern.

b. Other laws. The provisions of this Chapter shall not be deemed to nullify any provisions of local, state or federal law.

c. Codes and references. The provisions of the codes and standards referenced in this Chapter shall be considered part of the requirements of this Chapter to the prescribed extent of each such reference. Where there are conflicts between provisions of this Chapter and the provisions of any referenced code or standard, the provisions of this Chapter shall apply.

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