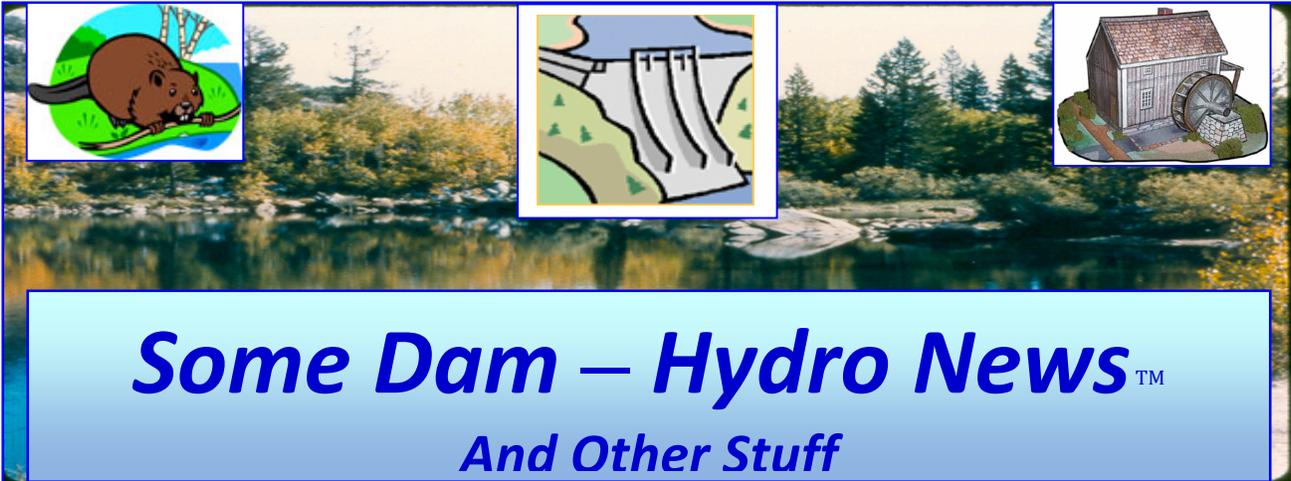


11/2/2018



Quote of Note: *"If you mess up, it's not your parents' fault, so don't whine about your mistakes, learn from them."* - Unknown

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 Tenuta di Gracciano Della Seta Italian (Tuscany) Red
"Vino Nobile di Montepulciano"
"No nation was ever drunk when wine was cheap." - - Thomas Jefferson



Dams:

(Big job!)

Work to start this month on 4-year Devil's Gate Dam sediment removal project

By CAROL CORMACI, OCT 05, 2018 | latimes.com

Work will start this month on a major, four-year-long project at Devil's Gate Dam that will include restoration of wildlife habit and the removal of 1.7 million cubic yards of built-up sediment behind the aging dam in the Arroyo Seco, according to the Los Angeles County Public Works Department. The flood-prevention project has been debated in public forums since first proposed following the 2009 Station



fire, which was a contributing factor to the buildup of debris behind the concrete dam. A 2014 lawsuit by Pasadena environmentalists stalled the work and successfully reduced its original scope.

County Public Works announced Friday the first phase of the project will center on a 70-plus acre swath where it will replace invasive plant species with native plants and reshape the slopes there to make it more habitable for wildlife. Some sections of trail through the project area will be temporarily closed to hikers. Work building access roads that will eventually allow for the sediment to be hauled out will get underway in late October or early November, according to the news release. **The actual sediment removal is expected to begin next April.**

(Flood control works.)

Vermont seeks federal funds for aging flood control dams

By Kit Norton, Oct 12 2018 | vtdigger.org

Vermont will soon be able to apply for up to \$40 million in federal funding for projects to repair three aging flood control dams, after the Senate passed the America's Water Infrastructure Act of 2018 overwhelmingly on Wednesday. Sen. Bernie Sanders, I-Vt., in the Senate, and Rep. Peter Welch, D-Vt., in the House, authored an amendment that raised funding for dam repair from \$10 million to \$40 million in the new bill. **The provision authorizes safety improvements at certain state-owned flood control dams constructed by the federal government before 1940.** In



Vermont, three dams – the Waterbury, East Barre and Wrightsville dams – are eligible to receive funding.

Vermont will be competing with all the other states for the funds. “These dams are essential pieces of Vermont’s infrastructure,” said Sanders in a statement, “maintaining and repairing the dams – especially the Waterbury Dam – has long been a priority for the state. This bipartisan legislation is an important step toward rebuilding aging dams in Vermont and throughout the United States.” In a statement Welch said this legislation is necessary for communities to prepare for and mitigate damage done by large storms hitting Vermont and the Northeast. “In 2011, Waterbury suffered a devastating flood during Tropical Storm Irene. More catastrophic damage was prevented due to the existence of the aging Waterbury Dam,” Welch said. “This important legislation will increase funding to refurbish outdated and hazardous flood control dams in Vermont and across the country.”

