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The California Department of Water Resources Wins Dishonor of California Golden Fleece® Award for Its "Patch and Pray" Approach to Dam Safety

The California Department of Water Resources (DWR) has won the Independent Institute's fourth California Golden Fleece® Award, given out quarterly to California state or local agencies or government projects that swindle taxpayers or break the public trust.

DWR, whose responsibility is the management and protection of water resources in California, is owner and operator of the shamefully mismanaged Oroville Dam. In February 2017, nearly 200,000 residents of several Northern California counties were displaced from their homes after the dam's two spillways were judged inadequate to safely relieve the rising water levels in the Lake Oroville reservoir. This foretold the possibility of total dam failure, which would have resulted in many deaths, injuries, and devastating property damage to downstream communities.

The agency has failed the public on many counts. It fell far short of its obligation to properly maintain the dam. DWR ignored, and in some cases outright rejected, specific warnings about safety risk. And in the aftermath of February's near catastrophe, they downplayed safety risks and hid information from the public about their own failings.

The Oroville Dam is a prime example of how governments recklessly mismanage dams and other critical infrastructure, endangering people's lives. The ownership of California's dams should be transferred to private parties as part of a modernization of California's entire water system. The Clinton-Gore administration provided a model for how this transfer process can work.

Background

Total dam failure is not theoretical speculation in California. Two government-owned dams have failed in the past century, resulting in mass casualties and widespread destruction of property. The worst of these was the 1928 failure of the Saint Francis Dam, once located about 40 miles north of Los Angeles, in current day Santa Clarita.

Constructed along with a reservoir and aqueduct system in the early 1920s by the City of Los Angeles, the dam was intended to provide water to the city's rapidly growing population. A series of fractures after completion, however, provided early warnings of the dam's instability. Rather than discontinuing use, short-term measures and repairs were adopted, and the dam was judged safe for operation.

Exactly two years after water began flowing into the Saint Francis Dam's reservoir, the structure failed, killing approximately 450 people. It remains the second most deadly event in California history, behind only the 1906 San Francisco earthquake and resulting fires. The main reason for the failure, it later emerged, was a defective foundation.

In the wake of this catastrophe, construction began on the Oroville Dam in 1961, about 70 miles north of Sacramento. The reservoir, Lake Oroville, was to be the primary water storage facility of the State Water Project (SWP), a system for providing water and electricity to state residents.

Construction of the Oroville Dam had significant complications from the start. In 1964, massive flooding of the Feather River delayed construction. And then a year later, construction was halted when two work trains smashed head-on in a fiery collision, killing four men working on the project and starting a forest fire. Nevertheless, the Oroville Dam was completed in 1968, owned and maintained by DWR for the past 50 years and serving three purposes.

First, the dam and its system of aqueducts, canals, and pumps supply water throughout the state, primarily to the more arid central and southern regions of California. Second, the associated Hyatt Powerplant is a source of hydroelectricity. And third, the dam provides flood control for the Feather River.

Although the reservoir, Lake Oroville, is the second largest in California, the Oroville Dam is the tallest in the United States at 770 feet, exceeding the federally-owned Hoover Dam in height by 44 feet.

Caught Off Guard and Unprepared: The 2017 Dam Spillways Failures

The Department of Water Resources proved itself an irresponsible and negligent owner of the Oroville Dam in February 2017 when its failure to properly maintain this critical infrastructure resulted in chaos, near deadly catastrophe, damage to property and a historical site, and the need for costly emergency repairs.

Unexpectedly high levels of rainfall had lifted water levels in Lake Oroville dangerously close to the lip of Oroville Dam, but the main and emergency spillways that were intended to relieve pressure on the reservoir proved inadequate due to flawed construction and years of insufficient maintenance and neglect.

On February 7, 2017, DWR engineers discovered a crater in the chute of the dam's half-mile long main spillway, which flowing water would soon erode to the size of a football field and about 40 feet deep. Even though they were facing rising water levels in the reservoir and a damaged spillway, DWR determined the situation manageable. Acting director of the DWR Bill Croyle told the *Sacramento Bee* at the time, "We do not believe there's an imminent danger to the dam, or the flood control . . . gates that we operate, or the public."

