Calif.’s other drought: Major earthquake is overdue

By Richard Aster, The Conversation

California earthquakes are a geologic inevitability. The state straddles the North American and Pacific tectonic plates and is crisscrossed by the San Andreas and other active fault systems. The magnitude 7.9 earthquake that struck off Alaska’s Kodiak Island on Jan. 23 was just the latest reminder of major seismic activity along the Pacific Rim.

Tragic quakes that occurred in 2017 near the Iran-Iraq border and in central Mexico, with magnitudes of 7.3 and 7.1, respectively, are well within the range of earthquake sizes that have a high likelihood of occurring in highly populated parts of California during the next few decades.

The earthquake situation in California is actually more dire than people who aren’t seismologists like myself may realize. Although many Californians can recount experiencing an earthquake, most have never personally experienced a strong one. For major events, with magnitudes of 7 or greater, California is actually in an earthquake drought. Multiple segments of the expansive San Andreas Fault system are now sufficiently stressed to produce large and damaging events.

The good news is that earthquake readiness is part of the state’s culture, and earthquake science is advancing – including much improved simulations of large quake effects and development of an early warning system for the Pacific coast.

The last big one

California occupies a central place in the history of seismology. The April 18, 1906, San Francisco earthquake (magnitude 7.8) was pivotal to both earthquake hazard

awareness and the development of earthquake science – including the fundamental insight that earthquakes arise from faults that abruptly rupture and slip. The San Andreas Fault slipped by as much as 20 feet (six meters) in this earthquake.

Although ground-shaking damage was severe in many places along the nearly 310-mile (500-kilometer) fault rupture, much of San Francisco was actually destroyed by the subsequent fire, due to the large number of ignition points and a breakdown in emergency services. That scenario continues to haunt earthquake response planners. Consider what might happen if a major earthquake were to strike Los Angeles during fire season.



Fires break out across San Francisco after the 1906 earthquake. Photo/USGS

Seismic science

When a major earthquake occurs anywhere on the planet, modern

global seismographic networks and rapid response protocols now enable scientists, emergency responders and the public to assess it quickly – typically, within tens of minutes or less – including location, magnitude, ground motion and estimated casualties and property losses. And by studying the buildup of stresses along mapped faults, past earthquake history, and other data and modeling, we can forecast likelihoods and magnitudes of earthquakes over long time periods in California and elsewhere.

However, the interplay of stresses and faults in the Earth is dauntingly chaotic. And even with continuing advances in basic research and ever-improving data, laboratory and theoretical studies, there are no known reliable and universal precursory phenomena to suggest that the time, location and size of individual large earthquakes can be predicted.

Major earthquakes thus typically occur with no immediate warning whatsoever, and mitigating risks requires sustained readiness and resource commitments. This can pose serious challenges, since cities and nations may thrive for many decades or longer without experiencing major earthquakes.

California's earthquake drought

The 1906 San Francisco earthquake was the last quake greater than magnitude 7 to occur on the San Andreas Fault system. The inexorable motions of plate tectonics mean that every year, strands of the fault system accumulate stresses that correspond to a seismic slip of millimeters to centimeters. Eventually, these stresses will be released suddenly in earthquakes.

But the central-southern stretch of the San Andreas Fault has not slipped since 1857, and the southernmost segment may not have ruptured since 1680. The highly urbanized Hayward Fault in the East Bay region has not generated a major earthquake since 1868.

Reflecting this deficit, the Uniform California Earthquake Rupture Forecast estimates that there is a 93 percent probability of a 7.0 or larger earthquake occurring in the Golden State region by 2045, with the highest probabilities occurring along the San Andreas Fault system.

Can California do more?

California's population has grown more than twentyfold since the 1906 earthquake and currently is close to 40 million. Many residents and all state emergency managers are widely engaged in earthquake readiness and planning. These preparations are among the most advanced in the world.

