Hoping to capitalize on the epic drought, the state's water industry wants to usher in a new era of dam-building in the state. But environmentalists say it would cost billions and do more harm than good.

By Will Parrish
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On the edge of the Yolla Bolly Wilderness, about 15 miles north of the dusty town of Covelo, 81-year-old Richard Wilson sat across from me in a ranch house that his father constructed here in the 1940s. For much of his adult life, Wilson has defended the meaning and importance of the Round Valley area of Mendocino County and the values that he and other local people attach to it. So while the ostensible purpose of my visit was to discuss Wilson's unique personal role in shaping California's water engineering history, it was no surprise that he also held forth on the local impacts of the four-year-long drought.

"When we get good, wet winters, the snow packs down on the mountaintops at about 4,000 feet, then holds there into the summer," explained Wilson in his spare and relaxed style. "As the snow melts, it keeps the grass growing, and that's how you know where to find your cattle. In the last four years, there's just been no snow."

Wilson's expansive spread, known as Buck Mountain Ranch, spans a portion of the state's third largest watershed: the Eel River. Few places in California are more remote from urban life than Round Valley, but the watershed and Wilson are central to understanding why Governor Jerry Brown and other powerful interests are avidly pursuing several multibillion-dollar dam projects and two massive water tunnels that are strikingly similar to plans laid out in economic and engineering charts in California in the early-1950s.

In 1960, state voters narrowly approved the California Water Project, which is still the largest bond issue in the state's history when accounting for inflation. (It cost $14.31 billion in today's dollars.) By the end of the Sixties, the water project had blocked the Feather River in the Sierra
foothills with what was then the world's tallest dam, the Oroville Dam. The bond had paid for giant pumping stations in the Sacramento-San Joaquin River Delta to move water into canals that parallel Interstate 5 through the San Joaquin Valley, via the 444-mile-long California Aqueduct.

But the State Water Project has never fully been built, and Richard Wilson is a major reason why. In 1967, the US Army Corps of Engineers unveiled a proposal to construct the largest dam and reservoir project in California history: the so-called "Dos Rios Dam" on the Middle Fork of the Eel River. In addition to being 742 feet tall, the dam would have flooded a 40,000-acre area for its reservoir, equal in surface area to the Shasta and Oroville reservoirs combined. These liquid resources would have then passed through thirty miles of ditches and tunnels in the Mendocino National Forest and into a smaller reservoir on the west side of the Sacramento Valley.

For California's water industry, the Dos Rios Dam was the key project that would unlock a host of others. Having completed a series of mega-water projects throughout the mid 20th century, state and federal water developers had long trained their sights on California's North Coast, where about one-third of the state's surface water flows mostly unimpeded to the ocean through magnificent mountain ranges and redwood groves. Besides for the Eel, the US Congress had authorized feasibility studies for dams and reservoirs on the Klamath, the Lower Trinity, the Mad, and the Van Duzen rivers.

The Dos Rios reservoir would have flooded Round Valley, a 24-square-mile alluvial basin that is home to one of California's largest Native American reservations, and which, in the late Sixties, had a population of about 1,500. Wilson and his wife, Susan, who then lived in Round Valley with their three children, mounted an opposition campaign. Although both Susan and Richard came from well-connected Republican families, they were up against interests whose power was roughly equivalent to that of the coal industry in Kentucky — or so it seemed.

Wilson's fireplace mantle displays memorabilia from his unique civic life, including a picture of him shaking hands with former California Governor Pete Wilson, under whom he served as director of the California Department of Forestry and Fire Protection in the 1990s. An autographed picture of former US president Richard Nixon occupies a slot nearby. But the largest item is located on the mantle's far left: a California Department of Water Resources map depicting the state's northern coastal rivers almost entirely submerged by reservoirs and blocked by dams. The big, bold header screams in red lettering: "We Can't Let This Happen!"

By 1969, the opponents of Dos Rios Dam had rallied enough support in Sacramento that then-Governor Ronald Reagan declined to support the project. The environmental movement had spawned mainstream acceptance of the idea that rivers are vital natural ecosystems that should
be protected, and that dams erected to divert water for agriculture, cities, and suburbs had pushed numerous fish species to the brink of extinction.

"The thing about Dos Rios was: It was really a project that was out of step with the times because I think we were moving on to other ways of looking at water," Wilson said.

