

**SUBJECT: SEISMIC ORDINANCE UPDATE FOR NON-DUCTILE
CONCRETE AND PRE-NORTHRIDGE STEEL MOMENT FRAME
BUILDINGS**

PREPARED BY: COMMUNITY DEVELOPMENT DEPARTMENT
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STATEMENT ON THE SUBJECT:

The purpose of this report is to provide and update and status report of the seismic retrofit ordinance as it relates to non-ductile concrete and pre-Northridge steel moment frame buildings.

RECOMMENDATIONS:

- 1) Receive and file.

BACKGROUND / ANALYSIS:

At the City Council meeting on April 3, 2017, the Council adopted strengthening provisions for two types of building structures:

1. Mandatory Seismic Strengthening Provisions for Existing Wood-Frame Buildings with Soft, Weak or Open Front Walls
2. Voluntary Seismic Strengthening Provisions for Cripple Walls and Sill Plate Anchorage in Existing Wood-Frame Buildings

The Council also reviewed a proposed ordinance for mandatory strengthening of non-ductile concrete and steel frame structures and asked staff to provide additional information and return at a later date.

Staff is currently working on compiling and analyzing the information requested from the City Council at the April 3rd meeting. In addition, staff is also reviewing the comments recently received by the community and is working on exploring these concerns further.

The goal is to further analyze this information and provide alternatives to the mandatory ordinance for non-ductile concrete and steel moment frame buildings while at the same time maintaining the intent of the ordinance which is to increase life safety and minimize building damage in the event of a major earthquake. Additional time is required to fully develop these alternatives and we anticipate returning to the City Council in the fall with options for Council consideration. Council can also give further direction or clarification in the meantime.

Community Concerns

A discussion of community concerns with clarifications is summarized below:

1. The City should classify residential condominiums as "single family homes" which are NOT part of this ordinance.

The ordinance categorizes buildings by construction type, not by occupancy or property use. The intent was to address building construction types that have performed poorly in previous earthquakes and have the highest potential for building collapse. As part of the next steps, staff will continue to explore alternatives.

2. Based on the cost estimates provided at \$50 to \$100 per square foot, the cost to retrofit my building will be several millions of dollars.

It is difficult to pre-determine the actual costs of retrofits for all buildings as each building is unique and will have its' own specific retrofits and associated costs and in some instances no upgrades may be required. The purpose of the cost study was to provide rough order of magnitude (ROM) cost estimates for informational purposes only. As part of the seismic ordinance, individual structural evaluations are required for each building in order to determine the extents of the building deficiencies and scope of work. Staff is aware that cost is a major concern and is exploring retrofit alternatives for Council to consider.

3. Removal of asbestos could easily add a significant amount of money to each homeowner's cost.

Typically for retrofits of this type, asbestos mitigation is limited to the area of work only and does not necessitate complete asbestos remediation for the entire building.

4. The ordinance will affect the marketability of these buildings.

Resiliency has become a topic of concern throughout the state with various large cities taking the lead on being proactive by retrofitting existing buildings that have been identified as being potentially vulnerable. San Francisco, Berkeley, Santa Monica, and the City of Los Angeles have all adopted a seismic ordinance to retrofit existing buildings with many other cities including Beverly Hills following suit. These policies are not unique to the City of West Hollywood, as it is already a widespread issue and concern. The safety of buildings is on the forefront of buyer's minds and the interest will continue to rise as more cities adopt seismic retrofit ordinances.

5. Living elsewhere for a year during the retrofit would be an additional cost.

There are various construction methods by which retrofits can be completed with minimal disturbance to the occupants. In addition, construction projects can be phased so as to provide minimal disturbance. Until an evaluation has been completed by an Engineer it is difficult to determine the extent of the disturbance. In many cases the area of work can be localized and displacement may not be required.

6. My building has successfully withstood many earthquakes with little or no damage, there is no need to retrofit.

Although we have experienced major earthquakes in Southern California such as the 1971 San Fernando Earthquake and 1994 Northridge Earthquakes, these earthquakes were far enough from the City that they did not have a high shaking intensity to significantly damage buildings in West Hollywood. The City was fortunate in these instances, however according to the USGS there is a high probability that a significant earthquake could occur in the West Hollywood area with high shaking intensity.

7. The City of Los Angeles did NOT require any retrofit for steel moment frame buildings in their seismic ordinance. Why is the City of West Hollywood including these in their ordinance?

As part of the development of the program, a comprehensive building survey was completed to categorize all existing buildings within the City. The intent was to analyze the existing building stock and develop an ordinance that was tailored for our City. As a result of this survey, it was determined that the City has a number of steel moment frame buildings. After the Northridge earthquake in 1994, many steel moment frame buildings experienced damage at their connections, more specifically at weld locations. A good majority of these buildings were not repaired or retrofitted after the earthquake because the weld connections are oftentimes buried in walls or within ceilings so any type of damage was not easily visible. Should another significant seismic event occur, these types of buildings become even more vulnerable as they may already have existing conditions which may contribute to poor performance during an earthquake. Although the City of Los Angeles did not include these types of building in their ordinance, the City of Santa Monica recently adopted an ordinance which addresses steel moment frame buildings.

