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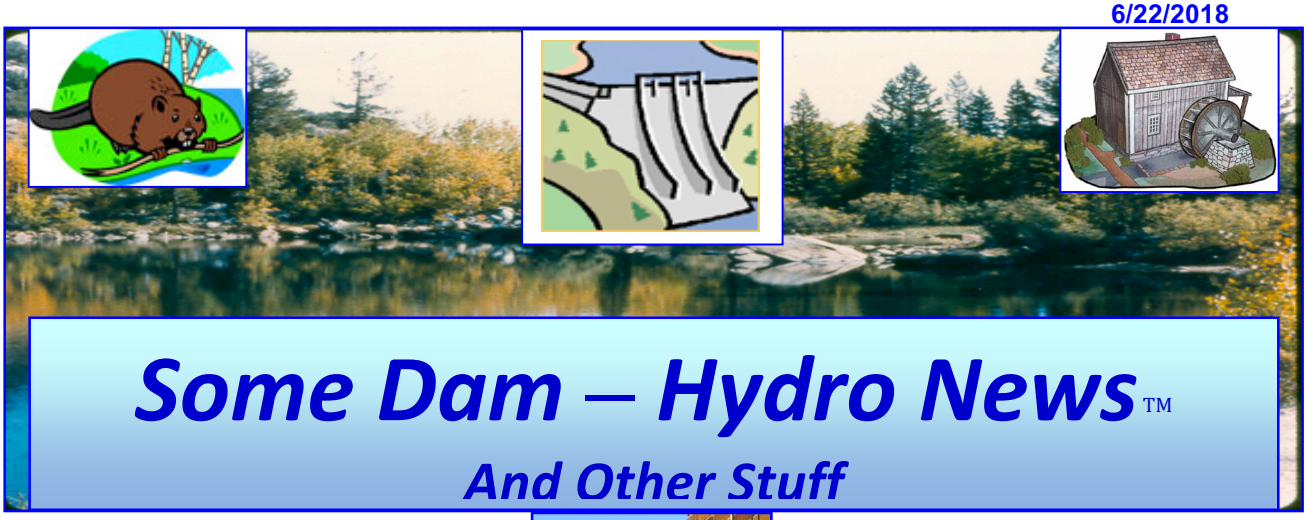


Some Dam – Hydro News™

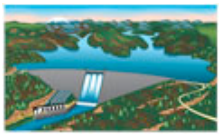
And Other Stuff

i

Quote of Note: *"You have enemies? Good. That means you've stood up for something, sometime in your life." - Winston Churchill*

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: **2015 Palacios Remondo Spanish Red "La Vendimia"**
"No nation was ever drunk when wine was cheap." - - Thomas Jefferson



Dams:

(It's not could, it's will.)

Proposal to raise Shasta Dam could mean renewed rancor

Agricultural districts are pushing for more water storage, but the state contends it violates California law.

By Tay Wiles, May 25, 2018, hcn.org

California's largest reservoir, Shasta Lake, sits where the dry Central Valley meets the rainier, mountainous northern part of the state. At its western edge is Shasta Dam, 602 feet high, built by the Bureau of Reclamation between 1938 and 1945 to help irrigate California. For decades, agricultural and municipal water districts have sought to heighten the dam to capture more water as it runs out of the Cascade Range

through the McCloud, Pit and Sacramento rivers. Environmentalists have long rallied against the proposal, and state officials contend such a project would violate California law. Now, though, with a push from some members of Congress and the current Interior Department, the idea has been given new life.

In January, the Interior Department informed Congress that, under the Trump administration, it had a "renewed focus on the development of new water storage in California and elsewhere." Austin Ewell, a land and water use lawyer from Fresno, California, who became Interior's deputy assistant secretary for water and science last fall, recently told a water authority meeting in central California's San Joaquin Valley that construction on Shasta could start as early as late 2019. Shasta Dam is a critical part of the Central Valley Project, a sprawling water system that runs 400 miles from Redding to Bakersfield. Shasta Lake holds 4.5 million acre-feet of water, allowing for hydroelectric power, flood control and critical water storage. But the dam also looms large in the life of the Winnemem Wintu Tribe, whose members live nearby. The people were forced from their land when the dam was built; in fact, their ancestral burial grounds were flooded by the reservoir. Tribal Chief Caleen Sisk says 183 graves were dug up and moved when the dam was constructed. Others, however, were left behind. "There are a lot of burial grounds under the lake and will be more if they raise the lake," she says. More ancestral land would be swallowed, including the site of a traditional coming-of-age ceremony that the tribe still uses today. Sisk also opposes the dam raise because it could threaten salmon populations already decimated by low stream flows, habitat loss and waters increasingly warmed by climate change. Salmon no longer live in the rivers above the dam; downstream, they continue to struggle.

Hundreds of miles downstream, coastal fishermen also worry that enlarging the dam would harm the last remaining local chinook salmon. Noah Oppenheim, executive director of the Pacific Coast Federation of Fishermen's Associations, says the project prioritizes farms over fishing. In the late 1970s, nearly 5,000 commercial fishermen netted and hooked salmon off Northern California; now, less than 400 do. "It's death by a thousand cuts, and the dam is another cut," he says. Federal agencies appear to disagree about what a Shasta Dam raise would mean for salmon. A U.S. Fish and Wildlife Service draft report obtained by Friends of the River through a Freedom of Information Act request said the raise would likely prove detrimental to endangered chinook salmon, because it would decrease downstream flows. But project supporters point to a different report, by the Bureau of Reclamation, which says the project could actually benefit salmon by creating colder waters on the Sacramento River.

Some of the biggest champions of the Shasta Dam raise are agricultural districts. "The reality is, people need water and farmers need water," says Tom Birmingham, general manager of the Westlands Water District, the largest agricultural water district in the United States. "We have to use every tool available … and being able to capture water in storage during periods of high runoff has to be one of those tools." Raising the dam would provide an additional 600,000 acre-feet of water annually — enough, for example, to irrigate over 275,000 acres. Westlands' critics respond that raising the dam will mainly benefit corporate ag interests. But Birmingam says thousands of workers will suffer if districts like Westlands don't receive enough water. During intense regional drought in 2015, allocations were zeroed out, and farmers were forced to fallow fields.

