

# Some Dam – Hydro News™ And Other Stuff



**Quote of Note:** *“Even if you’re on the right track, you’ll get run over if you just sit there.” -- Will Rogers*

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**“Good wine is a necessity of life.” - -Thomas Jefferson**  
**Ron’s wine pick of the week: 2011 Fess Parker Winery Syrah & Shiraz (Other than French) "Santa Barbara County"**  
**“No nation was ever drunk when wine was cheap.” - - Thomas Jefferson**



## **Dams:**

(So is the workforce in dams getting older!)

### **Hoover Dam is solid, but its workforce is aging**

lasvegassun.com, March 27, 2014

Boulder City, Nev. (AP) — Hoover Dam has been showing its age lately, and the problem can't be fixed with fresh concrete or new equipment. Roughly two-fifths of the workforce at the federal facility will be eligible to retire within five years, leaving the Bureau of Reclamation scrambling to recruit and train skilled workers while keeping one of the nation's most important water and power facilities operational. "It's certainly something we're concerned about," said Terry Fulp, who heads up the bureau's Lower Colorado River region. "We are an aging workforce. There's no doubt about it." Interior Secretary Sally Jewell highlighted the problem in a December speech to Colorado River water users meeting in Las Vegas. Jewell said she noticed something unusual during a tour of Hoover Dam a few months earlier: The control center for Hoover, Parker and Davis dams was being operated by two men, the youngest of whom was her age. "I'd like to say that was a good thing, but it really isn't very good," the 58-year-old Cabinet secretary told the Las Vegas Review-Journal (<http://bit.ly/1hTxGGx>). "The older one had retired and was brought back

as what we call a returning annuitant. Lives in Alabama. Flies back once a week to take his turn running Hoover Dam. "That's not so good. We need to make sure that we are back-filling." Fulp said the problem is "Reclamation-wide," and bureau officials saw it coming as far back as 2000. That's when they launched a four-year apprentice program at Hoover Dam and elsewhere to head off personnel shortages in key jobs such as power plant operator, power system electrician and hydroelectric engineer. Fulp said four people graduated from the program last year and six more are enrolled this year, but it isn't enough. "We probably need to double that," he said.

### **A ROCK AND A HARD PLACE**

As of December, 140 of roughly 800 employees were eligible to retire from their jobs in the bureau's Lower Colorado Region, which runs the length of the river from downstream of Lake Powell to the U.S.-Mexico border. Hoover Dam's share of that number was 40 retirement-eligible workers out of a total workforce of about 250, Fulp said. But the real problem isn't retirement; it's retention. Fulp said workers used to stay with the same employer for their entire careers, but those days appear to be over. Changes to the retirement system have made it easier for employees to jump from job to job, and private-sector competition makes it difficult for the Bureau of Reclamation and other federal agencies to keep people. "We don't pay as well," Fulp said. Young workers "get trained up, stay for a few years and go somewhere else." Fulp said Hoover Dam recently lost a promising young engineer to a much better-paying job outside the government. "We really couldn't offer him enough to keep him." And changing that is no easy task. Though Hoover Dam operations are funded by the sale of power generated by the facility, employees there are still subject to salary ranges and job descriptions set by federal regulations. "We don't have the authority" to pay more, Fulp said. "It would literally take an act of Congress." Some new skilled employees are recruited directly from two-year technical schools, but one of the bureau's best sources of trained workers is the military, Fulp said. Locally, the agency also has established a "pipeline" to the University of Nevada, Las Vegas that has provided six employees for the agency's river operations office in Boulder City. A 25-year bureau employee, Fulp is part of the old guard. Now 60, he is among those able to retire in the next five years, though he plans to keep working beyond his eligibility date. "I'm feeling about 50 most days," the regional director said with a laugh.

### **DAM FAMOUS WORKPLACE**

Hoover still benefits from being Hoover. The chance to work at arguably the nation's most iconic dam is definitely a draw for a certain kind of worker, Fulp said. "We still have people, including me, who when we walk in we're amazed by it every time," he said. Rob Skordas, area manager for the bureau's Lower Colorado dams office, said Hoover's proximity to a major city also helps to attract job candidates. He went through the bureau's apprenticeship program at Grand Coulee Dam, which is a larger facility than Hoover but can be a tougher sell to employees because of its location in a remote corner of Washington state, 100 miles from the nearest metropolitan area. "If you're a guy who likes to hunt and fish, you might like it just fine. But if you have a wife who wants to go shopping, it can be less appealing," he said. It was a combination of convenience and prestige that drew the control center worker Jewell spoke about, the one who flies in from Alabama. Reclamation spokeswoman Rose Davis said the man didn't want his name used, but she said he told her he gets a kick out of working at one of the most famous structures in the world. The man retired from the Tennessee Valley Authority in 2000 after 33 years, then promptly returned to work there as a contractor. Five years later, he moved to the bureau's Grand Coulee Dam. Six years ago, he landed at Hoover Dam, where the weather is better than in Washington state and an airport is more conveniently located. Davis said the man works three or four 12-hour shifts a week in the dam's tightly secured control center, and flies home to Alabama on his own dime a few times a month. Fulp said that level of dedication is not unusual at Hoover Dam. "It really is about public service," he said. "We have two of the most important commodities we need as human beings: water and power. We get to work in both of them." But as rewarding as that work can be, it's simply not enough anymore to keep employees from looking for better opportunities someplace else. "I think we have to adjust to this new world where people are a lot

more mobile," Fulp said. "It's just different now. You've got to train a lot more people because you just aren't going to keep them."

(This a different slant on the subject!)

## Letter - Talk of breaching Snake River dams a red herring

union-bulletin.com, March 21, 2014

I understand why Idahoans want to breach the Lower Snake River Dams. In "The Snake River, Window to the West" (1991), Tim Palmer traced the Snake from its headwaters in Wyoming 1,076 miles to the mouth near Burbank, Wash. The Snake is wild and free above Jackson Reservoir, but there the pristine river ends. Jackson Lake was dammed for irrigation use in 1905, and taken over by the Bureau of Reclamation in 1907. Except for flows too high to capture in Jackson, Palisades, American Falls, Minidoka and Milner reservoirs, the entire Snake is diverted onto southeastern Idaho farms. The Snake is dry below Milner Dam most of the year. The Lost River flows from the Saw-toothed Mountains under lava fields and restores the Snake at the Thousand Springs where irrigators, fish farms and fish hatcheries divert water. Downstream, Upper Salmon Falls, Lower Salmon Falls, Bliss and C.J. Strike reservoirs store water for Idaho farms. From C. J. Strike to Brownlee Dam, the Snake isn't dammed, but the Owyhee and Malheur in Oregon, and the Boise, Payette and Weiser rivers in Idaho are. Brownlee, Oxbow and Hells Canyon dams provide Idaho Power Co. generation.

