



**DATE:** March 26, 2019

**TO:** Mayor and City Council

**FROM:** Development Services Director

**SUBJECT:** Seismic Retrofit Standards for Multifamily Buildings Work Session

## **RECOMMENDATION**

That the City Council reviews this report and provides direction to staff on the development of retrofit standards for multifamily buildings in Hayward.

## **SUMMARY**

Multifamily wood frame buildings with soft, weak, or open-front (“soft story”) conditions are at risk of severe damage or collapse in the event of a major earthquake. Staff estimates that approximately 280, pre-1979, five or more unit buildings in Hayward are potential soft story buildings. In the past decade, several California cities (including San Francisco, Berkeley, and Oakland) have developed soft story retrofit programs to reduce the risk of collapse of soft story buildings in their jurisdictions. Staff recommends and requests Council feedback on the following:

- Adopting a mandatory soft story building screening program that applies to pre-1979 multifamily wood-frame buildings with five or more units to identify and increase awareness of soft story buildings in Hayward; and
- Adopting retrofit standards and performance goals for soft story retrofits to provide guidance and incentives for owners who decide to retrofit voluntarily.

## **BACKGROUND**

The United States Geological Survey (USGS) predicts that there is a 72% probability of a major (M6.7 or greater) earthquake in the Bay Area by the year 2043. Of the 32 faults included in this analysis, the Hayward fault is the most likely to rupture and cause a damaging earthquake.

Some building types are more vulnerable to serious damage and potential collapse in a major earthquake. Engineers and other seismic safety professionals have identified so-called “soft story” buildings – multi-story wood-frame buildings with large open spaces on the first floor – as one such building type. These building types are most commonly multifamily residential structures with retail, open garage space, or “tuck-under” parking on the ground floor.

In recognition of the concerns specific to the seismic performance of wood-frame multifamily housing, several California cities have passed ordinances mandating or supporting the screening and retrofit of soft story buildings. A comparison of these policies is included in Attachment II.

On July 19, 2016, the City Council held a work session on seismic retrofits to soft story buildings. At the time, staff recommended a mandatory seismic retrofit program for wood frame, two-story buildings with five or more units, built prior to 1979. Following that work session, the ordinance was set aside to focus on addressing community concerns regarding increased rental housing costs.

In October 2016, City staff collaborated with staff from the Association of Bay Area Governments Resilience Program, volunteers from the Earthquake Engineering Research Institute, and students from California State University - East Bay to conduct a sidewalk survey of potential soft story buildings in Hayward. Starting with data from the Alameda County Office of the Assessor, participants completed visual surveys of pre-1979 multifamily wood frame buildings throughout the City using a FEMA visual screening tool. This exercise resulted in a rough estimate of the number of potential soft story buildings in Hayward: approximately 280 of the City's multifamily buildings may have a soft story condition.

## **DISCUSSION**

In order to return to City Council with an ordinance for the screening and/or retrofit of multifamily buildings with potential soft, weak, or open front (SWOF) conditions, staff needs direction on the scope of the ordinance, the type of program and ordinance to develop, and the retrofit performance goals.

### ***Mandatory Retrofit, Voluntary Retrofit, and Screening Programs***

One of the key considerations in developing a soft story program is the type of program to create: a screening program, a voluntary retrofit program, or a mandatory retrofit program.

*Screening Programs.* Soft story screening programs are intended to create a list of a jurisdiction's buildings that have soft story conditions. A screening program is the necessary first step in a mandatory retrofit program but can be implemented independent of a mandated retrofit program. Typically, screening programs involve noticing owners of potential soft story buildings requiring owners to provide data (e.g., permit numbers for previous retrofits, a floor plan and photos, or an evaluation by a licensed engineer) that confirms whether their building has a soft story condition and within a specified timeframe. Screening programs can include noticing requirements for tenants of suspected or confirmed soft story buildings and penalties for noncompliance. Screening programs require dedicated staff time for noticing owners, processing documentation, and administering the list of potential and confirmed soft story buildings.

*Voluntary Retrofit Programs.* Voluntary retrofit programs set retrofit standards and performance goals for retrofitting soft story buildings, but do not require owners to retrofit. These programs may include incentives for retrofitting including relaxed parking restrictions,

funding opportunities, and/or a temporary (often 15-20 year) exemption from any future mandatory soft story retrofit program or change to the retrofit standards. Voluntary retrofit programs provide guidance for owners who are interested in retrofitting, but do not generally result in widespread participation.

*Mandatory Retrofit Programs.* Mandatory retrofit programs require owners of soft story buildings to retrofit their properties. They begin with a screening program to identify buildings subject to the ordinance, set retrofit standards and performance goals, and a timeline for owners to acquire permits for and complete construction of retrofits. Like voluntary retrofit programs, mandatory programs may include incentives for participation but unlike voluntary programs, they also outline penalties for noncompliance.