There are many unanswered questions, including the vitally important one of who would pay for the project. An 18-foot boost would cost at least $1.3 billion. So far, the project has only $20 million from the 2018 federal Omnibus bill. Nevertheless, Erin Curtis, a Bureau of Reclamation spokesperson, told HCN the agency plans to move forward this year with pre-construction design while it looks for potential cost-sharing partners. Meanwhile, the state of California is gearing up

for a fight. State officials say raising the dam would violate California's Wild and Scenic River Act, which protects a stretch of the McCloud River for its trout fishery and "free-flowing condition." And, if the project does get a green light, several environmental groups will likely sue the federal government or cost-sharing water districts

(The infrastructure is falling apart.)

The Mississippi River lock and dam system is critical to the economy. But it's falling apart fast.

By Meg Jones, Milwaukee Journal Sentinel, June 1, 2018, jsonline.com

LA CRESCENT, Minn. — Late spring snow lingered on bluffs next to the Mississippi River as a tug from Little Rock, Arkansas, slowly crept northward, pushing a dozen empty barges. Sitting high out of the iced tea-colored water, it was heading to the Twin Cities to pick up corn and grain harvested last fall, before turning around and traveling to New Orleans. The grain would ultimately head to Asia or South America. The 12 barges had to split into two sections to float through Lock and Dam No. 7 near La Crosse. One at a time, slowly, each section moved through the 600-foot-long lock and rose 4½ feet before reconnecting. The Mississippi River has moved goods from one place to another for centuries. Sometimes called America's Central Coast, the Upper Mississippi, from St. Louis to the headwaters in Minnesota's Lake Itasca, generates almost $600 billion in annual economic activity. The entire 2,300-mile river is used to transport 60% of all grain products in America, the world's No. 1 grain producer. The system of 29 locks and dams ensures a relatively orderly flow up and down the river. But the system is in dire straits.

The river's infrastructure is deteriorating faster than it's being replaced. When most of the locks and dams were built in the 1930s, engineers estimated their lifespan at 50 years.
Do the math. The lock and dam system so critical to American commerce is way past its expiration date. Further, the amount of goods traveling on the Mississippi River is expected to increase by more than 20% by 2050.

The U.S. Army Corps of Engineers has managed to maintain and repair the locks and dams, but the agency estimates its backlogged maintenance costs at more than $1 billion. Should any lock or dam fail long-term, it could create havoc for U.S. commerce. Further, a new system would have longer locks — 1,200 feet, the size of a 15-barge tow — to prevent the kind of inefficiency caused by breaking barge tows in half to get them through. "They're fabulous structures given what they've done. But it's time," said Ernie Perry, principal investigator of a recent University of Wisconsin-Madison study examining how agriculture products would move to markets if the locks and dams closed. Time-lapse video of barge traffic going through Lock and Dam No. 7 on the Mississippi River near Onalaska and Milwaukee. The chronic underfunding for Upper Mississippi locks and dams has been going on for decades. Congress authorized construction of seven new 1,200-foot locks at the river's most congested spots in Missouri and central Illinois in 2007 at a price tag of more than $2 billion. One problem: It didn't provide the money. More than a decade later, they still haven't been built. President Donald Trump's proposal for infrastructure funding released a few months ago was vague but hinted at private-public partnerships, meaning less federal oversight and the possibility of fees. The locks have always been free and shipping companies say they could go bankrupt if required to pay fees.

Crumbling infrastructure

Water is the cheapest and easiest way to move big, heavy objects. Consider the tug heading up to the Twin Cities with a dozen barges. "If this 12-barge tow had three more barges, (a common

load on the Upper Mississippi River), you would need 1,000 trucks on Highway 55 and I-90, or two 100-car trains, to carry the same load," said Patrick Moes, spokesman for the Army Corps of Engineers St. Paul District. UW-Madison's Perry is administrator of the Mid-America Freight Coalition at the National Center for Freight Infrastructure Research and Education.
Buy Photo

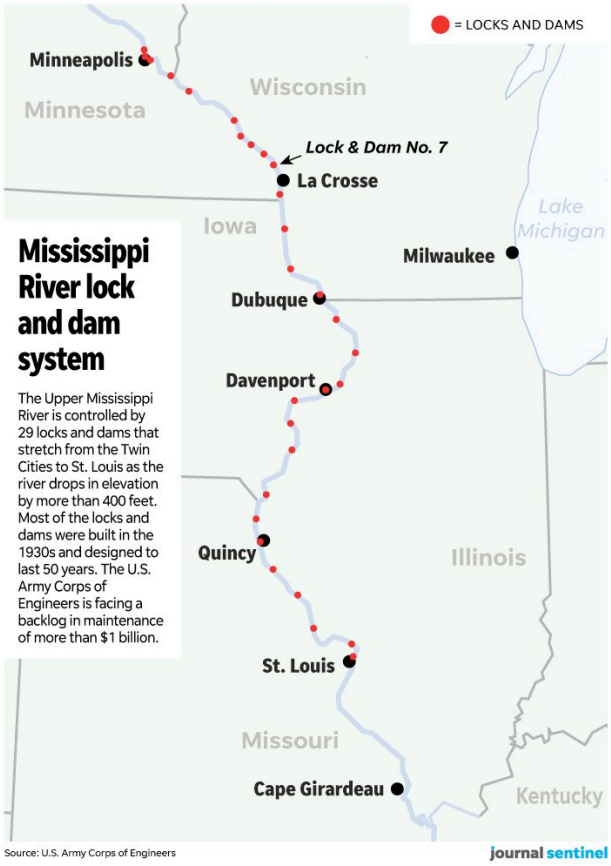
His report outlining how goods would get to their destinations without the Mississippi River is stark. Traffic jams. Cracked pavement. Crumbling infrastructure.
For the study, Perry focused only on transporting southbound agriculture products by truck. Assuming a one-season shutdown across the Upper Mississippi region, between 9.1 million and 12.4 million tons of agricultural goods would need to find another way to move to markets. That's the equivalent of 367,000 to 489,000 truckloads — with an additional cost of $283 million.
Perry found that many of the roads semitrailers would have to travel are rural and not designed for heavy loads. With pavement damage from the increased truck traffic, costs would go up an additional $28.8 million. And that's only a portion of the goods — just agricultural products — that travels along the river. Pollution would increase, too, because barges account for a much smaller carbon footprint than rail and trucks. Perry's study estimated an additional 212,000 tons of carbon dioxide would be created if trucks carried all the agricultural products normally moving on the Mississippi. By the time the Mississippi River reaches St. Louis, the waterway widens and tows pushing more barges travel in both directions. Perry saw a photo a few years ago showing a tow pushing 42 barges hooked together. That one load represented 18,000 acres of soybeans harvested in Missouri. "You look at the value of one barge — My God, it's tremendous. We're not talking small potatoes here," Perry said.

