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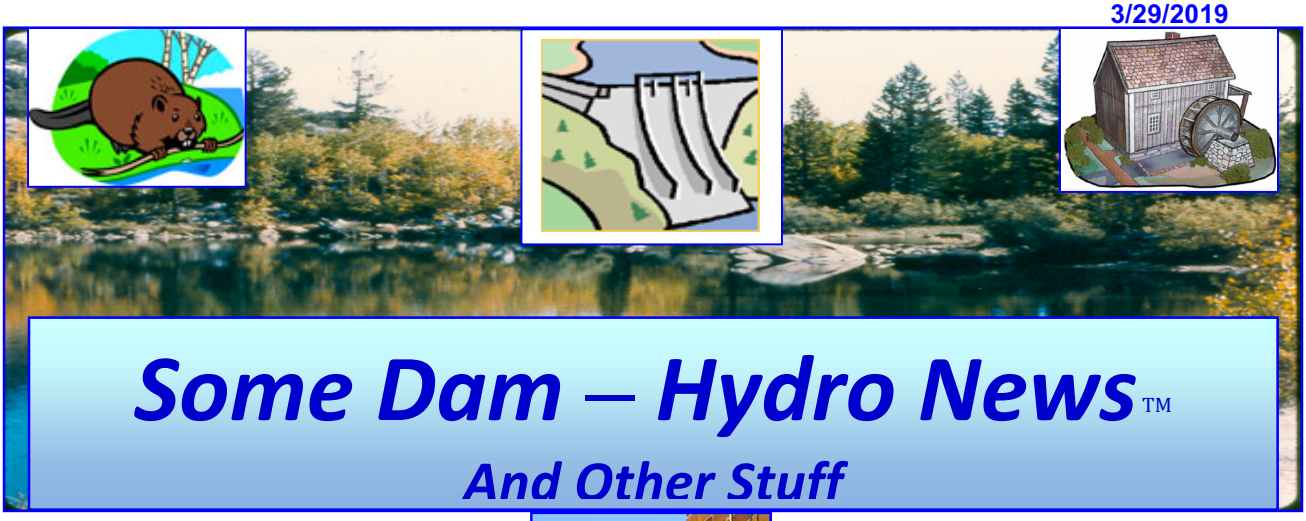


Some Dam – Hydro News™

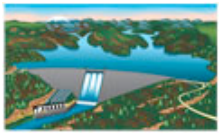
And Other Stuff

i

Quote of Note: *"Failure I can live with. Not trying is what I can't handle!" —Sanya Richards*

Some Dam - Hydro News → Newsletter Archive for Current and Back Issues and Search:
(Hold down Ctrl key when clicking on this link) http://npdp.stanford.edu/ . After clicking on link, scroll down ***under Partners/Newsletters on left, click one of the links (Current issue or View Back Issues).***

"Good wine is a necessity of life." - -Thomas Jefferson
Ron's wine pick of the week: **2016 Pedroncelli Zinfandel "Mother Clone"**
"No nation was ever drunk when wine was cheap." - - Thomas Jefferson



Dams:

(Problems with dams everywhere. Another argument for dam removal.)

America faces aging water infrastructure crisis

FEBRUARY 28, 2019, citizensvoice.com

Editor: On average, our country has constructed one dam every day since the signing of the Declaration of Independence. The U.S. Army Corps of Engineers has catalogued approximately 75,000 dams greater that six feet tall along the waterways of the United States. And at least tens of thousands of smaller dams clog our rivers and streams. And each day that obsolete dams remain in our rivers, they do our rivers, communities and wildlife significant harm. Dams reduce river levels by diverting water for power. Dams remove water needed for healthy in-stream ecosystems. Dams block rivers and prevent the flow of plants and nutrients, impede the migration of fish and other wildlife and block recreational use.

In addition to creating havoc in rivers that harm otters, fish and other wildlife, dams threaten people and communities. The vast majority of dams do not protect against flooding. Fewer than 15 percent of all dams in the U.S. provide any protection from floods. In fact, many dams actually cause flooding to be worse in upstream communities. And old and poorly maintained dams can fail. In recent years, more than 100 dams in New England were overtopped, breached or otherwise damaged by severe storms. Two thousand people had to be evacuated in the Massachusetts community of Taunton, due to flooding concerns at the 173-year-old dam nearby. America is facing an aging water infrastructure crisis that threatens our drinking water, wildlife habitat, our livelihood, and our lives. It is no secret that the Trump administration has done nothing to protect and preserve the environment for future generations. The Wyoming Valley and Northeast Pennsylvania are no strangers to water woes and flooding. Obsolete dams are a stark symbol of this silent emergency in America's rivers. *Patricia Marks*, *WILKES-BARRE, PA*

(Show me the money. Should the Federal Govt. pay anything?)

FEMA only repays portion of Oroville Dam spillway costs

By Ashley Gardner, March 7th 2019, krcrtv.com

OROVILLE, Cailf. — The Federal Emergency Management Agency (FEMA) announced Thursday it would pay $205 million for Oroville Dam spillway repairs, leaving $306 million in costs they said were not eligible for reimbursement. This is in addition to $128.4 million FEMA previously approved for reimbursement for emergency response, debris removal, and other costs. "We appreciate the hard work and commitment of FEMA staff, however are disappointed in some of their initial interpretations regarding cost eligibility," said Joel Ledesma, DWR Deputy Director of the State Water Project about the decision. "Our reconstruction work was necessary to safely operate the main spillway and ensure functionality of the emergency spillway. DWR plans to appeal FEMA's determination as we believe all costs should be eligible for federal reimbursement," Ledesma added.

FEMA's Public Assistance program reimburses applicants at least 75 percent of eligible costs associated with a federally declared disaster. Northstate Congressman Doug LaMalfa (R) said he expected FEMA to withhold additional funds in the wake of a dispute between the federal government and state officials over high-speed rail funds. "FEMA has reimbursed the state for eligible emergency repairs, but repairs due to maintenance failures as well as the new structures being built are ineligible for federal reimbursement legally. Meanwhile, California prioritized other spending initiatives, such as high-speed rail, over fixing deficiencies of Oroville Dam that led to this crisis, and FEMA is likely to withhold future public assistance funding as a result. That will prove to be a costly mistake. We don't want FEMA to come up short on other disaster assistance by misapplying funds in this case of dam mismanagement, born out in the forensic report," LaMalfa said in a statement. DWR officials said they will work with FEMA to provide further information to support the department's assertion that all reconstruction work should be eligible for reimbursement.

(We may see the new spillway chute at work.)