Nevertheless, DWR had developed a plan to deal with the increasingly worrisome situation. They would relieve pressure on the dam by slowly reducing the flow of water to the main spillway, divert it to smaller outlets,

and, if necessary, allow water to pour out to the emergency spillway, an option never used in the dam's 50-year history. The emergency spillway consisted of a concrete weir resting at the top of an unpaved hillside.

Reliance on the emergency spillway was considered a "last resort," according to DWR spokesman Chris Orrock. Because it was unpaved, the flow of water over the emergency spillway would be uncontrolled and could potentially impact communities downstream.

That last resort became necessary on February 11, and water was allowed to pour over a concrete wall and onto the emergency spillway. But just one day later, state engineers discovered that the flow of water had created headward erosion in the emergency spillway, threatening to undercut the lip at the top of the spillway, collapse the wall, and send billions of gallons of water down the hillside to the residential communities downstream. As if the situation was not bad enough, weather forecasts predicted an oncoming storm.

This confluence of events convinced officials that dam failure was a real, immediate possibility. The dam, it was believed, could fail within the hour. And, as Cal Fire incident commander Kevin Lawson warned in a news conference on February 12, it made possible the nightmare scenario of a "30-foot wall of water coming out of the lake."

That day officials issued an immediate mandatory evacuation for residents of Butte, Sutter, and Yuba Counties. Lucky individuals were afforded up to 30 minutes to pack belongings, while those less fortunate were told to leave immediately.

Residents described the situation as chaotic. Businesses were immediately shut down, roadblocks put in place, gas stations were raided, and evacuees battled their way through traffic to escape vulnerable low-lying areas. A handful of burglars and robbers took advantage of the panicked situation, stealing from markets, carjacking, and, in one case, stealing a safe full of firearms.

In total, about 188,000 people were displaced, including many senior citizens who had difficulty evacuating. And although residents were allowed to return to their homes days later, it took nearly six weeks for officials to lift the evacuation advisory. But, even as the worst-case scenario was avoided, surrounding communities were deeply impacted by flooding of the Feather River.

A historic cemetery in Marysville that houses the remains of important figures of the gold rush era experienced significant damage when the Feather River overflowed. Headstones toppled over or tilted, and sinkholes were created above grave sites. Restoring the cemetery, which is owned and maintained by the City of Marysville, is so costly—and outside the actual means of the city, which has a poverty rate of about 29 percent—that local officials took to soliciting donations and requesting funds from various levels of government.

More recently, lawyers representing walnut farmers in the region filed a $15 million claim against the California government, arguing that the massive flooding destroyed 27 acres of farmland, resulting in production losses and cleanup costs. More than $1 billion in claims for damages have been filed by people downstream.

The outlets of the dam also incurred costly damage, and have created secondary concerns. In March, for example, naturally-occurring asbestos was found in the rock and air near the main spillway, making dust emissions from the damage and necessary construction a potentially deadly hazard.

The total price tag of the necessary repairs, reinforcements, and liability damages is unclear at this point. And officials have not been forthcoming with all relevant information. But they estimate the work to cost more than $500 million and take a full two years. Realistically, though, true costs will vastly exceed the projections from state officials.

DWR already grossly underestimated the cost of initial repairs. Their engineers projected costs to repair the main spillway at $220 million (after increasing it from $200 million). In the end, the lowest bid received from contractors for the repairs was 20 percent higher, at $275 million from Kiewit Corporation in Omaha, Nebraska.

The initial repairs began in May, and will likely continue through at least November, just before the next storm season. But many question why the proper infrastructure repairs did not happen sooner, before things got so bad.

The government's story is that the dam fell victim to "unprecedented" and "unforeseen" events. But there were many warning signs.

Incompetently Built and Poorly Maintained

As details emerged about the spillway failures, many started to take notice of DWR's failure to act on specific warnings about spillway integrity, clearly insufficient inspection and repair processes over the years, and previous poor design and construction choices.

More than 10 years ago, during the Oroville Dam's relicensing, a collection of environmental groups filed a motion with the federal government requiring "the licensee" (DWR) to "armor or otherwise reconstruct the ungated spillway and to make any other needed modifications" to bring it consistent with prevailing safety standards. In fact, the groups specifically noted that severe rain and water flow could cause erosion to the emergency spillway, which would result in a loss of crest control and subsequent flooding downstream. They warned this risk could cause massive property damage and, in the worst case, the loss of lives downstream.