Lack of understanding
Between the first and last lock, the Mississippi drops about 400 feet over the course of 670 miles. Fixing locks and dams when they fail is not a viable long-term solution, Perry said. In 2013, the American Society of Civil Engineers gave America's inland waterway system a grade of D minus for poor condition and frequent delays. The Mississippi and Ohio river systems accounted for a disproportionate number of delays. Part of the problem is that Congress, and most Americans, don't understand what a critical role the Mississippi plays. "Every day people experience potholes but they don't see that on the river, so it's out of sight, out of mind," said Kirsten Mickelsen, executive director of the Upper Mississippi Basin Valley Association, which represents governors and agencies for five states, including Wisconsin, that border the river.

"The risk is incredibly high. The (Army) Corps will do its best job to avoid that at all costs. But a failure could occur at any time," Mickelsen said. "It's a matter of: Do we address this as an emergency situation or do we address it ahead of time?" Delays from scheduled and unscheduled maintenance, as well as breaking apart tows to move through 600-foot locks, are a headache for farmers and shippers, said Samuel Hiscocks, freight coordinator for the Iowa Department of Transportation. "The record harvests of corn and soybeans will continue to overwhelm that system and make the delays worse. That will increase commodity prices and decrease the nation's edge over other commodity producers," Hiscocks said.

Regular repairs
Lock and Dam No. 7 just north of La Crosse was built in 1937 and the last major rehabilitation work was done in 2003. The concrete guide wall is on top of 80-year-old wood pilings and riprap. When the structure began to shift recently, the Army Corps of Engineers brought in scuba divers to pump in low-density grout to stabilize the 600-foot-long structure. Divers will begin the same work on Lock 2's guide wall this summer, followed by locks 5, 8 and 10. Lock 2, the youngest in the St. Paul district, opened in 1948. "Some have guide wall issues. Lock 2 probably has the worst of the miter gates. Lock 4 has more concrete issues than others tend to have. Overall they're all sort of in the same place, it's just that they have their own idiosyncrasies," said Kevin Baumgard, chief of the Army Corps of Engineers' operation division in the St. Paul District, the northernmost of the three Upper Mississippi River districts. A major rehab was done in locks and

dams 2 through 10 in the 1990s, when electrical wiring and machinery was replaced. But the steel miter gates that clang shut behind tows passing through locks are original.



Unlike the locks and dams farther south, which remain open year-round, those along Wisconsin and Minnesota shut down for the winter season, which allows repair crews to drain water and perform maintenance, including blasting and painting, repairing concrete and replacing pipes. But winter weather is also a hindrance because freezing and thawing cycles can degrade concrete and other building materials more quickly. Dan Burger, a deckhand and Army Corps of Engineers safety officer, is part of a Fountain City-based team that handles repairs for 13 locks. That ranges from routine maintenance to responding to mishaps.

The crew includes welders, boat operators, electricians, crane operators, marine mechanics and people who specialize in concrete work and lock gates. Most crew members keep a bag packed for emergencies because when a lock shuts down, traffic quickly backs up with tows waiting on both sides to pass through. Backups cost shipping companies millions of dollars each year. "Sometimes a tow boat breaks off a piece of wall and we repair that. Sometimes it's just time — wear and tear," said Burger. "If it's a problem with a gate (which means shutting down the lock) it's all hands on deck."

Detailed inspections are scheduled on a five-year cycle at each of the locks and dams to assess problem areas and rate them from A to F, with D meaning the probability of failing in the near future, said Baumgard. The inspections help the Army Corps determine where to fix things that have the biggest risk or impact on the river. The annual operating budget for the St. Paul district, which handles locks 2 through 10, is around $19 million plus roughly $3 million for routine maintenance, said Baumgard. The district has gotten upward of $20 million for bigger maintenance projects.

Fewer tax dollars

When the Mississippi River lock and dam system was built during the Depression, spending on Army Corps-related civil works facilities was $70 per capita. Now it's $18 per American, noted Baumgard. "At that time in our nation's history, federal infrastructure was important. That's when a lot of stuff got built in the 1930s," Baumgard said. "Now there's other competing interests for our tax dollars." D.J. Moser has been the lock master at Lock 7 since 2003 where everything from 15-barge tows to kayaks pass through every day in the season. This year, the first northbound tow passed through Lock 7 on March 26 because Lake Pepin was slower to melt than in other years. In the spring, Moser sees a lot of coal, fertilizer and road salt. In the fall, it's mostly agricultural products after the harvest. She's seen the repair work done to keep the system working. She's also aware of the inevitable problems. "They've been updated quite a bit, but a lot of it is original parts — especially with the dams," Moser said. "Everything ages in time."

(Don't remove the dams.)