The victory over the dam marked a stunning defeat for California's water industry. And it had a cascade of consequences. In 1972, the state legislature passed the California Wild and Scenic Rivers Act, which prohibited construction of new dams on the Smith, Klamath, Scott, Salmon, Trinity, Eel, Van Duzen, and American rivers.

Though dam proponents subsequently retreated from the North Coast, their dream of capturing large new water sources to fuel an everlasting cycle of growth and development has never fully faded. And California's epic four-year drought, characterized by reservoirs that sport bathtub rings where water once was, has given them perhaps their last best chance to launch a new era of dam-building in California.

Advocates of other approaches to meeting the state's water needs point out that the new dams would cost California taxpayers billions of dollars, while doing astonishingly little to relieve the state's water woes. They also noted that the dams would lead to further destruction of fragile watersheds, the decimation of fisheries, and the ruination of Native people's cultures and sacred sites. And some caution that they could pave the way for a renewed effort to drain the North Coast.

Inside Proposition 1, the $7.5 billion water bond that California voters enthusiastically approved last November, is a provision requiring the expenditure of $2.7 billion on water storage projects. Many environmentalists had hoped that a substantial amount of those funds would be used for groundwater storage, but according to some close observers, it appears increasingly likely that most, if not all, of the money will go to dam-building. In addition, US Senators Dianne Feinstein and Barbara Boxer, both D-California, introduced a $1.3 billion emergency drought relief bill in July of this year to "support communities affected by drought."

This senate bill, as presently drafted, would authorize $600 million of spending on "Calfed storage projects," [Sic. As introduced, the Senate bill authorizes participation in any Federal storage projects up to 50% of project costs and up to 25% in non-Federal projects and authorizes appropriations up to $600 million to accomplish these purposes. It is not confined to Calfed projects.] in reference to four dam-expansion and construction projects that the state and federal governments have studied since 2004: Sites, Temperance Flat, Shasta, and Los Vaqueros. The first three of these projects are in various parts of the vast Central Valley, while Los Vaqueros is located in eastern Contra Costa County.

Feinstein, a former longtime chair of the Senate subcommittee that funds the US Bureau of Reclamation, has been a key player in advancing the dam proposals. "Building or expanding these four reservoirs would result in hundreds of thousands of acre-feet of additional water
storage, benefit urban and rural communities and increase the pool of water available for releases that benefit fish species," she wrote in a 2013 San Francisco Chronicle op-ed.

Of the four projects, the most costly would be Sites Reservoir. With an estimated pricetag of about $3.9 billion, the project calls for the construction of two large dams, each about 310 feet tall, on the Sacramento River. Engineers plans to pump the water through the Tehama-Colusa and Glenn-Colusa canals, as well as a third canal built specifically for the project that would originate north of Colusa, to an off-stream storage reservoir that would flood the Antelope Valley, located just east of Mendocino National Forest, about 10 miles west of the small town of Maxwell on Interstate 5.

The Temperance Flat project calls for building a 665-foot-tall dam on the Upper San Joaquin River in the southern Sierra foothills, northeast of Fresno. The proposed dam would flood scenic canyons and historic sites along the river. It would be the second tallest dam in California, and the fifth tallest in the United States (it would be about 63 feet higher than Shasta Dam). In February, Congressmember Jim Costa, D-Fresno, introduced a bill to authorize construction of the dam — which is projected to cost as much as $3.36 billion [USBR draft feasibility report is $2.5 billion].

And then there's the proposal to expand Shasta Lake by raising Shasta Dam by up to 18.5 feet, at an estimated cost of $1.2 billion. The reservoir expansion would flood thousands of additional acres of the Trinity-Shasta National Forest and innumerable sacred sites of the Winnemem Wintu people. It would add 300,000 [sic, actually 634,000 is the preferred alternative in FEIS] acre-feet of storage capacity to what is already California's largest reservoir, with an existing
capacity of 4.55 million acre-feet. And finally, the proposed expansion of Los Vaqueros dam in Contra Costa County would add 115,000 acre feet of water storage capacity and cost an estimated $840 million.

