

## **ORDINANCE NO. 2405**

AN ORDINANCE OF THE CITY OF FREMONT ADDING CHAPTER 11  
(EARTHQUAKE HAZARD REDUCTION IN EXISTING TILT-UP CONCRETE  
AND REINFORCED MASONRY (TRM) BUILDINGS) TO TITLE VII  
(BUILDING REGULATIONS) OF THE FREMONT MUNICIPAL CODE  
CONCERNING MANDATORY EARTHQUAKE HAZARD REDUCTION IN  
EXISTING TILT-UP CONCRETE AND REINFORCED MASONRY BUILDINGS

The City Council of the City of Fremont does ordain as follows:

### Section 1:

Title VII (Building Regulations) of the Fremont Municipal Code is hereby amended by the addition of a new Chapter 11 (Earthquake Hazard Reduction in Existing Tilt-up Concrete and Reinforced Masonry (TRM) Buildings) to read as follows:

#### **Sec. 7-11100. Title.**

This Chapter shall be known as the "Tilt-up Concrete and Reinforced Masonry (TRM) Buildings Retrofit Ordinance."

#### **Sec. 7-11105. Purpose.**

The purpose of this Chapter is 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 rigid wall, flexible diaphragm buildings, commonly known as tilt-up and reinforced masonry and concrete buildings, designed under building codes in effect prior to the effective date of the 1976 Uniform Building Code. This Chapter creates minimum standards to strengthen the more vulnerable portions of these structures. When fully followed, these minimum standards will considerably improve the performance of these buildings but will not necessarily prevent loss of life or injury or prevent earthquake damage to retrofitted buildings. This Chapter shall not require existing electrical, plumbing, mechanical or fire-safety systems to be altered unless they constitute a hazard to life or property.

#### **Sec. 7-11110. Findings and Determination.**

- (a) The City of Fremont is located within Seismic Zone 4.
- (b) As set forth more fully in Exhibit A, which is attached hereto and incorporated herein by reference as though fully set forth, significant seismic hazards and problematic soil conditions exist in the City of Fremont.
- (c) The City Council desires to lessen the risks to life and property of the residents of the City of Fremont posed by a major earthquake along the Hayward Fault as set

forth in Exhibit A.

- (d) Based on the foregoing, the City Council has determined to implement a seismic hazard identification and mitigation program that notifies owners of the potential earthquake hazard of Rigid Wall, Flexible Diaphragm buildings, commonly known as tilt-up concrete and reinforced masonry buildings, provides standards for retrofit of these buildings, and establishes a timetable for the mandatory retrofit of these buildings.

**Sec. 7-11115. Scope.**

- (a) The provisions of this Chapter shall apply to all buildings designed under building codes in effect prior to the effective date of the 1976 Uniform Building Code as adopted by the City of Fremont which, on the effective date of this ordinance, are Rigid Wall, Flexible Diaphragm buildings as defined herein.
- (b) Buildings within the scope of this Chapter may not be added to, structurally altered or remodeled without first complying with the provisions of this Chapter, unless the building official determines that the addition, alteration or remodel does not increase the value of the building by more than 10 percent.
- (c) Seismic strengthening in place prior to the effective date of this ordinance shall be evaluated according to the provisions of this Chapter and will be ordered to be modified to comply with this Chapter if deficiencies in relation to the cross-grain bending and cross-grain tension of the wood ledgers and top plates were not adequately mitigated, if the continuous ties required by this Chapter were not installed as part of the previous retrofit work, or the design loads used in the previous retrofit work were less than those required by the 1976 Uniform Building Code.

**Sec. 7-11120. Definitions.**

For purposes of this Chapter, the definitions in the Building Code of the City of Fremont as well as the following definitions shall apply:

*Commenced Construction* shall mean construction pursuant to a valid building permit has progressed to the point that one of the required inspections has been made, the work for which the inspection has been called is substantial and said work has been approved by the building official.

*Division* shall mean Building and Safety Division.

*Engineered Plans* shall mean plans, along with any structural calculations and specifications or reports, developed by a registered civil or structural engineer.

*Essential Building* shall mean any building housing a hospital or other medical facility

having surgery or emergency treatment areas, fire or police stations, municipal government disaster operations, and communication centers.

*Historic Building* shall mean a building designated or currently in the process of being designated as an historic building by an appropriate federal, state or local jurisdiction.

*Owner* shall mean that person, firm, corporation, partnership, or other entity whose name or title appears on the record with the Alameda County Recorder's Office, as well as all successors or assignees of these persons.

