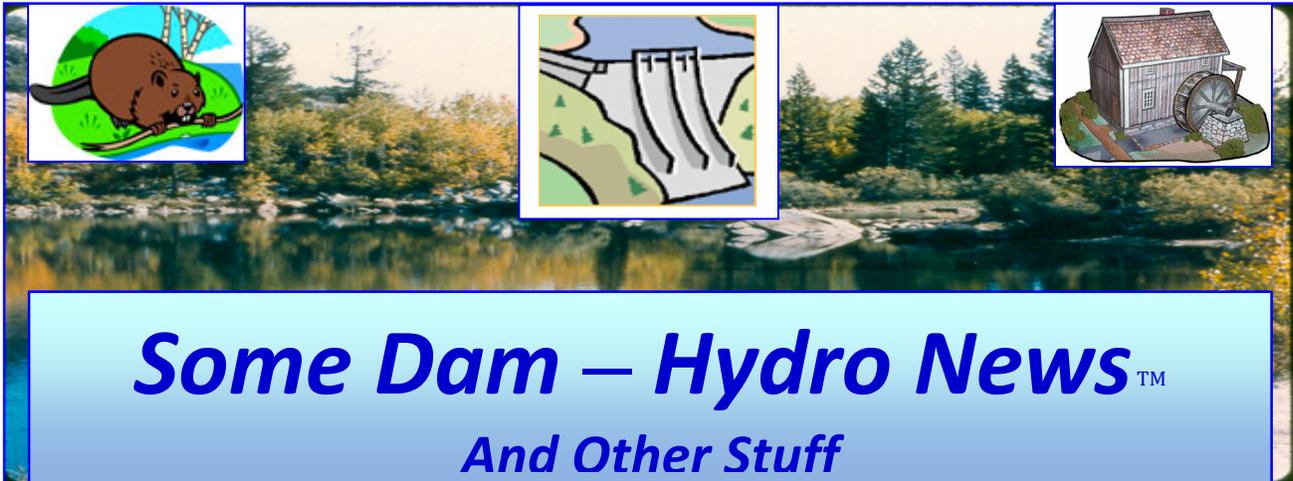


10/18/2019



Some Dam – Hydro News™

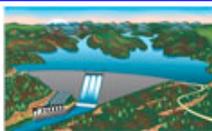
And Other Stuff



Quote of Note: *“Success is more a function of consistent common sense than it is of genius.” - An Wang*

Some Dam - Hydro News → **Newsletter Archive for Current and Back Issues and Search:**
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“Good wine is a necessity of life.” - -Thomas Jefferson
Ron’s wine pick of the week: 2017 Lazy Creek Pinot Noir "Lazy Day"
“No nation was ever drunk when wine was cheap.” - - Thomas Jefferson



Dam:

(Making it stronger.)

Cave Creek Dam undergoing repairs

10/4/19, elkodaily.com

ELY, Nev. — State agencies are working this month to repair the Cave Creek Dam at Nevada’s Cave Lake State Park. As part of the initial phase of this project, the water level of Cave Lake will be temporarily lowered by approximately one-third of its current surface area. Upon completion of the full project, the lake’s water level will gradually return to its normal surface level. The Nevada Department of Wildlife is working to determine a specific



timeline for the full rehabilitation, which will depend on weather conditions and funding Status updates for visitors to Cave Lake State Park will be available at parks.nv.gov/cave-lake. During construction, Cave Lake State Park will remain open to the public, and visitors can continue to enjoy kayaking, fishing, swimming, and other recreational activities. The lake will remain easy to access, and the health of area fish and wildlife will not be impacted, according to NDOW. **The fish will occupy a smaller area within the lake, potentially improving catch rates.** The boat dock, however, will be closed for the duration of the project.

While there are no immediate safety issues, NDOW, as the owner of Cave Lake Dam, has identified necessary improvements that will help ensure the long-term integrity of the dam and continued recreational access to Cave Lake State Park. Originally constructed in 1932, Cave Creek Dam's aging infrastructure, coupled with findings from a recent engineering assessment, indicate that **the dam needs repair and improvements to help accommodate extreme weather and storm events.** The rehabilitation project includes enhancing the overall stability of the dam with an expanded spillway, increased stormwater storage capacity, advanced technology, and other necessary long-term improvements.

NDOW is working closely with both the Nevada Division of State Parks and Nevada State Engineer's Office to ensure visitors are still able to enjoy Cave Lake State Park during construction and **that the dam repairs meet the highest safety and engineering standards.** "The Nevada Department of Wildlife, together with its partners, is committed to ensuring all Nevadans and visitors can continue to enjoy the myriad recreational opportunities and natural splendor that Cave Lake State Park has to offer," said NDOW Chief Engineer Rodd Lighthouse. "We appreciate your understanding as we complete these important upgrades at Cave Creek Dam to help ensure safe, memorable, and amazing recreational experiences for all."

(A lot of thought went in to this one.)

Letters to the Editor: Dam response

Oct 4, 2019, taftmidwaydriller.com



Four generations at the same Klamath location immediately below Iron Gate, "in the water" over 50 times a year as my grandfather before me, before and after, at the so-called 'focal point' of dams impacts, a life vested in and with the river and region we love, and with well over 10,000 unpaid hours and countless sleepless nights researching the Klamath over the last few decades alone of this debacle, I feel compelled to comment. Unfamiliar with Dr. Lusardi, his mentor, Dr.

Moyle, is an early proponent strategically modeling rationales advocating his personal opinion regarding Klamath Project destruction and regional rewilding. Over the years, virtually all of his area historically unsubstantiated theories have failed. Rather than responsible retraction and reevaluation, we instead see him pushing unaccountable "adaptive management" and doubling down on academic empowered (funded) mandate within even greater Regulatory resource confiscation and control. Consistent with that, any inference of Dr. Lusardi's objectivity evaporates with video and advertisements on behalf of destruction 'agreement' benefiting special interest signatories. **Unfortunately, his boilerplate agenda rhetoric reveals an equally certain motive or lack of area specific Klamath knowledge in which nearly every statement is wrong or misleading.**

"Aging" dams are State designated in excellent condition and so well built that the oldest, Copco, reinforced with railroad rails, presents major impediments to destruction. Iron Gate discharge temperatures show minimal transitory downstream impacts, supported by consistently higher salmon survival rates near the dam than farther downstream. **Studies confirm salmon never ascended in any known numbers beyond the vicinity of the Keno "Project" for at least 8,000 years,** with intermediate area habitat listed as "marginal" by Fish and Game records, consistent with salmon returning to the dams area, before and after, already largely depleted and dying. His

expected “gravel recruitment” is actually naturally virtually non-existent, to the point ratepayers are already paying to import gravel to the intermediate area with no identifiable proven benefit. “Confounding” flushing and mobilization experiments demonstrated the lack of destruction proponents’ knowledge or credibility, but they apparently have no problem endorsing minimally estimated 13-20 million yards of sediment devastating the regional environment.

