
SENATE COMMITTEE ON HOUSING
Senator Scott Wiener, Chair
2021 - 2022 Regular

Bill No:	AB 1329	Hearing Date:	7/8/2021
Author:	Nazarian		
Version:	6/30/2021 Amended		
Urgency:	No	Fiscal:	Yes
Consultant:	Erin Riches		

SUBJECT: Building codes: earthquakes: functional recovery standard

DIGEST: This bill requires the California Building Standards Commission (CBSC) and the state Department of Housing and Community Development (HCD) to develop and adopt building standards that require buildings to be designed and built to a functional recovery standard for earthquake loads, as specified.

ANALYSIS:

Existing law:

- 1) Establishes the CBSC within the Department of General Services and requires any building standards adopted or proposed by state agencies to be submitted to, and approved by, the CBSC prior to codification into the California Building Standards Code.
- 2) Requires HCD to propose to the CBSC, the adoption, amendment, or repeal of building standards for residential buildings including hotels, motels, lodging houses, apartment houses, dwellings, buildings, and structures.

This bill:

- 1) Requires the CBSC and HCD, during the 2024 triennial building code cycle, to develop, adopt, approve, codify, and publish building standards that require buildings not already under the authority of another state agency to be designed and built to a functional recovery standard for earthquake loads.
- 2) Defines “functional recovery standard” as a set of enforceable building code provisions and regulations that provide specific design and construction requirements intended to result in a post-event performance state in which a building’s structural and non-structural capacity are maintained or can be

restored to support its basic intended functions within an acceptable period of time.

- 3) Requires the CBSC and HCD, in proposing and adopting standards, to establish acceptable functional recovery times for buildings of different uses and occupancies and to identify specific design and construction requirements deemed to comply with these acceptable times.
- 4) Authorizes the CBSC and HCD to consider design and construction requirements that vary to suit different levels of seismicity and different seismic design categories. Also authorizes the CBSC and HCD to deem that design and construction requirements in the current codes provide acceptable functional recovery times for certain uses, occupancies, levels of seismicity, or seismic design categories.
- 5) Requires the CBSC and HCD to actively consult with interested parties, as specified.
- 6) Provides that any standards adopted pursuant to this bill shall apply to new construction of buildings, except for buildings regulated by the Office of Statewide Planning and Development or the Division of the State Architect.
- 7) Provides that neither the State Building Standards Law nor this bill shall limit the authority of a city or county to establish more restrictive building standards related to recovery-based design standards, based on local recovery needs and priorities identified by the city or county, through regular and open rulemaking processes that include consideration of input from various stakeholders and the general public.

COMMENTS:

- 1) *Author's statement.* "California has experienced dozens of disastrous earthquakes, which have caused loss of life, injury, and economic loss. The current building code aims to ensure preservation of life in the event of a large earthquake. However, the code does not aim to prevent damage, limiting building closure times, or limiting financial losses. This bill would facilitate the creation of standards for new buildings to make sure they remain functional after an earthquake. New buildings that meet a functional recovery standard would mean people could enter buildings more quickly after a large seismic event, instead of having them closed for months or years at a time."

- 2) *The California Building Standards Code*. Under the state building code adoption process, relevant state agencies propose amendments to model national building codes, which the CBSC must then adopt, modify, or reject. HCD is the relevant state agency for residential building codes, while the Office of the State Fire Marshal is responsible for life and fire safety for hotels, apartments, dwellings, and assembly and high-rise buildings. The Division of the State Architect is responsible for public schools, community colleges, and accessibility in public accommodations and public housing, and the Office of Statewide Health Planning and Development is the relevant state agency for hospitals and clinics.

Not all buildings fall under the jurisdiction of a relevant state agency. Most commercial, industrial, and manufacturing structures are considered “local buildings,” over which local governments may determine applicable building standards. The CBSC is responsible for developing building standards for state-owned buildings, including university and state college buildings, and for developing green building standards for most buildings except for housing, public schools, and hospitals.

- 3) *The Legislature’s role in proposing building standards*. Although legislation may be enacted to change or propose building standards, this process is generally conducted through state agencies. Instead of proposing specific standards, the Legislature typically offers guidelines, or directs agencies to consider specific standards, in order to provide flexibility. After the proposal of building standards by state agencies, the standards undergo a vetting process. A code advisory committee, composed of experts in a particular scope of code, reviews the proposed standards, followed by public review. The proposing agency considers feedback and may then amend the standards and re-submit them to the CBSC for consideration.