*Rigid Wall* shall mean an exterior bearing or non-bearing concrete or masonry wall. This definition shall include the term concrete tilt-up wall.

*Rigid Wall, Flexible Diaphragm Building* shall mean any building constructed of rigid walls, such as concrete and masonry, and a flexible diaphragm (wood or sheet metal).

**Sec. 7-11125. Rating Classifications**

The building official shall place each building within the scope of this Chapter in one of the rating classifications set forth in Table A herein. The total occupant load as determined by Chapter 10 of the 1998 California Building Code for the entire building, plus the occupancy of any adjacent building which interconnects with the subject building or uses the subject building for exiting purposes, shall be used to determine the rating classification for buildings subject to this Chapter.

**TABLE A  
RATING CLASSIFICATIONS**

CLASSIFICATION	OCCUPANT LOAD
Group I	Buildings with a total occupancy load of 300 or more; and Buildings housing Groups H1 through H3 and H6 through H7 occupancies as set forth in the 1998 California Building Code
Group II	Buildings with an occupancy load between 50 and 299 occupants and not housing Groups H1 through H3 and H6 through H7 occupancies
Group III	Buildings with an occupancy load between 49 and 16 occupants and not housing Groups H1 through H3 and H6 through H7 occupancies
Group IV	Buildings with occupancy load of 15 or less and floor area of less than 2000 square feet and not housing Groups H1 through H3 and H6 through H7 occupancies

**Sec. 7-11130. General Requirements.**

- (a) The owner of each building within the scope of this Chapter shall cause to be made an investigation of the existing construction of the building and a structural analysis of the building by a civil or structural engineer or architect licensed by the State of California. If the building does not meet the minimum earthquake standards specified in Section 7-11140 of this Chapter, the owner shall cause it to be structurally altered to conform to such standards.
- (b) The owners of a building within the scope of this Chapter shall comply with the requirements set forth herein within the time periods specified in Table B below:

**TABLE B**

<b>Rating Classification</b>	<b>Submittal of engineered plans and issuance of building permit</b>	<b>Completion of Construction</b>
Group I	18 months from date of notice	36 months from date of notice
Group II	18 months from date of notice	48 months from date of notice
Group III	24 months from date of notice	60 months from date of notice
Group IV	4 years from date of notice	8 years from date of notice

(c) *Exceptions:*

- (1) *Nonconforming Uses.* Legal nonconforming uses are excepted from this ordinance.
- (2) *Extensions for Voluntary Demolition.* No extensions for voluntary demolition of Group I buildings will be granted. When the owner of a building with a Group II, Group III, or Group IV occupancy classification intends to demolish a building within two years from the completion of construction timetable identified in Table B, the building official may grant an extension up to two (2) years provided all of the following conditions are met:
  - (i) The owner applies for a Voluntary Demolition Extension in writing with all necessary supporting documents prior to the expiration deadline for obtaining a retrofit permit, and
  - (ii) the owner posts a performance bond equal to the cost of demolition including any cost of relocating existing businesses, and
  - (iii) the owner provides written statements from all of the building tenants acknowledging receipt of the owner's notice of intent to demolish the premises on a specific date and agreeing to vacate the building no later than 90 days prior to that date.

- (3) *Exemptions for Previously Retrofit Buildings.* If the Building Official makes all of the following findings regarding buildings that have been previously retrofit, he or she may exempt those buildings from the requirements of this ordinance. The Building Official may base his or her decision under this subsection on either plans and calculations maintained by the City of Fremont, or a structural report submitted by a civil or structural engineer licensed to practice in the State of California.
- (i) The design force used for the retrofit meets or exceeds 75% of design load required for the wall connection prescribed in the State of California Building Code in effect in the City of Fremont at the time of the retrofit; and
  - (ii) The retrofit effectively resolved the problem of cross-grain bending in the wood ledger and provided positive connection between concrete/masonry walls and diaphragms; and
  - (iii) Continuous ties were installed as required to create proper sub-diaphragms. If continuous ties are the only missing aspect of a previous retrofit, the Building Official may exempt a building from the requirements of this ordinance after such new continuous ties have been installed under the Building Code applicable at the time of the installation.