Rebuilt Oroville Dam Spillway Appears To Be Nearing 1st Test

By Wilson Walker, March 5, 2019, sanfrancisco.cbslocal.com

OROVILLE, CA (KPIX 5) — Two years after the crisis in Oroville, the dam's reconstructed spillway may be nearing its first test. "Assuming mother nature keeps putting down a lot of precip and snowpack, there's a chance this season, certainly," said Erin Mellon, a spokesperson with the California Department of Water Resources. With Lake Oroville finally creeping back towards capacity, DWR is again watching the math that flows down the Feather River. That's the rain and snowmelt moving into the lake, and the water can be moved out of it. "Right now, we are actually releasing from Hyatt Tower plant at about 5000 ft.³ per second," Mellon explained of the flows currently being allowed downstream. But while the hydro plant is humming, another atmospheric river over this region could quickly shift attention to the newly-constructed spillway.

"Thicker, has more concrete, has more anchors and rebar in the original design," Mellon said of the new spillway. "We spent an off a lot of time and effort, I had the best minds in people on the reconstruction, and that's why we are confident that it is going to be able to handle flows." And no one is paying more attention to all of this, than the people living just down river in Oroville. "Absolutely, we've been watching this project unfold very closely," said Oroville Mayor Chuck Reynolds. "I think the people are confident with actually being able to see what my name there is instead of just trusting something that was built 50 years ago." Reynolds said the town's trust was shaken during that harrowing evacuation in 2017, a situation he described as "a panic." While the state still has some trust to restore here, most people are confident in the reconstruction job, according to Reynolds. "I believe that when we spend $2 billion, we should have a state-of-the-art project; we should have something that's going to work for us," said Reynolds. "And I trust that wholeheartedly." The Department of Water Resources said it knows people across the region are paying attention to the dam, the weather, and the new spillway. It plan to inform the public if the spillway is to be used.

(Some people think it's failing now.)

Complete failure at Oroville Dam

By Chriss Street, March 18, 2019, americanthinker.com

The $1.1 billion spent to repair Oroville Dam is failing as water is seeping through the rebuilt spillway threatens new mass evacuations over the risk of the dam collapsing. According to national dam expert Scott Cahill of Watershed Services of Ohio, Oroville Dam is on the same failure track as in 2017, with visible water seepage trickling from the foot of the dam and dozens of points along the dam's principal spillway. Cahill warns that warming temperatures magnified by precipitation is a growing threat to the dam. American Thinker reported on March 1 that the Sierra snow pack was at a record 113 inches, but another 44 inches fell in the next 10 days. With temperatures spiking this week to 75 degrees in the valleys and 41 degrees in the high mountains, dam inflows are running twice the outflows, and the water levels rose from 800 to 839 feet.

As America's tallest earthen dam with a 770-foot face and 901-foot top of the spillway, the lake behind the Oroville Dam can hold 3.5 million acre-feet of water. Its viability is a crucial element for the effectiveness of California's system of 1,250 flood-control dams. The last time the water level rose to 815 feet in February 2017 and engineers began opening eight huge spillway gates to allow 100,000 acre-feet per second to race down the face of the dam, the spillway's midsection began seeping water at many points. The difference of the huge water pressure on the dam and the lower pressure from water running down the spillway caused the huge cement plates to rise

and fall. As water seepage turned into porting streams, the spillway buckled and then washed away. Facing the risk of a 30-foot wall of water racing toward metropolitan Sacramento, the Butte County sheriff issued a mandatory evacuation of 188,000 residents. The rains ebbed, and the dam survived, but the Federal Energy Regulatory Commission's after-action 537-page Independent Forensic Team Report found:

> *The Oroville Dam spillway incident was caused by a long-term systemic failure of the California Department of Water Resources (DWR), regulatory, and general industry practices to recognize and address inherent spillway design and construction weaknesses, poor bedrock quality, and deteriorated service spillway chute conditions. California's potential liability for the 2017 Oroville Dam crisis was reinforced on March 14, when Sacramento Superior Court judge James McFetridge ordered discovery to begin in a lawsuit against the state for hundreds of millions in damages by the City of Oroville, dozens of farmers, businesses, and others during the two-month crisis.*

The plaintiffs' motion included wide-ranging allegations of dam employees suffering from sexual and racial harassment, extensive theft of equipment by dam officials, filing fraudulent financial reports, shoddy maintenance records, and a pattern of actively destroying evidence to conceal liability and criminal actions.

President Trump has blamed California for systematically failing to fund known state infrastructure and safety needs, then billing the Federal Emergency Management Agency under its 75 percent reimbursement for national disaster relief claims. Based on the reports of incompetence, FEMA denied $306 million of California's first $639-million national disaster reimbursement requests for the 2017 Oroville Dam crisis. The $1.1 billion spent to repair Oroville Dam is failing as water is seeping through the rebuilt spillway threatens new mass evacuations over the risk of the dam collapsing. According to national dam expert Scott Cahill of Watershed Services of Ohio, Oroville Dam is on the same failure track as in 2017, with visible water seepage trickling from the foot of the dam and dozens of points along the dam's principal spillway. Cahill warns that warming temperatures magnified by precipitation is a growing threat to the dam.

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(This is the best bang for the buck for renewable energy,}

The Wages of Incompetence in California

By Michael Reagan with Michael R. Shannon, 12 March 2019, newsmax.com

Bible-believing Christians know the wages of sin is death, but the Bible is unclear on the wages of incompetence. One indication that incompetence tends to be expensive comes from the Associated Press. AP reports the cost of incompetence in California is in the neighborhood of $306 million.

That's the amount of the request for reimbursement that was denied by the Federal Emergency Management Agency. California submitted the request to help pay for repairs to the Oroville Dam — which boasts the tallest spillway in the history of the United States — which almost failed during heavy winter rains last year. The request was denied because it seems the Oroville Dam also features the tallest spillway in the nation that had a faulty design from the get-go. For more detail on the past parade of incompetence as related in this column you can click here, here, and here.

As this is written California paper-pushers have requested $639 million from FEMA to help rebuild the dam with $333 million already approved and spent. According to federal share-the-tax-dollars law California can request up to 75 percent of the cost to rebuild a dam that benefits no one but Californians. Taxpayers in other regions of the country cannot be faulted for thinking why should their money be used to bail out a wealthy, blue, high-tax, low-humility state like California? It's an excellent question. Why can't California take some of the millions wasted on fighting "global warming" and apply the money to fixing a real world, right now problem? According to the AP, Republican Cong. Doug LaMalfa agrees, and blames state bureaucrats for "spending money on other things, such as a high-speed rail project, over 'fixing known deficiencies at the dam.'" The official reason the feds rejected the request was because the dam was damaged before the rain came, but no one bothered to check during the drought. FEMA spokesman Brandi Richard explained, "Two separate independent engineering reviews indicate that a variety of problems existed at the dam prior to the February 2017 floods. FEMA's Public Assistance can only fund work directly linked to the declared disaster."