Iron Gate Hatchery, using “unnatural” cold water made possible only by the Dam, consistently spawns far more returning salmon and steelhead than ever previously “naturally” known for the region, including six million chinook smolts per year, which capacity will disappear with destruction. Area counts since Copco a hundred years ago indicate zero impacts to local salmon returns and a substantial increase after Iron Gate. Studies prove naturally occurring consistent Upper Klamath Lake (UKL) biomass and nutrient output for hundreds of years prior to anthropogenic impacts, supporting local experience that the dams protect the local fisheries by isolating habitat incompatible species and enhance downstream conditions towards cold water fisheries. Studies prove the Klamath’s only deep water lakes retain and reduce UKL nutrients, which after destruction would annually release nutrients/biomass directly downstream at the most detrimental time of year, conducive for downstream far more potentially damaging already demonstrated toxic algae instream production and harm to coinciding salmon runs.

Sentinel fish exposures, polychaete, and ceratomyxa shasta data show that any salmon shoved into historically inaccessible nonconductive Upper Basin habitat will encounter conditions and existing polychaete densities far more deadly than downstream. By infecting those polychaete with the most coho deadly genotype of ceratomyxa, and with one infected salmon releasing billions of infectious myxospores, disease conditions will compound and transport downstream affecting all currently protected species, including world class red band trout threatened by increased disease, competition, and predation. Then there’s several of the strongest multi life cycle endangered sucker populations and habitats that will be hypocritically destroyed with their “plan.” Dr. Lusardi makes many knowingly conflicting statements and contradicted assurances, too many for here. I have little doubt Dr. Lusardi is highly intelligent and respect his accomplishments, but either Dr. Lusardi is aware of this documentation easily available to him and chooses to dismiss it for affiliated agenda purpose, or he is so uninformed regarding the unique circumstances of the Klamath that his assurances carry little weight. It doesn’t matter.

It is irrelevant whether one believes Dr. Lusardi or the most affected history and emerging data refuting resource destruction and Klamath devastation. The fact is Dr. Lasardi and the special interests currently pushing the Federal Energy Regulatory Commission for approval personally accept zero accountability for the vast majority of imposed acknowledged inescapable and known potential damages to the environment, private property, public safety, regional security, infrastructure, and more. The ‘agreement’ signatories conscripting unwilling and unrepresented ratepayer/taxpayer limited funds to impose unaccountable ‘agreed’ devastation must be held jointly and severally liable to compensate those damages without legal barriers, something they are unwilling and unable to do, forcing those losses on the most affected. Please let FERC know your opposition. *Rex Cozzalio, Hornbrook, CA*

(It’s a mess, gotta fix it.)

Gibson Pond Dam to be rebuilt soon

The Town of Lexington says the goal is to have the dam open by fall of 2020.

Author: Nic Jones, October 4, 2019, wltx.com

LEXINGTON, S.C. — Town of Lexington officials say they hope the Gibson Pond Dam will be rebuilt over the next year. The Gibson Pond has been out since the October Floods of 2015. While the park has remained open, it hasn't looked the same since.



Laurin Barnes, the spokesperson for the town, says it's been a work in progress to restore the dam. "We've just been working hard to make sure we can restore it like it was," said Barnes. The Town of Lexington said in their State of the Town address earlier this year they would be submitting plans to FEMA to get the dam rebuilt. Officials also say 75 percent of the public park project will be paid by FEMA and the town will take care of the remaining 25 percent. They say the overall project cost to fix the dam is around \$5 million. Barnes says good news is on the way. "We've got our DHEC permit approved. So we plan to begin construction late this year or early next year," Barnes explained. "It will be great. It's a great park and so with a pond it's even better. We're really looking forward to it being like it was." The town says the goal is to have the dam back open by Fall of 2020.

(Some incentive to have a State dam safety program.)

DAM REHAB PROGRAM APPROVED

FEMA Grant Awarded for High Hazard Potential Dams Rehabilitation Program

\$409,298 awarded for use on eligible dams in Kansas

OCTOBER 5, 2019, fortscott.biz

The Kansas Water Office (KWO), with assistance from Kansas Department of Agriculture (KDA) Water Structures Program and the Division of Conservation applied for the FY 2019 Federal Emergency Management Agency (FEMA) High Hazard Potential Dam (HHPD) Rehabilitation Grant. The approval was recently announced and Kansas is being awarded \$409,298 in grant funds for rehabilitation of eligible high hazard potential dams. "Many Kansans were able to see firsthand benefits of dams helping to minimize downstream flooding this year across the state," said Kansas Water Office Director Earl Lewis. "Utilization of resources such as this HHPD Rehabilitation Grant will help to ensure eligible projects will function properly into the future."



The purpose of the HHPD Grant is to make funds available to eligible dams for technical, planning, design, and pre-construction assistance. Two eligible dams, McPherson County State Lake Dam and Lake Sherwood Dam, were part of this initial Kansas request to FEMA. Both were approved and there are 34 other eligible dams with the option to apply for the grant funds through KWO. In order for a dam to be considered eligible it must be a non-federal dam located in a state with a state dam safety program, classified as high hazard potential by the state dam safety agency, have an approved emergency action plan, and pose an unacceptable risk to the public.

"Overtime, some dams have been reclassified as high hazard structures and are now out of compliance," and," said Kansas Secretary of Agriculture Mike Beam. "With the award of the HHPD Grant funds, we will have the ability to work with eligible dam owners throughout the state to bring their high hazard classified dams into compliance. Having these dams in compliance will reduce risks to the public, decrease flood potential, and in some cases, protect critical water supplies." The official and final grant award notification was received by the KWO on September 19 with three years to utilize funds. The KWO will again work with the KDA Water Structures Program and the Division of Conservation to revise the grant work plan to appropriately distribute the additional funds.

