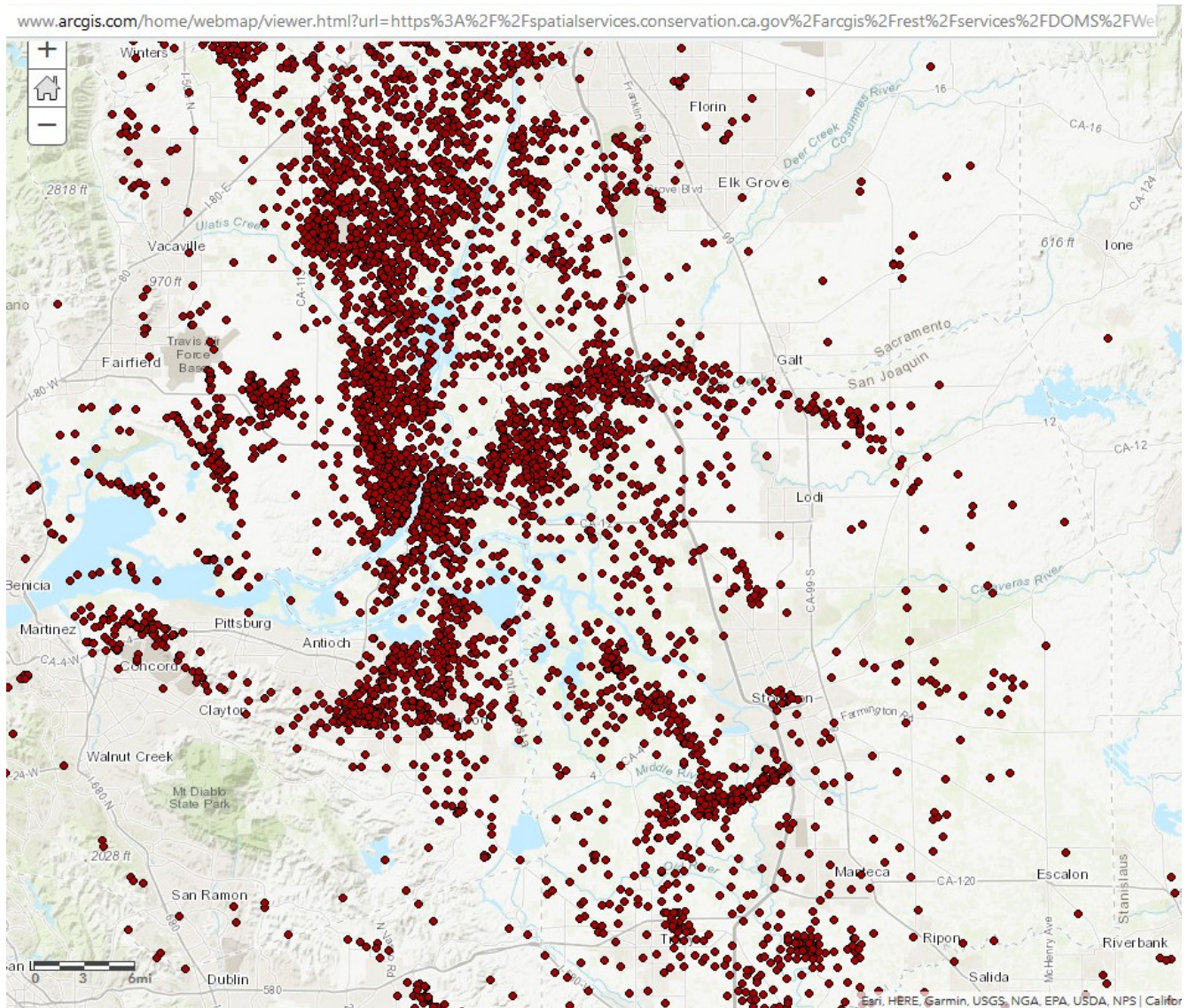


Water rights and Farmers intakes:

[http://waterrightsmaps.waterboards.ca.gov/viewer/index.html?viewer=eWRIMS.eWRIMS\\_gvh#](http://waterrightsmaps.waterboards.ca.gov/viewer/index.html?viewer=eWRIMS.eWRIMS_gvh#)

Screen prints from California Department of Conservation and a AGIS resource showing estimated locations of natural gas wells in the Delta region. California WaterFix EIR/EIS and related documents failed to assess impact to the area infrastructure from hitting one or several of these gas wells during tunnel boring. **Hitting one of these gas wells could cause an explosion like the one on Andrus Island several years ago, which has the potential to cause local levees to fail and could cause risk to farms, local residents in the immediate area and boaters on the waterways nearby at the time of impact.**

Map showing gas wells in the Delta area of California



**Since the State of California did not require fracturing companies to report the exact locations of the gas wells until just the last few years, it is not actually known how many and where those gas wells are located in the Delta.** An extensive database of gas and oil wells was found online, and will be submitted as evidence to show the estimated number of wells within the counties of the Delta.



In fact, drilling of natural gas wells has increased substantially since discovery of the new method of fracturing or directional drilling. Below is an excerpt from the Department of Conservation:

<http://www.conservation.ca.gov/index/news/2001%20News%20Releases/Pages/NR2001-58%20Spike%20in%20Gas%20Drilling%20Permits.aspx>

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stream energy, inc

## SPIKE IN NATURAL GAS DRILLING IN CALIFORNIA

Natural gas well permitting in Northern California is on fast track.  
At current pace, 267 permits will be issued -- most since 1984

SACRAMENTO –Notices to drill new natural gas wells in Northern California are being received at a pace not seen since the mid-1980s, and the total for any single year in the 1990s will soon be surpassed.

As of August 31, the Department of Conservation (DOC) records show that its Division of Oil, Gas, and Geothermal Resources' office in Sacramento had issued 178 permits to drill new wells in Butte, Colusa, Contra Costa, Glenn, Solano, Sutter, Yolo, San Joaquin, Sacramento and Tehama counties. At the current rate, 267 notices will be filed by the end of the year, compared to 137 in 2000. Drilling activity in the previous decade ranged from 187 permits issued in 1990 to only 78 in 1995.

In March, 2001 Governor Davis directed Mary D. Nichols, Secretary for Resources, to form and chair the multi-agency Natural Gas Working Group to closely monitor natural gas supply, demand and price. The Group also facilitates gas projects throughout the State.

"I congratulate our gas producers for their rapid response to California's pressing energy needs," said Secretary Nichols. "The latest figures on in-state natural gas drilling show that California is making progress to increase our native sources of energy production."

Most of the new activity is taking place in proven gas fields, which contain about 900 active wells. In some cases, such as the Denverton Creek field in Solano County, field boundaries are being extended when the new well drilling proves successful. In other cases, such as the Willows-Beehive Bend field in Glenn County and the Rio Vista field, operators are drilling deeper within existing field boundaries.

Last January, the fair market price of gas, according to the Natural Gas Intelligence Weekly Gas Price Index, was \$14.32 per thousand cubic feet, and soared into the \$50-\$60 range in the spot market. Currently, gas sells for about \$3.40 per thousand cubic feet, and the spot-market price has at times dipped below \$3. The price could rise as winter approaches.

The pace of new drilling notices has been relatively consistent this year, peaking at 18 the week of June 30. All of the new drilling is unlikely to put much of a dent in the amount of natural gas the state imports, however. California produces about a billion cubic feet per day -- ranking it 10th in the nation -- but uses more than six times that amount, with most of the gas coming from Texas, Wyoming and Canada.

California natural gas production dropped between the mid-1980s and the early 1990s, falling off sharply in 1992. Production has risen slightly of late, led by Stream Energy Inc. in the Todhunters Lake gas field in Yolo County and Calpine Natural Gas Co. in the Rio Vista field.