Donnelly: Courts shouldn't be managing Columbia River

By Ann Donnelly, June 3, 2018, columbian.com

Ann Donnelly, a Vancouver, WA businesswoman, is a former chair of the Clark County Republican Party. Rapid snowmelt. That's the simple explanation we're being given for spring flood conditions on the Columbia River. In April and May, riverside foot paths have been closed; repeated bridge lifts (up to six a day) have caused costly, dangerous traffic jams, and school buses trying to negotiate jammed side streets have been delayed. Is this just Mother Nature sending us more water than usual, in the form of melting snow? Not entirely. An Oregon judge also played a role. The history of the issue extends back decades. Look around the United States and you will not find another river system generating as much power as the Columbia. With its massive tributaries and steep gradient, the Columbia system supplies over 40 percent of the hydroelectric power in the country. No wonder our region drew the aluminum industry in the 1940s, peaking in the 1960s.

In those days, the dams were managed primarily to benefit people (served by public utilities) and industry (aluminum, timber, paper). But in the 1980s and 1990s, fish advocates of various political stripes brought about major changes in the Bonneville Power Administration's management of the region's annual water budget, which accumulates largely in the fall (rain) and winter (snow).
To benefit young salmon, rapid spill of water through the dams, aka "fish flush," was instituted each spring to help young salmon reach the ocean. But how much spill is enough? Is more better? The water isn't free. Clark Public Utilities, for example, depends on hydropower for nearly 60 percent of its energy resources. Fish flush severely depresses spot electricity prices sometimes to zero, wasting the value of the electricity sales needed to pay BPA's bills. Utilities and large energy users contend that spills in spring put BPA and ultimately consumers at risk of having to buy costly non-renewable replacement power from natural gas plants in the fall low-water months.

In March 2017, Judge Michael Simon of the U.S. District Court in Oregon issued a court order requiring federal agencies to increase spill across Columbia River dams to levels higher than in the Obama era. When BPA sued, a 9th Circuit Court of Appeals decision affirmed the decision.
Bipartisan solution Court-ordered spills took effect April 10 and will last through June 15. The result is the biggest planned water spill over Columbia River dams ever in history. BPA estimates that the spill will cost $38.6 million, based on the projected lost generation and the projected electricity price, and has instituted a spill surcharge to be billed to its customers for 2018 and 2019.

Decisions about how our region spends its crucial electricity resources should not be made by the courts. A bipartisan group of U.S. House members from Washington and Oregon agrees. Rep. Jaime Herrera Beutler, R-Battle Ground, is one of five Northwest sponsors of HR 3144, which would approve the 2014 Federal Columbia River Power System Biological Opinion until 2022, thus taking management of the river out of the courts. The bill has passed the House. Herrera Beutler states the increased spill may "pose long-term damage to fish populations. This judge (Simon) claims to know better than the local stakeholders and experts, tribal nations, and federal scientists and engineers who crafted the (2014) Biological Opinion." Advocates of super-spills or even outright dam removal believe we are such a rich society that we can throw low-cost and renewable electricity away on speculative fish programs. But are we a rich society? Our burgeoning homeless population is just one indication that we are not.

(Major upgrade.)

Major flood risk reduction and dam safety enhancements planned for New Bullards Bar

By Yuba County Water Agency, June 6, 2018, yubanet.com

MARYSVILLE, Calif. (June 5, 2018) – A significant reduction in flood risk and enhancements to dam safety are in the works for Yuba County. Yuba County Water Agency today approved moving forward with the environmental documentation, permitting and design of a secondary spillway at New Bullards Bar Dam. The construction of an estimated $160 million secondary spillway will increase water release capabilities in preparation for major storm events, ultimately creating additional room for inflows in the reservoir. This will decrease flood risk downstream, including the areas of Marysville, Linda, Olivehurst, Plumas Lake and Yuba City. "New Bullards Bar Dam is already in great shape," said Yuba County Water Agency General Manager Curt Aikens. "This enhancement will help even more. Especially after Oroville, we know more than ever how important it is to have redundancy with a secondary option for releases in case of an emergency."

As a result of the major flood in 1997, Yuba County Water Agency initiated a series of studies, completed in 2002, to identify future projects to reduce the region's flood risk. One such project was a plan to increase the release capability of New Bullards Bar Reservoir by constructing a secondary spillway. The feasibility study, conducted in 2016, considered various alternatives and determined a secondary spillway, with the lowest water release point 31.5 feet lower than the existing spillway, to be the best option to accomplish the agency's goals at the lowest cost with the least negative environmental impact. This phase of the project is estimated to wrap up in 2021, with construction beginning in 2022. It is estimated to take approximately three years to build. Both the cost and schedule are rough estimates at this time, expected to be much more clearly defined as the project is further designed. An additional benefit of the secondary spillway is the redundancy of an alternate for water releases in case of a problem with the primary spillway. The secondary spillway would, on its own, be able to manage releases from the reservoir in a 1 in 260 year storm event without exceeding the maximum pool elevation. "With the combination of a secondary spillway and planned alterations to the way water is managed at the dam, the flood stage reduction in Marysville could be reduced by about 2 feet during a 1997-type storm," said Naser Bateni, senior vice president of GEI Consultants. Additional benefits of the secondary spillway include a reduction in ecosystem damages from flooding, enhanced overall flood system flexibility and resiliency.

"This great reduction in our flood risk also benefits the entire region – reducing risk all the way to the Delta," said Brent Hastey, chairman of the Yuba County Water Agency. These enhancements are just one part of the agency's overall strategy to significantly reduce flood risk in the region. Other efforts have included partnering with other local agencies on the Feather River Setback Levee and the Marysville Ring Levee, among others. As a result of these efforts, the south Yuba County and Marysville areas are slated to become one of the first regions in California to reach the state's requirement for 200-year levee certification in urban areas. The agency has been preparing financially, saving to help pay for the costs of major infrastructure improvements, including the secondary spillway. Costs for the field investigation, environmental documentation, permitting and design of the secondary spillway are estimated at $11 million.