Below Hells Canyon are Lower Granite, Little Goose, Lower Monumental and Ice Harbor dams. Of 1,076 miles of the Snake River, 508 miles are impounded by major dams, two thirds of those in Idaho. More dams impound Idaho and Oregon tributaries for irrigation. According to Idaho law, human use, stock water and irrigation were the only beneficial uses of water. Hydropower was recognized later, but most early dams didn't have generators. Fish, wildlife and human recreation didn't count. Irrigation water returns to the Snake warmed and loaded with silt, fertilizers and pesticides. Much of the silt settles in Brownlee, but more irrigation occurs in the Salmon and Grande Ronde valleys. Water reaching Lewiston is warmed and loaded with silt, pesticides and fertilizers. The Clearwater adds cool water from Dworshak Reservoir, but according to irrigators, any water that reaches Lower Granite Reservoir is wasted. Over 3 million salmon are expected to return to the Columbia in 2014 with the U.S. Army Corps of Engineers' dams in place. That is far below the 12 to 16 million that returned when all the Snake River habitat and water was available for salmon. Breaching the Lower Snake River dams is a red herring used to keep attention off Idaho dams and water. - John McKern, Walla Walla

(Duke seems to be under a magnifying glass!)

## DENR officials examining crack in Moncure coal ash dam

By Mark Binker, 3/20/14, wral.com

Moncure, N.C. — Environmental regulators and Duke Energy officials are responding to reports of a crack in an earthen berm holding a coal ash pond back from the banks of the Cape Fear River in Moncure, officials with the Department of Environment and Natural Resources said Thursday. Duke officials reported the crack at 4 p.m., according to a new release from the department. No water was flowing through the earthen dam, said Steve McEvoy, state dam safety engineer with the state Division of Energy, Mineral and Land Resources.

This the same dam where, earlier in the day, DENR officials cited Duke Energy for illegally pumping water into a nearby stream in order to carry out maintenance on the pond.

According to a DENR news release:



*"Staff members from the Division of Energy, Mineral and Land Resources are driving to the facility to determine the cause of the crack and to determine whether the crack is a threat to the integrity of the dam and what can be done to fix the crack.*

*"From our first reports from the utility and based upon photographs, the dam does not appear to be in imminent danger of failure," McEvoy said. "The crack doesn't look like it has progressed deeply into the downstream face of the dam."*

*"The dam is considered a high hazard dam because of the potential environmental damage if it were to fail. The dam is part of a coal ash impoundment, which was constructed in 1985 and is used to impound coal ash, which is waste generated when coal is turned into electricity.*

*"An on-site canal that is on the west side of the dam eventually flows to the Cape Fear River."*

No home or roadways are in the path of where water would flow from the dam if it failed. Late in the day, Gov. Pat McCrory weighed in the crack.

"This is the latest in a series of troubling incidents at Duke Energy facilities over the past few months, and it's time for Duke Energy to come out of the shadows and to publicly address this growing problem," McCrory said. "Initial reports show that the dam does not appear to be in imminent danger of failure. We are going to continue to enforce the law and take appropriate action to address this situation. We need an explanation from Duke Energy as soon as possible – not only to us, but to the people of North Carolina."

*(What's more important the water or a safe dam? With a safe dam you assure the future of safety and water!)*

### **California drought dilemma: Drain Anderson Reservoir to make dam safe in earthquakes?**

By Paul Rogers, mercurynews.com, 03/20/2014



Morgan Hill -- As California's historic drought worsens by the day, Silicon Valley's main water provider faces a difficult choice: Risk catastrophic flooding if a major earthquake strikes its largest dam -- or drain billions of gallons of water from the reservoir behind it to make repairs. "When I heard this, I said, 'Are you kidding? They want to drain it in a drought? Are you crazy?'" said Lynne Meyer, a Morgan Hill resident who lives near Anderson Dam. Santa Clara Valley Water District officials, however, say they have little choice but to drain Anderson Reservoir: State and federal officials have ordered that the dam must be seismically retrofitted by 2018 -- and to meet that deadline the work must start next year. "The most important thing we are concerned about is public health and safety," said Katherine Owen, a deputy operating officer at the district. "We live in a seismically active area. We want to make sure that residents are safe -- drought or no

drought. That's first and foremost." **While the timing couldn't be worse, the dilemma is a familiar one in an earthquake-prone region.** From aging dams to the Bay Bridge to the Hetch Hetchy water system, key landmarks built generations ago no longer meet modern seismic standards and must be strengthened or replaced so they don't collapse in the next big quake. In 2009, the Santa Clara Valley Water District released engineering studies showing that a 6.6 magnitude quake on the Calaveras Fault directly at Anderson Reservoir, or a 7.2 quake centered one mile away, could cause the reservoir's 240-foot-high earthen dam to slump and fail. Although the chances of that happening are extremely slim, a complete failure of Anderson Dam when the reservoir is full could send a 35-foot wall of water into downtown Morgan Hill within 14 minutes. The waters would be 8-feet deep in San Jose within three hours, potentially killing thousands.

**When Anderson Dam was built in 1950, scientists thought the nearby Calaveras Fault was inactive.** And water officials once believed that the dam was anchored in bedrock. An engineering firm performing tests required by federal regulators in 2009, however, found that the dam's foundation contains sand and gravel, which could shift in a major quake. **Repairing the dam will cost \$193 million and take three years, Oven said.** The reservoir, scheduled to open to summer boating April 15, is also a key source of drinking water for Silicon Valley, holding more water when full -- 90,000 acre feet -- than all the district's other nine reservoirs combined.

Anderson Reservoir is currently 48 percent full. But it would have to be drained starting in the fall of 2015 so the three-year construction and repair job can be finished by 2018, a deadline set by the State Division of Safety of Dams and the Federal Energy Regulatory Commission. Oven said the water district is working on engineering studies now, and an environmental impact report is due out this summer. She said draining the reservoir will be done over a six-month period and district officials plan to save as much of the water as they can. More than half of Anderson's water will probably be sent to homes and businesses or pumped back into the ground to store in aquifers, she said.