Earlier this month, US Senator Lisa Murkowski, R-Alaska, chair of the Energy and Natural Resources Committee, held a long-awaited legislative hearing on both Feinstein's bill and drought-relief legislation produced by the Republican-controlled House of Representatives, along with several other bills dealing with Western water issues. Congressmember Kevin McCarthy, R-Bakersfield, the House majority leader, has been instrumental in advancing the new dam proposals.

Meanwhile, the California State Water Commission, the nine-member committee appointed by the governor that will rule on allocation of the Prop 1 bond money, has held meetings this month to craft guidelines for handing out the water storage money. The commission is expected to announce the guidelines next month and to allocate the funds sometime in 2017.

Some legislators have seized on the dam projects and attempted to stamp them as the start of a new era. In the mid-1990s, then-Congressmember John Doolittle, D-California, repeatedly said that the proposed construction of the Auburn Dam on the American River would "inaugurate a great new era of dam-building." (The dam was defeated largely on environmental grounds.) A new stock phrase, courtesy of Congressmember Tom McClintock, R-Roseville, is that the new reservoir projects subject to Proposition 1 and Congressional funding will help "to build a new era of abundance."
But opponents of the projects point out that California is already home to nearly 1,600 dams, plus thousands more of mostly small, privately owned ones. All together, more than 60 percent of the state's water fills up behind concrete and earthen walls. With California largely leading the way, in fact, the American West as a whole was transformed during the last century into a region of dams and canals.

Critics of the current dam-building plans note that they are extremely costly compared to the amount of water that they would yield. Despite the fact that the projects would add lots of capacity to store water in the state, they would likely only yield, on average, about 400,000 acre-feet of additional water per year for California because of the lack of water available — and would cost taxpayers about $9.75 billion to construct, according to an analysis by the environmental group Friends of the River. "[M]ost of the water that would fill these dams is already being diverted," explained Ronald Stork, senior policy advocate for Friends of the River. "For example, Temperance Flat would be built on a river, the San Joaquin, that's already bone dry most of the time because its water is so over-allocated."

By contrast, according to an analysis by the California Department of Water Resources, water-saving techniques — such as wastewater reuse, stormwater capture, and groundwater cleanup — have yielded the state nearly 2 million acre-feet of water per year at the far lower cost of $5.13 billion.

The view that dams are too costly was bolstered in 2014 by the release of an Oxford University study. Researchers looked at 245 large dams built between 1934 and 2007 and found that actual construction costs were, on average, nearly double the projected costs, and that construction took 44 percent longer than forecast. "Forecasts of costs of large dams today are likely to be as wrong as they were between 1934 and 2007," the study concluded.
California's enormous and elaborate water infrastructure — dams, reservoirs, power plants, pumping plants, canals, aqueducts, gates, tunnels, and other machinations plumed together across more than six hundred miles — is divided into numerous management regimes. The largest of these is the Central Valley Project, which is administered by the US Bureau of Reclamation and has the capacity to deliver more than 7 million acre-feet of water a year, using Shasta Dam as its linchpin.

The November 1960 water bond that authorized the State Water Project (SWP) passed by the narrowest of margins: less than one percentage point. Key to the measure's victory was the influential Los Angeles-based Metropolitan Water District, a consortium of 14 cities and 12 municipal water districts that provides water to 18 million people in Southern California. The district only supported the bond measure after the California Department of Water Resources agreed to give it nearly half of the project's estimated annual yield of 4.23 million acre-feet of water.

Other entities that signed contracts to receive SWP water included the Kern County Water Agency and San Luis Delta-Mendota Water Authority, both of which represent large agricultural interests in the dry San Joaquin Valley.

But today, the State Water Project yields only half the water promised to these entities, or about 2.2 million acre feet. "In the old planners' minds, the SWP is only half-built," said Stork. "The question is, Where's the missing yield? And one answer would probably be Richard Wilson's answer, which is that the Department of Water Resources sought to turn the Eel River from a wild river into a series of reservoirs but failed."

One month after the State Water Project's narrow approval in 1960, the California Department of Water Resources released a blueprint for future water development entitled "Delta Water Facilities," which describes the operation of the San Luis Reservoir, Oroville Reservoir, and the pumps in the southern section of the Sacramento-San Joaquin River Delta that move water from north to south. The bulletin encourages construction of 2 million acre-feet of reservoir capacity on the Eel River by 1981. The bulletin also anticipated the completion of new dams on the Mad, Van Duzen, and Klamath rivers by 2012.