(A useless plea for sanity. The one side will never talk until the dams are gone)

Dams and fish are possible if we're willing to talk it out

Commentary Jeff Sayre, 10/6/19, Imtribune.com



When I started fishing the Snake River for steelhead in September of 1984, it was a steep learning curve from the trout I fished for on the Spokane River and lakes around Cheney. I eventually became a resident

of Idaho and worked at fishing the Clearwater River. I did well for years, some nights hooking dozens. I also saw guys hook 30 or more in one night. That's all changed. Hydroelectric direct current electricity started in 1880, the same year Thomas Edison invented the incandescent filament light bulb. Electricity changed America for the good of many. Hydroelectricity changed many desert and desolate Western states forever.

They grew agricultural products to feed America. And population growth followed. President Franklin D. Roosevelt actually started the idea of building dams on the Columbia River at Bonneville Dam's location. He was a visionary in that sense and knew electricity would change the Pacific Northwest. He visited the shores of the Columbia in 1932, 1934 and again in September of 1937 for the dedication of the unfinished New Deal project. At Bonneville Dam's dedication, FDR spoke words that, in part, ring true today: "My friends of the Northwest, today I have a feeling of real satisfaction in witnessing the completion of another great national project, and a pleasure in the fact that, in its inception four years ago, I had some part. ... Almost exactly three years ago, I inspected the early construction stages of this dam at Bonneville. ... The more we study the water resources of the nation, the more we accept the fact that their use is a matter of national concern."



We are now almost 30 years into federal court battles over the management of the Columbia and Snake rivers, both of national concern. Federal judges are making decisions over the "right" management of the river systems. None of them is a dam operator. This is probably the most complex natural resource issue in the Western U.S., if not the entire country. Environmental groups have teamed up to tie it all up repeatedly in the slow federal court system to force a decision that moves only in their direction. They don't care about the rest of us — the folks who love the working river system FDR started and we use today in so many ways. Have mistakes been made from Bonneville Dam to Lower Granite Dam and beyond in dam designs? Yes. Engineers have tried to fix many of those issues as they moved upriver at each project. Each dam has been retrofitted to make them more energy-efficient and to make them easier for salmonids to pass and return through. Millions of your electric bill dollars have been spent on habitat restoration. They do work. I've seen it work.

We can have both dams and fish. There is clear evidence even before Bonneville Dam was built that commercial salmon harvests on the Columbia River were slaughtering returning salmon from Idaho, Oregon and Washington. According to a Native Fish Society report on the decline of salmon in the Columbia basin, the Payette River in 1874 produced a commercial catch of 30,000 pounds of sockeye, about 7,000 fish. Did that have an impact on overall historic sockeye returns to Idaho? Yes. It was gone by 1880. In 1880, there were 39 canneries on the Columbia. In 1882 they harvested 42.8 million pounds of salmon, about 3 million salmon, producing 600,000 cases of canned salmon. In 1883, the commercial fishery on the Columbia peaked and there were 1,700 gill net boats fishing. By 1889, only 18.3 million pounds were taken. The population had been hammered in six years. Also in 1889, there were 57 fish wheels operating upstream 30 miles from Bonneville almost to Celilo Falls. The best fish wheels took about 6,000 fish a day. The fish were hammered. When the chinook were gone, they went on to sockeye and steelhead. When those were gone, they moved to coho and chums. The fish were hammered more. When those five species were diminished, they moved to fall chinook. Did that influence historic salmon runs to the Snake and Columbia headwaters today? Yes, absolutely. Unfortunately, salmon are one of those casualties of the modern world. Why? Poor planning for progress and money? Development of the West and the imperative to feed people? Many state fisheries and indigenous

tribes screamed of the demise of these powerful fish in the late 1890s but their pleas fell on deaf ears. Can we turn back time and fix it? Should we keep or remove the dams? Should we destroy the entire Pacific Northwest's combined economies? What about all the people? We all live here. Whatever happens does absolutely affect all of us. Here is an idea: Call on Oregon, Washington and Idaho, college and university students, and departments to help us solve this matter. Come up with new ideas, new plans, new conversations, new collaborations and new technologies. We can solve this together. We must all talk it out. Sayre of Lewiston served as regional director to former U.S. Sen. Larry Craig.

(Two kinds of construction material too, probably not tied together. Given what's downstream, there doesn't seem to be a sense of urgency)

Problems accelerating at Basin Creek dam, but failure not imminent

By MIKE SMITH, mtstandard.com, Oct 6, 2019

The top portion of the Basin Creek Dam south of Butte is deteriorating at a faster rate than past years, which could impact its ability to withstand overtopping in an extreme storm event, officials say. But Mark Neary, the county's director of Public Works, says there are no concerns about it failing anytime soon. The dam holds water from Basin Creek Reservoir, a major source of drinking water in Butte for decades. "It's something we're looking at but there's no imminent danger," Neary said.



The county is applying for grant funds that would pay for a detailed examination of the problem, what it will take to fix it and how much it would cost. Commissioners OK'd the \$8,000 grant request this week and money for the actual repairs would be sought next year. The timetable itself shows it is not an emergency situation, officials say. But the problems are real. The Basin Creek dam is one of many "high hazard" dams in Montana and all must be inspected every five years by a professional engineer in order to have their operating permits renewed.



Photograph from 1915 shows structure of Basin Creek Dam No. 1. The dam is built with sturdy blocks and the concrete at the top was added after 1913.

Butte-Silver Bow still does not have a professional engineer on staff, but Neary says it has always contracted out the five-year inspections. Basin Creek was inspected this past July by professional engineers with Pioneer Technical Services and the Montana Department of Natural Resources and Conservation (DNRC). The 2019 draft report for the Basin Creek dam "describes numerous cracks, spalling, and signs of severe deterioration of the concrete on the upstream face of the dam," Neary wrote in a Sept. 26 letter to commissioners. "This deterioration was also noted in the 2014 and 2019 Periodic Inspection Reports," the letter said. "However, the rate of deterioration has increased considerably in the past couple of years." In the report, Neary says, dam safety officials "express concern that the concrete deterioration appears to be accelerating and this could impact the ability of the dam to withstand overtopping and the top several feet could fail in an extreme storm event. The water level is currently about 5 to 6 feet below the top of the dam, Neary said.