The bill also has a provision that authorizes the Army Corps of Engineers to repair bridges in Vermont that are part of New England’s evacuation routes during extreme weather events. In addition to infrastructure maintenance for bridges and dams, the bill includes funding for lead testing in schools and testing for unregulated contaminants including PFOA — which has been found in Bennington County. **The bill, which allows states to apply for \$5 million a year in grants and \$25 million a year for technical assistance** for lead testing could potentially assist Richford Elementary School, which the Health Department found had lead levels equal to or above the EPA recommended limit in 33 percent of the water samples in the school. After final congressional approval on Wednesday, the bill will go to President Donald Trump, who is expected to sign it.

(Dams prevent floods.)

Dam system prevents damage

By: Journal Record Staff, October 12, 2018, journalrecord.com

The U.S. Department of Agriculture-Natural Resources Conservation Service estimates that the dams across western Oklahoma prevented an estimated \$10 million in damage during storms on Oct. 6-9.

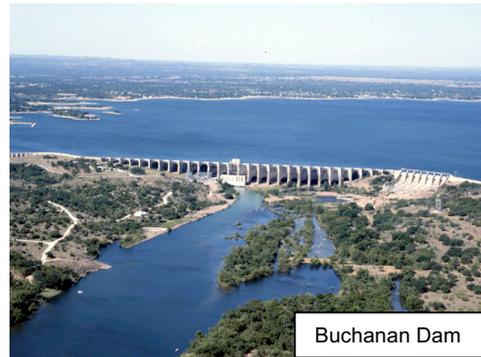
(Many dams working together.)

Explainer: How do the Highland Lakes and dams work?

Here's how the Highland Lakes and dams work.

Author: Jason Mikell, October 16, 2018, kvue.com

CENTRAL TEXAS — The Highland Lakes, their flows and storage units are extremely important to the Hill Country and Austin metro. At the time of this story, lakes Travis and Buchanan -- the region's water supply reservoirs -- are 88 percent full. They hold 1,774,516 acre-feet of water according to the Lower Colorado River Authority. These provide water supply to more than 1 million people as well as businesses, industries, agriculture and countless communities. LCRA closing several Austin area lakes; warning for residents near Wirtz and Starcke dams to provide some background, the Lower Colorado River Authority (LCRA) is combined of six dams in Central Texas. These include Buchanan, Inks, Wirtz, Starcke, Mansfield, and Tom Miller. They serve six Highland Lakes: Buchanan, Inks, LBJ, Marble Falls, Travis and Austin. It goes without saying that these dams and reservoirs help manage flooding and generate hydroelectric power. Together, according to the LCRA, the hydroelectric plants can provide more than 295 megawatts of power. Let's explore the dams and reservoirs in order of their flow and operations west to east.



Lake Buchanan and Buchanan Dam

Created in 1938, it serves Burnet and Llano counties and its primary purposes include hydroelectric power and water supply.

Inks Dam and Inks Lake

Created in 1938, it serves Llano and Burnet counties and its primary purpose is water supply. Inks Dam has no floodgates and is the smallest of the lakes. This is the smallest power plant of the Highland Lakes.

Wirtz Dam and Lake LBJ

Also serving Llano and Burnet counties, it was created in 1951 and its purpose includes serving hydroelectric power and serving as a cooling reservoir for the Thomas C. Ferguson Power Plant.

Starcke Dam and Lake Marble Falls

The smallest dam of the Highland Lakes, it was created in 1951 and serves Burnet County. This was the last dam to be completed of the Highland Lakes.

Mansfield Dam and Lake Travis

Created in 1942, it is used for flood management, water storage supply and hydroelectric power. It serves Travis and Burnet counties within the Austin metro area. This lake is critical to the flow of the Highland Lakes and is specifically designed to hold floodwaters. It is designed to hold an addition 787,000 acre-feet of floodwaters in what LCRA refers to as a flood pool.

Tom Miller Dam and Lake Austin

This serves the City of Austin within Travis County and completed in 1940. Its primary purpose is hydroelectric power and water supply.

(Wonder if this will end it?)

State Supreme Court Rejects Appeal By Restore Hetch Hetchy Group

By Bay City News Service, October 18, 2018, sfgate.com

SAN FRANCISCO (BCN) - A group seeking to force San Francisco to drain the Hetch Hetchy Reservoir in Yosemite National Park and restore the valley beneath it has lost an appeal to the California Supreme Court. The high court on Wednesday declined without comment to review an appeals court ruling that upheld San Francisco's right, granted by Congress in the 1913 Raker Act, to build a dam creating the reservoir to capture Tuolumne River water.