Placing building standards in statute through legislation, rather than legislatively directing a state agency to consider certain standards, prevents state agencies from taking expert and public feedback into consideration. Moreover, it forces any future changes to be made through legislation rather than through the regulatory process. In addition, state agencies generally develop California-specific amendments to national and international model codes; this bill, however, would require the state to adopt a functional recovery despite the fact that no such standard exists yet at the national or international level. *The committee may wish to consider amending this bill to strike the requirement for HCD and the CBSC to “develop, adopt, approve, codify, and publish” the functional recovery standard and instead require them to “develop and propose” such a standard.*

- 4) *Functional recovery standard.* When Congress reauthorized the National Earthquake Hazards Reduction Program in 2018, it charged the National Institute of Standards and Technology (NIST) and the Federal Emergency Management Agency (FEMA) to convene a “committee of experts” to study the issue and make recommendations. In January 2021, NIST and FEMA released its report, *Recommended Options for Improving the Built Environment for Post-Earthquake Reoccupancy and Functional Recovery Time*.¹ The report recommended that state and local governments adopt recovery-based codes and standards. This bill would require HCD and the CBSC to develop, adopt, and publish standards for a functional recovery standard for earthquakes.

The NIST-FEMA report defines a functional recovery standard as “as post-earthquake performance state in which a building or lifeline infrastructure system is maintained, or restored, to safely and adequately support the basic intended functions associated with the pre-earthquake use or occupancy of a building, or the pre-earthquake service level of a lifeline infrastructure system.” This allows for faster recovery after seismic events because buildings would be designed to maintain their basic functions after an earthquake.

California’s current building standards focus on safety-based considerations that preserve human life and allow for safe egress from structures; the standards do not consider recovery time. A functional recovery standard would therefore be a significant advancement in the state’s resilience after a major earthquake. Buildings would be designed to not only allow for reoccupation after an earthquake, but to reduce the period to “get back to normal” as well. However, a functional recovery standard would, in all likelihood, also result in a significant increase in the up-front costs of construction, to meet the much more stringent standard.

To help address this concern, the author recently amended this bill (June 30, 2021) to authorize HCD and the CBSC, in proposing and adopting the standards, to:

- a) Establish functional recovery times for buildings of different uses and occupancies.
- b) Identify specific design and construction requirements deemed to comply with these times.

¹ National Institute of Standards and Technology and Federal Emergency Management Agency. *Recommended Options for Improving the Built Environment for Post-Earthquake Reoccupancy and Functional Recovery Time* (January 2021) <https://nvlpubs.nist.gov/nistpubs/SpecialPublications/NIST.SP.1254.pdf>

- c) Consider design and construction requirements that vary to suit different levels of seismicity and different seismic design categories.
- d) Deem that design and construction requirements in the current codes provide acceptable functional recovery times for certain uses, occupancies, levels of seismicity, or seismic design categories.

These amendments are intended to provide HCD and the CBSC with flexibility to establish different tiers of functional recovery standards for different types of buildings.

- 5) *Implementation questions.* The NIST-FEMA report was the result of a multi-year process that included convening a panel of experts who met with stakeholders across the country. The author notes that half of the national committee was made up of leading California engineers and other industry professionals. Although this bill requires HCD and the CBSC to actively consult with specified stakeholders, neither HCD nor the CBSC currently includes any structural engineers among its staff. In addition, according to a presentation by several experts – including the sponsor of this bill – at the May 2021 California Association of Local Building Officials conference, “the comprehensive approach envisions an entirely new design standard based on recent and ongoing research and vetted by expert committees. It is estimated that this approach would take 10+ years.” This bill, however, requires the CBSC to adopt a functional recovery standard in the next triennial building cycle.
- 6) *Trying again.* This bill is an expanded version of several prior bills carried by the author. AB 1857 (Nazarian, 2018) would have required the CBSC to assemble a working group to consider whether California’s building codes should reflect a functional recovery standard. That bill was vetoed by Governor Brown. The veto message stated the Governor preference to allow the NIST to finish its work before moving forward with a state functional recovery standard. Subsequent, nearly identical bills, AB 393 (Nazarian, 2019) and AB 1997 (Nazarian, 2020), were held on the suspense files in the respective houses’ Appropriations Committees. The author notes that now that the NIST-FEMA report has been published, it is time for California to move ahead in developing a functional recovery standard.

RELATED LEGISLATION:

AB 1997 (Nazarian, 2020) — would have required the CBSC to assemble a working group to determine criteria for “functional recovery” standards following

a seismic event. *This bill was held on the suspense file in the Assembly Appropriations Committee.*

AB 393 (Nazarian, 2019) — would have required the CBSC to assemble a working group to help determine criteria for voluntary or mandatory “functional recovery standards” for buildings following a seismic event. *This bill was held on the suspense file in the Senate Appropriations Committee.*

AB 1857 (Nazarian, 2018) — would have required the CBSC to assemble a working group to consider whether California’s building codes should reflect a “functional recovery standard.” *This bill was vetoed.*

FISCAL EFFECT: Appropriation: No Fiscal Com.: Yes Local: No

POSITIONS: (Communicated to the committee before noon on Thursday, July 1, 2021.)

SUPPORT:

Structural Engineers Association of California (Sponsor)
American Council of Engineering Companies of California
American Institute of Architects California
American Society of Civil Engineers-region 9
City of Alameda
Earthquake Engineering Research Institute
Omegaflex
US Resiliency Council

OPPOSITION:

None received

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