Jim Keenan, chief operator for Butte's water utility, told commissioners this week that most of the dam was constructed with granite in the late 1880s and is solid. "But then in 1913 they added 13 feet of concrete to the top of the dam," he said. "Well, that top 13 feet is in very bad shape and it is deteriorating pretty quickly." Because of that, he said, state officials want Butte-Silver Bow to start addressing the problem. That will begin with an analysis by concrete experts, which the initial grant should pay for. Keenan said if the study is done by November, the county could apply for another grant to help fund technical assistance needed for actual repairs. "Their concern is the top several feet of that dam could fail in the event of an extreme storm event," he said.

A close look at the crumbling Basin Creek Dam shows concrete erosion. Officials say that although the water line does not reach the crumbling portion of the dam, the structure needs to be fixed. Dan Dennehy, the county's director of emergency management, said the county has action plans in place for all its major dams should they fail but the one for Basin Creek will be updated in the coming weeks. That will begin with a review of the current plan and latest engineer findings on Oct. 21, he said, and be followed with a full discussion and exercise to update the response plan should there be a breach. "We will discuss the notification of downstream homeowners, what would happen if the dam is breached, what time frame is needed to get people evacuated, what is the first alert that would go out," Dennehy said. "There is a plan now but this is a redo with everything updated ... and we will run it through with all our first responders," he said.

(Been around awhile, needed a little work.)

Repairs to Arrowrock Dam gates completed

By BRAD CARLSON, Capital Press, 10/8/19,

Repairs to three malfunctioning gates on the downstream side of Arrowrock Dam limited the loss of water, a manager says.] An estimated 7,100 acre-feet of water was lost in the Boise River system in September as the U.S. Bureau of Reclamation completed repairs to the clamshell-like gates, said Bryan Horsburgh, deputy area manager for the bureau's Snake River Area Office in Boise. Crews repaired one on Sept. 20 and the other two Sept. 22.



"The gates are running correctly and we have returned to normal fall operations," Horsburgh said Oct. 4. The Reclamation-owned dam is in the middle of the three-dam Boise system. The bureau also owns Anderson Ranch Dam upstream. The U.S. Army Corps of Engineers owns Lucky Peak Dam downstream. Water stored in the reservoirs is important for irrigation and other uses across the region. Arrowrock Dam's downstream wall marks the upstream end of Lucky Peak Reservoir, which the Corps says has a total storage capacity of 306,000 acre-feet. Horsburgh said Reclamation and the Corps cooperated on necessary outflows from Lucky Peak. At Arrowrock, "normally we would have closed the gates when irrigation demand decreased," he said. "This year we had to leave them open until the Lucky Peak pool dropped enough to access the gates."

Water flows through Arrowrock Dam via a penstock on the upstream side and clamshell gates, which are parallel to each other, on the downstream face. Reclamation discovered the gates were stuck partly open during spring and summer operations, when water in the Lucky Peak Pool was too high to accommodate repair access. "Every drop of water is important," Horsburgh said. "Reclamation is pleased that we were able to repair the gates as soon as possible."

(Ugly creatures.)

Nuisance black vultures causing damage to vehicles at Bagnell Dam area

October 7, 2019 KTTN News, kttn.com

For those who enjoy visiting Bagnell Dam, the Missouri Department of Conservation advises area users at Bagnell Dam Access on the Osage River to beware of potential damage to parked vehicles due to black vultures. MDC has worked to harass these birds and remove some of them, but they continue to congregate in this area despite deterrence efforts. MDC also has signs posted at Bagnell Dam Access alerting area users of the potential nuisance threat.



“MDC and conservation partners in the area are working to try to deter these vultures, but black vultures can be aggressive and persistent,” said MDC Wildlife Regional Supervisor John George. “It may make sense for area users to take precautions such as covering their vehicles with tarps and straps. However, even these precautions do not necessarily guarantee full protection. Black vultures (*Coragyps atratus*) have a large, black body with a naked black head. Their global range extends from South America through the southeastern U.S., and, historically, these birds have only been reported in southern Missouri. However, in the past several years their range has expanded northward and sightings as far north as the Lake of the Ozarks has increased. Two species of vultures live in Missouri. The turkey vulture (*Cathartes aura*), identifiable by its naked red head (adults), are slightly larger and typically avoid areas where black vultures are present. \ Turkey vultures look for carrion by riding wind currents and searching for smells to investigate for food. Black vultures cannot smell as well as turkey vultures, and they rely more on sight to find food. Vultures play an important role in nature by cleaning up dead animal waste, recycling proteins, and other nutrients, and limiting exposure and spread of disease to both wildlife and humans.\ All vultures and other nongame bird species are protected by the Migratory Bird Treaty Act and may not be killed without special permission from the U.S. Fish and Wildlife Service.

(Dam removal under Court order. Looks like it's in bad shape.)

State begins removal process after taking over plagued Brentwood dam

By Jason Schreiber, Union Leader Correspondent, Oct 8, 2019, unionleader.com

BRENTWOOD, NH -- The state is taking the first steps toward removing an aging dam along the Exeter River this week following a legal battle that began after the owner failed to address the deficiencies. In the wake of a court order issued last month, the state has taken control of the dam on Mill Road and on Wednesday will begin permanently removing the lower level gate and penstock from the dam built in 1927. According to Charlie Krautmann, a dam safety engineer with the state Department of Environmental Services' Dam Bureau, the removal of the gate and penstock is the start of the project that will permanently remove the dam that's been a concern for state officials and local residents in recent years.



The state has classified the dam as a “significant” hazard based on a dam failure analysis. “We’ve given the owner a couple of years to repair or remove it,” Krautmann said. The project must still receive proper permits, but Krautmann said he expects the dam will be completely removed by sometime next year. Once the dam is gone, he said, “the Exeter River is going to go back to its natural state.” The dam’s removal means the slow, meandering river will be more shallow through the area, he said.

The state was forced to take over the dam after Rockingham County Superior Court Judge N. William Delker on Sept. 5 ordered the owner, Brentwood Dam Ventures LLC, to take immediate action to have it repaired or removed. Delker found that it committed various violations and ordered the company to abide by the terms of an administrative order issued by the state last year. Brentwood Dam Ventures was given 30 days to prepare and submit an emergency action plan and 45 days to repair or remove the dam, but since nothing has been done, the state has assumed responsibility. Krautmann said the state will pay for the removal and seek reimbursement from Brentwood Dam Ventures. While the project will be costly, he declined to offer a preliminary estimate

(They're going to get it done even though there's no money to FIX dams. There's always money to tear them down, but never any money to fix them. Priorities in this country are all screwed up.)