(See next page)

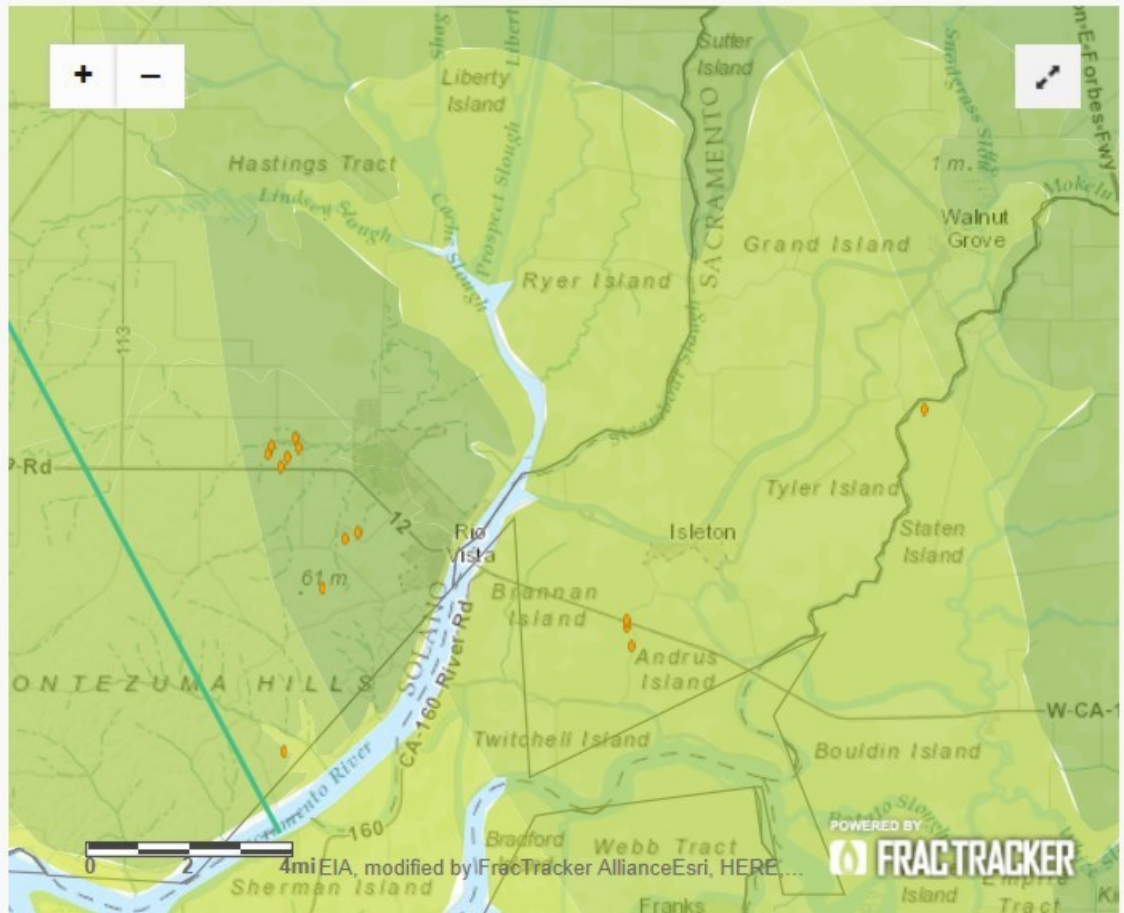
In addition, the exact location of the wastewater wells full of toxins that have been allowed to be placed in and around the Delta region were not considered by California WaterFix proponents. Damage from tunnel boring to the fracking wastewater well located on Staten Island, for example, would release toxins into the Mokelumne River and the drinking water aquifer and put thousands or millions of persons at risk of drinking those pollutants found in the fracking wastewater well. Map is from Food & Water Watch organization website <http://FracTracker.org>



[http://www.fractracker.org/2014/03/ca\\_injection\\_earthquakes/](http://www.fractracker.org/2014/03/ca_injection_earthquakes/)

Oil & Gas Topics Projects

such as areas of San Francisco built on landfills, will typically shake more than areas comprised of bedrock at the surface. The type of shaking, whether it is low frequency or high frequency will also present varying hazards for different types of structures. Low frequency shaking is more hazardous to larger buildings and infrastructure, whereas high frequency events can be more damaging to smaller structure such as single family houses. Various assessments have been conducted throughout the state, the majority by the California Geological Survey and the United States Geological Survey.