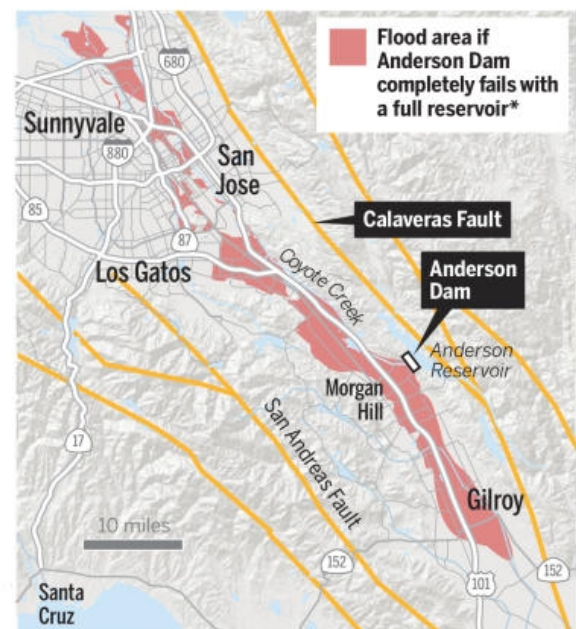
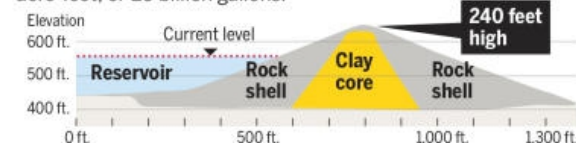
**Still, the notion of draining a major reservoir during a drought when the public is being asked to conserve water is a potential flash point.** "To me, it's more critical to have water at this juncture," Meyer said. "I don't know of anyone who's happy about the idea of draining the lake."

If the drought gets even worse, the water district may ask state and federal regulators by December for a delay, Oven said, although at this point the district is moving forward.

It's unclear if the state would agree to a delay. "We would be flexible if that request came in. But our main concern is public safety," said Christopher Dorsey, a senior engineer with the state Division of Safety of Dams in Sacramento. "There's a window of risk. You're extending that window. We would take that into an account." The agency has already ordered the water district not to fill Anderson Reservoir more than 68 percent full. That reduces the weight of water on the thinnest part at the top of the dam. National experts say dam

### Anderson Dam safety concerns

Because of earthquake concerns, state officials have ordered that the Anderson Reservoir be no more than 68 percent full, or 61,810 acre-feet. The dam's capacity is just over 90,000 acre-feet, or 29 billion gallons.



\*Assuming reservoir were completely emptied  
Sources: Santa Clara Valley Water District, Association of Bay Area Governments, topographic map by ESRI  
BAY AREA NEWS GROUP

safety officials aren't eager to delay key repair jobs, particularly when they involve earthquake risk.

"These regulatory agencies are under tremendous scrutiny and have so much responsibility for public safety," said Mark Kilgore, an engineer with the American Society of Civil Engineers in Washington, D.C.

Anderson isn't the only dam in the Bay Area that has had earthquake issues. In 1979, San Pablo Reservoir, east of Richmond, was drained by the East Bay Municipal Utility District so that the 1920s-era structure could be strengthened. But when more earthquake retrofitting was needed in 2008, the district was able to avoid draining it again by pumping concrete underneath it and building a new buttress on the downstream side. Similarly, Calaveras Dam, on the Santa Clara-Alameda County border, was found to be vulnerable in a major quake. So state regulators ordered repairs, which are now underway and expected to be finished in 2018. The San Francisco Public Utilities Commission decided to build a new dam a few hundred feet downstream from the old one, allowing crews to avoid draining the lake.

But those fixes won't work at Anderson, Oven said. Unlike Anderson, Calaveras is in a narrow canyon where building a second dam is feasible. The water district, Oven said, studied doing the Anderson project underwater but decided it couldn't prove to state regulators that the dam was safe unless it excavates portions of the dam in a dry area to remove the sediments under the structure. "Delaying work like this is a tough call," said Xavier Irias, director of construction and engineering for East Bay MUD. "It may not be the best timing, but they have to put safety as the foremost concern. If an earthquake happens, they are going to look like geniuses."

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(It's time to update the PMP data. This should be done Nationwide!)

### **Dam owners get a reprieve ... of sorts**

**Hefty construction bills will be on hold while the state determines how much rain is too much.**

by Luanne Rife, Mar 22, 2014, roanoke.com

Dam owners facing costly spillway modifications will get a reprieve from safety regulations while engineers calculate just how much rain could possibly fall in Virginia. Currently, Virginia uses data compiled about 40 years ago and includes storms all along the East Coast to determine how much rainfall an impoundment must be able to contain. Del. Kathy Byron, R-Campbell County, sponsored a bill to gather Virginia-centric scientific data. It is just the first step in her quest to ease the financial burden on Virginians, like herself, who live in neighborhoods with small lakes and ponds and million-dollar bills to meet state regulations. She said the new data will be used to reargue the old political question: To what degree should dam owners be required to ensure the safety of those living or driving downstream? Byron and Sen. Tom Garrett, R-Louisa County, sponsored identical bills during the General Assembly session that gained unanimous consent in both the House and Senate and were supported by the state Department of Conservation and Recreation. Seeking precise scientific data is not controversial. "The last time, climate and storm conditions on the entire eastern seaboard were used," said DCR spokesman Gary Waugh. "This would narrow it down to Virginia and be more accurate for the entire state." Several other states have undertaken their own storm analyses to come up with values for what is called Probable Maximum Precipitation, the theoretical greatest depth of rain that is physically possible to fall upon a particular drainage area during a defined period of time. Virginia has used the National Weather Service's PMP for the entire eastern half of the United States.

Waugh said a more precise calculation may increase or decrease the PMP for Virginia, but based on what the other states have found, the outcome is likely to be advantageous to dam owners. How much, though, is questionable.