The O'Shaughnessy Dam was built in 1923. The water, piped to the Bay Area, now provides drinking water for 2.6 million people in San Francisco and parts of San Mateo, Santa Clara and Alameda counties. It also supplies the Modesto and Turlock irrigation districts and creates hydroelectric power. The group Restore Hetch Hetchy, based in Berkeley, contends San Francisco's operation of the dam and reservoir violates a state constitutional requirement that any diversion of water must be reasonable. It sued the city in Tuolumne County Superior Court in 2015. A Superior Court judge in 2016 and then a state Court of Appeal panel in Fresno in July ruled that the federal law supersedes the state constitution and said the lawsuit should be dismissed. The state Supreme Court's denial of a hearing leaves the appeals court decision in place.

The case could be appealed further to the U.S. Supreme Court. Representatives of Restore Hetch Hetchy were not immediately available for comment. San Francisco City Attorney Dennis Herrera said in a statement, "This lawsuit was misguided from the start. Attempting to drain a reservoir that provides emissions-free hydroelectric power and clean drinking water to 2.6 million Bay Area residents is a terrible idea." Hetch Hetchy Valley, in the northwest part of Yosemite National Park, is nine miles long and was carved from granite cliffs by glaciers and the Tuolumne River. Naturalist John Muir, who fought against the dam, compared Hetch Hetchy to Yosemite Valley to the south and called it a "most precious and sublime feature of the Yosemite National Park." The lawsuit sought to require the city to develop a plan to divert water farther downstream, make system improvements to maintain a reliable water supply and eventually restore the valley.

(Another Judge weighs in on the Lower Snake River controversy.)

Judge says cool the rivers. Group says remove the dams

BY ANNETTE CARY, tricityherald.com, October 17, 2018

KENNEWICK, WA - The federal government is required to come up with a plan to help protect salmon in the Snake and Columbia rivers from water that's too warm for the cold-water fish. The ruling made Wednesday by U.S. Judge Ricardo Martinez is another piece of evidence on the side of removing the four lower Snake River dams, said Miles Johnson, senior attorney for Columbia Riverkeeper. Columbia Riverkeeper, along with four other groups, filed a lawsuit in February 2017 against the Environmental Protection Agency, saying it failed to come up with a plan for maximum daily



Warm river water in the summer of 2015 is blamed for killing fish. This 7-foot-long dead sturgeon at the east end of Pasco's Wade Park near Road 39 attracted attention in June 2015. Tri-City Herald file

temperatures to protect salmon from hot water. Other plaintiffs were Idaho Rivers United, Pacific Coast Federation of Fishermen's Associations, Snake River Waterkeeper and The Institute for Fisheries Resources.

(This dam is going to the dogs.)

The Corps' Newest Dam Dog Arrives At Cannelton Locks

OCTOBER 19, 2018, BY WATERWAYS JOURNAL, waterwaysjournal.net

For the second time ever, the Corps of Engineers has employed a well-trained dog to deter nuisance birds from an inland lock and dam system. Breeze, a blue merle, smooth-coated border collie, was delivered to Cannelton Locks and Dam in Cannelton, Ind., September 18 by Rebecca Gibson from Flyaway Geese, an organization providing professional bird management by dog deterrence. Breeze, who will be 2 years old in January, began staying all night at the lock last week. "It gives Breeze the chance to work with other lock personnel," said Larry Dunning, Cannelton Locks and Dam lockmaster. "For the first couple weeks, it was recommended by Flyaway Geese, that Breeze spend nights at home with [me]. The intent was to help Breeze gain trust with the lockmaster and learn to follow commands from me before she was trained with other personnel."



She started her training at 8 months old on a farm in North Carolina. She recently gave birth to her first litter of puppies. "Breeze is a fully-trained bird control dog, so we are excited for what she is going to do out here," Gibson said. "It should be a lot of fun for these guys and a ton of fun for her." When Breeze isn't training or working during the day, she has a kennel in the break room at the lock, with her bed and toys inside of it. The team will be assessing Breeze for the next three months to determine her effectiveness of deterring vultures that are eating away the expansion joints on the dam. The vultures are most problematic for the facility when drift accumulates on the dam, according to the Louisville Engineer District. "As soon as we replace the expansion joints, the vultures tear them right back out," said Dunning. "We are hoping that if the dog works and the vultures stay away, we will be able to replace all the expansion joints next summer."

