

Date of Hearing: June 30, 2016

ASSEMBLY COMMITTEE ON GOVERNMENTAL ORGANIZATION

Adam Gray, Chair

SB 438 (Hill) – As Amended June 14, 2016

SENATE VOTE: 37-0 (Not relevant)

SUBJECT: Earthquake safety: statewide earthquake early warning program and system

SUMMARY: This bill would establish, within the California Office of Emergency Services (Cal OES), the California Earthquake Early Warning Advisory Board (board) to support the development of the statewide earthquake early warning system (system). Specifically, **this bill:**

- 1) Requires the board to include 7 voting members and 2 nonvoting members, as follows:
 - a) The Secretary of the Natural Resources Agency, or his or her designee.
 - b) The Secretary of California Health and Human Services, or his or her designee.
 - c) The Secretary of Transportation, or his or her designee.
 - d) The Secretary of Business, Consumer Services, and Housing, or his or her designee.
 - e) One member who is appointed by, and serves at the pleasure of, the Speaker of the Assembly and represents the interests of private businesses.
 - f) One member who is appointed by, and serves at the pleasure of, the Governor and represents the utilities industry.
 - g) One member appointed by the Senate Committee on Rules representing county government whose term of office shall be four years to run with the officer or incumbent. The Senate Committee on Rules shall appoint, on an alternating basis, a member who resides in northern or southern California.
 - h) The Chancellor of the California State University, or his or her designee, shall serve as a nonvoting member of the board.
 - i) The President of the University of California, or his or her designee, may serve as a nonvoting member of the board.
- 2) Requires the board to convene periodically and advise the Governor's Office of Emergency Services (Cal OES) on all aspects of the program, including, but not limited to:
 - a) System operations.
 - b) Research and development.
 - c) Finance and investment.

- d) Training and education.
- 3) Requires the California Integrated Seismic Network (CISN) to be responsible for the generation of an earthquake early warning alert and related system operations.
- 4) Requires Cal OES, on or before February 1, 2018, develop and submit a business plan for the program to the Senate Committee on Governmental Organization, the Assembly Committee on Governmental Organization, the Senate Budget and Fiscal Review Committee, the Assembly Committee on Budget, and the Legislative Analyst's Office, as specified.
- 5) Requires Cal OES, on or before February 1, 2019, and annually thereafter, report to the Legislature any changes to the business plan from the prior year and shall provide a general report on progress of the program and the implementation of the system.
- 6) Discontinues the requirement that the funding sources for the system exclude the General Fund and be limited to federal funds, funds from revenue bonds, local funds, and funds from private sources.
- 7) Deletes the provisions providing for the repeal and the contingent operation of the requirement that the office develop the system.
- 8) Appropriates \$23,100,000 from the General Fund to Cal OES for the purpose of implementing the system.
- 9) Makes legislative findings in support of its provisions.

EXISTING LAW:

- 1) Creates, within the office of the Governor, Cal OES which, under the Director of Emergency Services, coordinates disaster response, emergency planning, emergency preparedness, disaster recovery, disaster mitigation, and homeland security activities.
- 2) Requires various entities, including Cal OES, through a public-private partnership, to develop a comprehensive statewide earthquake early warning system in California, as specified.
- 3) Requires Cal OES to identify funding for an earthquake early warning system through single or multiple sources of revenues that shall be limited to federal funds, funds from revenue bonds, local funds, and private grants.
- 4) Prohibits General Fund moneys to be used for the establishment of an earthquake early warning system.
- 5) Specifies that if funding is not identified by January 1, 2016, the provisions relating to the establishment of an earthquake early warning system should be repealed.
- 6) Establishes the California Earthquake Safety Fund (fund) in the State Treasury.

FISCAL EFFECT: Unknown

COMMENTS:

Purpose of the bill: According to the author: “California is the second most seismologically active state in the nation and a statewide earthquake early warning system has the potential to save lives, prevent injuries, and reduce monetary losses. We owe it to Californians to get the system up and running as soon as possible. SB 438 helps to do so by eliminating current restrictions on public funding and creating an implementation advisory board.”

Background: In 2013 the California Legislature passed and the Governor signed SB 135 (Chapter 342, Statutes of 2013), which requires Cal OES in collaboration with various entities, to develop a comprehensive statewide earthquake early warning system in California. The bill further requires Cal OES to identify funding for the system but specifically prohibits General Fund money to be used. SB 135 also specifies that if funding is not identified by January 1, 2016, the provisions of the bill will be repealed. SB 494 (Chapter 799, Statutes of 2015), delayed this dateline to July 1, 2016.