Byron doesn't expect that the \$400,000 study over the next 18 months will in itself lessen the burden of current dam safety regulations on dam owners. That's why she is preparing to go the next round. Currently, Virginia requires high-hazard dams to withstand 90 percent of PMP. Dams can meet a lower threshold of 60 percent — a storm more intense than Hurricane Gaston, which centered on Richmond in 2004 — as long as they comply with a list of conditions that require

inspections and insurance to cover the damage downstream if the structure does fail. In Botetourt County, Rainbow Forest homeowners plan this fall to finally enlarge the spillway for their dam in order to comply with regulations and refill the lake that DCR ordered lowered several years ago. And in Bedford County, Liberty University is planning to make erosion repairs to a dam at Ivy Lake. Byron's bill, which is awaiting the governor's signature, has a provision that allows dam owners who haven't started modifications to wait until the study is completed. "If a dam owner is getting ready to start construction and puts it off, the language allows them to do it. There are cases where it makes sense," Waugh said. However, dam owners are still liable if a problem occurs; those required to lower their pool would still need to comply, and construction prices could rise. **Given that, Waugh said it would make sense for Rainbow Forest and Ivy Lake to make the repairs since recalculating PMP won't solve their problems.** But for others, Byron seeks regulatory relief. "This is just the first step. This isn't as far as I want to go with it," she said. "I need to do more research as this seems like an overreach of government." **She said lawmakers need to determine a percentage of PMP for dams that would protect the safety of people downstream without unduly penalizing dam owners.** And they will need to look at whether the classification system adopted in 2008 is correct. The change then prompted dam owners to prepare inundation studies. If it was determined that one life could be lost if a dam were breached, the dam was reclassified as "high hazard," kicking in the more stringent requirements. Byron said the effect of that regulation on private dam owners has been tremendous across the commonwealth in prompting costly spillway modifications. **"This is no different than a \$323 million tax on dam owners," she said.**

## Aging Locks and Dams Create Concerns for Companies that Rely on Barges

3/24/2014, by [Steve Banker](#) Contributor, forbes.com

Dana Weber, the CEO of Webco Industries, a tubing manufacturer, is speaking out about her concerns about the ongoing lack of sufficient spending on locks and dams on the U.S.'s inland waterways. Webco, headquartered near Tulsa Oklahoma, was founded in



1969 based on the perceived demand for tubing products across Oklahoma, Louisiana, and Texas. Based on the demand, and the belief that an Oklahoma plant close to their customer base could be cost competitive as long as barges could be used to bring in raw materials, Webco was founded and began shipping in 1970.

**Most of Webco's raw materials originate in the northeastern U.S., although they also receive raw materials from the southeastern U.S. and overseas. Webco has another plant in Pennsylvania, not located near a waterway, that consequently relies on truck – rail for various reasons is not practical – to get most of their raw materials.** These goods come from suppliers located for the most part less than 200 miles away. Despite the much greater distances involved, it is cheaper for the Oklahoma plant to receive raw materials from the Northeast via the Port of Catoosa than it is for their Pennsylvania plant to receive materials from local suppliers. Indeed, Ms. Weber says that Webco saves over \$4 million per year in freight based upon their usage of barges. Over time, the advantage of barge transport has only increased. Truck rates have increased much faster than barge rates, and there have been capacity shortages around securing flatbeds. If anything, Ms. Weber believes, those trucking pressures will increase based on the new hours of service rules.

**Barge moves do require longer lead times.** For Webco the lead times increase from one week to a month with barge, which increases inventory carrying costs. But the freight savings far outweigh inventory carrying costs, especially with the very low interest rates now prevailing. One downside

to the use of barges is that low water levels in late summer and high water levels in the spring can prevent barges from using a waterway. However, Webco has a good advanced understanding of when those events are likely to occur and work with their suppliers to stock up in advance of river disturbances. However, Ms. Weber's greatest concern when it comes to barge is the deferred maintenance and aging locks and dams. Ms. Weber's concerns are not unique. Cargill has been public about their concerns. And the American Association of Port Authorities put out a statement saying that the latest transportation budget proposed in the President's fiscal year 2015 budget "falls well short of the waterside maintenance and modernization needs of this country. Bob Portiss, Port Director at the Tulsa Port of Catoosa, and a Director at the National Waterways Conference, points out that towing service providers are one of the very few industries begging for increased taxes that would then be used to maintain inland waterways. The Inland Waterway Trust Fund is paid for with a 20 cent tax on every gallon of diesel fuel that the towing services industry uses. But the Trust Fund has not collected enough to meet the backlog of work that needs to be done. Bob made the point that "Water transportation is one of the least expensive modes of transportation. It allows US businesses to be competitive." Finally, Ms. Weber points out that the last thing the U.S. transportation infrastructure needs is to shift more products from barges to our highways, which could negatively impact the entire economy due to truck capacity limitations. If anything, the U.S. would get more bang for the buck trying to get more traffic moving by barge.

(Who says they aren't building new dams or at least thinking about it!)

### **New dams in the works at Mount Gilead State Park**

Mar. 26, 2014, Written by John Jarvis, The Marion Star, bucyrustelegraphforum.com

Mount Gilead — A \$6 million project to replace two deteriorating dams in Mount Gilead State Park in Morrow County is among the capital improvement projects in Gov. John Kasich's proposed budgets for fiscal years 2015 and 2016.

The Ohio Department of Natural Resources' proposal is to replace the existing dams with one set of dams, creating one "full lake" from the two lakes that cover about 30 acres in the 180-acre park, which is just east of the village of Mount Gilead, said Pat Davies, Morrow County chief of operations.



John Wisse, ODNR spokesman, said the project at Mount Gilead State Park is "going to be in the next group" of projects addressing dams that do not meet current safety standards.

"We don't have anything specifically on the board at the moment for Mount Gilead, but it's going to be most likely in the next group of projects that come down the pike," Wisse said. "... We're looking at doing an assessment of needs and also proceeding with final design to bring that dam structure into regulatory compliance." Davies said Morrow County officials have discussed improvement needs at the park with ODNR for about a year, adding that local park supporters hope to have public showers installed in conjunction with the safety project. She said the state likely would ask the village to extend wastewater lines to the park for the addition of the showers. The dams at the park are Class I dams, which pose a threat to life downstream from the structures, Wisse said. "Mount Gilead is one of a number of dams that do not meet all the state dam safety standards," he said. "This has been an ongoing issue for a long period of time." He said ODNR is receiving an increasing amount of capital improvement dollars, enabling it to do a growing number of projects such as the one at Mount Gilead State Park. Davies said replacement of the dams is needed to make the area safer from flooding hazards and, "we'd like the state park to be as beautiful as it can be. Taking out one of these dams would make a more beautiful lake and a more usable lake." The park offers picnicking, hiking and fishing. Surveys of



people who use the park's campgrounds indicate campers would stay longer if it had public showers, she said. People staying longer at the park would mean people spending more money locally for supplies and additional entertainment, such as horseback riding, paintball, trap shooting and others activities available in the Mount Gilead area, she said.