(They say it should go.)

This river's tallest dam must come down, environmentalists say

By Marisa Lati, lehighvalleylive.com, 6.8/18,

Federal officials called it a public safety risk. The state classified it as high-hazard. Almost 40 years after environmental experts first warned the Warren Glen Dam should come down, the political muscle to make it happen may finally exist. Sandwiched in a gorge of the Musconetcong River between Warren and Hunterdon counties, the 37-feet tall dam once generated hydropower. It has been out of commission for decades due to the river's unreliable flow and lack of sufficient strength, and environmental groups now say leaving the dam intact is more trouble than it's worth.


Warren Glen Dam

U.S. Reps. Leonard Lance and Josh Gottheimer have sponsored a bipartisan amendment to the Water Resources Development Act of 2018 that directs the secretary of the Army to expedite a study of the feasibility of removing the dam. The act, including the amendment, passed Wednesday in the House of Representatives. Removing the dam -- which is the river's largest -- would make the area safer, create a larger habitat for fish and enable people to boat through that section of the river, said Alan Hunt, executive director of the Musconetcong Watershed Association. Among the species of fish in the river are American shad, which come to the river to breed but live in the Atlantic Ocean. Opening up room on the Musconetcong helps them to increase their historically declining numbers.

(Another dam coming down.)

Demolition begins on 19th century dam in Leeds

By: Tashanea Whitlow, Jun 07, 2018, wwlp.com

LEEDS, Mass. (WWLP) - After years of planning and permit process, a 19th-century dam in Leeds is finally being removed. Crews used equipment to begin dismantling the Upper Roberts Meadow Dam in Leeds on Wednesday morning. Northampton DPW director Donna LaScaleia told 22News that the project hit several roadblocks but the city was finally able to secure permits for demolition. The Massachusetts Office of Dam Safety determined the dam was structurally dangerous and the city was given two options: repair it or remove it. Multiple studies determined the dam would be removed.

Some residents are concerned for local wildlife that depended on the dam. "It has been determined the benefits of removing this dam there will be significant environmental benefits, including the restoration of cold water fisheries where the impoundment currently is," Donna LaScaleia explained. The project is estimated to cost $850,000. But more than $600,000 in state grants will cover the majority of the cost. The remaining $200,000 will come from the city's water enterprise fund. Wednesday was one of several steps to demolish the dam. An excavator removed a small piece to release water. A neighbor told 22News, it took 30 minutes to drain the dam. The second stage will begin next week. The rest of the dam is expected to be removed by the end of the year.

(Some things last forever.)

Off Beat: Dam song beloved by many, but not dam staff

Bonneville book spurs employee's memories of Woody Guthrie tune 'Roll On, Columbia'

By Tom Vogt, Columbian Science, Military & History Reporter, June 10, 2018, columbian.com

Woody Guthrie's song about Bonneville Dam will live forever in the memories of just about everybody who has heard "Roll On, Columbia." That certainly includes many of the people who worked there. They'll never get the dam song out of their heads. That glimpse into the lives of Bonneville employees stems from Pat Barry's book, "Bonneville Lock and Dam: A Gift from the People of the Great Depression." The Vancouver resident managed the Bonneville Visitor Center for 27 years. People who have worked at Bonneville since the 1930s provided some of his material. Even after its publication, Bonneville employees have enjoyed sharing their memories with Barry. So, when he made a recent presentation at the Fort Vancouver Visitor Center, a former Bonneville worker was remembering the song that would roll on and on and on.
"The public loved it. The maintenance staff hated it," retired carpenter John Wheeler said. Guthrie recorded "Roll On, Columbia," in 1941 when the Bonneville Power Administration hired him to write songs promoting hydropower.

The 26 songs he wrote in 30 days are collectively known as "The Columbia River Songs." Guthrie earned $266, Barry said, or about $10 a song. "Roll On, Columbia" was used for several years to welcome people to the visitor center at the navigation lock. The recording "was triggered by a motion detector," Barry said. The center drew hundreds of thousands of visitors a year. A place that popular also needed upkeep and maintenance. And if carpenters were working on the door itself, Wheeler said, they would reach their threshold for that song long before they finished the job. Barry also got a story from one of the fish counters. They watch through an underwater window as fish swim up the fish ladder. Electronic keyboards have replaced the mechanical counting devices, but his source was there during the count-and-click years. Some visitors were watching — and listening — as she tallied the traffic swimming upstream. She overheard one say: "Every time you hear a click, she lets a fish through."

(Technology has its negatives.)

Two Companies Picked To Protect Nation's 600 Dams from Cyberattacks

By Aaron Boyd, Senior Editor, June 11, 2018, nextgov.co

The Interior Department awarded spots on a five-year, $45 million contract to manage IT risk for more than 600 dams nationwide.

Two companies were awarded spots on a $45 million contract to secure the nation's dams from cyberattacks: federal contracting giant Booz Allen Hamilton and Virginia-based small business Spry Methods. The Interior Department's Bureau of Reclamation awarded winners on its five-year indefinite-delivery, indefinite-quantity contract for IT risk management services on June 5. The contract covers technical and professional services in support of the bureau's threat monitoring and mitigation programs; compliance with the Federal Information Security Management Act; security of dam industrial control systems, or ICS; and working with Reclamation's information system security officer. Reclamation can now issue task orders to Booz Allen Hamilton or Spry to provide these services to more than 600 dams under the bureau's purview. Those dams are spread across 17 states in the western U.S.

"Over the last two years, Spry has been deeply involved in the security assessment and evaluations of numerous Reclamation systems," including ICS security, Lori James, Spry's chief

cybersecurity officer, told Nextgov. “Spry is looking forward to our continued support of DOI and Reclamation specifically, where we can help streamline security requirements and produce efficient and useful methodologies that will become commonplace at DOI.”