Cooper Lake dam work could begin in late 2020, engineer says

By Ariél Zangla, dailyfreeman.com, Oct 8, 2019

KINGSTON, N.Y. — State-mandated improvements to the Cooper Lake reservoir dam and water supply intake could begin in late 2020, depending on funding for the project and the construction bids, according to the design engineer. If the project starts late next year, it could be completed by the beginning of 2022, Greg Daviero, a principal with Schnabel Engineering, said during a public information session Monday. He said those are "soft dates" but are the targeted project timeline. The Kingston Water Department is undertaking the approximately \$12 million infrastructure project in order to bring the Cooper Lake dam into compliance with current engineering standards required by the state Department of Environmental Conservation. Those updated safety regulations were issued in 2009 and required dam owners to make detailed engineering evaluations.



Daviero said the engineering evaluations found the spillway for Cooper Lake was too small and that the dam embankment, while stable, did not meet the "factors of safety for stability" required by the state and by modern-day standards. He said it was also determined there was no operable low-level outlet that would allow water to be safely released from Cooper Lake before a catastrophic release occurred. Since 2012 when the evaluations were submitted to the state, the Kingston Water Department has been trying to develop a plan to make improvements to the water supply and to restore operational capabilities, Daviero said.

"This project is going to achieve regulatory compliance," Daviero said. Cooper Lake, in the Woodstock hamlet of Lake Hill, is the main water supply for the city of Kingston and is fed by the Mink Hollow Creek, Kingston Water Department Superintendent Judith Hansen said during Monday's session. She said the water is taken by pipe from the lake and transported to the city's water treatment plant. From there, the water is fed into the Binnewater Reservoir before being transported by three pipes into the city, Hansen said.

The infrastructure project for Cooper Lake would be done in three phases, with the first creating a temporary interconnection with the Ashokan Reservoir. That would provide a backup water supply for Kingston in the event of drought during the construction project. The second phase would be the construction of new water supply outlet works, after which the existing water supply would be abandoned. The final phase of the project would be improvements to the dam embankment. Daviero said the improvements would also raise the dam by 6 feet so the Water Department could raise water levels in Cooper Lake at some point in the future. The water levels could not be increased, though, without a project to raise the west dike on Cooper Lake, he said.

Daviero said the current project only calls for leveling out the west dike. Hansen said the \$12 million project cost is an estimate, and that the total would actually range from \$10.7 to \$13.5 million. "We don't actually have a real number until we get a bid," Hansen said. She added that the Water Department is seeking a mix of funding for the project, though there are no grants available on either the state or federal level for work on dams.

"There's no money to fix dams," Hansen said. "There's just no grant programs, no subsidized programs, in the country. And I know that sounds crazy." She said she spoke with a representative of the state's Environmental Facilities Corporation who said that dam projects are so large, three would eat up all the money the agency has annually for water infrastructure work. Fortunately, phase one and two of the Cooper Lake project qualifies for funding under the state's Water Infrastructure Investment Act, Hansen said. She said the Water Department has applied for up to \$3 million under that grant program. The other \$4 million for the first two phases of the project could come from a low-interest loan from the Environmental Facility Corporation's Drinking Water Revolving Loan Fund, Hansen said. The balance of the project would likely be paid through market rate municipal bonds, Hansen said. Hansen said the Water Department's budget is \$4.8 million, with most of the revenue coming from the sale of water. She said under the worst-case scenario, water rates could increase 20 percent to cover a \$12 million municipal bond. That would mean a customer using the minimum amount of water each year would see their annual cost increase \$37.42, from \$187.20 to \$224.64, Hansen said. She said an average family using up to 20 units of water a quarter would see their annual bill increase \$79.81, from \$399.04 a year to \$478.85. The finances are a question for water users, while quality of life concerns will affect their neighbors in Woodstock, Hansen said. She said the Water Department would hold an information session for Woodstock residents in the future.

(Looks like all is lost. Mighty big hole.)

Dam At Collamer Giving Way

By Teresa Carrano, Times-Union Staff Write, October 8, 2019, timesuniononline.com

COLLAMER, Ind. – The long standing low head dam at Collamer, just south of the town, off Ind. 14, has developed a breach and the Eel River is pouring through the hole, causing more erosion to the 115-year-old cement structure. The first wooden dam was built in 1845 to provide power for Ezra Miller's grist mill. The current dam was built in 1904 to provide electric power to Collamer and Sidney. A fisherman noticed a small whirlpool on the east side of the dam Thursday. The whirlpool grew and it was soon discovered the river was funneling under the dam.

Over the weekend, owners Mike and Denise Conner made valiant efforts to secure the structure. Assisted by a host of volunteers, 500 sandbags were dropped into the breach. The sandbags came out the other side. A huge feed bag was filled with sandbags and dropped into the gap but the relentless river water found a way around it. IDNR aquatic biologist Rod Edgell said Monday morning there are funds available to completely remove the dam, but that process doesn't happen overnight and the Connors must apply for the grant.



Any construction along the river can only be done by permit, Edgell said, and there haven't been any applications submitted for the work. A steady stream of visitors stop by the dam to tell stories about outings to the dam. At one time a conservation club maintained a park and banks were open to the public. Because of the current danger, access to the dam has been fenced off and lined with police "do not cross" tape on the south side. Tuesday, South Whitley town marshal Mikel VanDevender said the Connors are discussing options with the IDNR's division of water.



Hydro:

(Gotta get this thing going.)

Watertown hydro plant going under more repairs

\$375,000 PROJECT: Three turbines will be shut down for two months; city to lose revenue

By CRAIG FOX, nny360.com, Oct 4, 2019

WATERTOWN, NY — The city's hydroelectric plant will be shut down for more repairs later this month. State dam safety program and dams to fix. Work on replacing the 91-year-old hydro plant's excitation system will put its three turbines — known as Faith, Hope and Charity — out of commission for about two months. The \$375,000 repair project has been planned for about a year and is scheduled to begin on Oct. 14. During the shutdown, the city will lose revenue because it sells its excess hydroelectricity to National Grid. In the summer of 2018, the plant was out of operation for about three months, causing the city to lose about \$400,000 in revenues.