Despite these dire warnings and specific precautionary recommendations, no action was taken. Worse, the spillway was officially determined by DWR and a collection of other agencies—who would likely have to pay for infrastructure upgrades—to be in "acceptable" condition for the type of "rare flood event" that was discussed in the motion to intervene. The Federal Energy Regulatory Commission (FERC) agreed, and rejected the motion, allowing Oroville Dam's relicensing to proceed with these safety recommendations ignored.

Why were safety issues disregarded? According to Ron Stork, policy director of Friends of the River (one of the groups that filed the motion), "They tried to be as evasive as possible. It would have cost money to build a proper concrete spillway." He remembered being told informally by DWR at the time that "the Metropolitan Water District and the water contractors who buy water from Oroville did not want to incur the extra costs." State Water Contractors, a consortium of urban and agricultural water agencies from the San Joaquin Valley, southern California, and the San Francisco Bay Area store water behind Oroville Dam.

According to the *Mercury News*, twelve years ago, FERC said the dam's emergency features were fine and the emergency spillway "was designed to handle 350,000 cubic feet per second." But state officials began ordering

evacuations when flows over the spillway reached only "6,000 to 12,000 cubic feet per second" or "5 percent of the rate that FERC said was safe." Clearly, government officials were wrong about the dam's capacity.Costs are now much higher than they would have been if repairs were made more than a decade ago when they were brought to DWR's and FERC's attention. "Armoring," or paving, the emergency spillway was estimated to cost about $100 million at the time. But because warnings were ignored, DWR had a much larger, and now extraordinarily urgent and costly, project on their hands.

DWR's immediate response was to fill the eroded portion of the spillway using heavy-lift helicopters. But proper repairs require a demolition and rock cleaning on the emergency spillway, before it is reconstructed and paved.

DWR's performance regarding the main spillway was equally reckless.

According to acting director Croyle, who defended his agency, inspection reports from 2014 and 2015 found no visible issues with the main spillway. But reports going back nearly a decade show defects had been repeatedly found in the damaged area. In other words, it was a well-known issue that DWR officials failed to fix.

University of California, Berkeley, emeritus professor of civil and environmental engineering Robert Bea, who looked at DWR reports for the *San Francisco Chronicle*, concluded, "We had evidence that there was trouble going back to 2008, 2009 . . ." But rather than perform proper repairs to the damaged spillway, DWR opted to engage in smaller, ineffective, and temporary measures. Bea characterized DWR's process of filling cement into the spillway cracks as "patch and pray."

A report Bea produced with other experts from UC Berkeley's Center for Catastrophic Risk Management also noted that DWR was previously aware of design flaws related to the spillway, noting them in its own inspection reports. But DWR failed to address them sufficiently over the years. Bea and his colleagues directly blamed DWR's faulty work for the eventual cratering of the main spillway.

Bea also concluded that builders cut corners during the original spillway construction: Parts of the concrete chute were too thin; the drainage system was flawed; and the spillway was not anchored properly to the bedrock below. The DWR displayed "lethal arrogance," Bea said.

Another expert, J. David Rogers, an engineering professor and dam historian at the Missouri University of Science and Technology, concluded that design problems with the spillway were "gross and obvious," causing him to express surprise that the main spillway had not failed decades earlier.

Legendary geologist Eldridge Moores, professor emeritus of geology at UC Davis and one of the world's leading experts on the geology of the Sierra Nevada, concluded that Oroville Dam had a faulty design from the start 50 years ago. The main concrete spillway was built on, and the emergency spillway was made of, "incompetent rock," also called "weathered rock," highly susceptible to water erosion. "It seems to me that even a student of geology could have told them [DWR] that they were going to have an erosion problem here," Moores told San Francisco public radio.