Representatives from Booz confirmed the award but declined to comment further at this time. The need to secure the nation’s dams is urgent because the threat is real. In 2016, alleged Iranian hackers were able to leverage access to a dam’s accounting system to gain control over a sluice gate controlling water flow. Luckily, the hackers got the wrong dam, gaining access to the diminutive and then-out-of-service Bowman Avenue Dam in Rye Brook, New York, rather than the comparatively massive Arthur R. Bowman Dam in Oregon. But the episode demonstrates the need to secure this critical infrastructure or risk massive loss of life and property. The larger Bowman Dam is one of the 600 managed by the Bureau of Reclamation.

“Hydroelectric facilities such as the ones operated by [Reclamation] can have a significant number of ICS/ [operational technology] systems,” said Marty Edwards, managing director at Automation Federation and former director of Homeland Security’s ICS-CERT. Those systems “tend to be overlooked legacy types of installations that can be particularly challenging to bring up to date with modern cybersecurity standards.” Edwards applauded Interior’s focus on critical infrastructure security as a good start but noted that $45 million spread across 600 sites comes out to approximately $75,000 per dam over five years. “That is certainly a good start but ultimately cybersecurity is about hiring people,” he said. “I would like to see either permanent civil servants or a standing program put in place to use contractors every year. Most likely the best approach is a combination of the two.

Hydro:

(If you don’t like it, sue them.)

Idaho utility sues EPA over Hells Canyon dams requirement

Idaho Power seeks to force the EPA to allow warmer water temperatures in the Snake River below the Hells Canyon Complex.

By Keith Ridler / Associated Press, June 7, 2018, ktvb.com

BOISE, ID - An Idaho utility has filed a lawsuit against the U.S. Environmental Protection Agency contending the agency failed to act on a request by the state of Idaho to modify water temperature standards below a hydroelectric project on the Idaho-Oregon border. The lawsuit filed Wednesday by Idaho Power Company in U.S. District Court seeks to force the agency to approve a 2012 request by Idaho allowing warmer water temperatures in the Snake River below the Hells Canyon Complex. The area is a key spawning spot for federally protected fall chinook salmon. Idaho Power says the EPA is violating environmental and administrative laws by failing to act. The company says changing the water temperature standards won't harm salmon but could save customers up to $100 million over 50 years

(Hydro is renewable energy.)

Renewable energy: Twin Falls hydro project shuts down in summer months

By HEATHER KENNISON, magicvalley.com, 6/7/18

TWIN FALLS, ID — The cascading water of Twin Falls doesn't enthrall spectators in quite the same way as Shoshone Falls. But its hydroelectric plant has a greater capacity to generate power to Magic Valley homes than its famous counterpart. Two turbines combined can generate 54 megawatts of power, said Area Leader Ryan Merrick. That's more than four times what Shoshone Falls can produce — simply because Twin Falls' equipment is newer. "Shoshone Falls has three units, two of which are so old that they've been decommissioned and they're falling apart," Merrick said. The Twin Falls Power Plant was built by Idaho Power Co. in 1935. The original unit has a capacity of about nine megawatts. In 1995, the company added another turbine and plant that could generate 45 megawatts, Merrick said.

And it's because of those plants that you can no longer see the "twin" of Twin Falls. The waterfall once had a second fall alongside it and a third in extra high water years. But Idaho Power constructed a dam along the top, and the company essentially pipes that second waterfall through steel and concrete to either of two turbines. Merrick suspects that Idaho Power could still do a dam project like that today if they needed to, but it would take a longer time to get all the permits and permissions. Idaho Power is required to maintain scenic flows at Twin Falls of at least 300 cubic-feet-per-second between April 1 and Labor Day weekend. This requirement — combined with decreasing flows during irrigation season — means the Twin Falls power plant is operational only part of the year. "This plant will be shut down and quiet for most of the summer," Area Supervisor Stanley Bell said during a May 17 tour of Twin Falls plant.
In recent years, improvements in irrigation have resulted in less runoff returning to the river. Snowpack and temperatures also affect water flows. The older generator can run when there are at least 150 cfs flowing, up to 940 cfs. The larger generator will go online if flows are 1,000 to 4,000 cfs. "Anything over 4,000 cfs, we run over both units," Merrick said. And over 5,000 cfs, the company has to spill water from the dam. In late May, the falls were flowing at nearly 7,000 cfs. That was unusually high even for spring, Merrick said, but there was still high carryover from the "snowpocalypse" of 2017.

"Historically, we only run about 300 cfs," he said — just enough to maintain scenic flows and at times run the generators. At any given time, a device called "the governor" can regulate water flows to control the speed of the generator, Merrick said — similar to cruise control on your car. Once a year, water is entirely pumped out of the plants so Idaho Power can check on the generators and turbines for abnormalities. Technology has changed operations at Twin Falls Power Plant. Whereas Idaho Power once required employees to live at housing on-site, they now come in four days a week. Automation installed in the mid-1990s allows for remote control. "Somebody is here to at least look at things most days," Merrick said.
The rest of the time, Idaho Power employees in Boise are supervising the plant's operations from afar. More automation is coming soon, Merrick said. This summer, the company will replace those manual flips and switches with touchscreen panels

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(Renewable is not a new idea.)

For a small Colorado utility, 100% renewable energy is old news

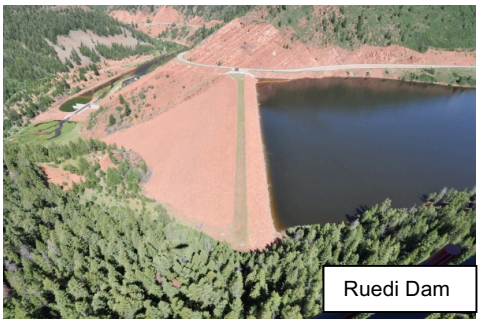
WRITTEN BY Allen Best, June 8, 2018, energynews.us

Warren Buffet-owned utility MidAmerican Energy recently made national news by announcing it was on track to offset 100 percent of its electricity with renewable energy – while keeping costs low for customers. For a small Colorado utility, that's old news. Aspen Electric, the municipal utility serving the resort town of the same name, achieved 100 percent renewables in 2015, and it didn't break the bank to do so. Residential rates for Aspen's customers rank among the lowest in

Colorado, while meeting a 100 percent renewable energy goal set by Aspen's city council 13 years earlier. And this month, upgrades to a Nebraska wind farm, of which Aspen Electric is a major customer, will push the utility's costs even lower – dropping about 15 percent annually, or $475,000.

