

Quake warning system for West Coast nears reality

November 30 2011, By Suzanne Bohan

The devastating 1868 Hayward fault earthquake in Northern California shook loose the first plausible idea for warning people of imminent ground shaking.

A San Francisco Bay Area physician proposed using telegraph cables into San Francisco to transmit energy from an earthquake to ring a warning bell.

A high-tech version of that idea is finally close to reality along the [West Coast](#).

This summer, the University of California, Berkeley, the U.S. Geological Survey and two other universities began testing of a prototype earthquake warning system. It would alert people, hospitals, transit systems and factories seconds to a minute before a major quake.

They are developing the system with Google.org - Google's philanthropic arm - and several companies such as Deutsche Telekom's Silicon Valley Innovation Center.

A \$6 million grant from the Gordon and Betty Moore Foundation in Palo Alto, Calif., announced Tuesday will speed the project's development, said Richard Allen, director of the UC Berkeley Seismological Laboratory.

"We've basically been putting this together on a shoestring budget,"

Allen said. The new grant "is going to allow us to make this test system much more robust." UC Berkeley, the California Institute of Technology and the University of Washington will each get \$2 million.

Within three years, Allen is optimistic they can prove the system works and seek \$150 million for a full-scale West Coast warning system. It could be running two years later, he said.

A foundation spokeswoman said early warning systems could save thousands of lives and prevent millions of dollars in damage.

Japan is far ahead of the United States with the technology. It had a simple system in the 1960s to shut down power to high-speed trains during [major earthquakes](#).

Now TV and radio stations broadcast warnings seconds after an earthquake starts using data gathered by nationwide networks of seismic stations. Two cellphone carriers also send early warnings to their 21 million customers, and a third one plans to start soon.

A network of sensors along the West Coast already gathers real-time earthquake data, but the challenge is swiftly spreading the word. Companies like Google and Deutsche Telekom are exploring how to almost instantly disseminate the warnings via computers, cellphone alerts, broadcast stations and community alert systems.

The system doesn't predict earthquakes. But it does detect quake primary waves, or p-waves, and send alerts if they exceed a threshold.

Following p-waves, more destructive secondary, or s-waves, travel about 2.5 miles per second.

At the epicenter of a quake, such a [warning system](#) can give only a

second or two of notice.

The farther from a large quake epicenter, the longer the alert time - several seconds to more than a minute in California - said Douglas Given, USGS earthquake early warning coordinator.

Even a few seconds' warning lets people dive under a sturdy table or desk to avoid falling objects or to step back from a pot of boiling water, Given said.

Hospitals and clinics could quickly halt operations. BART is an early tester of the West Coast prototype. Utilities have keen interest in it, as do manufacturers, especially microchip processors where production is extremely sensitive to motion.

While the test project is far from ready, Allen does think it's just a matter of time - and funding - before West Coast residents can have at least fleeting notice of a major earthquake.

(c)2011 the Contra Costa Times (Walnut Creek, Calif.)
Distributed by MCT Information Services

Citation: Quake warning system for West Coast nears reality (2011, November 30) retrieved 24 April 2024 from <https://phys.org/news/2011-11-quake-west-coast-nears-reality.html>

| |
|--|
| <p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p> |
|--|