"I can't emphasize enough that it's all laid out in Bulletin 76," said Michael Jackson, a prominent water rights attorney.

The central feature of California's existing water system is the delta, the largest estuary on the West Coast of the Americas. The delta is also a pivotal transportation bottleneck that hinders water development: Pumping too much freshwater from it increases the salinity of the remaining water, thereby causing devastating harm to the aquatic life in the estuary and diminishing the quality of water shipped to millions of Californians.

Since the 1970s, a defining question for California water planners has been whether the delta would be unblocked to permit more water to flow from north to south, or whether there would be a paradigm shift in water policy, as suggested by the water industry's defeat at Dos Rios. The idea of building peripheral canals around the delta became the solution for delivering new water
to the irrigated farms of the west side of the San Joaquin Valley and to the Metropolitan Water District.

In the early-Eighties, Jerry Brown, during his first stint as governor, and the legislature sought to deliver new water to these interests by proposing a peripheral canal. Despite being dressed up with fish ladders and screens and assurances that North Coast rivers were not the target of such a facility, the Peripheral Canal was defeated in a 1982 statewide referendum. It was the second crushing rebuke of California's water industry, with the first being at Dos Rios.

But Big Ag in California still thirsts for more water. Los Angeles, for instance, uses about 600,000 acre-feet of water annually, while Kern County, at the southern end of the San Joaquin Valley, consumes more than four times as much — about 2.7 million acre-feet in a typical year.

In recent years, the state's water industry, with Brown's ardent backing, has resurrected the old peripheral canal concept as the Delta Twin Tunnels, with the same essential features. These 40-foot-diameter water pipelines would tap into the Sacramento River upstream of the delta. And, as Stork noted, "With the tunnels project back on the table, some of the firebrands are turning up heat on undoing protections for North Coast rivers."

In July 2013, the agribusiness-dominated Tulare County Board of Supervisors made known its ongoing desire to tap the northern coastal rivers. "The continued over-drafted groundwater basins of the Central Valley are also a very serious threat to the economic future of California agriculture, and the Central Valley is in dire need of the development and importation of more surface water to eliminate mining groundwater," the board wrote in a statement. "The legislature should revisit Wild and Scenic Rivers status of the North Coast waters, where nearly one-third of California's water supply flows to the ocean, when there is such a demonstrated need to put available resources to their highest and best use."

One conservative ideologue who bemoans the failure to tap California's northern coastal waterways is Victor Davis Hanson, a senior fellow at Stanford University's Hoover Institution — an influential right-wing think tank. Writing in the urban-policy magazine City Journal earlier this year, Hanson stated, "Had the gigantic Klamath River diversion project not been canceled in the 1970s, the resulting Aw Paw reservoir would have been the state's largest man-made reservoir. At two-thirds the size of Lake Mead, it might have stored 15 million acre-feet of water, enough to supply San Francisco for 30 years."

Stork sees the recent resurrection of these ideas as part of a broader strategy by south-of-Delta water interests. "From their perspective, you have to find a way to put water into the delta pumps. To do that, you have to build the tunnels. Then, you can put a little more in by raising Shasta and a bit more by constructing Sites or Temperance Flat. But the really juicy parts come from attacking North Coast rivers."

Sites Reservoir is perhaps the most likely of California's four prospective new dam projects to receive state and federal funding. As Bill Kier, the former water projects branch chief of California Department of Fish and Wildlife, noted, Sites is "a reincarnation" of a facility described in Department of Water Resources Bulletin 76, known as the Paskenta-Newville
reservoir in Glenn County. That reservoir's original function was to receive water diverted from the Dos Rios Reservoir, serving as a forebay to regulate the rate at which diverted Eel River water would flow into the Sacramento.

"When the North Coast rivers — the Eel and others — were given protection under the State and federal Wild and Scenic River systems in the 1970s, it was game over for Paskenta-Newville," Kier said. "Well, Sites Reservoir is just Paskenta-Newville migrated about seventeen miles south-southeast from Glenn into Colusa County."

Stork, who is a member of the California Water Commission's Stakeholder Advisory Committee, says the competition for the Prop 1 funding appears to be "a shoot-out between the two new reservoirs" — Sites and Temperance Flat. Tensions concerning each dam are ratcheting up in their respective areas. Earlier this year, two Bureau of Reclamation attorneys visited the homes of residents in the town of Auberry and informed them that, should Temperance Flat Dam be constructed, the government would be taking the family's property via eminent domain.