Mandatory retrofit programs tend to result in much higher levels of compliance than voluntary retrofit programs. They also have significant costs for cities, owners, and tenants. The staff time required for administering a soft story retrofit program has necessitated new FTE positions in some cities. Additionally, soft story retrofits can be expensive – unlike single family home retrofits (e.g., “brace and bolt”-type retrofitting), each soft story retrofit requires an engineer’s evaluation and plan development specific to the building based on the floor plan, construction methods, and materials used. Multiple steel moment frames may be required to reinforce the large openings in the ground story. The costs of retrofits are also subject to cost fluctuations in the construction market generally, including the cost of labor and materials, both of which are currently in high demand.

One of the key policy concerns in the adoption of mandatory soft story retrofit ordinances in other jurisdictions has been the burden of retrofit costs on tenants. Often, soft story retrofits have used existing rent control ordinances or infrastructure to cap and/or amortize the pass-through of retrofit costs to tenants. In Hayward, due to the small number of units covered by the Rent Stabilization Ordinance and lack of infrastructure for limiting rent increases, implementing a pass-through cap would be virtually impossible.

**TABLE 1. SUMMARY OF SCREENING, VOLUNTARY RETROFIT, AND MANDATORY RETROFIT PROGRAMS FOR SOFT STORY BUILDINGS.**

SCREENING	VOLUNTARY	MANDATORY
<ul style="list-style-type: none"> <li>- Confirms the number of soft story buildings in jurisdiction</li> <li>- Helps City staff gather information about the potential risk in the building</li> <li>stock/community</li> <li>- May include noticing requirements</li> <li>- Requires dedicated staff time</li> </ul>	<ul style="list-style-type: none"> <li>- Sets retrofit standards and performance goals*</li> <li>- May include incentives for retrofitting</li> <li>- Tends to result in limited compliance compared to mandatory program</li> <li>- Lower impact on staff time than mandatory retrofit program</li> </ul>	<ul style="list-style-type: none"> <li>- Necessitates a screening program</li> <li>- Sets retrofit standards and performance goals*</li> <li>- Sets a timeline for compliance</li> <li>- Often includes noticing requirements</li> <li>- May include incentives for retrofitting and penalties for noncompliance</li> <li>- Tends to result in high levels of compliance than voluntary program</li> <li>- Requires significant dedicated staff time</li> <li>- Often includes limits to the retrofit</li> </ul>

SCREENING	VOLUNTARY	MANDATORY
		costs that owners can “pass through” to tenants

**Staff recommendation:** Create a mandatory screening program but a voluntary retrofit program to assist City staff with disaster preparedness and response planning, to help increase awareness of potentially at-risk buildings, and to gather data for potential funding opportunities while providing guidance to owners who would like to retrofit. One key goal of staff's recommendation is minimizing the potential displacement of residents in rental housing.

***Scope***

By definition, a soft story retrofit program will consist of multistory, wood frame residential buildings. However, there is some variation in the age and size of the buildings covered by a retrofit ordinance.

*Age.* The majority of soft story building retrofit ordinances focus on pre-1979 buildings. Past 1979, new buildings were designed and built in accordance with an updated version of the Uniform Building Code (UBC). The updated UBC included a new, more rigorous seismic risk category that covered areas particularly susceptible to earthquake damage due to their proximity to fault lines, like Hayward.

The two exceptions to the pre-1979 cutoff are Oakland and Alameda. Oakland's mandatory screening and retrofit program includes buildings built prior to 1991, when the California Building Code adopted more comprehensive earthquake design standards based on building performance in the 1989 Loma Prieta earthquake.

**Staff recommendation:** Limit the ordinance to pre-1979 buildings, which are at greatest potential risk in an earthquake due to building code standards at the time of their construction.

*Units.* Soft story retrofit ordinances typically apply to buildings with five or more units. Buildings of this size are considered commercial properties and may be eligible for financing options that are unavailable for buildings with fewer units. Additionally, focusing on larger buildings will have the greatest impact in the community, since most multifamily tenants are in buildings with five or more units. It is worth noting, however, that buildings with fewer than five units may also have soft story conditions that put them at risk of severe damage and collapse in an earthquake.

**Staff recommendation:** Limit the soft story ordinance to buildings with five or more units.

***Retrofit Performance Goals***

In order to develop either a voluntary or mandatory soft story retrofit ordinance, staff will need Council direction on the desired outcome of the retrofit program.