(A lot of locks and dams all need work.)

### **\$35 million Marseilles dam repair approved**

NT Staff, 3/26/2014, newstrib.com

The U.S. Army Corps of Engineers will provide full funding for the second phase of the Marseilles Lock and Dam repair project, which will ultimately lead to the project's completion. The Corps announced \$35 million for the repair, the office of U.S. Rep. Adam Kinzinger (R-Channahon) announced. "This project is of vital importance to the people of Marseilles and the region, and its immediate full funding represents a big win in terms of getting the repairs done quickly and efficiently. I thank all the people who worked with my office to make this project a priority, and look forward to seeing the lock and dam fully operational again."

Since the U.S. Army Corps of Engineers released its repairs estimate for Phase II, which includes permanent repairs to the dam, Congressman Kinzinger has made achieving full funding a top priority. "Through official requests to USACE officers and U.S Army Civil Works leaders, Rep. Kinzinger has articulated the importance of the project to the region and people of Marseilles who rely on the lock and dam for commerce and flood protection," his office says.



### **Hydro:**

(Legislation about the obvious!)

### **Hydropower bill steams ahead**

montrorepress.com, March 22, 2014, By Katharhynn Heidelberg Daily Press Senior Writer

Hydropower's "stars are aligning," one proponent remarked after a bill to streamline the regulatory process passed the Legislature. House Bill 1030 on March 19 passed the Senate and is headed to the governor's desk. Rep. Don Coram, R-Montrose, who co-sponsored HB1030 with Rep. Diane Mitsch Bush, said he expects the governor will sign the measure sometime in May, possibly in Montrose or Ridgway. "I think it's a great bill. It provides the opportunity to produce 10 megawatts of energy under renewable energy standards. It's a great deal for where the water flows," Coram said.

(You gotta love the graphic that came with the article!)

### **AMJET Lands Federal Grant**

By Jason Parrott, tristatesradio.com

A potential Keokuk industry is getting a financial boost from the federal government. AMJET Turbine Systems will receive \$1-million from the U.S. Department of Energy to build a full-size version of its micro-hydroelectric turbine.

The company says the size of the turbines will eventually allow them to be placed in a wide variety of waterways.

AMJET is still in line for a \$10-million grant from the Department of Energy, which could allow mass production to get begin. Keokuk and Lee County are each investors in the company.



(This little project is hanging on by a thread against organized opposition. A neighborhood fight!)

### **Hydro foes tell feds city has no intent for plant development**

by Brent Gardner-Smith, Aspen Journalism, March 24, 2014, aspendailynews.com

A group of Aspen property owners fighting the city's hydro plant on Castle Creek filed a document Thursday with the Federal Energy Regulatory Committee that claims the city is failing to make actual progress on its required development application. The property owners told the federal agency that recent public statements made by city officials "show that not only is the city not moving forward toward a development application, it in fact has no current intent to do so, and may never." The claim by the opponents was in response to a six-month progress report from the city to FERC, which was submitted on March 11. Tom and Maureen Hirsch, Dick Butera, Christopher Goldsbury, Bruce Carlson, four corporate entities controlled by Bill Koch, and an organization called Saving Our Streams filed the response to the city's progress report. The landowners are opposed to the hydro plant, and don't actually want the city to make progress on the proposed hydro project. But they are taking an opportunity to tell FERC that the city's statements and actions indicate it is not actually making progress and its current "preliminary permit" should be canceled.

The opponents say FERC has the right to cancel the city's permit if it "does not demonstrate that progress is being made toward a development application." An FERC spokesperson could not be reached for comment. The proposed hydropower plant is estimated to cost \$10.5 million and would supply over 5 million kilowatt hours per year of electricity, or 8 percent of the power the city utility provides to its service area in central Aspen. It would divert up to 25 cubic feet per second of water from Castle Creek and 27 cfs from Maroon Creek. A license from FERC is necessary to build and operate the plant. As part of their claim, the opponents of the city's hydro project point to a statement made in a Dec. 27, 2013 letter to the editor by David Hornbacher, the city's director of utilities and environmental initiatives. "While the city has no plans to move forward with the Castle Creek Energy Center, it is always beneficial to have the public dialogue be accurate," Hornbacher said in his letter. They also point to a January 2013 city staff memo to the city council stating, "council gave staff direction to postpone forward progress on the CCEC." In the same memo, staff said that the recommended March progress report to FERC from the city "merely maintains the current state of the CCEC — neither moving it forward nor backwards." Attorney Paul Noto of Patrick, Miller, Kropf and Noto of Aspen prepared the filing, but declined to comment on it. Noto is also representing the same property owners in a lawsuit in state water court claiming that the city has abandoned its water rights for hydropower in Castle and Maroon creeks, which the city denies. In the filing, he writes "that a careful review of the (city's report to FERC) reveals that the city has undertaken no activities demonstrating progress toward a development application during the last six month period."

Noto claims that the city's current review of its renewable energy options with the National Renewable Energy Laboratory, which is included in the city's progress report, is not true progress. He said the NREL review "is aimed at merely deciding whether or not the city will move forward with the project in light of the 2012 vote in which Aspen voters directed the city not to complete the project." And he told FERC that instead of the NREL review being actual progress, "it is likely just the opposite in that it may well conclude that the city should pursue other more appropriate renewable energy options." As part of its March 11 progress report, the city included 942 pages of exhibits, including a listing of work done since 2008 on the project and many of the briefs from the water rights law suit. Noto said that work on the water rights is also not true progress, but instead is "wholly irrelevant" because "FERC does not even require an applicant to own a water right in order to license a hydropower facility." In response to Noto's claims, Will Dolan, a utilities and communications specialist with the city, said that city's work with NREL does in fact represent progress. "The ongoing NREL consultation represents additional analysis of renewable energy alternatives — including the CCEC," Dolan said, referring to the Castle Creek Energy Center, as the city calls the proposed hydro plant. Dolan also said the work being done by both the city and the plaintiffs in an effort to settle the ongoing water rights case represents progress. "The 'additional study' incumbent to the ongoing water rights litigation also represents further analysis of the CCEC project," Dolan said. "Without question, both activities are key to the hydro project's progress should council direct staff to file a development application in the future."

Dolan also said that city "staff will continue to complete the work necessary to preserve the preliminary permit, and in doing so also preserve council's current and future decision-making authority on the fate of the CCEC project."

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(Excerpts from NHA Today, March 24, 2014!)