For the general public, preparations include participating in drills like the Great California Shakeout, held annually since 2008, and preparing for earthquakes and other natural hazards with home and car disaster kits and a family disaster plan.

No California earthquake since the 1933 Long Beach event (6.4) has killed more than 100 people. Quakes in 1971 (San Fernando, 6.7); 1989 (Loma Prieta; 6.9); 1994 (Northridge; 6.7); and 2014 (South Napa; 6.0) each caused more than $1 billion in property damage, but fatalities in each event were, remarkably, dozens or less. Strong and proactive implementation of seismically informed building codes and other preparations and emergency planning in California saved scores of lives in these medium-sized earthquakes. Any of them could have been disastrous in less-prepared nations.

Nonetheless, California's infrastructure, response planning and general preparedness will doubtlessly be tested when the inevitable and long-delayed "big ones" occur along the San Andreas Fault system. Ultimate damage and casualty levels are hard to project, and hinge on the severity of associated hazards such as landslides and fires.

Several nations and regions now have or are developing earthquake early warning systems, which use early detected

ground motion near a quake’s origin to alert more distant populations before strong seismic shaking arrives. This permits rapid responses that can reduce infrastructure damage. Such systems provide warning times of up to tens of seconds in the most favorable circumstances, but the notice will likely be shorter than this for many California earthquakes.

Early warning systems are operational now in Japan, Taiwan, Mexico and Romania. Systems in California and the Pacific Northwest are presently under development with early versions in operation. Earthquake early warning is by no means a panacea for saving lives and property, but it represents a significant step toward improving earthquake safety and awareness along the West Coast.

Managing earthquake risk requires a resilient system of social awareness, education and communications, coupled with effective short- and long-term responses and implemented within an optimally safe built environment. As California prepares for large earthquakes after a hiatus of more than a century, the clock is ticking.

Richard Aster is a professor of geophysics at Colorado State University.

Nevada bridges rank as nation’s best

By KRNV-TV

The American Road and Transportation Builder’s Association recently released an analysis of the Department of Transportation’s bridge inventory data.

Nevada ranked best with only 1.6 percent of bridges receiving a ‘structurally deficient’ rating. The national average is 8.9 percent.

These bridge elements are rated on a scale from 0 to 9, with 0 representing a failed condition and 9 representing an excellent condition.

Read the whole story

Placer supes to vote on Kings Beach Center

Placer County supervisors on Feb. 6 could approve the purchase and sale agreement of the 3.5-acre Kings Beach Center.

There will be a public hearing regarding the matter.

The supervisors meet in Auburn, but Tahoe residents may participate in Tahoe City.

San Diego-based C.W. Clark/Kalthia Group want to buy the property, build a hotel and other businesses.

But not everyone is thrilled with how the process because they contend the public has had no voice in the matter. Plus, there are residents wondering why other competitive offers are not being considered, and not being brought to the public’s attention.

Chris Gray-Garcia, the county spokesperson, told *Lake Tahoe News*, “There is a long history of very public engagement over years of effort to seek a buyer for this property. Presenting this particular proposal to the board is – if they vote to

approve the agreement – only the beginning of what would be a very thorough and public review process before any sale is actually completed."

A **petition** is now being circulated so people can comment.

Here is a **link** to the agenda item.

– Lake Tahoe News staff report

Deal with SnowGlobe regarding field up to council



The grass field post-SnowGlobe. Photo/LTN

By Kathryn Reed

A settlement agreement with the producer of SnowGlobe regarding the damaged field is on the Feb. 6 South Lake Tahoe City Council agenda.

It is on the consent agenda. This is where slam dunk items that are not discussed get placed. However, it is possible for

anyone – even a member of the public – to pull a consent agenda off so there can be dialogue.

The agreement states that Chad Donnelly, who owns the three-day music festival, will pay the city $250,000 until it is determined how much it will actually cost to repair the field.