*Reduced Risk/Life Safety.* This is the most common retrofit standard for soft story ordinances throughout California. The goal of reduced risk retrofits is to prevent collapse in a major earthquake, allowing inhabitants to survive the initial temblor and evacuate prior to aftershocks. These retrofits focus on the “target story” or soft story of the building and involve minimal, if any, work on the other stories of the building, minimizing temporary displacement of tenants.

*Habitability.* Buildings may also be retrofitted such that they are expected to be minimally damaged and remain habitable following a major earthquake. However, this performance expectation is higher than what is currently expected of new construction and bringing older buildings (those staff recommends should be considered under the proposed ordinance) up to this standard is an extensive and often prohibitively expensive undertaking. Retrofitting to this standard would likely entail work above the “target story” and would temporarily displace tenants during construction.

In considering retrofit performance goals, the ABAG guidance document for developing soft story ordinance states, “if soft story buildings are spread over a wide geographical area, it can be assumed that earthquake ground shaking will vary based on location and that some buildings will perform better than others based simply on the degree of shaking they experience. Therefore, it may be acceptable to set a more moderate performance objective and still have acceptable performance of the building stock as a whole.”

What other jurisdictions have selected is in column D of the table in Attachment II.

Staff recommendation: Use a reduced risk performance goal (life safety only) for developing retrofit standards.

### ***Incentives and Other Policy Considerations***

In addition to the policy considerations listed above, Council should consider the following:

- *Exemption from future designations.* One incentive that is typical to seismic retrofit programs is an exemption to property owners from future mandatory programs or stricter retrofit requirements after voluntarily retrofitting. This allows time for the property owner to recoup the cost of their retrofit and/or plan for another rehabilitation of similar magnitude. These provisions typically establish a 15-20-year exemption period.
- *Parking requirements.* Because soft story retrofits commonly include reinforcement of parking garages or bays, they can reduce the number of parking spaces. Retrofit ordinances make exemptions to parking requirements for retrofitted buildings.
- *Noticing requirements.* Screening programs and mandatory retrofit programs often require building owners to notify their tenants that their building is a soft story and notify any new tenants who move in prior to retrofits.

## **ECONOMIC IMPACT**

To the extent that these retrofits prevent collapse in an earthquake, they can potentially limit economic losses and speed recovery. The immediate economic impact of a major earthquake on the Hayward Fault would include the probable loss of several thousand housing units, creating a tremendous need for short-term housing and support among a portion of our population likely to have limited resources. The anticipated longer-term economic impact would include permanent loss of multi-family housing stock, causing long-term displacement of residents from the City of Hayward, blight, and a prolonged recovery from the disaster.

## **FISCAL IMPACT**

The fiscal impact of adopting seismic retrofit standards and/or a seismic risk screening program depends on the level of participation. Should Council direct staff to proceed, next steps and one-time costs would include hiring an engineering consultant to help develop guidance and standards for retrofits based on Council's feedback. Other fiscal impacts could include:

- Increased utilization of contracted plan checking services, and
- Administrative staff time for creating and maintaining a seismic screening program.

Building permit fees would cover the cost of reviewing permit applications and conducting inspections for any program developed.

Based on Council direction, staff will return for adoption with a more specific and thorough analysis of the costs and staff time associated with seismic retrofits for multifamily buildings.

## **STRATEGIC INITIATIVES**

This agenda item supports the Complete Communities Strategic Initiative. The purpose of the Complete Communities Initiative is to create and support structures, services, and amenities to provide inclusive and equitable access with the goal of becoming a thriving and promising place to live, work, and play for all. This item supports the following goal and objective:

Goal 2: Provide a mix of housing stock for all Hayward residents and community members, including the expansion of affordable housing opportunities and resources.

Objective 4: Increase supply of affordable, safe, and resilient housing in Hayward.

## **PUBLIC CONTACT**

In preparation for this work session, staff has met with multifamily housing property owners and managers who operate in Hayward, as well as representatives from the Rental Housing Association. Some of the concerns that arose from these conversations included:

- Consistency – owners and managers were concerned with consistent and predictable interpretation and application of retrofit standards between City staff and contracted service providers. Staff will develop guidance documents for internal and external plan

checkers and building inspectors to ensure consistency in the application of the requirements for soft story retrofits.

- Incentives – owners and managers supported an exemption from future increased or mandatory retrofit standards for 15-20 years following the completion of a voluntary retrofit.
- Timeline – owners and managers indicated that two years was an appropriate timeline for compliance with a screening program.

## **NEXT STEPS**

Should the Council decide to proceed with the development and adoption of a soft story building retrofit ordinance, staff will hire an engineering consultant to assist with the development of engineering guidelines and guidance documents. Staff will return in late April or early May with a soft story retrofit ordinance.

*Prepared by:* Laurel James, Management Analyst

*Recommended by:* Laura Simpson, Development Services Director

Approved by:



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Kelly McAdoo, City Manager