It all comes down to the sad fact that for politicians it's not worth spending money if you don't get credit. No media outlet is going to cover a ceremony to mark routine maintenance and repairs on a spillway, unless the politicians careen down it in a barrel. But a bullet train ground-breaking! Now that generates news coverage, even if months later the money is wasted and the train never leaves the station.

(Here's our answer.)

DWR responds to judge's ruling to let Oroville Dam crisis allegations go forward

The allegations include racist actions, sexual harassment, petty theft and conspiracy to destroy evidence

By **RISA JOHNSON** | chicoer.com | Chico Enterprise-Record, March 18, 2019

"The judge did not in any way rule that these allegations are appropriate for inclusion in the litigation or true. Instead, he denied DWR's motion strictly for procedural reasons. DWR remains prepared to defend its zero tolerance policy and the actions taken before and during the Oroville spillways incident by our dedicated DWR employees." The judge who filed the order allowing the allegations to move forward was James McFetridge. He said in his written ruling that striking the allegations from the cases at issue would not remove the allegations entirely, as they were included in another case (for plaintiff Mary's Gone Crackers, represented by the same lawyers) as well.

"At the hearing on this motion the Court raised this issue with counsel for the moving party; at that time, counsel for DWR argued that the Court has the ability to strike the allegations from the MGC Complaint to conform it to the other pleadings, but failed to provide any legal authority to support this assertion," the ruling reads. "The court concludes that the allegations in the MGC Complaint, which were not included in this motion to strike, cannot be stricken."
Removing the allegations from these specific cases only would serve "no purpose or benefit," the judge wrote. Most of the lawsuits against the state over the spillway crisis are being considered together in a joint proceeding, with a trial date set for June 1, 2020. Related court documents can be found by searching for case number case number JCCP 4974 on the Sacramento County Superior Court website:

(Nobody trusts DWR.)

Letter: DWR taking chances with city of Oroville

By LETTERS TO THE EDITOR | March 17, 2019, chicoer.com

The Department of Water Resources (DWR) appears to take marching orders from for-profit water vendors and continues to play foot loose and fancy free with all life, limb and property below the dam. The dam cannot be determined structurally safe given non-functioning internal monitors. Control gates are as decrepit as the spillway that failed. The pretend auxiliary spillway will likely be tested this season, ready or not, and if it survives DWR will say, "See, everything is in proper order, it's time to relicense us for another 50 years of playing daredevil with Oroville and other downstream communities." Nobody knows what will happen if a major quake hits when the dam is full to capacity, or what will happen when warm rain hits an above normal snow pack and the dam is already full. We do know that DWR has been releasing water minimally to get the water up to a profitable, if dangerous, level. We are in this situation after a catastrophe at the dam nearly erased Oroville from the face of the earth. DWR has not changed its ways. Our current full-to-capacity situation is partly owing to DWR and water vendors wheedling their way into City Hall with funds full of dangerous strings and one-sided arrangements. The money silences the council, creating a shady alliance with nefarious characters. Our city council continues to roll the dice with these people, holding the township hostage to the toxic relationship and shirking their duty to keep Oroville safe. — *Don Fultz, Oroville, CA*

(Here's your answer.)

FEMA Details Why It Rejected State's Request for Oroville Spillway Funds

By Dan Brekke, March 20, kqed.org

Federal emergency relief officials have provided new details on their decision to reject California's request to reimburse the state for work to rebuild and reinforce the badly damaged spillways at Oroville Dam. The Federal Emergency Management Agency announced earlier this month that it would not reimburse the state for $306 million in construction on the spillways, which failed in February 2017 and prompted mandatory evacuation orders for 188,000 people living downstream of the nation's tallest dam. In a brief statement March 8, a FEMA spokesperson said the agency was refusing to reimburse the California Department of Water Resources (DWR) for work on the upper portion of the dam's main concrete spillway. The agency said the decision was based on earlier engineering reviews that found "a variety of problems existed at the dam" before the sequence of events that led to the spillway crisis.

(Nothing hurts more than shooting yourself in the foot.)

Environmentalists Didn't Expect This Would Happen When They Busted Up Dams

Coal moved in.

By NATHANAEL JOHNSON, MARCH 2, 2019, motherjones.com

This post was originally published by Grist. It appears here as part of the Climate Desk collaboration.

Dam busting is a grand tradition of American environmentalism. In 1966, when the Sierra Club and allies got Congress to prohibit new dams in the Grand Canyon it was "a turning point, the biggest victory yet for conservation," according to the PBS documentary A Fierce Green Fire. At the innermost center of an environmentalist's hell "stands a dam," wrote John McPhee, the godfather of nature writing, back in 1971. "Possibly the reaction to dams is so violent because rivers are the ultimate metaphors of existence, and dams destroy rivers." The environmental movement was so successful in its opposition that it effectively ended all major dam building in the United States. But blocking that source of low-carbon power, did nothing to quench the growing thirst for electricity. More often than not, fossil fuel-fired power plants came to replace hydropower, using water from those undammed rivers to cool their boilers, according to a recent study by Edson Severnini, an assistant professor of economics and public policy at Carnegie Mellon University. Severnini stumbled into this discovery while investigating the reasons that dam projects failed. As he was reading through dusty government records—EPA papers scrutinizing dams and licensing documents from the Federal Energy Regulatory Commission—he spotted a pattern. A few years after authorities rejected a hydropower dam to comply with environmental rules, they would approve using water from the same river for a coal plant. "To be honest, when I started my research I was surprised to find that this relationship exists between environmental regulations and fossil fuel plants being built," Severnini said. "These rules appear to have encouraged utilities to build dirtier plants."

Sevirini looked at all the places in the country where environmental law thwarted hydropower—whether dams were torn down or never built—and found that the fossil-fuel plants that were built instead now produce more than 11 million tons of carbon dioxide each year. That's the equivalent of putting 2.4 million cars on the road. Why is this happening? The laws that greens successfully pushed back in the dam-busting heyday were concerned with saving unique places and wildlife. The climate wasn't a consideration. In fact, there's still no law on the books explicitly directing the federal government to consider the consequences to the climate of building any type of power plant. Severnini thinks that, even in recent years, environmental groups have been driven primarily by local concerns—protecting beloved landscapes or habitats—rather than a desire to stop greenhouse gas emissions. "Do environmental regulations aimed at preserving natural ecosystems protect the environment?" Severnini wrote in his paper. "The answer seems to be not necessarily." That doesn't mean we should trash all regulations in a libertarian fit. It just means that we need to take the blinders of our laws. Severnini said that when environmental regulations thwart one form of energy without fully considering what will replace it, the results can end up backfiring. Perhaps someday climate change will replace dams at the center of an environmentalist's hell.

(Small dam, big damage!)

