City of Sunnyvale

Agenda Item

24-0110 **Agenda Date:** 2/15/2024

2024 COUNCIL STUDY ISSUE

NUMBER
CDD 24-01

TITLE Determine Cost and Feasibility of Requiring Structural Retrofitting of Existing Seismically-Vulnerable Buildings within a Specific Time Frame

BACKGROUND

Lead Department:	Community Development Department
Support Departments:	Office of the City Manager Office of the City Attorney
Sponsors:	Councilmembers: Cisneros, Klein, Din, Melton, Mehlinger, Srinivasan, Sell
History:	1 year ago: N/A 2 years ago: N/A

SCOPE OF THE STUDY

What precipitated this Study?
At the April 4, 2023 City Council meeting, Councilmember Cisneros sponsored a Study Issue to determine the number of vulnerable structures, the cost and feasibility of structurally retrofitting compromised buildings, and a time frame to have building owners complete the retrofit.

Earthquakes experienced in California have shown certain buildings do not perform favorably during earthquakes. Buildings classified as Unreinforced Masonry (URM), Tilt-up, Non-Ductile Concrete, and Soft-Story Buildings permitted for construction before January 1, 1979 (January 1, 2008 for Tilt-up Buildings), do not meet recognized seismic safety design standards. These buildings experienced failures that have led to property damage, personal injury, and loss of life.

In 1986, California enacted a law that required local governments to inventory unreinforced masonry buildings and to establish a URM loss reduction program. URM retrofit is the responsibility of the building owner and is not mandated by State law. Sunnyvale complies with this law through notification to URM building owners of their seismically-compromised buildings. City staff have identified 20 URM buildings located in Sunnyvale, all on the historic 100 block of S. Murphy Avenue. Of these 20 buildings, 2 have been upgraded to reinforce the structures.

The 1989 Loma Prieta and the 1994 Northridge quakes brought the need to retrofit compromised buildings to the forefront. San Francisco and Los Angeles have enacted ordinances mandating the retrofit of soft-story buildings within a specific timeframe. Los Angeles has a similar ordinance for non-ductile concrete buildings. Some Bay Area jurisdictions have ordinances addressing varying degrees of earthquake hazard reduction in the four types of buildings.

Since a rupture on the San Andres fault is inevitable, concerns have been voiced over the structural integrity of soft-story and non-ductile concrete buildings and the possible damage to property, injury, and loss of life that could be avoided if seismically compromised buildings are brought up to current seismic related construction codes.

What are the key elements of the Study?
The Study will include creating an inventory of suspect soft-story buildings and non-ductile concrete buildings. Soft-story buildings are multi-story buildings in which one or more floors have weak and/or open wall lines (windows, wide doors, or other openings) where structural walls are normally required for earthquake stability. An example of a soft-story building is a multi-story apartment building with tucked under parking on the first floor. A non-ductile concrete building is a concrete structure that lacks sufficient reinforcing steel to safely resist earthquake forces. If the Council chooses, the Study can include Tilt-up buildings. During an earthquake, the concrete or masonry exterior walls of a tilt-up building are free to separate from the roof sheathing causing the roof to collapse. Subsequently, the walls will collapse as the roof is no longer stabilizing the walls.

The Study will not include a specific determination of the engineered construction of an identified building. The building's design verification would require a licensed civil or structural engineer to investigate and analyze its structural integrity. As a model, cities have placed the cost and responsibility of the building analysis on the owner.

The Study will include a feasibility analysis of the program's implementation, outreach to business owners, consideration of incentives, and if a program would involve education only or a requirement to retrofit by a certain date. The Study will not include an analysis of the potential cost incurred by the owner to upgrade buildings since it is based on the existing construction of the building and the extent of modifications needed to bring a building into compliance.

Estimated years to complete study: 2 years

FISCAL IMPACT

Cost to Conduct Study

Level of staff effort required (opportunity cost):	Moderate
Funding Required for Non-Budgeted Costs:	$125,000
Funding Source:	Will seek budget supplement

A consultant would evaluate, catalog, and categorize buildings. Staff and consultant would work on compliance documents and tracking. Outreach would be provided to educate owners on requirements and responsibilities.

Cost to Implement Study Results
Unknown. Study would include an assessment of potential costs.

EXPECTED CITY COUNCIL, BOARD OR COMMISSION PARTICIPATION

Council-Approved Work Plan: No
Council Study Session: No
Reviewed by Boards/Commissions: No

STAFF RECOMMENDATION

Support. This policy issue merits discussion at the 2024 Study Issues Workshop subject to funding for the study.

Consistent with the General Plan's Community Vision Chapter and its goal to ensure a Safe and Healthy Community, ensuring buildings are resistant to structural failure can protect property, preserve lives, and avoid personal injury.

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