The original contract stated that SnowGlobe must return the field to the condition it was in prior to vendors setting up. The city took pictures of what the site looked like before the concerts so there would be proof.

The performance bond secured from SnowGlobe was for $250,000, which is how that figure in the settlement came to be.

“The settlement agreement allows the city to manage and oversee the restoration of the field to ensure the field is restored to the city’s expectations and more easily access the $250,000 deposit,” City Manager Nancy Kerry told *Lake Tahoe News.*

The Dec. 29-31 festival was on grass fields. By the time it was over the fields were dirt, with little evidence any sod ever existed.

While some protective covering was used, it did not cover the entire area. More than 10,000 people were walking and dancing on the cover/grass/dirt for three straight nights. And there was no snow to act as another layer of protection.

Tuesday’s staff report written by interim City Attorney Nira Doherty states, “In 2017, the fields were finalized with installation of the turf, including soil preparation. The cost for soil preparation and turf installation was approximately $270,000. Initial damage to the field as a result of the festival indicate approximately 20 percent to 30 percent of the turf may need to be replaced, other portions of the field may need leveling utilizing top dressing and importation of other materials for restoration.”

The settlement agreement calls for the city to determine by June 30 the exact cost of repairing the field. If the bill is less than $250,000, the city will have 30 days to return to SnowGlobe the difference between that quarter million dollars and the exact cost.

The settlement further states if the cost to repair the field were to exceed $250,000, SnowGlobe would not be liable for it.

The City Council at some date will have to decide if the controversial festival that just concluded its seventh year has a future at that location or anywhere in the city limits.

Staff is expected to present the council with a more comprehensive report on SnowGlobe at the Feb. 20 or March 6 meeting.

Sierra Nevada snow a fraction of normal



An inversion this week over Lake Tahoe is keeping temps too warm to make snow. Photo/John Gomez

By Dale Kasler, Sacramento Bee

The last time California officials conducted their snow survey near Echo Summit, a month ago, the ground was practically barren.

This time there was snow. Just not a lot of it.

The Department of Water Resources' monthly snow survey at Phillips Station revealed a meager 13.6 inches of snow, or 14 percent of historical average. It was the latest evidence of a dry winter that has conjured up fears of another drought.

Read the whole story

Why it costs so much to be poor in the U.S.

By Karen Weese, Washington Post

Sirrea Monroe never expected her electricity to get shut off — she was only $70 behind, and she planned to pay it off after her next paycheck. What happened next shocked her: “I called to get it turned back on, paid the $70 with what was supposed to be my rent money, and then the lady says, ‘Great, thank you for your payment! Now I need $250 for the ‘new customer’ deposit.’” Monroe, a convenience-store manager who has a child with special health needs, was in disbelief. “I’m like, ‘Look, I couldn’t afford $70. Where am I going to get $250?’ Now I’ll be more in the hole than I was before.”

Monroe had been a customer of the electric company for more than a decade, and the power had been off for less than an hour. It did not matter: She had to pay it. It took more than six months to pay off.

It has never been easy to be poor in America, but decisions made in company boardrooms about seemingly modest financial matters — about fees, fines, interest rates, minimum balances — make life far harder than it has to be for low-income families. This week, Bank of America announced its free, no-minimum-balance checking account, popular with many low-income customers, will require a $1,500 minimum daily balance or $250 in direct monthly deposit (totaling $3,000 per year). If customers fall below that threshold, they will be forced to pay a monthly fee.

Read the whole story

Nev. gambling board investigates Wynn sex allegations

By Regina Garcia Cano, AP

LAS VEGAS — Casino mogul Steve Wynn is under investigation after sexual misconduct allegations were leveled against him, Nevada gambling regulators announced Tuesday.

The *Wall Street Journal* reported Friday that a number of women said they were harassed or assaulted by Wynn, and that one case led to a $7.5 million settlement with a manicurist.

Wynn has vehemently denied the allegations, which he attributed to a campaign led by his ex-wife.

