ORDINANCE NO. 2008-13

AN ORDINANCE OF THE CITY OF AMERICAN CANYON OF THE STATE OF CALIFORNIA, ADDING A NEW CHAPTER 16.13 TO TITLE 16 OF THE CITY OF AMERICAN CANYON MUNICIPAL CODE, RELATING TO REPAIR OF DAMAGED STRUCTURES.

THE CITY COUNCIL OF THE CITY OF AMERICAN CANYON DOES HEREBY ORDAIN THE FOLLOWING:

Chapter 16.13 is added to Title 16 of the City of American Canyon Municipal Code, to read:

Chapter 16.12 Repair and Reconstruction

Section 16.13.01 Adoption and Intent

This chapter establishes regulations as amendments to the building code for the expeditious repair of damaged structures. In the event an amendment to the California Building Standards Code results in differences between these building standards and the California Building Standards Code, the text of these building standards shall govern. In accordance with California Health and Safety Code Section 17958.7, express findings that modifications to the California Building Standards Code are reasonably necessary because of local climatic, geological or topographical conditions are either already on file with the California Building Standards Commission prior to the effective date of the ordinance codified in this Article. In accordance with California Government Code Section 50022.6, at least one true copy of the California Building Code has been on file with the Chief Building Official since fifteen (15) days prior to enactment of the ordinance codified in this Article. While this Article is in force, a true copy of this Chapter shall be kept for public inspection in the office of the Chief Building Official.

Section 16.13.02 Definitions

For the purposes of this chapter, the following definition applies and is hereby added to Section 3402.1 Definitions of the 2007 California Building Code (CBC):

Substantial Structural Damage. A condition where:

1. In any story, the vertical elements of the lateral-force-resisting system, have suffered damage such that the lateral load-carrying capacity of the structure in any direction has been reduced by more than 20 percent from its pre-damaged condition, or

2. The capacity of any vertical gravity load-carrying component, or any group of such components, that supports more than 30 percent of the total area of the structure's floor(s) and roof(s) has been reduced more than 20 percent from its pre-damaged condition, and the remaining capacity of such affected elements with respect to all dead and live loads is less than 75 percent of that required by the building code for new buildings of similar structure, purpose, and location.

Section 16.13.03 Repairs

For the purposes of this chapter, the following repair requirements are hereby added as a new Subsection 3403.5 to Section 3403 Additions, Alterations or Repair in the 2007 California Building Code (CBC):

3403.5.1 Repairs. Repairs of structural elements shall comply with this section.

3403.5.1.1 Seismic evaluation and design. Seismic evaluation and design of an existing building and its components shall be based on the following criteria.

3403.5.1.1.1 Evaluation and design procedures. The seismic evaluation and design shall be based on the procedures specified in the building code, ASCE 31 *Seismic Evaluation of Existing Buildings* (for evaluation only) or ASCE 41 *Seismic Rehabilitation of Existing Buildings*. The procedures contained in Appendix A of the *International Existing Building Code* shall be permitted to be used as specified in Section 3403.5.1.1.3.

3403.5.1.1.2 CBC level seismic forces. When seismic forces are required to meet the building code level, they shall be one of the following:

1. 100 percent of the values in the building code. The R factor used for analysis in accordance with Chapter 16 of the building code shall be the R factor specified for structural systems classified as "Ordinary" unless it can be demonstrated that the structural system satisfies the proportioning and detailing requirements for systems classified as "Intermediate" or "Special".

2. Forces corresponding to BSE-1 and BSE-2 Earthquake Hazard Levels defined in ASCE 41. Where ASCE 41 is used, the corresponding performance levels shall be those shown in Table 3403.5.1.1.2.

TABLE 3403.5.1.1.2

ASCE 41 and ASCE 31 PERFORMANCE LEVELS

OCCUPANCY CATEGORY (BASED ON IBC TABLE 1604.5)	PERFORMANCE LEVEL FOR USE WITH ASCE 31 AND WITH ASCE 41 BSE-1 EARTHQUAKE HAZARD LEVEL	PERFORMANCE LEVEL FOR USE WITH ASCE 41 BSE-2 EARTHQUAKE HAZARD LEVEL
I	Life Safety (LS)	Collapse Prevention (CP)
II	Life Safety (LS)	Collapse Prevention (CP)
III	Note (a)	Note (a)
IV	Immediate Occupancy (IO)	Life Safety (LS)

a. Performance Levels for Occupancy Category III shall be taken as halfway between the performance levels specified for Occupancy Category II and Occupancy Category IV.

3403.6.1.1.3 Reduced CBC level seismic forces. When seismic forces are permitted to meet reduced building code levels, they shall be one of the following:

1. 75 percent of the forces prescribed in the building code. The R factor used for analysis in accordance with Chapter 16 of the building code shall be the R factor as specified in Section 3403.6.1.1.2.

2. In accordance with the applicable chapters in Appendix A of the *International Existing Building Code* as specified in Items 2.1 through 2.5 below. Structures or portions of structures that comply with the requirements of the applicable chapter in Appendix A shall be deemed to comply with the requirements for reduced building code force levels.

2.1. The seismic evaluation and design of unreinforced masonry bearing wall buildings in Occupancy Category I or II are permitted to be based on the procedures specified in Appendix Chapter A1.

2.2. Seismic evaluation and design of the wall anchorage system in reinforced concrete and reinforced masonry wall buildings with flexible diaphragms in Occupancy Category I or II are permitted to be based on the procedures specified in Appendix Chapter A2.