Dunning said that if all goes to plan, Breeze will be worked daily. "She goes up on the dam and around the locks different times of the day," he said. "This allows for the element of surprise with the birds by her not having a set routine. She works hard chasing all the pigeons and vultures away. She runs them until they completely go away and won't rest until they are gone. She is well trained, but of course with anything there is a learning curve to go through. It's been amazing to watch her work." In addition to the nuisance vultures, pigeons and geese continuously cover the project site with their defecation, causing health hazards to the employees and visitors. Breeze has been trained to deter those birds as well.

On May 23, Danielle D'Amato, Engineer Research and Development Center research biologist, came to consult, advise staff and assess the damage and hazards posed by birds. D'Amato visited field sites to determine suitability for using and housing a dog, and educated the lockmasters and employees on the benefits of using dogs to deter birds. It was concluded that several species of birds have created an unhealthy and unsightly working environment and have damaged Corps facilities.

Nuisance bird behavior is costly to the projects, consuming funding and labor hours, and using dogs like the Corps' first dam dog, Ellie, to deter birds has already proved successful at projects in the Tulsa and Chicago districts. Dogs are natural predators whose presence can be a deterrent to birds, said the Corps. The dogs are trained to actively deter birds by patrolling specific areas of

a project. Using a dog can be substantially less costly than conventional deterrence methods like baiting or trapping. "This will be the second dog that the Corps of Engineers has," said Todd Kimery Louisville District assistant operations manager. "Right now, the initial thought is that we would split her time between two locks and dams since the facilities are close in distance." Other locks and dams with bird issues are John T. Myers Locks and Dam in Mt. Vernon, Ind.; Markland Locks and Dam in Warsaw, Ky.; and McAlpine Locks and Dam in Louisville, Ky.

(Fix that dang dam.)

FERC Upholds Michigan Dam Closure over Safety Fears

By Amanda Durish Cook, October 21, 2018, rtinsider.com

FERC last week said that it will not delay its decision to shut down a Michigan hydropower dam over safety violations. The commission ruled there was no reason to grant a stay of its order to revoke the license of the 4.8-MW Edenville Dam in northern Michigan, saying it only allows such a delay in cases of "irreparable injury" to the petitioner (P-10808-062). In this case, the commission said it found no harm other than economic loss.



Edenville Dam spillway

FERC ordered the dam shut down in February, citing concern over a failure of owner Boyce Hydro to increase the dam's spillway capacity. (See Michigan Dam Ordered Shut over Safety Breaches.)

Boyce filed for a stay last month, along with the Sanford Lake Preservation Association, the Wixom Lake Association and the Gladwin County Board of District Commissioners, who wanted to take over dam operations. The D.C. Circuit Court of Appeals on Sept. 25 denied Boyce's motion to stay the revocation order. In its ruling Thursday, FERC reiterated the dam's 14-year history of noncompliance and safety violations. "In multiple orders, the commission has set forth a history, going back to 2004, of Boyce Hydro's failure to comply with its license, the commission's regulations and commission orders," FERC wrote. "The commission's primary concern has been Boyce Hydro's 'longstanding failure to address the project's inadequate spillway capacity.' Nevertheless, 14 years after acquiring the license for the project, the licensee has still not increased the project's spillway capacity. The licensee has shown a pattern of delay and indifference to the potential consequences of this failure, which the commission has found must be remedied in order to protect life, limb and property."

FERC also said it was not swayed by the argument by the lake associations and county commissioners that it would be costly and difficult to acquire a new license for the dam. "Whether Boyce Hydro and the lake associations will reach agreement regarding the sale of the project works is speculative; these entities have not suggested that such a transaction has gone beyond the exploratory stages," FERC said. The shutdown is ultimately in the public interest, FERC said, observing that even the temporary state of the dam during spillway renovations would place the public at further risk: "Boyce Hydro ... notes that to repair the spillways will require the installation of a cofferdam for four to six months, which will reduce the spillway capacity by approximately 50%, increasing the potential for overtopping of the dam."

(Kick the can down the road.)

Trump issues order on Columbia and Snake River dams. He wants fewer regulations

BY ANNETTE CARY, tricityherald.com, October 20, 2018

KENNEWICK, WA - President Trump on Friday ordered the removal of what he called "unnecessary" regulatory burdens on Columbia and Snake River hydropower dams. He signed a presidential memorandum requiring that a new environmental study on management of the eight

dams operated by the Army Corps of Engineers be completed a year sooner than previously planned. "Moving up the deadline ... is a procedural win that will give more certainty to the communities whose livelihoods depend on effective operations of our dams," said Rep. Dan Newhouse, R-Wash., on Friday. But Joseph Bogaard of Save Our Wild Salmon of Seattle said the memorandum looked "like politics a few weeks ahead of an election rather than real meaningful policy."