Temperance Flat is highly controversial because it would flood thousands of acres of public land in the San Joaquin River Gorge, where scenic canyons and historic sites are located. Meanwhile, an effort to promote Sites Reservoir is simultaneously ramping up in Butte and Colusa counties. On September 22, state Senator Jim Nielsen, Assemblymember James Gallagher, and Congressmember Doug LaMalfa — all Republicans — convened an event that they dubbed the North State Water Action Forum, where they encouraged attendees to flood the state water commission with comments supporting the project. But Barbara Vlamis, executive director of AquaAlliance in Chico, said the reservoir "does not have slam-dunk support up here." She said the forum's two hundred attendees were roughly divided among those in favor, against, and undecided.

Environmentalists also note that neither Sites nor Temperance Flat pencils out in terms of the costs to construct them and the amount of water they would yield. Sites Reservoir, for example, would be filled via the Sacramento River, and proponents of the project believe it would solve a problem of too much water racing down the Sacramento River during high flows. So they propose a "Big Gulp, Tiny Sips" approach in which Sites the would be filled by big gulps during wet years and tiny sips the rest of the time.

But the reservoir, according to Kier, also would be "an evaporation pan" on account of its hot, dry location and shallow size. And, he said, it's "unclear whether there is sufficient water remaining in the Sacramento River even to fill the proposed Sites Reservoir, or whether it would require raising Shasta Dam and increasing the capacity of Shasta Reservoir to make the Sites scheme work."

According to the state and federal Pacific Salmon Plan for the Sacramento River, the river's flow past the city of Sacramento to San Francisco Bay must be 30,000 cubic-feet per second in order to provide safe downstream passage for juvenile fall-run chinook salmon — the backbone of California's salmon fisheries — thereby allowing enough juvenile salmon migration to reach the Pacific Ocean's rearing grounds to ensure the subsequent levels of returning adults that the plan
calls for (122,000–180,000). The State Water Board has yet to make these flow levels mandatory, however.

"If the water agencies choose to ignore those delta through-flow needs in the development of projects like Sites Reservoir or raising Shasta Dam, then California's salmon fisheries are doomed, together with the communities, economies, and cultures that they support," Kier said.

When Shasta Dam was constructed in the 1940s, it flooded roughly 90 percent of the Winnemem Wintu's traditional territory and eliminated the chinook salmon runs that are the Winnemem's source of life. In exchange for appropriating the Winnemem's land, the federal government promised to compensate the tribe — but never did.

Now, raising the dam would flood many of the Winnemem's remaining cultural strongholds. On August 12, 2014, Winnemem Wintu Chief Caleen Sisk delivered that message to the United Nations' 85th Session of the Committee on the Elimination of Racial Discrimination. Sisk was one of five indigenous leaders from North America selected to present to the committee, which was investigating the United States' record of compliance with the Convention on the Elimination of Racial Discrimination.

Sisk has noted that the US government's refusal to recognize the Winnemem prevents the tribe from having enough political standing to take on the federal government in court. In a conversation with me last year, she referred to the twin tunnels plan and associated projects under the catch-all term "Brown Water Planning," in reference to California's governor.

"This water plan is one big toilet," she said at the time. "Shasta Dam is the tank. The San Francisco Bay Estuary is the bowl. And the tunnels are the exit pipes, one of which goes right to Westlands Water District to provide for their selenium-laden, poisoned crops."

In spite of the lack of official recognition, the Winnemem have mounted a campaign to oppose the dam's construction and cultivated alliances throughout the world. In 2003, when Feinstein introduced legislation to fast-track feasibility studies related to expanding California's water storage capacity, including the raising of Shasta Dam, the Winnemem responded by holding a traditional war dance, the first by their people since 1887. Asserting that Shasta Dam is a Weapon of Mass Destruction that has caused great harm to the Winnemem culture, she chose September 11, 2004 as the date of the ceremony.

As the war dance was about to begin, the Winnemem people got word that then-US Senator Ben Nighthorse Campbell, R-Colorado, was preparing to introduce legislation to restore their federal tribal recognition — something they had long sought. The Winnemem were asked to cancel or postpone the war dance, to avoid attracting negative attention or arousing the wrath of politicians who favored raising the dam. But political compromise could not interfere with their spiritual beliefs, and the war dance went on.