2.3. Seismic evaluation and design of cripple walls and sill plate anchorage in residential buildings of light-frame wood construction in Occupancy Category I or II are permitted to be based on the procedures specified in Appendix Chapter A3.

2.4. Seismic evaluation and design of soft, weak, or open-front wall conditions in multiunit residential buildings of wood construction in Occupancy Category I or II are permitted to be based on the procedures specified in Appendix Chapter A4.

2.5. Seismic evaluation and design of concrete buildings and concrete with masonry infill buildings in all Occupancy Categories are permitted to be based on the procedures specified in Appendix Chapter A5.

3. In accordance with ASCE 31 based on the applicable performance level as shown in Table 3403.6.1.1.2.

4. Those associated with the BSE-1 Earthquake Hazard Level defined in ASCE 41 and the performance level as shown in Table 3403.6.1.1.2. Where ASCE 41 is used, the design spectral response acceleration parameters Sxs and Sx1 shall not be taken less than 75 percent of the respective design seismic coefficients 2.5Ca and Cv as defined in Tables 16-Q and 16-R of the *International Building Code*.

3403.6.1.2 Wind Design. Wind design of existing buildings shall be based on the procedures specified in the building code.

3403.6.2 Repairs to damaged buildings. Repairs to damaged buildings shall comply with this section.

3403.6.2.1 Unsafe conditions. Regardless of the extent of structural damage, unsafe conditions shall be eliminated.

3403.6.2.2 Substantial structural damage to vertical elements of the lateral–force-resisting system. A building that has sustained substantial structural damage to the vertical elements of its lateral-force-resisting system shall be evaluated and repaired in accordance with the applicable provisions of Section 3403.6.2.2.1 through 3403.6.2.2.3.

3403.6.2.2.1 Evaluation. The building shall be evaluated by a registered design professional, and the evaluation findings shall be submitted to the code official. The evaluation shall establish whether the damaged building, if repaired to its pre-damage state, would comply with the provisions of the building code. Wind forces for this evaluation shall be those prescribed in the building code. Seismic forces for this evaluation are permitted to be the reduced level seismic forces specified in Code Section 3403.6.1.1.3.

3403.6.2.2.2 Extent of repair for compliant buildings. If the evaluation establishes compliance of the pre-damage building in accordance with Section 3403.6.2.2.1, then repairs shall be permitted that restore the building to its pre-damage state, using materials and strengths that existed prior to the damage.

3403.6.2.2.3 Extent of repair for non-compliant buildings. If the evaluation does not establish compliance of the pre-damage building in accordance with Section 3403.6.2.2.1, then the building shall be rehabilitated to comply with applicable provisions of the building code for load combinations including wind or seismic forces. The wind design level for the repair shall be as required by the building code in effect at the time of original construction unless the damage was caused by wind, in which case the design level shall be as required by the code in effect at the time of original construction or as required by the building code, whichever is greater. Seismic forces for this rehabilitation design shall be those required for the design of the predamaged building, but not less than the reduced level seismic forces specified in Section 3403.6.1.1.3. New structural members and connections required by this rehabilitation design shall comply with the detailing provisions of the building code for new buildings of similar structure, purpose, and location.

3403.6.2.3 Substantial structural damage to vertical load-carrying components. Vertical load-carrying components that have sustained substantial structural damage shall be rehabilitated to comply with the applicable provisions for dead and live loads in the building code. Undamaged vertical load-carrying components that receive dead or live loads from rehabilitated components shall also be rehabilitated to carry the design loads of the rehabilitation design. New structural members and connections required by this rehabilitation design shall comply with the detailing provisions of the building code for new buildings of similar structure, purpose, and location.

3403.6.2.3.1 Lateral force-resisting elements. Regardless of the level of damage to vertical elements of the lateral force-resisting system, if substantial structural damage to vertical load-carrying components was caused primarily by wind or seismic effects, then the building shall be evaluated in accordance with Section 3403.6.2.2.1 and, if non-compliant, rehabilitated in accordance with Section 3403.6.2.2.3.

3403.6.2.4 Less than substantial structural damage. For damage less than substantial structural damage, repairs shall be allowed that restore the building to its pre-damage state, using materials and strengths that existed prior to the damage. New structural members and connections used for this repair shall comply with the detailing provisions of the building code for new buildings of similar structure, purpose, and location.

3403.6.3 Referenced Standards

Standard Referenced

Reference In Code

Number Title Section Number

ASCE 31-03 Seismic Evaluation of Existing Buildings 3403.6.1.1.1,

TABLE 3403.6.1.1.2,

3403.6.1.1.3

ASCE 41-06 Seismic Rehabilitation of Existing Buildings 3403.6.1.1.1,

3403.6.1.1.2,

TABLE 3403.6.1.1.2,

3403.6.1.1.3

A summary of this Ordinance shall be published once in the Vallejo Times Herald, a newspaper of general circulation serving the City of American Canyon, within fifteen (15) days after its passage and shall become effective thirty (30) days after the date of its adoption.

The foregoing Ordinance was introduced and read at the regular meeting of the City Council of the City of American Canyon, State of California, held on the 18th day of November, 2008, and passed and adopted at a regular meeting on the 2nd day of December, 2008, by the following vote:

AYES: Garcia, Coffey, Bennett, Callison, West
NOES: None
ABSTAIN: None
ABSENT: None

Leon Garcia

Leon Garcia, Mayor

ATTEST:

Dorothy Roadman

Dorothy Roadman, City Clerk

APPROVED AS TO FORM:

William D. Ross

William D. Ross, City Attorney