In Aspen, those savings could stall future rate increases or be passed along directly to customers, says Phil Overeynder, special projects director for Aspen Electric. Overeynder said pursuing wind and other renewable energy sources has not caused financial distress, as some directors of other utilities had predicted 20 years ago when Aspen began putting together its portfolio. "There was just a general feeling of that it's a really risky approach," he says. "They were comfortable with the tried-and-true forms of generation from coal and other fossil fuels."

A January 2018 survey conducted by the Colorado Association of Municipal Utilities found that residential customers of Aspen Electric paid $80.95 for 700 kilowatt hours (kWh), the typical monthly use of a single-family residence. That made it the 10th lowest among the 54 municipal, cooperative and investor-owned utilities in Colorado. Aspen was an early innovator in electricity. Soon after silver mining began in 1880, hydroelectric power was harnessed for use in the mines. By 1886, just a few years after the town was founded, some 40 stores were electrified by a local hydroelectric plant. The city was the first west of the Mississippi River to have electrified street lights. But in other ways, Aspen was typical of many utilities serving small towns. As demand for electricity grew, the city idled its local hydroelectric installations around 1960 in favor of electricity from distant sources, both from big dams and from large coal-fired power plants. Then came the push for renewed renewable supplies. Overeynder credits the late Randy Udall – of the famous political family that included two U.S. senators – with creating the vision for a path to 100 percent renewables. In the late 1990s, when Udall was directing a local non-profit called the Community Office of Resource Efficiency, he and Overeynder flew to Wyoming to inspect a new wind farm near Medicine Bow. They bought into that production, then found a better fit yet. In 2005, with Udall representing Aspen, the city struck a deal with the Municipal Energy Agency of Nebraska, or MEAN.


Ruedi Dam

Today, Aspen gets about half of its power from wind, half from hydroelectric, and a small amount from solar. Its hydroelectric portfolio includes production from a local creek as well as output from two nearby dams, Ruedi, a federal dam, and Ridgway, a regional irrigation reservoir. As well, Aspen gets 8 percent of its supply from the Western Area Power Administration (WAPA), which operates the federal government's giant dams in the West. Wind comes cheap, but not the cheapest. WAPA power runs 2 to 2.5 cents per kWh, comparable to the power from Reudi Dam. Aspen is now paying 6.8 cents for the wind energy from the Great Plains, down from 8.1 cents per before. Ridgway, the most recently retrofitted dam, also costs 6.2 cents and helps meet the city's peak demands during winter. The Nebraska project is part of a wave of repowering projects of older wind farms across America. The replacements are fueled by better understanding of wind energy but also construction of higher towers, where wind is both stronger and more prevalent. At Kimball, for example, the new towers are 295 feet tall, compared to the 230 feet of the former towers. Electronics have improved, and blades are longer and lighter, able to sweep more wind with each rotation. These improvements have yielded higher energy capacity of individual turbines. Higher capacity factors – a measure of the amount of time the facility can be expected to generate power – reduce backup costs. Wind farms constructed early in the century had capacities of around 30 percent, and those now being constructed or repowered

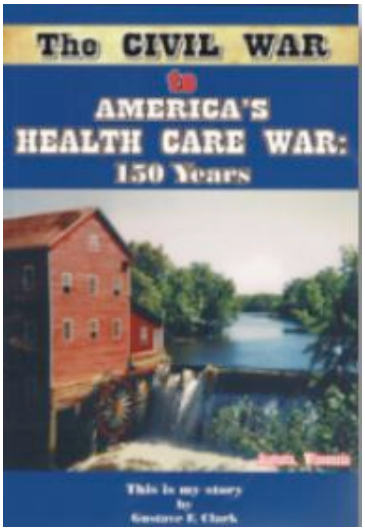
have capacities from 40 to 50 percent. A typical coal plant has a capacity factor of about 54 percent.

Like Aspen Electric, MidAmerican Energy in Iowa aims to provide 100 percent renewable energy for its customers. It is adding 1,000 more turbines to its previous fleet of 2,020 turbines around Iowa with the belief it will be sufficient to supply about 95 percent of customers' energy needs, and the utility notes that its rates are among the lowest in the country. "With wind, we don't need to buy fuel to make the energy," MidAmerican spokesman Adam Wright told the Des Moines Register last month. "This is a big reason why MidAmerican Energy's rates are 37 percent below the national average." A 2012 study by the National Renewable Energy Laboratory took a longer view, calculating what might be achievable regionally by 2050. The study found that "renewable electricity generation from technologies that are commercially available today, in combination with a more flexible electric system, is more than adequate to supply 80 percent of total U.S. electricity generation in 2050 while meeting electricity demand on an hourly basis in every region of the United States." That NREL study used market prices and technology that existed in 2009 and 2010. Since then, prices have decreased and technology has improved. In Aspen, Overeynder remembers talking with Udall 20 years ago about the arc of the possible. Udall was optimistic that wind generation could be pushed to 30 percent of the city's portfolio. "If you could push it to 50 percent, you'd be walking on water."

(Save a piece of history.)

A community pitches in to save a Wisconsin dam

By Bob Collins June 8, 2018, blogs.mprnews.org



Herman Borntreger, of Augusta, Wis., not only owns a dam, he owns one of the most photographed places in all of Wisconsin: Dells Mill. http://dellsmill.com/. Owning a dam can be an expensive proposition when it becomes unsafe. That's when most mill ponds become creeks. Who can afford to keep up a dam? The former owner says it may be the last privately owned dam in Wisconsin.