Although the fall season is typically a good time to produce electricity, the work must be completed while there's enough water to operate, City Water Superintendent Vicky Murphy said. The excitation equipment that's being replaced allows just the right amount of electricity to lead into and leave the plant, Ms. Murphy said. It will take two to four weeks to demo the old system, about two weeks to install the new equipment and another week for certification. "Each of the turbines have to be tested separately," Ms. Murphy said.

Last year, the City Council approved \$1.8 million in bonding for maintenance and repairs for the hydro plant, including this most recent work. Last summer, the plant stopped operating while a 90-foot-long horizontal crack in a wall of the building was repaired. The emergency repairs on the wall had to be finished immediately because water was creeping too close to an electric transformer inside, causing a potentially dangerous situation. The plant supplies electricity to more than 20 city buildings and properties. After using the energy from the hydroelectric plant for city buildings, the city sells its excess power to National Grid for nearly 22 cents per kilowatt-hour. The city is nearing the end of a franchise agreement to sell electricity to National Grid that began in 1991 and expires in 2029, when the company will pay the city 34.7 cents per kWh.

(Those were the good old days. It always helps to think about history.)

Looking Back

Madras Pioneer, October 08, 2019, pamplinmedia.com

25 YEARS AGO, October 5, 1994

On June 17, 1965, a dedication was held for Round Butte Dam and Lake Billy Chinook, the reservoir which formed when the dam was built. This Saturday, Oct. 8, beginning at 9 a.m., a special 30-year celebration of the formation of Lake Billy Chinook will look back on that day, with over 30 agencies and businesses participating. Historical displays will tell about Warm Springs Indian scout Billy Chinook and give information about the formation of the lake and subsequent Cove Palisades State Park. There will be information and concession booths and interpretive displays. Parties of volunteers will also be organized to do park cleanup and those participating will receive free camping

Back in 1965, Gov. Mark Hatfield came to Madras to speak at the dedication of the \$62 million Round Butte Dam, the largest hydroelectric dam located wholly within the confines of the state of Oregon. Started in 1961, some 1,300 workers were at work on the 440-foot high structure at the peak of construction. The Cove, located in the canyon where the Crooked and Deschutes rivers met, had been a favorite picnicking and swimming place for early-day Madras and Culver residents. The Boegli family farmed the canyon bottom and due to the lower elevation's milder climate, were able to grow peach and apple orchards, which drew customers from all over Central Oregon. The farm was sold to the State Parks Division in 1941. A hydroelectric plant was built in 1912 by Pacific Power and Light; there was a tenting campground and baseball fields for locals to enjoy. According to present Cove Park Ranger Paul Patton, the Crooked River was brought around by a flume, which created the island.

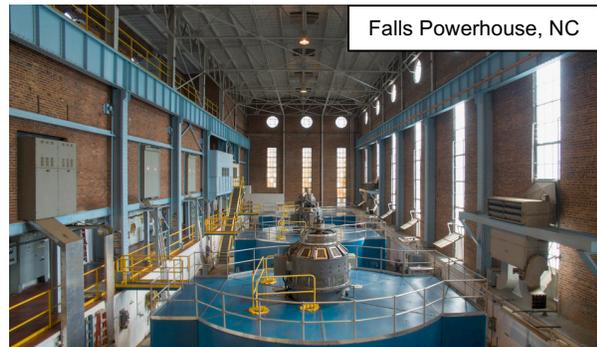
A reservoir began forming and flooding the old park area as construction on the dam progressed. It was expected it would take several years for the reservoir, named Lake Billy Chinook, to reach full capacity, but Mother Nature had other plans. A Christmas flood in 1964 sent 22,000 cubic feet of water per second flooding into the canyon and it filled in one week. "If it were not for the dams (also Pelton) the results would have been disastrous," Ranger Patton said. That body of water and the new Cove State Park now attract over 750,000 visitors a year, and have an economic impact of \$17 million per year in this area. "The Cove area has always been a special place, even though its face has changed," Patton commented.

(Hydro forever changing owners.)

OPG Finalizes Acquisition Of Cube Hydro

NEWS PROVIDED BY Ontario Power Generation Inc., Oct 08, 2019, prnewswire.com

TORONTO, Canada, Oct. 8, 2019 /PRNewswire/ - Ontario Power Generation (OPG) has finalized the acquisition of Cube Hydro Partners and Helix Partners (collectively "Cube Hydro"), an owner and operator of small and medium-sized hydropower facilities located in the northeast and southeast United States, from I Squared Capital, an infrastructure-focused private equity firm. Eagle Creek and Cube Hydro will be combined to form OPG's U.S. hydro platform.



"The acquisition of Cube Hydro builds on our 2018 purchase of Eagle Creek Renewable Energy," said Ken Hartwick, OPG President and CEO. "These high quality, clean generation assets provide additional scale to OPG's existing U.S. hydro portfolio." "The Cube Hydro portfolio represents an attractive opportunity to enhance our hydro platform adding a team and assets that are well aligned with OPG's long-term growth strategy in the United States," said Eli Smith, President and CEO of OPG's U.S. hydro platform companies. "Cube Hydro prides itself on safety, compliance, innovation and social responsibility, all of which align closely with Eagle Creek and OPG's core values." Goldman Sachs & Co. LLC acted as a financial advisor and Dentons served as legal counsel to OPG on the acquisition. Centerview Partners acted as financial advisor and Sidley Austin LLP, Troutman Sanders LLP, and Davis Polk & Wardwell LLP served as legal counsel to I Squared Capital on this transaction.

Key Facts on OPG's U.S. hydro platform:

- The Cube Hydro purchase adds 19 additional hydroelectric facilities in five states to OPG's hydro platform. This brings the total to 85 hydro generating stations in the United States, representing 619 megawatts of capacity. In addition, the companies own

minority interests equivalent to approximately 10 megawatts in thirteen other hydroelectric facilities and two solar facilities in New England.

- Facilities are located across the United States primarily in the Southeast, New England, Mid-Atlantic and Midwest power markets.
- Offices are located in New Jersey, Maryland, North Carolina, Wisconsin and Massachusetts.
- OPG's U.S. hydro platform's environmental profile is well positioned for continued de-carbonization of the electricity industry.
- **Enhanced returns for Ontarians**, providing stable cash flows for generations to come, with no impact on electricity bills.