Ord dam failed causing flooding for those down stream

By KHG, March 13th 2019, nebraska.tv

According to the Valley County Sheriff's office, the Hardenbrrok Dam in the city Ord dam has failed and is causing flooding for those downstream. The incident happened around 3 this afternoon. We have

a reporter on site and we will continue to update you as more information is sent to us.
(Any kind of dam failure is not good.)

11-foot wall of water: One dam breaks, three counties suffer

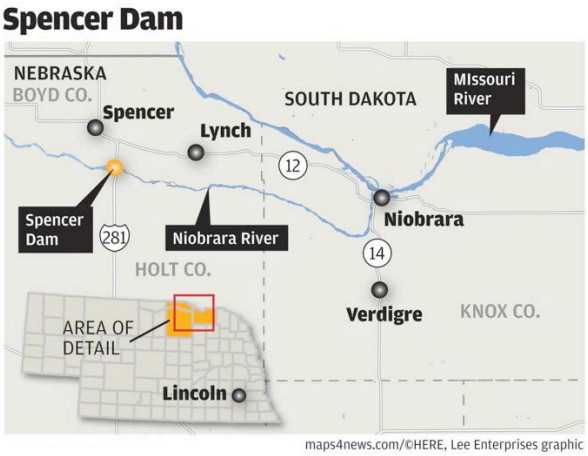
By **PETER** SALTER, Lincoln Journal Star, Mar 17, 2019, journalstar.com

Spencer dam

From their offices in Lincoln early Thursday, hydrologists with the U.S. Geological Survey were monitoring the final few moments of a stream gauge more than 200 miles away, on the Niobrara River. It was hinting at something catastrophic. "We were watching it from here, and it looked like something incredible was happening that we couldn't believe," said Jason Lambrecht. "And suddenly, everything went dark." The gauge had been ripped away by the wall of water released when the 90-year-old Spencer Dam failed under the pressure of the river, swollen with rain and rapid snowmelt and broken ice. But its last readings allowed Lambrecht to measure the size of the surge. Earlier, the Niobrara had been running at 5 or 6 feet of gauge height. After it broke through the dam, it measured nearly 17.5 feet. It wasn't a gradual increase, either. "It started a really fast rise," he said. "There was an 11-foot wave that rolled through." And in its wake, three Nebraska counties would learn how that much moving water can become immediately destructive and potentially deadly. How it can cause instant pain and long-term suffering. How it can harm not only those in its path, but those living miles away. First, the wave swept away a section of U.S. 281, a nearby riverside saloon and at least one home, possibly occupied. And it continued downstream, barreling toward the town of Niobrara — and its mouth at the Missouri River — about 40 miles away.

The wall of water released when the Spencer Dam failed washed away most of Niobrara's western edge.

Knox County: 'It's crazy' The service station owners thought they were ready for the coming water. They'd taken the tire machine and other equipment away. They brought the important paperwork home. They put their '68 Camaro up on the lift. They moved the rest of what they could to higher ground, filling the rafters with inventory. And the couple had a huge inventory. Vic's Service has anchored the west edge of Niobrara for 25 years, and had enough hydraulic fittings and plumbing pieces to serve as a kind of farmer's supply store, said Ruth Janak, who co-owns the station with her husband, Victor. They checked on their business Wednesday, and found it already swamped with 4 feet of water, her desk upturned, pop machines on their sides. A mess, but nothing they couldn't handle.



"We thought, when the water recedes, we'll be able to get in and clean all that up," she said.
They returned Thursday, and found most of it missing. "Our main building, the one we did our business at, it's gone. The gas pumps are gone. We lost

the propane tank. So many tools are gone," Janak said Friday. "Where's all that stuff at? It's crazy." Later, she would find a jug of hydraulic fluid — and someone else's pontoon boat — on what remained of the town's golf course. But their main building, and much of what it contained, had likely tumbled downstream. Theirs wasn't the only missing building. The wall of water had brutalized Niobrara's west side, a low-lying commercial district, and the part of town closest to the river. Jody Stark, the chair of the village board, listed the other casualties. Several buildings from a hay business? Gone. A state Department of Transportation garage? Gone. A Knox County road shop? Gone. The Mormon Bridge on Nebraska 12? Stark has video of the deck floating away. The Country Cafe? Still standing, but it had been nearly swallowed by water and ice, with maybe a foot of the roof visible at one point. "A lot of buildings washed away," he said. "They were pretty much swept right down the river and they're in the Missouri somewhere." The good news? Almost all of the 300 or so residents of Niobrara live on higher ground, and weren't directly hurt by the floodwaters.

Still, his town was struggling. The flooding compromised the town's two wells, leaving its residents without a water supply, and the fire department was going door-to-door, filling containers. Getting in and out of town was also difficult; by Friday, the Standing Bear Bridge to South Dakota had reopened, and there was one passable gravel road south of town. Nebraska 14, the main route south out of Niobrara, was so strewn with ice it was only open for emergency travel. The damage was unprecedented, Stark said, and worse than they had originally expected. But that was before they'd heard the Spencer Dam had failed and even more water was headed their way. "They did tell us there would be a surge coming, but we had no idea how much, when or how long it would take," he said. "I don't think anybody expected to see the water that we did see come."

It wasn't just Niobrara. A dozen miles to the south, Verdigre's main street resembled a river. "The streets were covered with water; they are really broken up," said Laura Hintz, the Knox County emergency manager. "The café there has a ton of mud, it took the brunt of it." It is far too soon to put a dollar figure to the damage, she said. "Everybody is still trying to wait for the water to go down and figure out what's gone, what's still there and what's salvageable." Which is what Ruth and Victor Janak spent Friday doing: Dodging ice chunks to see what remained of their business. Earlier, on Thursday — after they'd heard the surge had swept Vic's Service away — Ruth Janak and her son had stood on a lookout near Standing Bear Bridge, watching for their livelihood to float by in the Missouri River, but not wanting to witness it. "Thank God we didn't see anything," she said. Friday, she and her husband tried to recover what they could — before others got the same idea. They found a tool box. They found the shipping container they used for storage tangled in the trees. And they found their newer building still standing, their Camaro still safe up on the lift.

(Everybody is an expert on dam removal. People versus the environmentalists. I think he means "What removal of Snake dams ---")

Editorial: What look at Snake dams can mean for orcas, us

The state shouldn't shy away from a discussion of the costs and benefits of breaching four dams.