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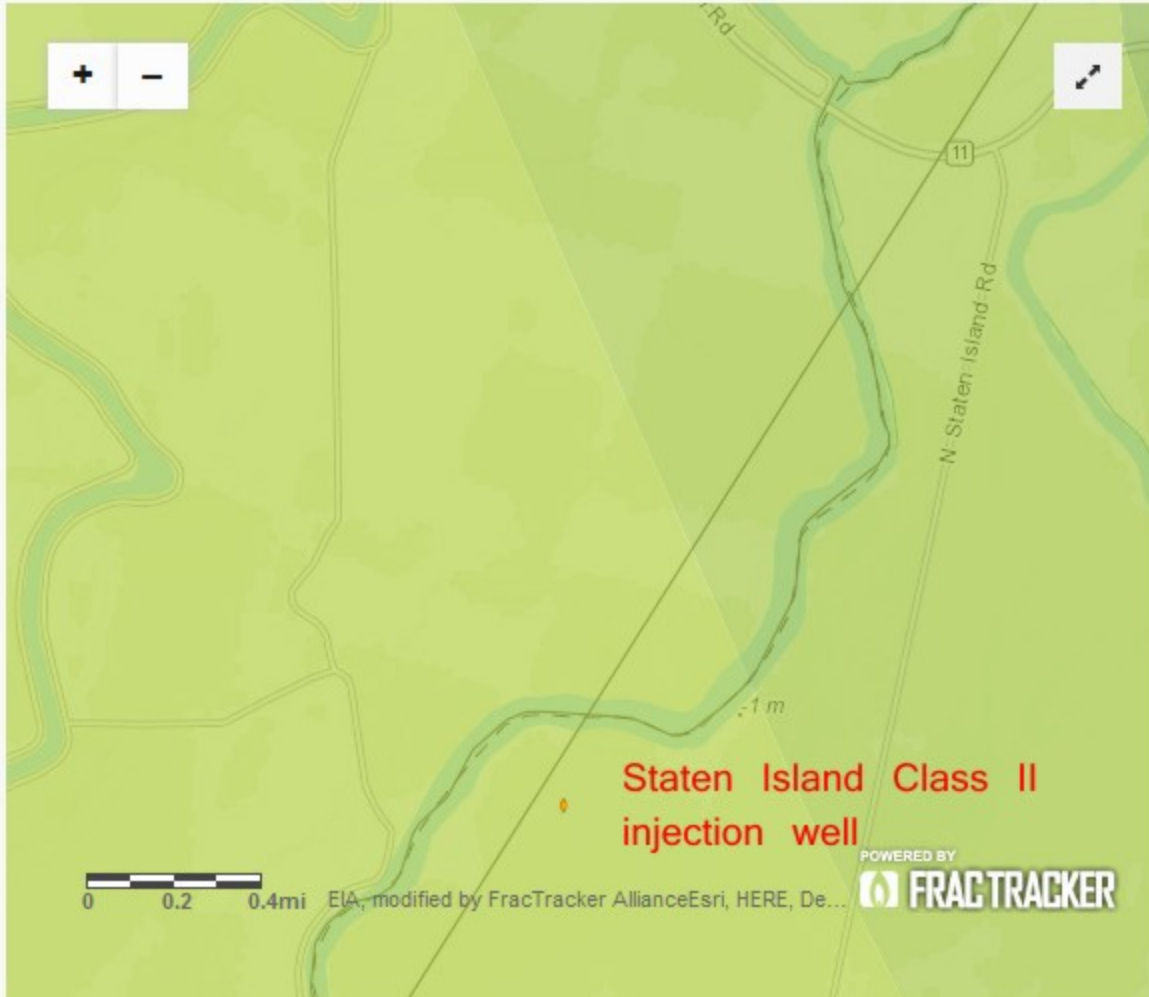


Figure 2. California Earthquake Shaking Amplification and Class II Injection Wells