In 2016, a federal judge in Portland overturned a 2014 management plan for the dams, finding it did too little to protect salmon runs, and ordered a new management plan that could include tearing down the four lower Snake River dams. This presidential memorandum moves the completion of the new management plan, called a biological opinion or BiOp, from 2021 to 2020. It would ensure the plan is completed during Trump's current term. A schedule for reaching that goal must be submitted within 60 days, the memorandum said. It ordered the secretaries of Interior, Commerce and Energy, along with the assistant secretary of the Army for Civil Works under the direction of the Secretary of the Army, to develop the schedule. The secretaries of the Interior and Commerce must work together to minimize regulatory burdens and increase the efficiency of decision-making so that water projects in the West are better able to meet the demands of their intended purposes, the memorandum said.

The 2014 BiOp was the result of collaboration between the Obama administration, states and Northwest tribes to protect salmon while operating dams. But in 2016 U.S. Judge Michael Simon in Portland found that the BiOp did not do enough to protect salmon and ordered a new environmental study that would include the option of tearing down the Snake River dams from Ice Harbor Dam near Burbank upriver to Lower Granite Dam near Pomeroy. He also ordered more water to be spilled over the Snake and Columbia dams in the spring starting in 2018, with the goal of helping young salmon on their way to the ocean. Water that is spilled cannot be used to produce inexpensive electricity, which increases utility bills for Northwest ratepayers. Some opponents of the spill say it could harm, rather than help salmon. A joint press release from the offices of Newhouse and Rep. Cathy McMorris Rodgers, R-Wash., said the judge is "dictating new river operations from behind the bench" and throwing the river system's operations into disarray. The judge's actions have forced uncertainty upon the Bonneville Power Administration's ability to manage the power transmission system, it said. "Dams and fish coexist, and after more than two decades in the courtroom, we should let scientists, not judges, manage our river systems and get to work to further improve fish recovery efforts," McMorris Rodgers said. Trump's action Friday meets those goals, she said.



Lower Granite Falls dam

But Glen Spain, Northwest regional director of the Pacific Coast Federation of Fishermen's Associations, said the presidential memorandum will only create more confusion, errors and litigation. "It's a mistake to take one of the most complex systems in the country and put it on a short timeline for analysis," he said. The largest problem is not over regulation of the Columbia and Snake River system, he said, but not enough water, especially given climate change, for all the demands on the system.

The Northwest will not benefit from the Trump administration jumping into the issue and playing politics with Northwest salmon and rivers, Bogaard said. "We need a thorough, objective analysis of salmon recovery options in the Columbia and Snake rivers," he said. It will take people working together to find solutions, he added. The order on the Columbia and Snake dams was part of a presidential memorandum

addressing reliable water access in the West. "We have to make sure American farmers and their families, wherever they may be, wherever they may go, have the infrastructure projects that they need to compete and grow," Trump said in a statement released by the White House Office of the Press Secretary.

The memorandum said the federal government has invested enormous resources in water infrastructure in the West to reduce flood risks to communities; provide reliable water supplies for farms, families, businesses, and fish and wildlife; and to generate hydropower. "Decades of uncoordinated, piecemeal regulatory actions have diminished the ability of our federal infrastructure, however, to deliver water and power in an efficient, cost-effective way," the memorandum said.

(Old dam gets new gates.)

ComEd upgrades Fordam Dam to help install automatic floodgates

By WIFR Newsroom | Oct 23, 2018, wifr.com

ROCKFORD, Ill. (WIFR) -- ComEd is stepping up to upgrade the Fordam Dam, helping out with repairs to make its floodgates automatic. The maintenance comes after residents expressed concerns about the dam's safety earlier in the year. The floodgates are in the process of becoming automatic after an agreement between the Winnebago County Sheriff's Office and ComEd. Crews brought in a helicopter to help out with some installments on Tuesday.



Some dam advocates are satisfied with the changes, while others are skeptical of the process. The dam was originally built more than a century ago.



Hydro:

(Here's a deal for you.)

Save 25 Percent On the Hydro Flask Pint Glass

By The Editors, Oct 17, 2018, outsideonline.com

This 16-ounce stainless steel pint glass (\$19; 25 percent off) is insulated to keep your beer cold, which is just one of the reasons why our Gear Guy loves his. It's also BPA-free, phthalate-free, and is designed to be easily stackable, so go ahead and buy a few.



(Another Lock & Dam hydro project.)