The dam at Dells Mill, a grist mill, was built of wood in 1864, and replaced with concrete in 1919. When the Wisconsin Department of Natural Resources inspected it a few years ago, the news wasn't good for Borntreger, who bought the place in 2015. It'd need to be repaired. The DNR provides grants for these sorts of things, but not for private owners. There is up to $50,000 in assistance to remove private dams, but Borntreger isn't interested. He's Amish. He tells the Eau Claire Leader-Telegram taking grant money violates his religion's self-sufficiency. Borntreger is willing to take on the $300,000 to $500,000 project himself somehow, the paper says. When he went to tell the neighbors why the pond was about to be lowered, he had no intention of mentioning the cost. But then someone asked.

Right away, though, everyone wanted to know where the money was going to come from. "I wasn't even really trying anywhere to get money," Borntreger said, "but I had a meeting with the property owners a couple weeks ago, and they asked me how I was paying for this. I said, 'I guess I'll be paying for it myself, unless somebody wanted to help,' and a couple of them spoke up and said, 'Yeah, we feel like we should. It's our pond too,'" Borntreger said.
Thus, a GoFundMe page was created. The fundraising efforts by his pond-sharing neighbors came as somewhat of a surprise to Borntreger, but he said he is very appreciative of their help. Richard Berg, one of the property owners, said it was obvious to him that he and the others needed to help in some way. "It's a great undertaking that he's doing, and we figured, as the property owners around, the least we could do is try to create some activity to help offset the cost of this dam for Herman," Berg said. No need to hire expensive construction companies.

Borntreger's Amish friends showed up ready to work and so far have removed and replaced a cap. They figure by July 4, it'll also have a new face and a new base. As for the fundraising, it's pretty slow so far. It's raised $400 of the $500,000 goal

Environment:

(Fish gotta swim.)

Hydro plant bypass

JUNE 8, 2018, watertowndailytimes.com

CHRISTOPHER LENNEY / WATERTOWN DAILY TIMES
A worker prepares rebar for concrete on a fish passage at a hydroelectric facility on the Oswegatchie River in Heuvelton, NY.

(Going the wrong way.)

Shad run on the Susquehanna River hits record low in 2018

By P.J. REILLY | Staff Writer, 6/11/18, lancasteronline.com

The American shad "season" on the Susquehanna River ended June 3 at Conowingo Dam.
And this year's results hit a new low. The season is the period during which an elevator at Conowingo lifts shad up past the dam during their spring spawning run. The Conowingo Dam is the first impediment spawning shad hit as they return from the Atlantic Ocean to run up the Susquehanna River. Operators of the hydroelectric dams at Holtwood, Safe Harbor and York Haven also run fish elevators, and those lifts are still operating. But Conowingo is the gatekeeper for the annual run. Since it's the first dam the fish hit, it always passes the most shad. While Pennsylvania does not allow recreational fishing for shad on the Susquehanna River, Maryland does, and the area below Conowingo is popular among Maryland and Pennsylvania anglers alike. Elevator operations began at Conowingo on April 2. The first shad was lifted April 21. The elevator was shut down June 3.

During that time, a total of 6,992 American shad were hoisted over the dam to continue their spawning run. That's the lowest on record since counts began in 1997, and it's less than half the number of shad lifted last year – 16,248. It's important to note that high water is known to suppress the shad run, because it's harder for the shad to find the elevator when the dams are spilling a lot of water. And the Susquehanna certainly has carried a lot of water this spring.

But the low count at Conowingo this year falls in line with recent history, as the number of shad lifted over the dam has been steadily declining since the high count of record – 193,574 – in 2001. The previous record low count came in 2015, when 8,341 shad were hoisted at Conowingo. In an effort to boost the plummeting numbers of American shad running up the Susquehanna, Exelon Generation, which owns the Conowingo Dam, and the U.S. Fish and Wildlife Service in 2016 reached an agreement that calls for up to 100,000 shad and 100,000 river herring to be captured below Conowingo and trucked past the dam to Susquehanna River tributaries where shad are known to spawn. The Pennsylvania Fish and Boat Commission supplements the effort by stocking shad fingerlings it grows at a hatchery in Juniata County.

Fish and Boat Commission officials in 2016 told LNP it will likely take decades before any "substantial progress" is seen in boosting the annual shad run. The ultimate goal is for 2 million American shad to be lifted beyond all four dams each year.

Other Stuff:

(Ridiculous incomes for what they do – entertainment.)

Among World's 100 Highest Paid Athletes, 0 Women

Boxer Floyd Mayweather comes out on top

By Arden Dier, Newser Staff, Jun 8, 2018, newser.com

(NEWSER) – Women in sports say Forbes' annual list of the world's highest-paid athletes is proof that the gender pay gap is real and pressing. That's because—for the first time in eight years—not a single woman made the cut. The highest-paid female athlete in 2017—the year she gave birth to a daughter—was Serena Williams. Her $18 million puts her roughly $5 million below the take of the man to hold the 100th spot, Nicolas Batum of the Charlotte Hornets, who made $22.9 million, reports NBC News. "When more men in power become allies and care about gender equality, the power differential will shift," former tennis champ Billie Jean King says in a tweet. The top-earners for 2017 are:

1.Floyd Mayweather (boxing): $285 million
2.Lionel Messi (soccer): $111 million
3.Cristiano Ronaldo (soccer): $108 million
4.Conor McGregor (MMA): $99 million
5.Neymar (soccer): $90 million
6.LeBron James (basketball): $85.5 million
7.Roger Federer (tennis): $77.2 million
8.Stephen Curry (basketball): $76.9 million
9.Matt Ryan (football): $67.3 million
10.Matthew Stafford (football): $59.5 million

Stafford is also the NFL's 2nd highest-paid player: http://www.newser.com/story/247871/nfl-has-a-new-highest-paid-player-in-history.html

The full list of 100 is here: https://www.forbes.com/athletes/list/

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