In fact, deception plagued the Oroville Dam from the start. In his book on the history of California's water system, *Cadillac Desert*, Marc Reisner recounts how Governor Pat Brown, father of current governor Jerry Brown, repeatedly fabricated numbers on the cost of the State Water Project, of which the Oroville Dam was a lynchpin,

in order to deceive the legislature and then voters into approving the November 1960 bond measure. Honest estimates put the price tag at $3 billion, more than $20 billion in today's dollars, but Pat Brown simply invented a number of $1.75 billion. Brown hid the true cost to gain support for the bond. The *Sacramento Bee* described Pat Brown as a "man hell-bent on building Oroville and the rest of the State Water Project" as a "monument to me," as he once described it.

In September 2017, an independent national team of dam safety experts concluded that flaws in the original design and construction of the Oroville Dam allowed water to collect beneath the main spillway and gradually weakened the structure. The team of forensic investigators concluded that over-reliance by dam inspectors on annual visual inspections of the spillways were not sufficient to find these flaws. Inspectors did not regularly review original design blueprints and construction specifications to discover the flaws.

Specifically, the forensics team found that flawed construction undermined the integrity of the spillways allowing water to enter through cracks in the concrete. In addition, the experts pointed to a faulty drainage system underneath the concrete chute that was too thin in places, poorly placed drains, and inadequate foundations. Other contributing factors included suboptimal maintenance, rebar corrosion, and insufficient inspection technology, such as cameras, lights, and sensors. Clearly, for decades the DWR provided inadequate oversight of the dam.

Cracks in the Story: DWR Deflects Blame with Dangerous Consequences

At repeated junctures, DWR minimized concerns about safety and tried to remove itself from blame for problems associated with the Oroville Dam, even as independent reviews continue to find lingering dangers, and point blame at the agency for their "long-term continued use of . . . inappropriate standards, guidelines, procedures, and processes."

Asked to comment on the cause of the emergency spillway failures and mass public displacements, DWR's Croyle said, "I'm not sure anything went wrong." The spillway failures, he suggested, were analogous to getting a flat tire. "This happens. Stuff happens," he remarked.

And as his agency came under increased scrutiny regarding maintenance of the dam, Croyle downplayed the extent of damage, saying, "The dam itself is sound. We have some little pieces that are critical to the operation of the dam that have been impaired."

DWR officials have been quick to point out that the dam and its outlet structures are routinely inspected, and that the now-damaged spillways were examined numerous times over the past decade. They "have always done well in tests and inspections," according to former DWR director Lestor Snow. DWR spokeswoman Lauren Bisnett even went so far as to offer that the main spillway "has been inspected repeatedly and been found to be well maintained and satisfactory for continued use."

If Californians were to accept DWR's story, we might believe February's near-catastrophe resulted from such an unlikely and unfortunate confluence of circumstances, mostly outside DWR's control such as weather, that the spillway failures could not have been reasonably anticipated. As Croyle characterized it, "This was a new, never-happened-before event."

But detailed independent analyses show DWR at complete fault for the structural damages and subsequent emergency evacuations. One report demonstrated that, despite being aware of the recurring presence of cracks in the affected area of the main spillway, "deficiencies were either ignored, treated as low priority, not acted upon, or a combination thereof."

Another report by the UC Berkeley team of civil and environmental engineers called February's spillway failures "preventable" and blamed damage on DWR's consistently poor response to known problems. It concluded, "The Gated Spillway was 'managed to failure' by DWR and DSOD [Division of Safety of Dams]."

DWR's defense regarding recent inspections of the primary spillway also leaves out key details about their thoroughness and compliance. For example, it fails to note that the two most recent inspections prior to the spillway failures were not performed by DWR workers walking the spillway chute. Instead, they examined it visually from a distance.

And a report on the DSOD, which falls under DWR's authority, notes that inspections were "not consistent with the intent of the California Water Code and Code of Regulations," which requires they be conducted by an independent consultant to avoid conflicts of interest for dams owned by DWR. Rather, "there is a strong connection to DWR employees being utilized to perform these reviews."

While DWR tries to explain away or ignore the embarrassing details of their maintenance failures, the agency's hardheadedness in acknowledging actual problems continues to jeopardize public safety. Take, for example, DWR's recent attempt to minimize warning signs about possible dam leakage.