By The Herald Editorial Board, heraldnet.com, March 17, 2019

Nobody said it was going to be cheap. Or easy.
But if two of Washington state's signature species — orca whales and the salmon on which they depend — are to survive it will take a range of actions, significant funding, some sacrifices and a willingness to adapt. At last count, 74 Southern Resident killer whales remain in the three family pods that spend part of their year around the San Juan Islands, Puget Sound and the larger Salish Sea, down from a peak of nearly 100 about 20 years ago. While orcas face myriad threats to their health, the most significant remains the decrease in abundance and size of salmon, specifically chinook, on which they predominately feed. State, federal and Canadian fisheries experts are predicting returns of spring

chinook to the Columbia River to drop about 14 percent lower than last year's returns and amount to about half of the 10-year average. For Puget Sound rivers, less than 30,000 wild chinook are predicted to return. Only coho salmon returns are expected to be about 15 percent above their 10-year average.

Fortunately, there are a range of actions already outlined last year — 36 in all — by the state's Southern Resident Orca Task Force that seeks to address the array of challenges that salmon and orca are facing, including impacts from marine vessel noise and activity that hamper the orcas' hunt for salmon and the presence of toxic chemicals that affect their health. At the end of the year, Gov. Jay Inslee, used many of those recommendations to propose $1.1 billion in spending along with other policies that now are under consideration in the Legislature. That array of solutions deserves lawmakers' full consideration; one, in particular, because it already faces significant opposition but presents significant promise in restoring salmon spawning habitat that could help restore healthy runs of chinook and other salmon.

Among the spending sought by Inslee is $750,000 that would support the work of further study and discussion on the impacts and opportunities of removing the four "run of the river" hydro-electric dams on the lower Snake River in Eastern Washington, the Columbia River's largest tributary. The removal of some of the state's smaller dams are also among the recommendations, including one on the Pilchuck River. The recent removal of the Elwha Dam on the Olympic Peninsula shows some of the promise in restoring salmon habitat. Five years after its removal, the forecast for the Elwha River shows better returns for wild chinook. Opponents of removal of the four Snake River dams, notably U.S. Reps. Cathy McMorris Rodgers, R-Spokane; and Dan Newhouse, R-Sunnyside, have criticized the proposed study as wasteful because, "breaching them is out of the question." Backers of the dams have pointed to the dams' roles in providing irrigation, barge transportation for wheat and other agricultural products and electricity. A closer look at what the dams provide, however, questions the dams' actual utility and speaks to the potential benefits for salmon, orca and even the economic health of Eastern Washington if the dams were removed.

We've discussed earlier that the electricity produced by the four dams can — and in coming years will — be replaced as new wind turbines and solar facilities are built. A study commissioned by the Northwest Energy Coalition found that the four dams produce about 4 percent of the region's electricity but could be replaced with a mix of wind, solar and energy efficiency programs that would add about $1 a month to the electrical power bills of most consumers. Continuing the supply of water for irrigation would require little more than moving the pumping equipment. And replacing the barge transportation, for which the U.S. Army Corps of Engineers built the dams and their locks in the 1960s and 1970s, is already happening, as shippers have increased their use of rail to transport grain and other crops. The shift from barge to rail has not gone unnoticed by Eastern Washington farmers, including Bryan Jones, a Colfax wheat farmer who spoke to the editorial board last week. Jones doesn't make the choice on how his wheat is shipped; he just pays the 47 cents for a 60-pound bushel to do it. That decision is made by the shipping company he uses, but increasingly his wheat makes its trip by railcar and not barge. Shipping by barge is not without its costs, particularly to taxpayers who subsidize the dredging and other maintenance performed by the Corps to keep the locks in operation. Jones is an admitted minority among his fellow farmers in supporting an examination of removing the four Snake River dams, but it's one-on-one conversations that he has had with farmers and others in Eastern Washington — a few like himself who can recall what the Snake was like before the dams were built — that show the issue isn't "out of the question."

"When you talk quietly with them, they begin to see the possibilities," Jones said. Along with a deeper investigation of the costs, benefits and changes that removal of the dams would bring,

those conversations need to occur among all whose lives are tied to the Columbia and Snake rivers in Washington, Oregon and Idaho: farmers, community members, commercial and sports fishers, tribes, environmental groups, utilities, electricity consumers and many others. The possibilities Jones sees are for continued viability of Eastern Washington agriculture but also an economy strengthened by investment in a broader renewable energy sector that is already in increasing demand, as well as for the region's recreational economy that would be buoyed by healthy returns of salmon to the Snake and its tributaries. Not too surprisingly, what's good for salmon and orca could be good for us all.

Video

EXCLUSIVE: 360-degree ride along the top of Twin Buttes Dam

Mar 19, 2019,
https://www.conchovalleyhomepage.com/news/video/exclusive-360-degree-ride-along-the-top-of-twin-buttes-dam_20190319205205/1861149053
Take a 360° ride along the top of the longest dam of its kind in the world (8.2 miles). The only single dam to hold back two separate river basins (Middle Concho-Spring Creek and South Concho). The dam with the largest cutoff wall of its kind in the world and is located in Texas near San Angelo.

Hydro:

(Ocean energy.)

Three Wave Energy Developers Ready to Test Devices in Hawaii

Ocean Energy's Buoy will be towed from Portland, Ore., once construction is complete.
February 13, 2019, by Johanna Knapschaefer, enr.com

Fabrication of a giant barge-like wave energy device is underway in Portland, Ore., in preparation for testing in Hawaii this summer. The hull for the 125-ft-long by 59-ft-wide, 86-ton OE Buoy—with potential rated capacity of more than 1 MW in electrical power production—is complete. At Portland-based Vigor Marine, crews are assembling and fitting the device and installing the power take-off system, expected to take up to 10 weeks. Once complete, the buoy will be towed from Portland to Hawaii for 12 months of testing beginning this summer at the U.S. Navy Wave Energy Test Site, says John McCarthy, chief executive officer at Ocean Energy, based in Ireland. The $12-million project will be connected to the grid at the Navy site, he says. When seawater enters the submerged chambers of the buoy, it forces air through a turbine. As the water recedes, it creates a vacuum and the turbine continues to rotate in the same direction, creating electricity.

Two other wave power systems are scheduled to be tested this year at the Navy site. Columbia Power will test its $3-million dataRAY scalable low-power wave energy converter, and Oscilla Power plans to test its 100-KW Triton C, a full-scale multimode point absorber wave device. Oscilla is also developing a 30-ft by 20-ft utility-scale Triton wave energy converter that will be three times the size of the Triton C. Its investment in both projects is $20 million, says Tim

Mundon, Oscilla Power chief engineer. The concept for Oscilla's technology involves a float that moves vigorously in the waves below a ring-shaped float that resists its motion. "The relative motion of those two bodies is what generates power," says Mundon. Once construction is finished on the Triton C this fall, the device will be shipped to Hawaii, says Mundon. After testing, the team plans to deploy it offshore of a remote community in Washington state. Testing the Triton C for a year in Hawaii waters is a step toward commercialization, says Mundon. "After we demonstrate that success, we would look to be selling devices based on that system ... taking the learning during deployment and evolving the system so it's better."