Firm plans hydroelectric plant below Highland Park Bridge

By RITA MICHEL, OCT 18, 2018, post-gazette.com

Officials with Rye Development of Boston say they are moving ahead with design plans for a hydroelectric power plant at Locks and Dam No. 2 on the Allegheny River, just below the Highland Park Bridge. The \$40 million to \$60 million project could produce up to 11 megawatts, enough to provide power for 5,000 to 8,000 homes, according to company officials. The Allegheny River site is one of eight potential hydroelectric plants



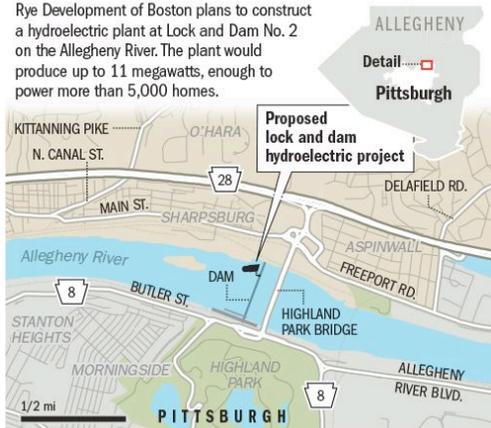
the company would like to develop in the Three Rivers region, including four on the Monongahela River and three on the Ohio River.

“Our goal is to do all eight projects at once,” said Paul Jacob, chief executive officer of Rye Development. “It makes more sense to deal with these simultaneously.” The hydroelectric plant on the Allegheny would be located on O’Hara side of the river, opposite from where the locks are located, and could be used as an emergency source of electricity in the event of a major power outage, Mr. Jacob said. The dams, owned by the U.S. Army Corp of Engineers, were all built in the early 1900s and have been providing flood control and river navigation for years. But Mr. Jacob sees them as lost potential. “When you look at it, there’s just water flowing over them.” His company has been working with state and federal agencies for more than a decade for approval to build the hydroelectric power plants. The power plant will have a similarly long lifespan as the existing lock and dam with no impact on their operation. “If the Corps thought this in any way would impact the dam, the wouldn’t allow it to be constructed,” Mr. Jacob said. Sara Hillegas Woida, hydraulic engineer and hydropower coordinator for the Corps of Engineers Pittsburgh District, said if the Corps’ review process determines that the power plant would be in the best interest of the public and would not impair the usefulness of Lock and Dam No. 2, Rye will be granted permission to build its plant.

That all hinges on approval of detailed design plans, Ms. Woida said. It follows a years-long environmental assessment by the Federal Energy Regulatory Commission (FERC), which granted Rye a license to proceed with planning. FERC is the agency that reviews and regulates the interstate transmission of electricity, natural gas and oil and reviews proposals to build

Proposed lock and dam project in O’Hara

Rye Development of Boston plans to construct a hydroelectric plant at Lock and Dam No. 2 on the Allegheny River. The plant would produce up to 11 megawatts, enough to power more than 5,000 homes.



hydropower projects. Once Rye completes and submits its final design, there are several more stages, requiring review and approval by regional and local Corps officials, including a public comment period, before the Corps grants permission. “We will be making sure there will not be an impact to navigation, recreation or water quality,” Ms. Woida said. The Army Corps has authority over contract awards for construction. “We have to seek permission from the Corps to build at this location,” Mr. Jacob said. They also have been overseeing the design process, which is about 30 percent complete. In addition, FERC will conduct ongoing inspections throughout the entire project.

Mr. Jacob said he hopes construction could begin as early as 2019, but Ms. Woida said she thought that was unlikely. “I really can’t tell you when it might happen but there’s still more licensing and review before shovels hit the dirt.” Construction is expected to take about two years to complete, Mr. Jacob said. Once construction is complete: “No one will notice it,” Mr. Jacobs said. “That’s the nice thing about it. The plant will run and produce renewable energy without any environmental impact.” Mr. Jacob said the plant would have minimal impact to both marine and terrestrial environments from construction through operation and maintenance. Most noticeable to those using the river and shore areas, he said, will be construction of a small road to get into the building site. “That’s part of the reason it took so long. There won’t be any surprises.” During construction, the hydroelectric power plant should provide 150 to 200 construction jobs, Mr. Jacob said. Once it’s up and running, it will be staffed by up to four maintenance people. The closest example of Rye’s power plant is on the Allegheny River at dams No. 5 and No. 6 in Freeport. It is owned by Cube Hydro of Bethesda, Md. That operation produces about 18 megawatts, according to the company’s website.

Once the plant becomes operational, it will have no impact on the river’s flow. “By the time it gets out of the water the velocity is the same as the flow of river,” he said. And that’s what he expects

Rye's plant to do once design and construction is complete. The bulk of the plant will be five stories down from the surface of the water. All that will be visible will be a concrete cube, built from locally sourced concrete. "What's neat about Pittsburgh is really why we're here. The water resources are tremendous. The river already flows. It's a great source of renewable energy. There's not many places in the country with this unique opportunity."

(Storing hydropower.)