**Sec. 7-11135. Orders and Appeals.**

- (a) *Service of Order.* When the Building and Safety Division determines that a building is within the scope of this Chapter, the Building Official may issue an order as provided in Section 11135(b) herein to the building owner.
- (b) *Contents of Order.*
  - (1) The order shall be in writing and may be served either by personal delivery to the owner or by deposit in the United States mail in a sealed envelope, postage prepaid, addressed to the owner as shown on the last equalized tax assessment roll. The order shall specify that the building has been determined to be within the scope of this Chapter and therefore, is required to meet the minimum seismic standards of this Chapter within the time periods set forth herein. The order shall specify the rating classification of the building under this Chapter. The order shall also state that the owner thereof must structurally analyze the building and, if necessary, structurally alter if the Building Official has determined that the building is not in compliance with Section 11140 of this Chapter.

- (2) Service by mail shall be deemed to have been completed at the time of deposit in the post office. The failure of any owner to receive such notice shall not affect the validity of any of the proceedings taken hereunder. Proof of giving notice may be made by an affidavit of any employee of the city which shows service in conformity with this section. Building and Safety Division administrative action, other correspondence between the City and the building owner or building owner's representative, or other evidence of knowledge of certification shall also be deemed as proof of giving notice.
- (c) *Appeal from Order.* The owner of the building may appeal the determination that the building is within the scope of this Chapter to the building official. Such appeal shall be filed with the building official within 90 days of the date of service of the Order described in this Chapter. Such appeal shall be made in writing upon appropriate forms provided therefor, the grounds thereof shall be stated clearly and concisely, and must be accompanied by a letter of findings by a registered civil or structural engineer stating why the identified building is not within the scope of this Chapter, or other reasons why the provisions of this Chapter should not apply. If the owner is dissatisfied with the building official's determination, he or she may appeal the building official's decision to the City Council, or other designated body. Such appeal must be filed and will be heard in accord with the provisions for appeals of determinations under the California Building Code as adopted by the City of Fremont.
- (d) *Recordation.* At the time of service of an Order under Section 11135(b) of this Chapter, the building official shall file with the Office of the County Recorder a certificate stating that the subject building is within the scope of this Chapter. If the building is found not to be within the scope of this Chapter, or is found to be structurally capable of resisting minimum seismic forces as required by this Chapter, the building official shall file with the Office of the County Recorder a certificate terminating the notice that the subject building is classified as within the scope of this Chapter.

**Sec. 7-11140. Retrofit Standards and Requirements.**

- (a) Sections 506 and 507 of Appendix Chapter 5 of the 1997 Uniform Code for Building Conservation (UCBC) and all subsequent corresponding sections of the UCBC or successor code which refer to the then latest edition of the California Building Code, are hereby adopted with the following modifications:
- (1) Section 506.1 of the 1997 UCBC is modified to read as follows:  
*506.1 Reinforced Concrete and Reinforced Masonry Wall Anchorage.* Concrete and masonry walls shall be anchored to all floors that provide lateral support for the wall. The anchorage shall provide a positive direct connection between the wall and floor or roof construction capable of resisting 75 percent of the horizontal forces specified in the Building Code.

- (2) Section 506.2 of the 1997 UCBC is modified to read as follows:

*506.2 Special Requirements for Wall Anchorage Systems.* The steel elements of the wall anchorage system and continuity ties shall be designed in accordance with the Building Code using a load factor of 1.7 for allowable stress design. Wall anchors shall be provided to resist out-of-plane forces, independent of existing shears anchors.

*Exception:* Existing cast-in-place shear anchors may be used as wall anchors if the tie element can be readily attached to the anchors and if the engineer or architect can establish tension values for the existing anchors through the use of approved as-built plans or testing, and through analysis showing that the bolts are capable of resisting the total shear load (including dead load) while being acted upon by the maximum tension force due to earthquake. Criteria for analysis and testing shall be determined by the building official.

Expansion anchors are only allowed with special inspection and approved testing for seismic loading. Attaching the edge of plywood sheathing to steel ledgers is not considered as complying with the positive anchoring requirements of this chapter. Attaching the edge of steel decks to steel ledgers is not considered as providing the positive anchorage of this chapter unless testing and/or analysis are performed that establish shear values for the attachment perpendicular to the edge of the deck. Any installation shall be subject to special inspection.

- (b) The structural retrofit of buildings within the scope of this Chapter shall comply with all provisions in Sections 506 and 507 of Appendix Chapter 5 of the 1997 UCBC as modified herein, and all subsequent corresponding sections of the UCBC or successor code which refer to the then latest edition of the California Building Code.