Read the whole story

Overcrowding cancels EDC supes' VHR meeting



Hundreds of people came out for the Feb. 1 El Dorado County Board of Supervisors meeting. Photo/Kathryn Reed

By Kathryn Reed

Thursday night's El Dorado County Board of Supervisors' meeting in South Lake Tahoe was canceled because the venue was too small to accommodate all the people who turned out.

The meeting was in the South Lake Tahoe City Council chambers at Lake Tahoe Airport. Fire officials said there were too many people in the room. In addition to that, the county had no way of operating the city's audio/visual equipment so the screen in the lobby could not be turned on for the overflow crowd to watch the proceedings.

The lone item on the Feb. 1 agenda was vacation home rentals.

The meeting will most likely be rescheduled at a facility owned by Lake Tahoe Unified School District, which can house more people. Per state law the date has to be disclosed a minimum of 72 hours before it would start.

Originally just the supervisors' ad hoc committee made up of Sue Novasel and Mike Ranalli was to convene. It became a full

board meeting when an anonymous complaint was filed against Novasel alleging she had a conflict of interest when it came to VHRs because of her husband’s business.

It was determined this week by the Fair Political Practices Commission that Novasel has no conflict. This means she can participate in all discussions and votes pertaining to VHRs, whether it’s at the county level or the Tahoe Regional Planning Agency, of which she is a board member.

This also means when the meeting is rescheduled it’s possible the county will choose for it to revert back to a meeting of the ad hoc committee and not the entire board. The board usually only meets once a year in Tahoe, and that is in August.

Prior to being told the meeting was canceled people had the opportunity to place dots on boards indicating what they like and don’t like about the short-term rentals.

Under problems the choices were:

- Unfamiliar people in the neighborhood
- Strain on law enforcement
- Decrease in property values
- Parking
- Noise
- Unpermitted/unregulated units
- Loss of long-term residents
- Decrease in long-term housing/increase in rents
- Safety, such as wildland fires.

The choices for benefits of VHRS included:

- Increase in transient occupancy tax
- Encourages maintenance, upkeep of property
- Local jobs
- Increase in property values
- Supplemental income
- Expands tourism market.

This is a **link to the Feb. 1 agenda item**, with supporting material. It is likely to look the same whenever the meeting actually happens.

Squaw-Alpine working to use 100% renewable energy

Squaw Valley Alpine Meadows is partnering with Liberty Utilities so the ski resorts can be powered by 100 percent clean, renewable energy sources. This could could be achieved as early as December.

Twenty-five percent of Liberty Utilities' current power mix includes renewables. It intends to develop and deploy a project or series of projects to achieve procurement of renewables equal to 100 percent of the electricity use of Squaw Valley Alpine Meadows as well as other customers with 100 percent renewable electricity goals.

"We take accountability for our company's contribution to CO2, hence our longstanding and unyielding internal focus on reducing our overall footprint," said Andy Wirth, president

and COO of Squaw Valley Alpine Meadows, said in a statement. “We’re glad to finally advance on this key, strategic level changeover to 100 percent renewable-sourced energy.”

With this change, Squaw Valley Alpine Meadows will reduce its total annual carbon footprint, including fuels and other sources unrelated to the power grid, from 13,078 metric tons to an estimated 6,682 metric tons – a 49 percent reduction which is equivalent to the emissions generated by the annual electric use of 959 homes.

Casino revenue stagnant in December

December was a rather flat month for Nevada casinos.

Statewide the gaming win was up 0.44 percent compared to 2016, with a total of $960,384,350. On the South Shore the year-over-year revenue was down 1.24 percent at $18,489,949. North Shore casinos were down 9.97 percent.

For the year, the statewide win was up 2.8 percent to $11.57 billion.

All but one of the 18 sectors the Gaming Control Board tracks was up for 2017. The lone loser was North Lake Tahoe, which was off 2016 totals by 0.9 percent.

– Lake Tahoe News staff report