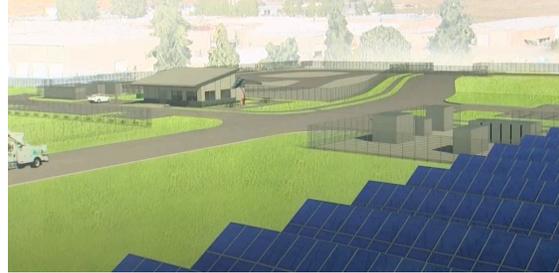
Pilot project under construction in Arlington aims to keep lights on after a disaster
A \$12 million pilot project under construction in Arlington will use modular batteries to store energy from three acres of solar panels that can help mitigate disasters when the demand for energy sky rockets.

Author: Glenn Farley, October 15, 2018, king5.com

Could large batteries be used to power microgrids to keep the lights on in a disaster like an earthquake? Snohomish County's Public Utility District (PUD), WA has begun

construction of a pilot project in Arlington to see how well a combination of solar panels and a new generation of large utility grade batteries might do that. We hear of the "electric grid" all

the time. It's the interconnected network of large and small transmission lines, hydroelectric plants, coal-fired power plants all interconnected across multiple states. Power can be moved back and forth and traded at different prices. In the end that electricity ends up in your home.



In 2015, Snohomish County PUD began using large one-megawatt batteries built inside of shipping containers to smooth out load demand during peak periods, particularly in the morning as people wake up. Two substations are using those batteries now. The batteries store energy coming from hydroelectric dams in the Cascade Mountains and along the Columbia River overnight when demand and power rates are low. The batteries can feed power back onto the grid when demand is high.

Now in Arlington, PUD plans to use a new generation of modular batteries to store energy from three acres of solar panels. Scott Gibson, Snohomish County PUD's principal engineer for the microgrid project, says those panel would charge the batteries in about nine hours on a sunny day. On a cloudy winter day, it might take a few days to fully charge the batteries, so a generator backup would also be part of the project. The \$12 million project, which includes \$3.5 million in clean energy funds from the Washington Department of Commerce, is designed to see just what such a project could do. It would also be a guide for other utilities and governments about a system that could go self-contained in a disaster while providing energy for the grid now. A building built by PUD on the project site will be powered from the panels and the batteries, while also serving as an educational site. Gibson says the technology is not there yet to provide power for the entire city but could power the hospital, fire and police stations, and emergency operations centers after a disaster.

(More rain is good for some.)

Wet weather lowers energy costs for some

Oct 19, 2018, upmatters.com

Significant rainfall and cooler temperatures has resulted in an increase in the production of the Upper Peninsula Power Company's (UPPCO) hydroelectric generation fleet. "The extra rainfall has increased the amount of water that is available to produce renewable energy through our hydroelectric generators," according to Brett French, UPPCO Vice President of Business



reservoir: "LCRA now projects that Lake Travis will rise within a range of 704 to 706 feet above mean sea level by Saturday," officials said. "Those projections could change if additional rain falls in the lower Colorado River basin."

That worst-case scenario is up to 25 feet above desired levels. The ideal level at Lake Travis is 681 feet above sea level, a point deemed "full" at maximum desired capacity. By Friday morning, the water level at Lake Travis was 703.91 feet — the fifth-highest crest on record. The Lake Travis water level would have to rise to 741 feet before runoff would surge over the Mansfield Dam spillway, but that scenario has never materialized in the history of the man-made reservoir.

Given the looming threat, several residents in the area of Lake Travis already have evacuated from their homes. Earlier this week, residents living along Mockingbird Street in Lago Vista reportedly exited their homes in search of higher ground elsewhere. Mockingbird Street is a low-lying artery fronting Lake Travis. LCRA officials continue to monitor a number of other area dams, and have closed several bodies of water for recreation use in light of the ongoing danger: "Flood operations continue at Buchanan, Inks, Wirtz, Starcke, Mansfield and Tom Miller dams," LCRA officials said. "Flows throughout the Highland Lakes are swift and high. LCRA has closed lakes Buchanan, Inks, LBJ, Marble Falls and Travis until further notice."



Other Stuff:

(It's a start. There's not enough money to make much of a dent.)

Trump Signs Water Infrastructure Bill into Law

Proponents say it will foster clean water, help with flooding, and maintain ports and waterways

BY HOLLY KELLUM, October 24, 2018, theepochtimes.com

President Donald Trump signed a bipartisan water infrastructure bill into law on Oct. 23 that its sponsors described as a step forward for infrastructure, the economy, and public health. The bill, America's Water Infrastructure Act of 2018 (AWIA), gives more resources to communities for flooding, to maintain ports and harbors, to expand water storage, and to improve irrigation, wastewater and drinking water systems, among other things. It also seeks to cut down on spending by creating a list of projects to be deauthorized.