8. It appears that the homeowners associations of the various buildings being considered for a retrofit were not consulted, but that multiple real estate brokers were.

The community was included in the development of the ordinance from the beginning through a volunteer community Advisory Group. The Advisory Group included six members from the community: two building owners, a Planning

Commissioner, a Historic Preservation Commissioner, a local architect, and a local engineer. Their input was critical in defining important policy issues such as timelines and prioritization.

A program webpage (www.weho.org/seismic) was created early in the process which includes reference information, FAQ's, updates on the program, the proposed ordinance, presentations from the community meetings, and contact information. Most importantly, there is an opportunity to register an email address to receive information related to the seismic program and ordinance as it moves through the process.

A discussion of the ordinance has been on the agenda for City Council consideration on three occasions: August 15, 2016, January 23, 2017, and April 3, 2017. All meetings were publicly noticed through the City's standard procedures which included advertisements in newspapers. The community has the opportunity to attend these meetings and voice any concerns during public comment.

As part of the development of the ordinance, various community meetings were also held. An informational community meeting was held at City Hall on July 28, 2016 and was noticed via a news release. In addition, at the direction of City Council, three additional outreach meetings were held on November 14, November 19, and November 29 of 2016. Tri-fold mailers were sent out to property owners/condominium owners and Home Owners Associations. Approximately 1300 mailers were sent for property owners of soft story buildings and over 1000 were sent out for property owners and HOA's for concrete and steel buildings. These meetings were also announced on the City's seismic webpage and those who were signed up through the webpage email list, received an email notification. The meetings on November 14th and 19th were directed toward owners of existing wood soft story buildings with the November 29th meeting directed towards owners of non-ductile concrete and pre-Northridge steel moment frame buildings.

At the request of the Beverly Hills/Greater Los Angeles Association of Realtors, a presentation was given by staff on May 22, 2017, to discuss the ordinance provisions adopted by Council for soft story buildings and voluntary strengthening of cripple walls and anchorage in existing wood-frame buildings. Prior to that meeting, Realtors were otherwise able to follow this issue via the seismic web page and the email subscription link, attend or follow City Council meetings, and may also have come across several articles on it in the local publication "WeHoVille". All of these communication vehicles were available to the general public.

History

On May 18, 2015, the City Council directed staff to address the structural seismic safety issues of the City's existing building stock and develop a framework for a seismic retrofit program with the ultimate goal of increasing life safety and minimizing the potential for catastrophic building damage during a significant seismic event. Staff has been working

with a Seismic Engineering Consulting firm, Degenkolb Engineers, to develop a three phase program which includes a city-wide comprehensive building survey, development of an ordinance, and implementation plan for the ordinance. The building survey categorized buildings within the City by type of construction. From this information, an ordinance was developed for four building types:

1. Mandatory Seismic Strengthening Provisions for Existing Wood-Frame Buildings with Soft, Weak or Open Front Walls
2. Voluntary Seismic Strengthening Provisions for Cripple Walls and Sill Plate Anchorage in Existing Wood-Frame Buildings
3. Mandatory Seismic Strengthening Provisions for Non-Ductile Concrete Structures
4. Mandatory Seismic Strengthening Provisions for Pre-Northridge Steel Moment Frame Buildings

To date, only policies for the first two building types mentioned above have been adopted. Staff is currently working on providing additional information and alternatives for non-ductile concrete and pre-Northridge steel moment frame buildings.

CONFORMANCE WITH VISION 2020 AND THE GOALS OF THE WEST HOLLYWOOD GENERAL PLAN:

This item is consistent with the Primary Strategic Goal(s) (PSG) and/or Ongoing Strategic Program(s) (OSP) of:

- OSP-9: Upgrade Existing Buildings & Infrastructure.

In addition, this item is compliant with the following goal(s) of the West Hollywood General Plan:

- SN-1: Reduce injury and damage from natural hazards.
- HP-2: Continue to identify and evaluate cultural resources.

EVALUATION PROCESSES:

The Building Official is working closely with the City's Seismic Engineering Consultants in developing the seismic retrofit ordinance and will continued to evaluate the effectiveness of the ordinance throughout implementation.

ENVIRONMENTAL SUSTAINABILITY AND HEALTH:

A seismic retrofit ordinance for existing buildings would increase life safety and minimize catastrophic building damage during a significant seismic event.

COMMUNITY ENGAGEMENT:

Staff will continue to work on alternatives to address community concerns.

OFFICE OF PRIMARY RESPONSIBILITY:

COMMUNITY DEVELOPMENT DEPARTMENT / BUILDING & SAFETY DIVISION

FISCAL IMPACT:

This report serves as a status update only. There is no additional fiscal impact at this time.

ATTACHMENTS:

Attachment A - Correspondence.