Summary of CAPSS Public Advisory Committee Meeting - August 13, 2008

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In response to Mayor Newsom's July 9, 2008 Administrative Directive, the CAPSS Project team has focused its efforts and work plan over the next few months to produce well-supported recommendations and options for a soft-story retrofit ordinance by the January 31, 2009 deadline. This effort will be a subset of the overall CAPSS project that covers all seismically vulnerable private buildings in San Francisco, including non-ductile concrete frame buildings.

In order to begin their technical analyses, the CAPSS project team sought input from the Advisory Committee in two areas:

- the desired performance of "soft-story" buildings in easy-to-understand terms
- a set of reference soft-story building types that should be analyzed

The goal was not to decide on what performance level to recommend, but to scope which levels should be analyzed and considered, both from a structural, engineering perspective as well as a cultural/socio-economic impact perspective.

To familiarize the Advisory Committee with the variety of styles and seismic vulnerability of San Francisco's wood-frame residential buildings, Advisory Committee member David Bonowitz began the meeting with an excellent photo summary of broad characterization of the most commonly found wood-frame building types in San Francisco.

The project team then began by briefly describing their planned approach (http://www.sfcapss.org/advcommittee.shtml) and presented a strawman draft of possible lay "performance objectives" and soft-story building types to be considered.

The proposed performance objectives--ranked from the highest level of performance to the lowest--are as follows(see powerpoint for initial rough estimates of % damage, repair and/or replacement):

- Safe and Operational after an event—standard for essential and critical use facilities
- Safe and Useable During Repair—"Recover at Home" standard
- Safe and Useable After Repair—"Building Preservation", practical and feasible to do repairs
- Safe but Not Repairable
- Unsafe, Collapse risk

Each performance objective would be analyzed to determine data and information needed to assess impacts and inform policy for an event of a "code" shaking intensity" (10% chance of being exceeding in 50 years). Practically, the "code shaking intensity" in San Francisco is similar to what would be produced

by a moderately large earthquake on the San Andreas fault on the Peninsula (about Magnitude ~7) . However, because of amplification differences between rock and soft soil, such an earthquake can result in shaking intensities that can vary by a factor of 10 or more across the city for a single event . Considerations for the analysis:

- What would be entailed structurally in retrofitting to meet these objectives and does an established engineering standard already exist that would meet the objective?
- What % damage corresponds to each performance objective, and what would be a realistic estimate of the repair time?
- What would be the cost range for retrofitting for each of several "reference buildings" types, and what would be the $ value of the loss avoided, as well as the social and culture value of loss avoided?
- How many buildings would be involved? What role do those buildings play in the city economy as well as cultural/historic value?
- How many people/households would be impacted both by the retrofit and if nothing was done? What socio-economic/demographic groups do these households represent?

DISCUSSION AND DECISIONS

After considerable discussion the Advisory Committee agreed that the CAPSS project team analyze all 5 proposed performance objectives for each reference building type in order to have the information and data needed to develop and defend the options to be submitted to the Mayor's office for consideration for the soft-story ordinance. Comments and modifications on each objective are described below:

- Safe and Operational after an event—standard for essential and critical use facilities
    - Likely to require costly retrofit and considerable mitigation to avoid content damage
    - Potential standard for facilities serving extremely vulnerable populations such as nursing homes or assisted living facilities
- Safe and Useable During Repair—"Recover at Home" standard
    - No need to move out of this home, still a very high standard
    - Could preserve rental income post-event
- Safe and Useable After Repair—"Building Preservation" standard
    - practical and feasible to do repairs
    - question of how long repairs might take realistically in a chaotic, post-event situation

- Safe but Not Repairable
    - Represents what has been the building code basic standard for more than 50 years
    - Basically was the code requirement for San Francisco's URM retrofits
    - Considerable discussion about this category, one end member was suggested to be (with title change) "safe for egress, but not repairable", emphasizing that there could be considerable damage, but short of complete collapse. Inhabitants may need to be rescued, and it would be possible to get to them
    - What does repairable mean—physically repairable or economically feasible? This is was NOT RESOLVED and will likely require the full structural analysis to aid in the definition
    - If the city were to adopt this performance objective for the soft-story retrofit, we would fall very short of SPUR's recommended "shelter in place" resiliency standards.
- Unsafe, Collapse risk
    - How many buildings in this category?
    - How are they identified within the city?

General comments:

1) Financial (or other) incentives could be tiered—a larger incentive to those building owners that decide to retrofit to a higher performance objective
2) What would be recommended might well depend on what perspective/goal you choose to adopt:
    a. What is feasible economically for the city?
    b. What would achieve, most rapidly, a given policy objective --such as the SPUR recommendation that a large fraction of the population be able to "shelter in place"? Or alternately, to retain sufficient "affordable housing"
    c. What is in the building owner's interest?
        i. No loss of life (likely a strong criteria for all)
        ii. Minimum disruption of rental income
3) What, if any consideration will be given to geologic "site" conditions that could amplify ground motions by a factor of 10 or more across the city

REFERENCE BUILDING TYPES

The team proposed 6 general and ubiquitous reference building types to analyze for the different performance objectives. These building types are wood frame buildings with three or more stories and five or more residential units with potential soft or weak conditions at the ground floor. The Advisory Committee endorsed the 6 selected building types and recommended a 7th type also be analyzed:

1) Traditional, Corner, 3+ stories, ground floor commercial

2) Traditional, Corner, 3+ stories, garage usage on ground floor

3) Traditional, Midblock, 3+ stories, ground floor garages

4) Contemporary, Corner, 3+ stories, tuck-under parking (carports)

5) Contemporary, midblock, 3+ stories, tuck-under parking

6) Traditional or Contemporary, Corner, 3+ stories, house on grade, ground floor garages?

Suggested additional building type, very common in city:

7) 25 foot wide, built over garage with front and side emergency exity,3+ stories