### **Views of Hydropower**

Hydropower enjoys a strongly positive reputation as an energy source. Nearly four-in-five Americans (78%) believe hydropower is cleaner than other current forms of energy, and roughly the same number (77%) think of hydropower as an environmentally-friendly resource. Moreover, hydropower is also seen as renewable (74%) and reliable (72%) by nearly three-quarters of Americans.

With all of these attributes there is broad bipartisan consensus that they describe hydropower well – with majorities of Democrats, Republicans and Independents in agreement.

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### **New web site offers global view of small hydroelectric projects**

Published in: Legalbrief Environmental

Date: Tuesday 25 March 2014

Category: Water

Issue No: 0352

It is now easier to access reliable data on small hydropower projects globally following the launch of a web site designed to promote this technology, says a UN body.

According to a report on the SciDev.net site, the UN Industrial Development Organisation and the International Center on Small Hydro Power (ICSHP), a China-based, non-profit body that promotes this form of energy worldwide, launched the site last month. 'The first step is to share knowledge so that decision-makers, stakeholders, investors and local communities can benefit and learn from our resource,' says Liu Heng, the ICSHP's Director-General. The new site includes a map based on three years of data gathering that has 20 regional overviews and 149 country reports. Each report is designed to be small enough to download on a mobile phone, so poorer people without access to computers can get hold of it.

Full report on the SciDev.net site: <http://allafrica.com/stories/201403200216.html?page=2>

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(Free money!)

### **DOE awards energy efficiency, renewable power funding to small businesses**

03/24/2014, By Editors of Electric Light & Power/ POWERGRID International, utilityproducts.com

The Energy Department's Office of Energy Efficiency and Renewable Energy (EERE) awarded \$17 million in Small Business Innovation Research (SBIR) projects to help small businesses in 13 states develop prototype technologies that could improve manufacturing energy efficiency, reduce the cost of installing clean energy projects and generate electricity from renewable energy sources. These projects will include technologies such as wind turbine blades that are easier to transport and use less energy, an electrochromic window technology that can achieve a 30 percent reduction in energy use, and a solar energy system that reduces installation costs and generates power in less time. Supported by EERE, these projects will focus on developing clean energy technologies with a strong potential for commercialization and job creation. Technologies from the 17 projects include:

- **Hydropower:** Based in Keokuk, Iowa, Amjet Turbine Systems LLC will develop lightweight, low-cost hydro turbines that can generate electricity from low-head dams and rivers all over the world.
- **Energy Efficient Heating and Cooling:** Austin, Texas-based Sheetak, Inc. aims to develop a low-cost solid-state heat pump technology that cuts the energy needed to heat water for commercial buildings and homes.

- Electric Vehicles: Headquartered in Rockledge, Florida, Mainstream Engineering Corporation will develop a hybrid electric turbocharger to help charge plug-in electric vehicles faster — providing drivers with more options to save money on fuel and cut carbon emissions

(Should we worry about this in the U.S.?)

### Hydropower needs ‘new climate knowledge’

Flickr/Global Water Partnership, scidev.net, 3/26/14

In a region where on average more than 60 per cent of electricity is provided by hydropower facilities — in contrast to a less than 20 per cent globally — the future of water availability matters. So, this issue dominated the second day of the Conference for Latin America and the Caribbean (LAC): Developing, linking and applying climate knowledge, organised by the World Climate Research Programme (WCRP) that took place in Montevideo, Uruguay last week (17-21 March). The idea that emerged



was to create a “new climate knowledge” for the hydropower sector, one that would help protect hydropower projects from future climate variability, said Sebastian Vicuña, researcher at the Interdisciplinary Center for Global Change at the Pontifical Catholic University of Chile.

Hydropower relies on water, a resource closely affected by climate, and thus it is likely to suffer from the potential impacts of climate variability and climate change, Vicuña said. “If the climate deviates significantly from these conditions there could be potential stresses in already water-tight systems.” He told SciDev.Net that many projects still assume a non-changing climate, basing their operation on climate data from 50 to 100 years ago. But he stressed that climate change has made such assumptions less relevant and this has implications for how hydroelectric systems are operated or developed. “If climate has caused changes in this logic [of how hydropower projects operate], we must modify the criteria and open the possibility of re-evaluating it for shorter periods of 30 years, for example,” said Vicuña. We must “recognise the uncertainty of how the weather is going to be in the future,” and think about short-term models, with scales in years or a few decades when designing hydropower projects. “This is climate informing public policy,” he said. Soroosh Sorooshian, director of the Center for Hydrometeorology and Remote Sensing (CHRS) at University of California, Irvine, in the United States, agreed with this approach. “At least three factors place special stresses and additional uncertainties on planning and development of water resources.” One of them is regional uncertainty resulting from global climate change and the resulting occurrence of more severe events, such as floods and droughts. The other two factors are rapid population growth in many regions of the developing world, and growth in economic prosperity and access to modern amenities resulting in higher water consumption rates. As the international climate talks go to Latin America, Peru, later this year, it will be interesting to see if and how this idea is developed further.

### Ohio city turns to hydroelectric power

By Chelsey Levingston, (Hamilton, Ohio) JournalNews • March 27, 2014, dispatch.com

Hamilton’s \$500 million Meldahl hydroelectric power plant is nearing the end of construction on the Ohio River. Rising to the height of a 10-story building, operators say the plant is one of the largest alternative-energy projects in the Midwest.



## Construction firm hired for hydropower project

March 27, 2014, MRES press release, [journalexpress.net](http://journalexpress.net)

Lake Red Rock — The hydroelectric power plant at Red Rock Dam is a go, Missouri River Energy Services sent this press release moments ago. We will follow up and have a full report in the April 4 Journal-Express. The Boards of Directors of Missouri River Energy Services (MRES) and Western Minnesota Municipal Power Agency (WMMPA) have approved moving forward with the Red Rock Hydroelectric Project and have chosen Ames Construction, Inc., as the general contractor. The hydroelectric plant will be built at the existing Red Rock Dam along the Des Moines River near Pella. With a nameplate capacity of 36.4 megawatts, it will be the second largest hydroelectric plant in the State of Iowa. It will be capable of meeting the electrical needs of about 18,000 homes. At certain times of the year, when water is plentiful, the plant will be capable of generating up to 55 megawatts of power.