The Energy Dept. recently awarded $25 million to help further develop marine and hydrokinetic projects. "This is the best funding year ever," says Tim Ramsey, DOE program manager for marine and hydrokinetic. "It's been a few years since we've had big in-water tests. We're very excited." Six ocean energy converters, two turbine designs and three control and power take-off systems are receiving awards from DOE, as well as a project that will help with permitting for a total of 12 projects. The DOE estimates there are 25 tidal ocean energy and 50 wave energy companies in the U.S. The latest DOE nationwide assessments identify up to 1,400 terawatt-hours of potential wave and tidal generation per year. One terawatt-hour of electricity is enough to power 85,000 homes.

"Many developers are now exploring smaller-scale solutions individually tailored to particular site conditions or local grid constraints," says Ramsey, "and there is a growing realization that there is no one size fits all in terms of harnessing the ocean's power." Despite years of research and tests, there are no commercial deployments in the U.S. of marine hydrokinetic systems. The marine environment makes deploying a system more difficult and expensive. Still, if successful, wave and other hydrokinetic energy could have advantages over other forms of renewable power such as wind or solar. "For ocean wave power, there are benefits in terms of energy density, variability, forecastability and location relative to urban centers," said Ted Brekken, an energy systems professor at Oregon State University, in an email exchange. "The energy in waves is very dense (for example, 30 kW per meter). It also doesn't change much from minute to minute, thus having low variability. And the wave climate can be forecasted pretty well up to a few days in advance." Such power is also close to population centers, and tidal power has the advantage of accuracy in forecasts, he added.

(Why is hydro left out?)

California tops 2020 goal of 33% renewable energy

February 26, 2019, ieefa.org

California has passed its 33% renewable energy target two years before the 2020 deadline. The state's next renewable milestone is at 44% by 2024, a 33% growth in just over five full years. The California Energy Commission estimates that 34% of the state's retail electricity sales in 2018 were provided by renewable energy sources eligible for its renewable portfolio standard (RPS). This definition notably excludes the state's large hydroelectric plants. The report notes that in 2018, solar represented the largest portion of renewable generation serving California's electricity load, at almost 12% of all electricity. Broadly, in the past five years large-scale solar generation has increased nearly five-fold, while behind-the-meter solar resources increased approximately 310%. As well, the state expects it will soon achieve the goal of 1 million solar roofs, with an estimated 958,000 solar systems installed. A total of 19 GWac of solar power has been installed in the state, including behind the meter capacity. In total, the state had installed 30.8 GW of renewable capacity by December 31, 2018. Of interest, large hydroelectric facilities, generally defined as 30 MW or larger, with some exceptions, are not eligible for the RPS in California, therefore generation from large hydroelectric facilities is not included in this calculation. The report notes that in 2017, large hydroelectric represented nearly 15% of California's electricity generation.

(This would be a trophy for dam removal proponents.)

State environmental group wants old Scott Dam on Eel River removed to help salmon and steelhead

By GUY KOVNER, THE PRESS DEMOCRAT, March 16, 2019, pressdemocrat.com

A state environmental group is calling for the removal of an old dam on the Eel River, contending it threatens the future of protected salmon and steelhead while acknowledging it is a key part of the North Bay's water supply. Scott Dam, a 138-foot concrete dam erected in 1922, is one of five aging dams California Trout asserts are "ripe for removal" to benefit their natural surroundings and communities. The nearly 50-year-old nonprofit known as CalTrout said in its report, "Top 5 California Dams Out," the Eel River represents "perhaps the greatest opportunity in California to restore a watershed to its former abundance of wild salmonids."

Scott Dam, located in Lake County's portion of the Mendocino National Forest, has been a longstanding target of other groups, including Friends of the Eel River, who want steelhead, coho and Chinook salmon to swim freely within the 288 miles of habitat in the Eel watershed blocked by the dam. The environmentalists see a "unique opportunity" to achieve their goal, as California's largest utility PG&E, which has owned the dam as part of a small hydropower project since 1930, has filed Chapter 11 bankruptcy and abandoned plans to sell or seek relicensing of the project that diverts 20 billion gallons of water a year from the Eel to the Russian River at Potter Valley.

Eel River interests have considered the diversion a form of theft, while the water is critical to towns and ranches on the upper Russian River from Potter Valley to Healdsburg and part of the water supply for 600,000 residents in Sonoma and Marin counties. How the future of the Potter Valley Project will play out over the next 18 months to two years is unclear, but it appears likely to result in either decommissioning or relicensing of the project, which includes a small powerhouse and two Eel River dams. The bottom line is either PG&E or a new owner of the project may face a choice between paying more than $90 million for a fish ladder at Scott Dam or about $70 million to remove it.

North Coast Rep. Jared Huffman, D-San Rafael, and CalTrout both say federal officials are likely to require "volitional fish passage" at Scott Dam, enabling the threatened salmon and steelhead adults to swim freely to their spawning grounds and juvenile fish to get out to the Pacific Ocean. "There's no way around it," Huffman said. The National Marine Fisheries Service, under federal law, has the authority to require fish passage at hydropower projects that are either changing hands or shutting down, said Josh Fuller, an agency biologist based in Santa Rosa. Fuller, who is involved in process, declined to name a preferred fate for the dam but said it should ensure the dwindling number of Eel River fish are "on a recovery trajectory." "We're going to have to have some sort of fish passage at the facility," he said. There are numerous ways to accomplish it, including trapping fish and trucking them around the dam, but Marine Fisheries favors volitional passage because it involves "less human intervention" in the fish population. Fuller said.

"It's fair to say the status quo will not work," he said. Darren Mierau, CalTrout's Arcata-based North Coast director, said the cost difference supports removal of Scott Dam, noting an engineer's report to PG&E last year that estimated the fish ladder cost at $55 million to $93 million.

Five dams CalTrout wants removed

California Trout, a nearly 50-year-old environmental nonprofit, cites five of the state's more than 1,400 sizable dams as "ripe for removal."

Scott Dam

Built in 1922 on the Eel River in Lake County's portion of the Mendocino National Forest, the 138-foot Scott Dam impounds Lake Pillsbury, a popular recreational area, and is part of a hydropower project that owner PG&E has abandoned, opening the door to removal as part of a decommissioning process. The dam blocks off the river's upper watershed to threatened salmon and steelhead.

Matilija Dam

Completed in 1947 on a creek in the Ventura River watershed north of Ojai, 163-foot Matilija Dam impounds a reservoir almost completely filled with sediment. Targeted for removal in 1998 but with no funding approved, it remains a barrier for endangered Southern California steelhead, which number about 500 fish.

Searsville Dam

Built in 1892 on a creek near Stanford University in San Mateo County, 65-foot Searsville Dam blocks the spawning passage for Central California Coast steelhead, a threatened species. The dam's reservoir is nearly filled with sediment, and the non-potable water is mainly used to irrigate the Stanford campus.