During the dance, Feinstein and Boxer presided over the passage of legislation that funded $395 million in studies on increasing California's water storage infrastructure, including raising Shasta
By the fourth day of the dance, word came that Campbell was going to remove the language recognizing the Winnemem from his proposed amendment. But the Winnemem people completed their dance and it was reported in media around the world, including in The New York Times.

While the McCloud River, which drains into Shasta Lake, is not included in the California State Wild and Scenic River System, it is protected from further dam construction in the Wild and Scenic River section of the California Public Resources Code. Therefore, the plan to raise Shasta Dam is ineligible to receive state funding unless the state legislature removes the wild and scenic designation on the McCloud. If that were to happen, it would set a precedent: neither the state nor federal government has ever removed a wild and scenic designation on a river [in order to build a reservoir].

In recent years, though, two of the most powerful water districts in the state — Westlands Water District and Metropolitan Water District — have been pushing to remove this protection from the McCloud. And Westlands is a notoriously influential donor to state and federal politicians, including Feinstein.

But environmentalists note that raising Shasta Dam, like the Sites and Temperance Flat projects, would cost far more than it's worth. At $1.3 billion, it would provide no more than 133,000 acre-feet of additional water, on average, each year — because of the lack of water available to fill the expanded reservoir [The FEIS preferred alternative average yield is 51,300 acre-feet]. The Bureau of Reclamation even points to this problem in the feasibility study it released for the dam project.

For the residents of Round Valley, the success of their campaign in the 1960s and '70s powerfully affirmed the meaning and importance of the place where they lived and the values they attached to it. In an era marked by liberation movements of Blacks, Latinos, and American Indians, Round Valley's indigenous people proved to be a potent force.

The Round Valley Indian Reservation, one of four California reservations that the federal government had established in the mid-19th century, was not only home to Round Valley's original inhabitants, the Yuki, but also indigenous people from throughout Northern California whose grandparents and great grandparents had been force-marched onto the reservation by the US Army and American vigilantes.

Ernie Merrifield, 74, is a Round Valley Indian of mixed Wailaki and Pit River ancestry and was among several spokespeople to emerge in the campaign against Dos Rios. "Richard Wilson was the first to stand up against the dam," recalled Merrifield, who has taught California Indian history at Humboldt State University and in public high schools. "In the end, we had elders going on television and saying, 'We were force-marched here, and we're not about to be forced to leave."

Merrifield added a cautionary note. "My elders told me this fight will never really be over," he said.
By the time I met Wilson, in late-September, the hills around Buck Mountain Ranch were a golden hue after weathering months of unending sunlight beating down out of cloudless skies. More than half the needles on many of the drought-stricken ponderosa pines and Douglas firs surrounding his ranch had died under the strain. As with so many landowners in California, he said it's the driest he's ever seen.

Nowadays, Wilson is mostly withdrawn from the day-to-day battles that characterize the world of California water politics. As a former director of Cal Fire, one of his main focuses is management of forests to reduce fuel loads. For several weeks this summer, Mendocino County and surrounding environs were blanketed with ash from wildfires that consumed roughly 150,000 acres in neighboring Lake County.

Seated beneath his mantlepiece, Wilson recalled the period after Ronald Reagan had decided against supporting the Dos Rios Dam when he worked for the passage of the California Wild and Scenic Rivers Act. "The way these developers do things is, if they get derailed, they come right back," he said. "They will continually come back as long as they see there's an opportunity. So, we tried to get it nailed down with as much protection as we could. It took us a couple of years running at the legislature to get [the Wild & Scenic Rivers] decision, but we finally did."

Corrections: The original version of this story misspelled Yolla Bolly Wilderness. It also mistakenly stated that the Westlands Water District has a contract to receive water from the State Water Project. Westlands is actually a contractor of the federally operated Central Valley Project.

FOR annotations: Shasta Dam expansion capacity and project yield from USBR FEIS, authorization characterizations in the Feinstein/Boxer drought bill, w&s history, and Temperance Flat Dam USBR DEIS cost estimates.

http://www.eastbayexpress.com/oakland/damning-californias-future/