Recent attention to "wet spots" along the back of the Oroville Dam, where vegetation has surfaced, has some experts concerned that water seepage foretells the possibility of eventual complete dam failure. The risks are discussed in one of the reports produced by UC Berkeley's Center for Catastrophic Risk Management, which warns the Oroville Dam "may be facing a breach danger from a serious and dangerous form of a slow-motion failure mode."

But DWR insists that the greening of the hillside is not indicative of a problem, but rather the result of rain or a "natural spring." But one of the Berkeley experts pointed to the presence of these wet spots even during droughts, severely undermining DWR's explanation. He warns that a hesitance to take seriously this leakage risk may result in "significant death and injuries, loss of property and productivity, and damage to the environment" if the dam were to fail. In other words, the people downstream of Oroville Dam are not out of the woods yet.

State officials, including Governor Jerry Brown, have been noticeably quiet regarding the human errors that caused the spillway failures, even obstructing public knowledge of such information. But despite their insistence, their reason likely has little to do with public safety. If the federal government concludes DWR did not properly maintain the dam prior to it crumbling, the feds may refuse to reimburse costs through "emergency" funding. As Dan Walters notes in the *San Francisco Chronicle*, "If it wasn't the weather, but human error, that created the problem, then the state's plea for federal aid is bogus." And so, too, are hopes that DWR can fix the disaster that it created.

Pathologies of Government: A Lesson in the Economic and Human Costs of Government "Ownership" of Assets

The Association of State Dam Safety Officials estimates that the total cost to fix the nation's dams exceeds $64 billion. To fix just those dams categorized as most critical, or high hazard, would cost nearly $22 billion, a cost that continues to rise as maintenance and repairs are delayed. Because of competing priorities and perverse incentives, governments will never invest the money needed to properly maintain the nation's, and California's, dams. But the private sector would make the necessary investments because they operate in economic markets with correct incentives, not political markets.

Why do governments persistently underfund asset maintenance? When a government "owns" an asset, such as a dam, road, bridge, or school, in effect nobody owns it. No person collects profits resulting from the efficient operation of the asset. And no person can sell their share in the asset. When everybody owns something, nobody owns something, and problems arise.

When assets are "owned" by a government, the absence of marketability and a profit motive results in mispricing of the asset or the asset's services, mispricing in the sense that prices do not reflect true scarcity. With roads, for example, the lack of monetary prices for road access results in severe traffic congestion, pollution, overuse, deterioration, and fatalities. With water, the lack of accurate prices that reflect true scarcity results in wasted water and suboptimal maintenance of water infrastructure.

Also, with government ownership, nobody is the "residual claimant" to any profits; thus, nobody has a direct incentive to make sure the asset is maintained properly to maximize appropriable profits. As a result, roads are riddled with potholes, bridges crumble, dams fail, classrooms have mold and falling ceilings, and public housing is in disrepair. Also, without a profit motive, the repairs that are made are seldom performed at minimum cost.

A politician or bureaucrat does not have a claim to the profits arising from sound asset management, therefore, he or she does not have a direct incentive to make sure the asset is maintained properly. To government authorities, maintenance is viewed generally as a pure cost without a corresponding increase in future revenues they can personally capture.

To a politician, money spent on maintenance is money not available to start new government programs or expand existing programs. A politician can get more votes and campaign contributions by starting a new program that concentrates benefits among a few people than by repairing a dam that confers benefits to a dispersed group of people, many of whom may not live in the politician's state or district.

To illustrate the absurd effects of government ownership, a bill was introduced in the California legislature (Assembly Bill 1270) to force DWR to perform annual inspections of state-maintained dams and reservoirs. With private ownership, liability and cost incentives are aligned to encourage proper maintenance. For example, an act of government is not required to get people to change the oil in their cars.

Government ownership also allows operators to shift the cost of maintenance or the cost of liability damages to other people. In the case of Oroville Dam, the State Water Contractors who buy water from Lake Oroville did not want to pay the extra costs required to maintain the dam properly. After the spillways failed as a result of improper maintenance, federal taxpayers, not the water districts, will pay for up to 75 percent of the costs of repair and liability damages.