Rindge Dam

Located on Malibu Creek about 3 miles from the coast in Los Angeles County, 100-foot Rindge Dam was built in 1924 by the Rindge family and filled with sediment in less than 30 years. It was decommissioned in 1967 and subsequently approved for removal, but the cost of hauling away 276,000 cubic yards of impounded sediment remains an obstacle. The dam thwarts migration of endangered Southern California steelhead.

Klamath Dams

Four aging hydropower dams on the Klamath River in Northern California and Southern Oregon are slated for removal in 2021 at a cost of up to $450 million and with support from more than 40 organizations. It would be the largest dam removal project in the world, restoring access to more than 300 miles of habitat for salmon and steelhead. The report by Mead & Hunt, a Sacramento engineering firm, concluded the "most feasible and cost-effective fish ladder design would be challenging to build, complicated to operate, very costly, and would have uncertain effectiveness." The report was marked "confidential," but is readily available on the Internet. A different engineer's report last year to Sonoma Water put the cost of removing the dam at $71.5 million. "We feel that removal of the dam is the best alternative," Mierau said. "Now that PG&E has abandoned the project, it just makes sense." PG&E notified the Federal Energy Regulatory Commission in January that it was essentially surrendering the project that generates 9 megawatts of power, roughly 0.1 percent of the utility giant's 7,700-megawatt total. PG&E intends to operate the Potter Valley Project until it is relicensed or decommissioned, said Brandi Merlo, a spokeswoman for the utility. If no new operator comes forward, PG&E expects FERC will order it to officially surrender the project along with a decommissioning plan. Either way, she said, all stakeholders — including water users, environmentalists and Native American tribes — would have a say during FERC's determination of what happens to the project. Merlo said "modifications to Scott Dam" could result from the process, but it is "far too premature to speculate on any potential outcome."

FERC has set an April 14, 2020 deadline for proposals to acquire a new license, noting that if none are submitted PG&E will be advised to file an official surrender application. The federal agency's website said the application should include a decommissioning plan that can allow project facilities to remain in place for other uses or their removal and site restoration. Meanwhile, an informal 21-member stakeholders' committee convened by Huffman has been working for more than a year on a plan that balances the need to improve fish passage on the Eel River with the continued diversion of water to the Russian River. The committee includes representatives of PG&E, CalTrout, Friends of the Eel River, Sonoma, Mendocino, Lake and Humboldt counties, state and federal agencies and three tribes. Huffman said the panel's goal is to craft a "two-basin solution" that could include removal of Scott Dam without cutting off water to people "who've been

using it for 100 years." Dam removal would result in a "run of the river" hydro project with wet weather flows on the Eel diverted through the Potter Valley Project's pipeline to the powerhouse and into Lake Mendocino, the reservoir near Ukiah. It could conceivably include a long-planned raising of the reservoir's level to hold more water, Huffman said. The congressman has not endorsed removal of the dam, but said in an interview that the fish ladder "may not be a great solution." Huffman said it is "highly unlikely" the status quo will continue, and that "nobody has a slam dunk to have their interests met."

"We're fully on board with it," CalTrout's Mierau said, noting that his solution includes removal of Scott Dam with a restored river channel in its place. The Potter Valley Project started in 1908 with the 90-foot Cape Horn Dam erected on the Eel River, forming a small reservoir that diverted water to the powerhouse built to provide Ukiah with electricity. Operators soon realized the powerhouse couldn't run in the summer because of a lack of water, so the larger Scott Dam was built 12 miles upstream in 1922 to provide a year-round water supply. The water was essentially a side benefit from the electricity, but it transformed arid Potter Valley into an agricultural powerhouse that produces $34 million worth of wine grapes, cattle and other products annually. The committee's water supply working group has determined that a seasonal water diversion is sufficient to keep Lake Mendocino from going dry, Mierau said. "Everybody was dedicated to making an effort to find the Potter Valley Irrigation District the water it needs," Mierau said. That might require developing water storage capacity in the valley or pumping water up from Lake Mendocino, he said. "There has to be a two-basin solution," said Janet Pauli, a Potter Valley rancher and irrigation district board member who serves on Huffman's committee of stakeholders. But she's not sold on the run of the river concept because there are too many unanswered questions, including how the 7,000-acre valley would be assured enough summertime water and how climate change may affect the watershed. "At this point in time, there's not an alternative that gives us confidence we can sustain the quality of life we have," she said. "I think it's premature for us to really discuss removing Scott Dam at this time." Potter Valley would be the first place impacted by a significant cut in Eel River water diversions to the Russian River, but only because "we're at the top of the watershed," Pauli said. The famed Alexander Valley grape growing area of northern Sonoma County, among others, depends on the water, she said.

San Francisco-based CalTrout, founded in 1971, says it is "dedicated to solving California's complex resource issues while balancing the needs of wild fish and people." David Keller of Petaluma, a director of the Friends of the Eel River, said the run of the river plan is "a very promising solution." His nonprofit has been pushing for removal of Scott Dam for more than 25 years and sees the end of PG&E's operation of the project as an opportune time for that to happen. The dam is a "white elephant," he said, part of a system that no longer produces profitable electricity and is essentially a "water transfer project." A 2017 report commissioned by CalTrout and conducted in collaboration with the UC Davis Center for Watershed Sciences cited the Eel River as a "stronghold" to be managed in perpetuity with the "highest priority to protect salmonid diversity and production."

Historically, the Eel River supported spawning of more than a million salmon and steelhead, according to a 2010 report by the UC Davis Center for Watershed Science. The average run is now about 3,500 fish, a 99 percent decline, according to the report. Biologists are attempting to estimate the number of adult fish in the river. Only 95 Chinook salmon and 112 steelhead have made it to a point near Scott Dam since October. Removal of Scott Dam would eradicate the reservoir behind it, Lake Pillsbury, a 2,000-acre recreational haven within Mendocino National Forest. Few people live year-round on the lake, a primitive area replete with bears, mountain lions and bobcats, a herd of tule elk plus eagles and ospreys circling over the water. It's an hour drive to Potter Valley and 90 minutes to Ukiah, the nearest shopping area, and there is no electricity. But in the summer, the lake draws thousands of people for camping, fishing, hiking, boating and waterskiing, while the Soda Creek Store on the lake's west side sells $10,000 worth of ice, said Edie Uram, who has run the store with her husband, Nick, for 30 years. Frank Lynch, a Cloverdale-area resident whose family has leased a cabin at the lake since 1947, said he's concerned the permanent and part-time residents — numbering close to 600 — are being ignored

in the deliberations over Scott Dam's future. "Obviously, we're being self- protective," he said. "We love our lake." Lynch, who is president of the Lake Pillsbury Homesite Association, said he has tried, without success, to gain a seat on the stakeholders' committee. "There needs to be a recognition there is a community here," he said.