The U.S. hydroelectric platform will continue to operate independently as a wholly owned subsidiary of OPG, with its own Board of Directors and management team. Its financial results will be consolidated into OPG's financial results. **OPG is the largest electricity generator in the province**, providing almost half the power Ontarians rely on every day. It is also one of the most diverse generators in North America with expertise in nuclear, hydro, biomass, solar and gas.



Water:

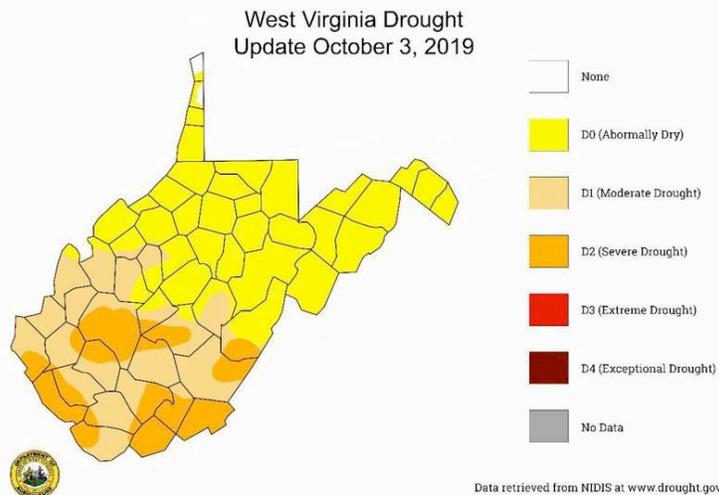
(Maybe they need a rain dance.)

Several counties now under "severe drought" status

By Jordan Nelson, The Register-Herald, Oct 3, 2019, register-herald.com

Without much rain the past two months and with unseasonably warm temperatures setting records daily, Gov. Jim Justice on Thursday declared a state of emergency for all 55 West Virginia counties. Boiling under a third consecutive day of record temperatures without any measurable precipitation, southern West Virginia is now experiencing severe drought conditions. Moderate drought conditions persist across much of the rest of the state.

On July 27, 0.16 of an inch of rain was recorded in Beckley. Since then, a mere .17 of an inch of rain has fallen. Only one-tenth of an inch of rain fell in all of September. The monthly average is 3.01 inches. And not only has rain been scarce, record high temperatures are now being set – daily. On each of the first three days of October, record highs were set in Beckley – **91 on Tuesday, 89 on Wednesday and then back up to 91 on Thursday**. The average temperature for a normal October is 63.3 degrees, according to the National Weather Service. September was warm, too. The monthly average is 72.9 degrees, but this year the average daytime high was 83.8 – which was warmer than the July average of 83.5 this year. Statewide over the past 90 days, West Virginia has received 2 to 5 inches less rainfall than normal, with some pockets of 5- to 7-inch rainfall deficits across the southern half of the state. As a result, numerous rivers, lakes, and streams have extremely low water levels — lowering harvest amounts, limiting water supplies for livestock and increasing the risk of forest



fires, among other potential dangers.

The governor's state of emergency follows a proclamation issued by Justice on Sept. 20, which bans all outdoor burning throughout the state with limited exceptions. The burning ban is still in effect. **Drought conditions in all 55 counties** are expected to escalate despite a forecast of showers during the day Sunday. According to the National Integrated Drought Information System (NIDIS), **18.7 percent of West Virginia is now considered under D2 (severe drought) status**, including areas of Raleigh, Fayette, Nicholas, Summers, Greenbrier and Monroe counties. According to the state's Commissioner of Agriculture Kent Leonhardt, these areas may experience potential crop loss, as well as water shortages.

"The WVDA (West Virginia Department of Agriculture) is concerned for the well-being of West Virginia livestock, as well as potential crop loss. We are working with our partners to assimilate potential resources for farmers," Leonhardt said. "We encourage those affected to check with your local FSA office for resources." WVDA, WVU Extension Service, USDA-FSA, the West Virginia Conservation Agency and the West Virginia Department of Emergency Management and Homeland Security are currently working together to assimilate resources for those affected. "Farmers should report drought conditions or any livestock deaths to their local Farm Service Agency Office," a release from Leonhardt's office stated. "FSA also maintains a list of hay for those in need or looking to secure hay for winter feeding."

According to National Weather Service (NWS) hydro-meteorologists, it will take around 2 to 3 inches of rain to get southern West Virginia out of its drought. Hydro-meteorologist John Sikora with the NWS-Charleston said the increase on the drought monitor will put added stress on vegetation, animal wildlife and water wells throughout the area. **Although September through October is typically West Virginia's driest time of year**, Sikora said, the magnitude of this year's lack of rain is an event that happens on a **10- to 12-year cycle**. According to his research, a dry spell such as this took place in 1988, another in 1999, one more in 2009, and now 2019.

As part of the state of emergency, the governor has directed state officials to:

- * Implement the West Virginia Emergency Operations Plan as it relates to drought emergency response.
- * Place the state Emergency Operations Center in a stand-by status, unless activation is deemed necessary and appropriate.
- * Restrict the use of water for the purpose of dust control at construction and industrial sites, except as required under terms of permits issued for the same.
- * Monitor existing water sources for the presence of contaminants, including harmful algae blooms, which tend to propagate more readily in warmer and shallower waters

Gov. Justice has also issued voluntary guidelines for the residents of West Virginia to:

- * Cease non-agricultural irrigation in the state, including those for strictly recreational purposes.
- * Limit washing or cleaning vehicles and/or structures where not otherwise required by law.
- * Limit use of public drinking water systems to minimal standards for good personal hygiene, food preparation, laundry, livestock, and pets, and other reasonable purposes.
- * Cease the filling of private swimming pools.

The state of emergency will remain in effect until rescinded.



Other Stuff:

(The same could be said of the US. **Don't know who to believe.** If the climate change advocates are wrong, oh boy! **This article**



predicts the demise of mankind if we don't do something about climate change.)

Oct. 5: 'Nothing about fighting climate change, or a war, is easy.'