Based on these perverse incentives, the Oroville Dam water contractors did what was in their best economic interest, but it was harmful to the downstream communities. Now taxpayers from coast to coast will have to pay for repairs and damages that water contractors in California should have paid for, and would pay for, if the dam was owned by private contractors. Now others will pay for the failings of the DWR and Oroville's water contractors. This is unfair, unjust, inefficient, and immoral. It does not concentrate costs on those responsible for the proper maintenance of the asset and those who receive the revenues from the asset. Shifting cost and liability results in suboptimal stewardship of assets and increased risks to the public.

For these reasons, chronic under-maintenance is the rule for the nation's government-owned assets, especially its dams, roads, bridges, and highways.

The inability of the public to sell their "share" in government-owned assets also prevents the assets from being owned by people who best understand the industry and have the technical knowledge to operate and repair the asset. Today, elected politicians and unelected bureaucrats have too much say in the extent and timing of dam maintenance and repairs, rather than skilled and knowledgeable engineers, entrepreneurs, and innovators.

The Recommendations: Shift Ownership Away from DWR, More Local Input, and Independent Inspections

The ownership and maintenance of dams in California by government bureaucrats is a legacy of a bygone era. Fixing the many failings of the current system requires ending government ownership and maintenance of Oroville Dam and all other California dams, as part of modernizing California's entire outdated water system. Also, federal government influence should be reduced and replaced by more local community input. Finally, dam inspections should be conducted by independent inspectors.

Privatize Ownership and Maintenance of Dams

According to the U.S. Army Corps of Engineers, California has 1,585 dams in one of four categories tracked by the Corps. Nationally, the Corps' 2016 National Inventory of Dams lists 90,580 dams. Most dams in the United States, 64 percent, are privately owned. But in California only 43 percent are privately owned, a considerable difference. In California, the federal government owns 226 dams, the state government owns 44, and local governments own 317.

California has a dramatically higher percentage of "High Hazard Potential" dams, those where "loss of human life is likely if the dam fails." In California, 53 percent of its dams are high hazard compared to only 17 percent nationally. Also, California's dams are 70 years old on average compared to a national average of 56 years. "It's not like an expiration date for your milk, but the components that make up that dam do have a lifespan," said Mark Ogden, a project manager with the Association of State Dam Safety Officials.

Relative to the rest of the country, California has more government-owned dams that are older and have a greater potential for loss of life and severe property damage if failure occurs. In other words, safety is paramount and incentives need to be aligned with this objective. Having DWR at the helm, with its opaque "patch and pray" approach, is not the answer.

Ownership of Oroville Dam should be transferred from the state government to private water companies or private irrigation districts, perhaps owned as shares in a consortium. The remaining government-owned dams should be eventually transferred to private ownership and maintenance as well. This transfer process should follow a blueprint started by the Clinton-Gore administration beginning in the late 1990s.

Under the "reinventing government" initiative headed by Vice President Al Gore, the Clinton administration sold several federal Bureau of Reclamation water projects to local irrigation districts in New Mexico and Washington state. By 2006, 19 Reclamation projects had been transferred to nonfederal owners. The Clinton-Gore transfers are models for California.

Politicians and bureaucrats operate on an entirely different calculus of responsibility and institutional incentives than do private businesses. Consider that the immediate reaction to February's spillway disasters from Governor Brown was to request federal aid, which he was able to justify by withholding information that the crisis was driven by poor maintenance of the Oroville Dam by DWR. And consider that the federal government is likely to cover at least half, and as much as three-quarters, of the total repair cost.

Public ownership comes with the automatic assumption of a taxpayer bailout for incompetence. This means when a government agency like DWR fails, we are all expected to pay the price. And since February's spillway damages were the result of a culmination of widespread and longstanding problems, rather than the fault of a small set of individuals, it is unclear anyone will lose their job or otherwise be held accountable.

Private ownership, on the other hand, concentrates the costs of failure, which properly incentivizes more effective maintenance, timely repairs, and efficiency. In the case of Oroville Dam, private ownership would mean putting responsibility for reservoir and outlet maintenance, as well as flood control, in the hands of individuals whose interests revolve around ensuring safety and the health of the dam itself, rather than concern with competing budget demands and conflicting political pressures. It also means that the private owner, not the state (effectively taxpayers), would be liable for damages that might result from preventable dam failures.