Water:

(Too much water.)

Deadly, Historic Midwest Flooding Threatens Ericson Dam, Nuclear Plant in Nebraska

By Pam Wright and Ron Brackett, 3/14/19, weather.com


Spencer Dam

Flooding Continues in Plains, Midwest as Snow Melts Meteorologist Domenica Davis has the latest on the flood threat from snowmelt that could cause flash flooding in the Plains and Midwest.

At a Glance

- New evacuations were ordered overnight in Minnesota and Wisconsin.
- A Nebraska farmer was killed trying to rescue a stranded motorist.
- A Nebraska nuclear plant is threatened.
- A 'compromised' dam forced evacuations along the Niobrara River.
- A third of the 24,000 residents in Norfolk, Nebraska, were ordered to evacuate Thursday.

Video here: https://www.1011now.com/video?vid=507145112

(More Midwest flooding,)

WATCH: Lanesboro Dam water flowing heavily after rain and snow melt

March 14, 2019, myfox47.com


Lanesboro dam

LANESBORO, Minn. (FOX 47) – Water is flowing strong in the Lanesboro dam as of Thursday morning. People are keeping a close eye on the water flow after the recent storms have caused multiple areas of flooding. During the 2017 Special Legislative Session, the legislature granted the City of Lanesboro $4,000,000 for the repair of the Historic Stone Dam. The dam was building in 1868 and is one of the only six gravity arch dams left in the U.S.

(Water, water everywhere.)

Flooding in the Midwest Is Causing Dams to Fail

By Jeanette Smith, March 15, 2019, guardianlv.com

Heavy rains and melting snow are causing significant flooding across the Midwest. One man is dead, and the flooding is threatening a Nebraska dam and nuclear power plant. The heavy rains and the melting snowpack are flooding waterways to historic levels. On Thursday, March 14, 2019, a Nebraska farmer was killed after the tractor he was using to help a stranded motorist was

carried away by the flood waters. The Omaha World-Herald reported that the incident occurred at Shell Creek near Columbus in eastern Nebraska.

On Friday, March 15, 2019, a portion of Union Dike in Valley, Nebraska, failed. It triggered a flash flood emergency. Residents in the area were encouraged to evacuate. Ericson Dam in north-central Nebraska is currently at a high risk of failing. The Cedar River is continuing to rise, threatening the stability of the dam. Officials in Boone County, downstream from the dam, is also in danger of imminent failure, according to Boone County News. Both agencies are warning residents in the area to seek higher ground. A utility company in Nebraska placed sandbags around a nuclear power plant threatened by the flooding, on Thursday, as the Missouri River continues to rise, according to the Omaha World-Journal.

Spokesman for the Nebraska Public Power District, Mark Becker, said in an interview with the newspaper that if the river rises to 45.5 feet over the weekend, the Cooper Nuclear Station, which accounts for 35 percent of NPPD's power, will have to be shut down due to the flooding. Becker stated that should the plant be shut down, DPPD will be able to obtain power elsewhere, and they do not expect the closure to lead to outages. On Thursday, DPPD lost a small electrical plant when the Spencer Dam failed at the Niobrara River. The failed dam caused a large ice floe to jam a hold in the building. Workers inside the electrical plant were not injured. Additionally, the dam failure forced an evacuation of dozens of residents along the river as flooding continues to be a threat. On Thursday morning, the Know County Sheriff's Office posted a notice on Facebook warning residents that the dam had been "compromised." The Nebraska State Patrol tweeted a photograph that showed a bridge on Highway 281 over the Niobrara River south of the dam washed away.

(Flooding throughout the Midwest.)

Shoto Dam Area Residents Being Evacuated Due to Flooding

By: McKenzie Konop, Mar 15, 2019, wearegreenbay.com

SHOTO, Wis. (WFRV) - Evacuations are underway due to flooding at Shoto Dam. Manitowoc County Emergency Services Director Jamie Aulik said the Shoto Dam in the community of Shoto (near Two Rivers) is flooding because of an ice jam north of the dam. People in the immediate area are being evacuated by the county.

In May of 2018 there was a flash flood warning at the Shoto Dam. A voluntary evacuation was placed for residents in the area as emergency crews evaluated two dams along the West Twin River near the Shoto Dam. The order was put in place over concerns the flood waters from the West Twin River spilling over the Shoto Dam's spillway would erode the dam and cause it to burst, but luckily the flooding did not happen. Local 5 will keep you updated on air and online as the story continues to develop.

Other Stuff:

(Here's where your power comes from.)

2018 Electric Generating Capacity (United States): U.S. Environmental Information Administration

Notes Role of Natural Ga

By Mitchell, Williams, Selig, Gates & Woodyard, P.L.L.C., 3/15/19, jdsupra.com

Download PDF here: https://www.jdsupra.com/legalnews/2018-electric-generating-capacity-78975/?

The United States Energy Information Administration ("EIA") published a March 11th report addressing 2018 electric generator inventory of utility-scale generation. The EIA states that utility-scale additions in 2018 in the United States primarily consisted of:

- 62% Natural Gas (90% of the added capacity is stated to have consisted of combined-cycle generators)
- 21% Wind (noting Texas, Iowa, and Oklahoma added a combined 4.0 gigawatts of wind capacity)
- 17% Solar Photovoltaic (60% of the additions were incurred in California, Florida, and Oklahoma)

The remaining two percent of additions are stated to have originated primarily from hydroelectric and battery storage capacity. As to aggregate numbers, the report notes that 31.3 gigawatts of generated capacity were added in the United States in 2018. Further, 18.7 were retired.

The 2018 annual capacity additions are described as the largest since 2003.

A link to the report can be found here: https://www.eia.gov/todayinenergy/detail.php?id=38632

(Renewables get the headlines unless they're hydro.)

It's Wednesday, March 20, and solar and wind power has quintupled in a decade.

grist.org/beacon. 3/20/19

The amount of renewable electricity generated in the United States has doubled in the last 10 years, according to number-crunching out Tuesday from the U.S. Energy Information Administration. And as impressive as doubling in a decade is, it understates the case. That's because about 90 percent of that growth came from wind and solar: 57 million megawatt hours in 2008, and 301 million megawatt hours in 2018 — increasing more than fivefold in a decade.

In all, some 17.6 percent of the country's power now comes from renewables — 6.9 percent of that comes from hydroelectric dams, 6.5 percent from wind, and 2.3 percent from solar power.

We still have a long way to go. But consider this: If renewables sustain this rate of growth, the United States would be roughly on track to get all of its electricity from carbon-free sources by 2050. But that's a pretty big "if." — *Nathanael Johnson*

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