Oct.5, 2019, theglobeandmail.com

CLIMATE CHANGE: CLEAN ENERGY



Re Scheer's Energy Corridor Will Never Happen (Oct. 2): The number of visionary energy projects that could provide the wealth Canada needs over the next half-century is close to zero. The exception would be a national energy corridor that delivers hydroelectric power to all regions of Canada and drives the emerging electrification of transportation. The concept of an energy corridor that captures the full value of Canada's energy resources is an exciting vision of the caliber that Peter Lougheed introduced in 1974

with the Alberta Oil Sands Technology and Research Authority, an initiative Globe contributor Jim Balsillie described, in 2015, as Canada's best example of mission-oriented economic development. Canada's most successful projects tend to be wide-sweeping: the Rideau Canal, the Canadian Pacific railway expansion, the James Bay hydroelectric project. But more so, Canada needs visionaries who can help create our future.

Canada should be shifting billions of dollars each year in government subsidies from fossil-fuel industries to the renewable-energy sector. Is it reasonable to support industries that continue to exacerbate the climate emergency that was just declared? It seems like pouring water on a fire with one hand, and pouring gasoline on it with the other.

CLIMATE CHANGE: OFF-TARGET

Re Conservatives, Liberals and Climate Change (Editorial, Oct. 2): Politicians of all stripes are competing with each other on how to deal with climate change. The goal is ambitious: zero emissions. Who can get there fastest seems to be the question. Will it be achieved by 2030, 2040 or 2050? However, tackling climate change should not be a horse race with a reckless sprint to the finish. Given the complexities, a climate plan should be more like a marathon, requiring steady and sustained effort. Negotiating with provincial governments, corporations, municipalities and other stakeholders will be a slow process. As we know, not all of them are onside – yet. Climate change is an undeniable fact. But promising a swift resolution to the problem is nothing but a pipe dream.

CLIMATE CHANGE: WHOSE BURDEN?

Re All Talk, No Action (Opinion, Sept. 28): I agree with columnist Gary Mason when he says this election should be focused on the climate emergency. I lay the fault for this not yet happening at the feet of the fossil-fuel industry I believe they have lobbied against action and denied long-known science proving the link between fossil-fuel burning and climate degradation. Climate change looks to be the biggest threat to humanity we have ever faced, and we need to mobilize the way people did during the First and Second world wars. Since our political leaders seem handcuffed, we should boycott this industry in any way we can: walk, bike, take transit, buy electric vehicles, and avoid single-use plastics. It won't be easy to make these changes, but nothing about fighting climate change, or a war, is easy – just necessary for survival. Deborah Frketich, Denman Island, B.C

(Has doubts about renewables. Is he right? One item, not all hydro is baseload.)

Oct. 8 Letter: Not ready for renewables

Daily Press | Oct 07, 2019 | dailypress.com

Green' electron problem



Re: Sept. 24 Digby Solomon Op-Ed: "Nuclear power is our answer to our carbon problem" Mr.



Solomon needed to dig deeper into the infrastructure that is our electric grid. Nuclear power, like hydroelectric, is "base load" — read "reliable" — but it has to be delivered. Is there a place for the sensible use of renewables such as wind and solar? Of course there is, if you can figure out how to do two things: store excess energy, and transport that energy over long distances. Without those issues addressed, renewables will remain a boutique source that sounds good until you try to use them.

Texas has more wind energy available now than it can use. How do you get that energy to Chicago or New York? The holy grail would be the development of room temperature superconductors (no losses from resistance) which, like nuclear fusion, await the delivery of a reliable product. A poor alternative to a superconductor is direct current (DC) transmission which is used sparingly now, as opposed to alternating current (AC), in which transmission losses are lower. We will find ourselves with a grid that will be third-world reliable if we move in the direction proposed by our governor and being pushed by the auto industry: moving to electric vehicles. From where do we get these "green" electrons? Sure beats me. Jim Hurst, Williamsburg, VA

(Taxes and taxes and more taxes. Guess we should all pack our bags and move to Wyoming!.)

State-by-State Guide to Taxes

<https://patch.com/virginia/vienna/s/qv91q/here-s-how-tax-friendly-virginia-dc-are-kiplinger?>

(Compare state tax rates and rules - on income, ordinary purchases, gas, sin products, property, and more - across the U.S)

The 10 Most Tax-Friendly States in the U.S. (Lowest to highest.)

- | | |
|-------------|------------------|
| 1 Wyoming | 6 Washington |
| 2 Nevada | 7 South Dakota |
| 3 Tennessee | 8 North Dakota |
| 4 Florida | 9 Arizona |
| 5 Alaska | 10 New Hampshire |

The 10 Least Tax-Friendly States in the U.S. (highest to lowest.)

- | | |
|---------------|----------------|
| 1 Illinois | 6 Nebraska |
| 2 Connecticut | 7 Pennsylvania |
| 3 New York | 8 Ohio |
| 4 Wisconsin | 9 Iowa |
| 5 New Jersey | 10 Kansas |

Kiplinger tax map

<https://www.kiplinger.com/tool/taxes/T055-S001-kiplinger-tax-map/index.php>

(It's ironic that San Francisco is on the list, given all the homeless people living on the streets.)

This Is America's 'Greenest' City

San Francisco tops WalletHub's California-dominant list

By Arden Dier, Newser Staff, Oct 8, 2019, newser.com

(NEWSER) – The Golden State might be more appropriately called green, according to WalletHub. The site looked at 28 "green" indicators—including water and air quality, greenhouse gas emissions, annual excess fuel consumption, and the share of electricity from renewable sources—in America's 100 largest cities to find those that are most environmentally friendly. The majority of the top 10 are in California, while none at the bottom of the list are. The five most and least green cities, with a score out of 100:

Most green:

1. San Francisco: 72.5
2. San Diego: 72
3. Irvine, Calif.: 69.8
4. Washington, DC: 68.8
5. San Jose, Calif.: 68.4

Least green:

1. Baton Rouge, La.: 35.4
2. Corpus Christi, Texas: 36.3
3. Toledo, Ohio: 37.8
4. Lexington-Fayette, Ky.: 39.5
5. Mesa, Ariz.: 39.8

See the full list here: <https://wallethub.com/edu/most-least-green-cities/16246/>

or see 15 cities likely to turn to wastelands this century, if global warming patterns continue as expected: <https://www.newser.com/story/278638/by-2080-climate-change-will-drastically-alter-these-us-cities.html>

(Oh, the things you run into while searching the internet.)

<https://www.recordonline.com/news/20191005/grape-things-happening-at-soon-to-open-city-winery> and this:

<https://www.recordonline.com/photogallery/TH/20191005/NEWS/100509999/PH/1>



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