

Coachella Valley relies on decades-old maps when building around earthquake faults

State geologists admit their maps are too old, but say there's little they can do unless lawmakers spend more money to accurately pinpoint active earthquake faults

Jeff Stahl, KESQ News, 2-10-14

DESERT HOT SPRINGS, Calif. - They're the official maps planners for California cities and counties use to determine where earthquake faults lie.

The results of those maps help decide where builders can erect new buildings and where they must take extra measures because of fault zones.

Geologists admit some of the legal maps are old, in fact so old they date back to the early 1970's. But they also say they can do little about it.

The state's regulatory map issued for the Coachella Valley was published in 1974. It's the state's best guess of exactly where local fault lines run.

But it was produced 40 years ago during a time when Tony Orlando & Dawn topped the music charts, Richard Nixon was in the midst of Watergate, pocket calculators were the new thing and "All In The Family" was the No. 1 show on television.

The state's Alquist-Priolo Earthquake Fault Zoning Act followed the deadly 1971 San Fernando or Sylmar earthquake.

Many were built directly over fault lines and caused the majority of deaths. The act required the state to establish regulatory zones around active faults so developers don't build on top of them. A number of buildings including a veterans hospital collapsed during the San Fernando quake.

Mapping is important for people in the Palm Springs area because the Coachella Valley lies between two very active fault systems.

Geologists say both are very capable of producing major earthquakes. The San Andreas fault runs to the north side of the Coachella Valley.

The San Jacinto fault runs to the south of the Santa Rosa Mountains.

Supervising geologist with California Department of Conservation, Tim McCrink, said mapping techniques have come a long way since the 1970's.

They now create high definition images of the earth using 3-D aerial photography and lidar imaging.

Lidar uses lasers to measure distance changes and produce pictures so sharp geologists can see tiny shifts in ground elevation.

Those differences can highlight underground earthquake faults which would otherwise be invisible to the naked eye.

McCrink said, "The ones that worry us are the ones we have not included in the zone up to this point, because no sight investigation is required for sights outside the zone."

Any developer would have to conduct an on-sight dig if a proposed development was within a designated fault zone, any area between 500 and 660 feet around a known fault.

But without the benefits of more modern mapping techniques there could be faults running under the Coachella Valley which are simply not yet discovered.

Often those faults are uncovered during newer mapping efforts.

Still, geologists say the older maps are still good. McCrink said, "The trace of the map might not be as accurate as we'd like.

As we would do with more modern standards, using new tools." Newer maps shrink the buffer zone around known faults to 500 feet.

Older maps still rely on a 660-foot buffer zone.

A newer map was published in 2012 for the Salton Sea and east, just east of the Coachella Valley.

Geologists say making sure homes are not directly over a fault rupture will save lives, and that's why their mapping effort is so important.

McCrink said, "That fault rupture happens within seconds of the earthquake starting.

So your house is going to get that terrible rip through it then it's going to ride out the shaking."

McCrink also said today's building codes should prevent most buildings from collapsing, but again only if a house isn't on top of a fault line.

As for getting a new map, it's up to the state to earmark funding for the Alquist-Priolo Earthquake Fault Zoning Act.

Gov. Jerry Brown has expressed his desire to increase funding, but it's ultimately up to state legislators in Sacramento.

Once it is approved, geologists say their efforts will be focused first toward high population areas such as West Los Angeles and in the Santa Monica area.