“Since we first announced our intentions to build the Red Rock Hydroelectric Project in 2011, we have been working our way through an intense, time-consuming regulatory process with state and federal agencies,” said MRES CEO Tom Heller. Earlier this month, the U.S. Army Corps of Engineers granted the final two approvals needed before construction of the Red Rock Hydroelectric Project (RRHP) can begin. Those approvals were for the 408 process, which is designed to ensure that the project will not impact the Corps’ operations at Red Rock and that the project will be constructed safely, and for the 404 Permit, which covers dredge and fill for the project. MRES is an organization of 61 municipalities in the states of Iowa, Minnesota, North Dakota, and South Dakota. WMMPA will provide financing for the project on behalf of MRES. WMMPA is made up of MRES members in the State of Minnesota and has provided financing for all of the major generating and transmission facilities that MRES uses to serve its member municipal electric systems. Ames Construction Inc., is headquartered in Burnsville, Minn., and has offices in several locations throughout the Midwest, Western U.S., and Canada. Construction of RRHP could begin late this year and the plant could be ready for commercial operation in the second quarter of 2018.



## Water:

### **Water emergency declared in Central Washington**

sfgate.com, March 22, 2014

Olympia, Wash. (AP) — The Washington Department of Fish and Wildlife has issued an emergency declaration to help farmers get irrigation water from behind the Wanapum and Rock Island dams in Central Washington. KNDU-TV reports (<http://nbcnews.to/1oKZYaL>) the emergency declaration will remain in effect until April 30. It applies to Chelan, Douglas, Grant, and Kittitas counties. It comes in response to the discovery of a cracked spillway at Wanapum Dam near Vantage. Some irrigation intake pipes were left above the water line when the Wanapum Pool was drawn down to reduce pressure on the dam. The Wanapum Dam situation also has affected water levels behind the Rock Island Dam near Wenatchee. The Rock Island Pool will be drawn down during flow tests this weekend, which will give irrigators an idea of the water line and flows expected during the coming irrigation season.

(Lots of talk, no action)

### **Congress focuses on dams amid California's drought**

By Kevin Freking, Associated Press | March 23, 2014 | [chron.com](http://chron.com)

Washington (AP) — California's drought has sparked a new push by federal lawmakers to create or expand a handful of reservoirs around the state, ramping up a political battle that former Gov. Arnold Schwarzenegger once referred to as a "holy war in some ways." Government agencies have been studying five major water storage projects for nearly two decades, with nothing to show for the effort so far. Meanwhile, the state's water problems have only grown worse. California has had its third relatively dry winter in a row and court



rulings have mandated that more water be released from reservoirs to sustain fish species in Northern California's delta. At the same time, the nation's most populous state, now at 38 million residents, continues to grow beyond the capacity of a water storage and delivery system that was mostly completed in the late 1960s. This winter is among the driest on record, forcing some communities to ration water and leading farmers to fallow thousands of acres that otherwise would be producing vegetables, fruits and nuts for the nation.

The state Legislature is expected to debate water storage options later this year as it seeks compromise on a multibillion dollar water bond for the November ballot. But California's congressional delegation has provided a jumpstart. Bills proposed in Congress would authorize a number of projects to expand or create reservoirs. Among the projects are raising the dam at Shasta Lake to store more water in California's largest reservoir, creating a new reservoir in the Sierra Nevada along the upper San Joaquin River east of Fresno and damming a valley north of Sacramento. Other storage options include expanding the dams at the San Luis Reservoir in the central part of the state and at Los Vaqueros Reservoir in the eastern San Francisco Bay Area. Authorizing such projects through federal legislation would be a prerequisite for dedicating money to a project in the future. Democratic Sen. Dianne Feinstein said those who oppose new or expanded dams are hoping that doing so will deter growth and development, but it's a losing battle. "Growth comes anyway," she said in a telephone interview with The Associated Press. "Then you don't have enough water." Feinstein acknowledges that conservation also is critical to meeting the state's water needs but said some new or expanded reservoirs must be allowed so more water can be captured during wet years and stored for use during the dry ones. "They have a certain prior, I don't know how to put it, stigma to them," she said of dams. "But this is a different

day now. And it's a day that's been coming for a long time. Somehow, we've got to measure up to it." In California, water often is a shared commodity between the federal government, the state and local users. Feinstein is urging the state Legislature to modify the bond measure on the November ballot to prioritize both water storage and conservation. She would like to see \$3 billion dedicated in the bond to developing storage, with an additional \$2 billion set aside for restoring the Sacramento-San Joaquin River Delta, the heart of California's water-delivery system. Doing so would be intended to appease both farmers and the environmentalists. No doubt there will be opposition. The \$1 billion proposal to raise the dam at Shasta, for example, would flood part of the McCloud River, one of the most picturesque rivers in the state. It also would inundate several sacred sites of the Winnemem Wintu, a small tribe that is not federally recognized.

In general, creating and expanding reservoirs are among the most expensive and environmentally harmful ways to address California's water issues, said Doug Obegi, an attorney with the Natural Resources Defense Council. He said investing in water recycling, storm water capture in urban areas and similar projects provides a greater return on investment. He said he failed to see how the current storage projects would help California's overall water supply, with so many reservoirs already far below their capacity. "It just doesn't add up to a lot of water," he said.

Peter Gleick, director of the Pacific Institute and one of California's leading water experts, said major dam projects "worked fine when there was new water to be had and when we didn't care about the environment. But those days are over." Republicans already have pushed through legislation in the House that would authorize construction for four of the storage projects. But the main thrust of the bill, sponsored by Republican Rep. David Valadao and co-sponsored by every GOP member of California's delegation, would cease the implementation of a lawsuit settlement designed to restore salmon populations on the San Joaquin River. Water dedicated to maintaining fish and wildlife would instead go to farmers and communities who receive water through the federal Central Valley Project. That bill has no chance to pass the Senate in its current form. As an alternative, Feinstein and fellow California Sen. Barbara Boxer, also a Democrat, are pushing legislation that would give state and federal agencies more flexibility to pump water out of the delta to aid farmers, as long as the pumping does not violate the Endangered Species Act. But one aspect of the House bill Feinstein endorses is the call for more major storage projects. "We should have some federal authorization of dam projects that have a positive cost-benefit ratio," she told the AP. The sharpest difference between the House bill and what Democrats seek is that the House version relies strictly on the state to pay for new or larger dams. Democrats say the federal government should help cover some of the costs. Rep. Jim Costa, a Democrat from the Central Valley farming region, said he doubts the projects will get off the ground without federal money. He has sponsored three bills — to authorize expanding the dams at Shasta Lake and San Luis Reservoir, and to build the Temperance Flat dam on the San Joaquin River. Cost-sharing arrangements, which he called crucial to the projects eventually getting built, would be negotiated later. Costa rejected the sentiment that conservation and recycling should be relied upon instead. He said the drought is so severe that every tool is needed. "You cannot recycle in enough quantities to irrigate half the nation's fruits and vegetables," he said. "It's really that simple." He said he believes prospects for more storage are better now because more parts of the state are feeling the pain from the drought. Others are more pessimistic. During a congressional hearing last week in Fresno, Republican Rep. Tom McClintock, who represents a vast district in Northern California, said a "radical ideology" has made its way into California water policy. "Translation: That means these dams will not get built," he said.