**Sec. 7-11145. Historic Buildings.**

Qualified historic buildings may utilize alternate building standards in deviation from this Chapter in order to preserve their original or restored architectural elements and features. However, any such deviations must be based on the California Historical Building Code, Title 24, Part 8 of the California Code of Regulations, or successor regulations thereto.

**Sec. 7-11150. Information Required on Plans.**

- (a) *General.* In addition to the seismic analysis required by this Chapter, a licensed engineer or architect responsible for the seismic analysis of the building shall set forth the information required by this Section on the approved plans for retrofit of a building subject to this Chapter.

- (b) *Information required.* The plans shall accurately reflect the results of the engineering investigation and design, and show all pertinent dimensions and sizes for plan review and construction. The plans must include the following:
- (1) Floor plans and roof plans shall show existing framing construction, diaphragm construction, proposed wall anchors, cross ties and collectors. Existing nailing, anchors, ties and collectors shall also be shown on the plans if these are part of the design, and these structural elements need to be verified in the field.
  - (2) At elevations where there are alterations or damage, details shall show roof and floor heights, dimensions of openings, location and extent of existing damage, and proposed repair.
  - (3) Typical wall panel sections with panel thickness, height, location of anchors shall be shown.
  - (4) Details shall include existing and new anchors and the method of development of anchor forces into the diaphragm framing; existing and/or new cross-ties; existing and/or new or improved support of roof and floor girders at pilasters or walls.
- (c) *Construction Observation.* The responsible engineer or architect shall provide construction observation as set forth in Section 1720 of the 1998 California Building Code.

**Sec. 7-11155. Required Building Maintenance.**

Every building which has been analyzed to demonstrate compliance or structurally altered to comply with the minimum earthquake 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.

**Sec. 7-11160. Remedies.**

- (a) Any building not in compliance with this Chapter shall be deemed a public nuisance.
- (b) It shall be unlawful for any person, firm or corporation to maintain, use or occupy any building which does not meet the minimum standards specified in this Chapter.
- (c) Any person who violates or causes or permits another person to violate this provision is guilty of a misdemeanor. For purposes of this section, any person includes an owner, lessor, sublessor, manager, or person in control of a building subject to this Chapter, but shall not include tenants in residential units.



- (d) All remedies available to the City for correcting violations of any other chapter in this Code shall be available to remedy violations of this Chapter.
- (e) The building official may order a building subject to this Chapter vacated and order the owner to demolish the building if the building official determines that vacating the building will not adequately mitigate the earthquake hazard posed by it to adjacent property and/or the general public. Should the owner refuse to demolish the building, the City may hire a contractor to demolish the building and place a lien on the property for any costs, including City administrative costs, incurred in such an action. For purposes of this section, the procedures set forth in the Fremont Municipal Code shall be followed.

**Sec. 7-11165. Waiver of certain plan check and building permit fees.**

Plan check, building and trade permit fees for work on tilt-up concrete and reinforced masonry buildings required under this Chapter shall be waived subject to the following limitations:

- (a) All required retrofit construction work is completed according to the timetables specified in this Chapter.
- (b) The scope of work for which the above fees are refundable is limited to the seismic retrofit of a tilt-up and/or reinforced masonry building, and to related trade permit fees if such fees are required as part of the seismic retrofit.
- (c) Plan check fees beyond the third cycle of review, plan check fees for revisions to approved plans and re-inspection fees shall not be waived and shall be assessed on a per-hour basis as set forth in the applicable fee Resolution.

Section 2:

A summary of this ordinance with the names of those city council members voting for and against it shall be published once in *The Argus*, a newspaper of general circulation, printed and

published in Alameda County and circulated in the City of Fremont, and a certified copy of its full text shall be posted in the office of the city clerk within fifteen (15) days from and after its adoption and shall take effect and be enforced thirty (30) days after its adoption.

The foregoing ordinance was duly introduced before the city council of the City of Fremont, County of Alameda, at the regular meeting of the City Council of such City, held on the 26th day of September, 2000, and finally adopted at a regular meeting of said Council held on the 10th day of October, 2000 by the following vote, to wit:

AYES: Mayor Morrison, Vice Mayor Zager, Councilmembers Wasserman, Zlatnik, and Pease

NOES: None

ABSENT: None

ABSTAIN: None

GUS MORRISON  
Mayor

ATTEST:

MARIAN HANDA  
Deputy City Clerk

APPROVED AS TO FORM:

CHRISTINE S. DANIEL  
Senior Deputy City Attorney