Proper priorities have been notably absent under DWR ownership, a fact recognized by local mayors and community leaders. In a letter they addressed to Governor Brown, they wrote, "The number one priority must be to protect the lives of 200,000 people living immediately downstream. To be abundantly clear: fisheries protection, water supply issue, State Water Contractor priorities, FEMA reimbursement, politics, and other issues must take a distant backseat to public safety."

Importantly, local mayors, community leaders, and members of the Oroville City Council also question whether DWR should continue to operate Oroville Dam and request a discussion of alternatives. We agree. It is past time to transfer ownership of Oroville Dam, and California's other government-controlled dams, to private owners as part of modernizing California's entire outdated legacy water system.

Give More Weight to Local Concerns

DWR has long minimized the concerns of those most impacted by its failures, giving preference, instead, to satisfying FERC. This should change, regardless of the future ownership of the Oroville Dam and California's other government-controlled dams.

Distrust of DWR by local residents and officials is pervasive. Butte County Supervisor Bill Connelly described DWR's history of broken promises to the residents of Oroville as "terrible," remarking, "I don't trust DWR. They can't keep their story straight." And in their letter to Governor Brown, local leaders described communication between the agency and their communities as "inadequate," adding that they have "little or no say in the construction, operation, or maintenance of that structure" despite having to shoulder "the extreme danger and burden of flood water."

Local business leaders and a U.S. representative have sent letters to FERC requesting its assurance that local safety start to be prioritized. Each has asked that the federal agency delay relicensing the Oroville Dam until forensic reports on February's spillway disasters are completed and fully considered. The Oroville Chamber of Commerce and other local business organizations wrote, "We want to make sure DWR is looking at dam safety as being paramount, and that the new license reflects that."

FERC has been negligent in ensuring the safety of communities downstream. In fact, in 2014 FERC declared the Oroville Dam spillways safe for use and, according to the Associated Press, rejected the need for investigating the possibility that either could fail. Federal inspectors concluded that the main spillway was "in good condition, and the underlying rock is very competent," which was not true. It is no wonder, then, that the authors of one of the UC Berkeley reports said, "The Gated Spillway was 'regulated to failure' by FERC."

Require Independent Dam Inspections

Lastly, the Division of Safety of Dams (DSOD), which oversees about 1,250 dams in California, should hire independent, third-party inspectors to conduct dam inspections, and these experts should have no ties to DWR.

Inspections and repairs at Oroville Dam performed since at least 2008 have been embarrassingly sub-par, according to the several independent assessments of the spillway failures. To that concern, some modifications to operational procedures have been suggested. But they will not fix the larger problem.

DSOD, whose mission is "to protect people against loss of life and property from dam failure," relies too closely on consultants with previous DWR connections. This makes it difficult, if not impossible, for DSOD to avoid conflicts of interest between inspection and ownership of the dam, as state rules require.

One solution that has been offered is to restructure DWR by removing DSOD from their control. Under such a change, DSOD might maintain its current responsibilities, but be located organizationally in a different agency. But relocating DSOD would not prevent oversight from being influenced by vested interests.

Instead, at the very least, oversight should be conducted by objective third-party experts and make such reviews publicly available. This would further prevent bureaucrats or politicians from spinning findings, or hiding information that the public has a right to know, as DWR and Governor Brown have attempted in the past.

The discovery of a surprising number of past and current safety problems with the Oroville Dam, both in terms of design and maintenance, by recent independent studies speaks to the value of truly objective third-party reviews.

All told, these concerns point to the dangers of keeping ownership and maintenance responsibilities with DWR. They also make clear the urgency of transferring those responsibilities to more accountable, trustworthy, and competent parties. The Saint Francis Dam collapse is a tragic reminder of what can happen when government mismanages critical infrastructure such as the Oroville Dam. California does not need, nor deserve, another catastrophe.

Written by Lawrence J. McQuillan, PhD, Senior Fellow and Director of the Center on Entrepreneurial Innovation at the Independent Institute.

Each quarter, Independent Institute highlights a California state or local spending program, tax, or regulation that fleeces taxpayers, consumers, or businesses. The California Golden Fleece® Awards shine a spotlight on waste, fraud, and abuse in California government to provide valuable information to the public, enabling them to provide needed oversight and demand meaningful change.

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