"This bipartisan law authorizes the U.S. Army Corps of Engineers to construct, expedite, modify or study more than 100 water resource projects," Sens. John Barrasso (R-Wyo.) and Tom Carper (D-Del.) said in a USA Today op-ed. "These important projects will create jobs here at home and spur economic growth. They will keep our waterways open to make it easier for American products to reach markets around the globe, keeping us competitive for years to come." The bill increases the involvement of local communities in prioritizing Army Corps projects because "those on the ground often understand the needs of their communities best," the sponsors of the bill wrote. The bicameral legislation passed with 99 votes in the Senate and one lone "no" vote by Sen. Mike Lee (R-Utah).

Drinking Water

The act authorizes \$4.4 billion in drinking water revolving loan funds over the next three years to help states comply with the Safe Drinking Water Act and Clean Water Act by taking out loans to build and maintain drinking water systems. It also allocates \$20 million for a program to improve water infrastructure systems on Indian reservations from 2019 to 2022. For communities struggling to deal with or prevent contaminants in their water supply, the act allows states to apply

for a grant from the federal government. Possibly in a nod to the Flint water crisis, the bill also includes language to hold any person or entity responsible for paying back the grant money if they “caused or contributed” to the contamination. Under the bill, schools can apply for grants to replace drinking fountains manufactured before 1988 or to test lead levels in school drinking water. “The events that produced elevated lead levels in the water in Flint, Michigan, were both tragic and avoidable,” wrote the sponsors. “All parents—no matter what ZIP code they live in—should have confidence that the water coming out of their tap is safe for their kids to drink. These same assurances should extend to schools as well.”

Flooding

The legislation seeks to prevent flooding by maintaining dams, levees, beaches, and wetlands through the financing of certain infrastructure projects. The Secretary of the Army must report to Congress about urban flooding and what federal policy constraints there are to addressing them. It also appropriates \$60 million more for the rehabilitation of dams constructed by the Army Corps than is currently in the Water Resources Development Act of 2016, and extends the National Dam Safety Act through 2023.

Workforce Development

To encourage jobs in the water utility sector, the act creates a grant program that institutions or organizations can apply to workforce and career development events, internships, and training in the water utility sector or that connect people to water utility jobs. The program was allocated \$1 million for the years 2019 and 2020. “As a candidate, I called for a great rebuilding of America’s crumbling infrastructure and we’re taking another major step toward that goal,” Trump said during the signing of the bill. “I am particularly proud that this legislation extends a requirement that protects ... projects supported by the Drinking Water State Revolving Fund use construction materials—all made in the U.S.A.”

“Under this administration, we are living by two simple but very important rules—buy American and hire American.” After signing the bill, Trump turned to Pastor Andrew Brunson, who came into the Oval Office with Vice President Mike Pence after a meeting. He gave Brunson the pen he signed the bill with, telling him it was a “very important pen” because it was a “very important water bill.” “God has blessed us with many natural resources as a country, and we need to be grateful to him,” Brunson said while accepting the pen. After telling the Democrats who worked on the legislation that he planned to work more with them on infrastructure bills, he gave them a pen for Senate Minority Leader Chuck Schumer (D-N.Y.).

(It’s a laudable goal, but-----! This applies to all countries.)

Energy mix vital to reduce climate change

By AUSTRALIAN ASSOCIATED PRESS, 21 October 2018, dailymail.co.uk

Australia needs to stop putting all its money into new renewable energy and use existing technology to take carbon dioxide out of the atmosphere, an expert says. David Byers, the boss of an Australian carbon capture and storage research organisation, said focusing solely on renewables could be a costly waste of time and resources. “Believing the world can mount a rapid, reliable and low-cost transition to an energy system that relies exclusively on wind, solar and hydro-electric power could lead to public resources being misplaced and discarding energy sources necessary to meet the world’s daily energy needs,” the chief executive of CO2CRC Limited said.



More than 80 per cent of the world's energy supply is from oil, gas and coal and this fossil fuel mix hasn't changed in 40 years nor is it likely to shift easily or quickly, he said. "It is only through global deployment of a diverse portfolio of clean energy technologies, that the pathway to a low carbon energy system will be feasible and economically viable," Mr. Byers said. "Technologies like carbon capture and storage are commercially viable and ready to play a vital role in delivering cost-effective emissions reductions by transforming the global energy system without trashing it." Mr. Byers will be the co-chair at the Greenhouse Gas Technologies conference, running from Monday to Thursday in Melbourne, where Australia's chief scientist Alan Finkel will also be a guest speaker. About 900 international delegates will attend to discuss developments in carbon capture and storage technology and its role in reducing emissions from fossil fuels at the event. Carbon capturing involves removing it from the atmosphere and storing it underground.



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