Skyscraper site may sit on active Hollywood fault line, state says

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California's state geologist has declared that the Hollywood earthquake fault is active and may run directly underneath a skyscraper project approved by the Los Angeles City Council last week.

The assertion raises new doubts about whether the 1-million-square foot Millennium Hollywood project - which would create two of Hollywood's tallest towers - should go forward without significantly more seismic safety testing than the city has so far required.

While the Hollywood fault has been known for several decades, geologists have never mapped its precise route on a block-by-block level. Steep slopes formed by old fault ruptures are visible from the street on both sides of the project location, where developers want to erect 39-story and 35-story towers.

Several geologists interviewed by the Los Angeles Times have urged more extensive testing, such as digging dozens of bore holes or a trench, to determine exactly where the fault lies. If an earthquake fault is found underneath the Millennium towers, it could force a revision of architectural plans or scuttle the project.

California law bars construction of new buildings within 50 feet of an earthquake fault declared active and mapped by state officials. A building over a fault can be ripped in half during an earthquake.

There have been questions about how active the Hollywood fault is. But the head of the California Geological Survey, John Parrish, said in an interview there is now ample evidence that the fault is active and capable of producing a devastating earthquake.

Parrish said strands of the Hollywood fault appear to run underneath the Millennium towers site near Hollywood Boulevard and Vine Street but that further tests are needed for final confirmation.

"This is a very big project that they're working on, and they should have the latest information that's available," he said.

A spokesman for the New York-based developer, Brian Lewis, said geologists did testing at the city's direction and found no evidence of a fault at the site. But he added: "We're happy to do more testing, and we fully intend to do more testing. We have no interest in building anything that would be unsafe."

The state is reviewing all known data about the Hollywood fault. In the next few months, state geologists will also perform a visual examination of the fault.

The research will culminate with the state creating a zone around the fault. The fault is not a straight line, but more like a fracture zone - like cracks in a broken piece of peanut brittle.

The Millennium project has prompted the state to accelerate its study, and it hopes to have results by early 2014.

Mapping the fault would have major implications for new development in Hollywood, which is undergoing a building boom.

Property owners along the officially drawn Hollywood fault would also

be prohibited from new construction or significant renovation under the Alquist-Priolo Earthquake Fault Zoning Act, passed after the 1971 Sylmar, Calif., earthquake.

The law does not affect existing buildings. But in the past, the discovery of faults has led some to take action. Los Angeles Southwest College demolished two buildings in 1991 that straddled the Newport-Inglewood fault. The Los Angeles Unified School District tore down a portion of the new Belmont Learning Center after finding that a fault ran underneath it.

University of Southern California earth sciences professor James Dolan - whose maps and studies in the 1990s are the leading source for state officials on the location of the Hollywood fault - said lawmakers had good reason for banning construction on faults.

The Hollywood fault could rupture into a magnitude 7 earthquake and could sever a building. Half of the building straddling the fault could be shoved 10 feet away from the other side, Dolan said.

"If you know where an active fault is, you just can't build on it," Dolan said. "You just don't do this when you're building structures for human occupancy."

The Hollywood fault, he added, is part of a series of faults that run east from the Malibu coast, along Santa Monica Boulevard, through Hollywood and eventually to the Raymond fault, which reaches Arcadia.

Parrish said the last time the Hollywood fault was known to have ruptured was 7,000 to 8,000 years ago. Any fault that has shown shaking in the last 11,000 years is defined by California as active.

But when Hollywood was transformed in the 1920s from lemon groves

into a new entertainment capital, few were aware of the existence of faults. Homes, apartments and offices have been built all along the Hollywood fault area, including the Capitol Records building.

Physical scars of the fault and violent shaking from the past remain evident, even to the naked eye.

North of the Millennium site is the well-defined northern strand of the Hollywood fault. At the intersection of Vine and Yucca streets, pedestrians can see a steep slope leading to the 101 Freeway. Dolan said he often takes his students there to see what a fault looks like.

There's also a southern strand of the Hollywood fault, documented in geologic papers since the 1990s.

The first report in 1992 studied bore samples taken for the Metro subway project. Geologists Richard Crook and Richard J. Proctor concluded that a strand of the Hollywood fault was south of Yucca Street at Cahuenga Boulevard. That's two blocks directly west of the Millennium site.

Dolan said there is also physical evidence of the fault east and west of the proposed towers.

To the east, an escarpment - a steep slope - that is evidence of the fault can be seen from Hollywood Boulevard and Argyle Avenue.

Escarpments can be created during an earthquake when one side of a fault violently thrusts over the other. That results in a cliff that can erode over time to form a hillside.

Another slope can be seen west of the development site on Whitley Avenue.

Connecting the dots between the visible escarpments suggest that the fault might go through the Millennium site.

But to be sure either way, Dolan said, geologists would have to bore dozens of holes or dig a deep trench.

L.A. city geologist Dana Prevost has asked the developer for more quake studies, and the firm agreed to dig a trench to determine whether the fault is under the property, a city spokesman said.

The developers cite two official sources that do not put the Hollywood fault underneath the Millennium site. Neither is precise.

One is the U.S. Geological Survey's map. A USGS spokesman said such maps were created to look at the bigger picture and were "not intended to be viewed at such a granular level."

The other is the city's zone mapping system, known as ZIMAS. According to the developer, ZIMAS shows the project site 0.3 to 0.37 miles from the fault.

When asked about the source of ZIMAS' data, deputy planning director Eva Yuan-McDaniel said the fault location is from the California Geological Survey. But she acknowledged the data are old.

Regardless of those two official sources, geologists say the only way to definitively find a fault at a site is to do extensive digging.

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