## Other Stuff:

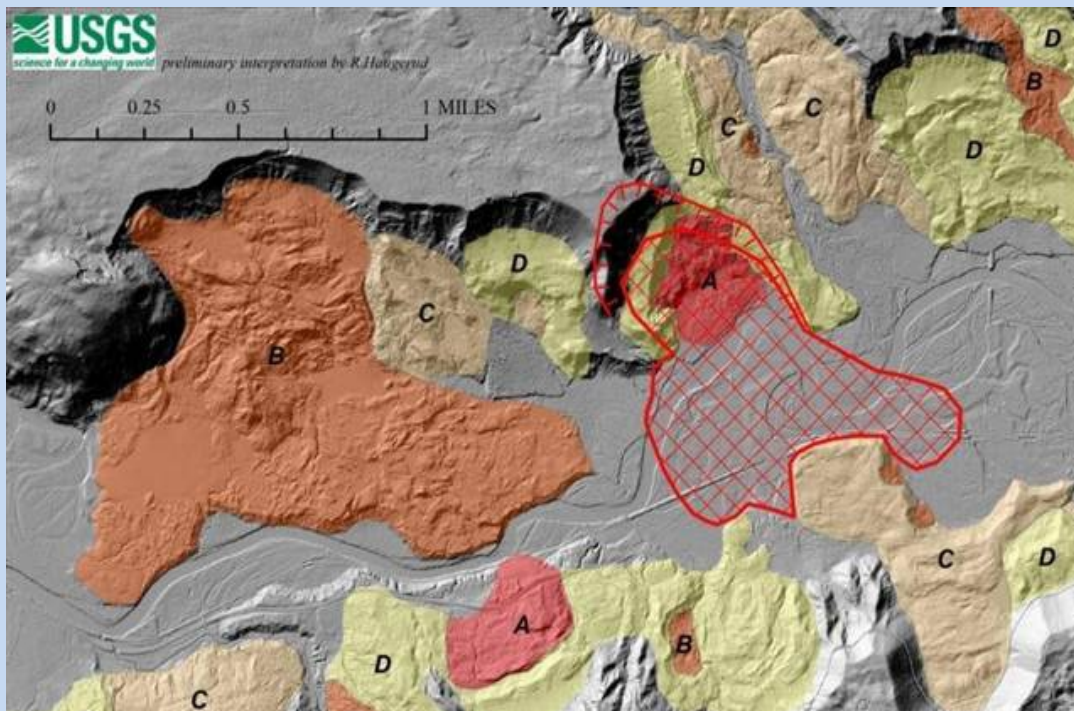
(This article is n eye-opener! Some geotech engineers who are familiar with stuff on dams need to talk to the County and give them some answers!)

### **Double-Barreled Blow: How the Oso Mudslide Went Down**

By Alan Boyle , 3/29/14, nbcnews.com

Almost a week after the catastrophic landslide in Washington state, geologists are filling out their timeline for the double-barreled collapse — and mapping out how previous landslides extensively changed the surrounding landscape. Mud and debris swept down a rain-saturated slope near the town of Oso, Wash., on March 22 — crossing the North Fork of the Stillaguamish River and burying homes and other buildings on the other side. Scores of people are dead or missing. Readings from the Pacific Northwest Seismic Network reveal that the hillside collapsed in two stages: The lower part of the slope gave way at 10:37 a.m. PT, triggering seismic activity that lasted two and a half minutes. That material could have been disturbed and weakened by a landslide that occurred in 2006, Kate Allstadt writes in PNSN's Seismo Blog.

The first collapse let loose a surprisingly fast wave of debris that probably caused most of the damage and deaths, Durham University's Dave Petley writes in the American Geophysical Union's Landslide Blog. It also destabilized the upper part of the slope, which collapsed four minutes later and set off a smaller seismic shock. Smaller landslides continued for days afterward. Was there a seismic trigger for the mudslide? The U.S. Geological Survey says there were no earthquakes in the area on March 22. A few days after the tragedy, a county emergency official suggested that a magnitude-1.1 earthquake on March 10 could have played a role, but seismologists say that wasn't strong enough or close enough to cause a collapse 12 days later. **However, the University of Washington's Bill Steele said the earlier quake could have been**



A USGS map based on interpretation of lidar data shows landslide zones in the area surrounding the March 22 slide, which is indicated by the red cross-hatched area. The zones are color-coded to indicate relative age. Red zones (also marked "A") are youngest, orange "B" zones are older, brown "C" zones are even older, and yellow "D" zones are the oldest. All of the indicated slide zones are younger than 14,000 years, when an ice sheet is thought to have retreated from the area.



"indicative of deformation going on in the hillsides around that area." The area's recent rains played a role as well. The glacial moraine and sand in the soil "can form a slick surface when saturated," he noted.

"It's a nightmare for landslides in this area," he told NBC News. That much is clear in a fresh series of maps issued by the USGS, based on elevation readings that were made using a laser-scanning technology known as lidar ("light" plus "radar"). USGS Computer-processed lidar observations can digitally strip away the vegetation from a landscape, revealing the terrain that lies beneath. The USGS lidar map, based on an interpretation of data collected during a 2013 aerial survey, shows a patchwork of previous collapses — including a landslide zone to the west that is substantially larger than the square-mile area that was devastated last week. The USGS acknowledges that the lidar readings probably don't tell the whole story. "The actual extent of landslide deposits is probably greater than shown," USGS research geologist Ralph Haugerud wrote.

*Update for 10:15 p.m. ET March 28: I originally wrote that last week's mudslide was the only one that crossed the river, but reader Brian Maschhoff says that's not correct. Past landslides have shifted the course of the Stillaguamish, as can be seen in historical imagery. "This river has moved around a lot, and has seemingly moved mountains as well," Maschhoff writes.*



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