The California Geological Survey (CGS) estimates its costs associated with developing the system would be approximately \$23 million in the first year and approximately \$16 million annually thereafter. These costs include realigning CGS' ground stations, purchasing additional instrumentation, upgrading existing instrumentation and communications networks, and staffing the system 24 hours a day, seven days a week.

Cal OES is currently in the process of identifying funding for the project and has been working with CISN, a working group composed of the United State Geological Survey, the California Geological Survey, California Seismic Safety Commission, UC Berkeley Seismological Laboratory, California Institute of Technology as well as other interest groups to establish best practices for an earthquake early warning system in California.

Earthquake Early Warning Systems: While earthquakes cannot be predicted or prevented, using advanced science and technology has in the past detected seismic activity and provided advanced warning. The objective of earthquake early warning systems is to rapidly detect the occurrence of an earthquake, estimate the level of ground shaking to be expected, issue a warning before significant ground shaking begins, and estimate the location and the magnitude of the earthquake. This is not the same as earthquake prediction, which currently is not possible.

When an earthquake occurs, the earthquake produces different types of shock waves, which travel at different speeds. The fastest and weakest of these waves are called P-waves. Technology exists that can detect the energy from P-waves to estimate the location and the magnitude of the earthquake. This method can provide warning before the more destructive S-wave arrives. The S-wave is responsible for most of the strong shaking that usually creates the most damage during earthquakes.

The amount of warning time at a particular location depends on the distance from the earthquake epicenter. Locations very close to the earthquake epicenter will receive relatively little or no warning whereas locations far removed from the earthquake epicenter would receive more warning time but may not experience damaging shaking.

Studies on earthquake early warning methods in California concluded that the warning time would range from a few seconds to a few tens of seconds, depending on the distance from the earthquake epicenter. However, very large earthquakes emanating from the San Andreas Fault could produce significantly more warning time because the affected area would be much larger.

Regardless of the warning time, earthquake early warning systems can provide adequate time to slow down and stop trains, stop cars from entering tunnels, automatically shut down dangerous machinery, and countless other benefits. Taking such actions before an earthquake arrives can reduce damage and casualties during and after an earthquake.

Earthquake early warning systems are currently in place in Japan and Mexico and many other countries throughout the world are currently in the process of developing such systems.

Private and Public Funding: Cal OES, to date, has been unable to demonstrate they have any firm commitments for private funding. They have pointed to the absence of a governance structure in statute as a reason for the lack of firm funding commitments from private interests. SB 438 is a product of negotiations between the author, Assembly G.O. Committee and Cal OES to address this issue.

On June 15, 2016, the Legislature passed SB 826: Budget Act of 2016. Within the 2016 budget is a one-time appropriation of \$10 million to provide initial operating costs and staff to build out the California Earthquake Early Warning System and Program. This is a shift in policy for the Legislature and Administration. As mentioned above, SB 135 (Padilla) prohibited General Fund moneys to be used for the establishment of the system.

Staff Note: *The Budget Act was signed by the Governor on Monday, June 27, 2016. The author has committed to removing the \$23.1 million appropriation in fiscal committee, since the \$10 million mentioned above has been officially allocated to Cal OES.*

Prior/Related Legislation: AB 1346 (Gray) of 2015-2016 Session. Discontinues the requirement that the funding sources for the system exclude the General Fund and be limited to federal funds, funds from revenue bonds, local funds, and funds from private sources. (Pending in Senate Appropriations)

SB 494 (Hill, Chapter 799, Statutes of 2015) created the California Earthquake Safety Fund to be used for seismic safety and earthquake-related programs, including the earthquake early warning system and requires the identification of funding of the earthquake early warning system to occur by July 1, 2016.

AB 918 (Cooley, Chapter 187, Statutes of 2013) required OES, on or before July 1, 2015, to update the SEP to include proposed best practices for local governments and nongovernmental entities to use to mobilize and evacuate people with disabilities and others with access and functional needs during an emergency or natural disaster.

SB 31 (Padilla Chapter 342, Statutes of 2013) required OES, in collaboration with various entities, to develop a comprehensive statewide earthquake early warning system in California.

AB 928 (Blakeslee) of 2009-2010 Session. Would have required the High-Speed Rail Authority to develop an earthquake early warning system and coordinate development of that system with various state agencies. (Held in Assembly Governmental Organization Committee)

REGISTERED SUPPORT / OPPOSITION:

Support

American Academy of Pediatrics, California
American Red Cross
Bay Area Rapid Transit
California Department of Insurance
California Fire Chiefs Association
California Institute of Technology
California State Firefighters' Association
Computing Technology Industry Association
Fire Districts Association of California
Mayor Eric Garcetti, City of Los Angeles
Silicon Valley Leadership Group

Opposition

None on File

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