1/20/2017

Some Dam – Hydro News™

And Other Stuff

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"Good wine is a necessity of life." - -Thomas Jefferson
Ron's wine pick of the week: **2013 Chateau Ste Michelle Cabernet Sauvignon "Canoe Ridge Estate"**
"No nation was ever drunk when wine was cheap." - - Thomas Jefferson

Dams:

(Fix those darn dams, the heck with the policy. Wow, 290 dams in one city.)

City moves forward with Cedar Lakes dam proposal with no policy in place

By Joy Hampton Senior Staff Writer, Jan 5, 2017, normantranscript.com

City leaders are moving forward with a solution to a privately-owned dam problem, even though no policy has been established for working with homeowners associations throughout the city. Norman, OK has 20 dams of significant size, most over 40 years old, identified on the Oklahoma National Dam Inventory. The city's Stormwater Master Plan also identifies 290 smaller dams throughout the city. Many of those dams are failing, and Norman needs a policy and a plan of action to deal with the problem.

“You can’t add a bunch of stormwater upstream and expect it not to have an effect,” said Dan Butler, a Norman resident who is also a former stormwater professional retired from the Conservation Commission. “And you can put in detention ponds for Wal-Mart, but they’re designed for a 25-year [rainfall] event. If you have more than that, you’ll have an effect.”
Most of Norman’s dams are privately owned. Built as a way to meet city requirements for stormwater control, they often serve double duty as a neighborhood amenity, but unlike other infrastructure such as roads, dam maintenance is not taken over by the city. Property or homeowners associations are charged with maintaining them in perpetuity. “I can recall 1982 when the city drainage ordinance went into effect,” said Jim Adair, realtor and former developer. “The director of public works and the director of planning structured that ordinance to place the long-term maintenance of those detention ponds on the homeowners associations. Many of us objected.” Adair said under city rules, the developer puts in streets, sewer lines and water lines up to city code and once those are accepted, they are dedicated to the city for permanent maintenance. “In my opinion, drainage improvements are part of an integral system just like sewer lines are part of an integral system,” Adair said. “To place that with homeowners associations means maintenance may or may not get done. They don’t always have the expertise.” He said the burden is beyond the technical expertise and financial capability of HOAs. Butler said standards for dams should be higher which would be more costly, but would allow the city to take over maintenance, allowing homeowners associations to continue with mowing and landscaping duties. “It costs a lot to put in a retention pond that’s designed and built to good standards so it won’t erode and so it’s not going to require a lot of future attention and care,” Butler said. “Even the best of ponds are built with a life expectancy, but they have short life expectancies when not built to good standards.”

Continued development and 100-year record level rains in 2015 put additional strain on privately owned dams and a few are now critical. To protect the public safety, the city is working to provide support for HOAs that are repairing their dams, without expending public funds, if feasible.
On Tuesday, the city council indicated a consensus for putting a solution for the Cedar Lake dam on the next city agenda for approval. It was a solution that Cedar Lakes homeowners, working proactively, brought to the city. The Cedar Lake addition near Cedar Lane Road and 24th Avenue Southeast was developed in 1995 and includes 19 homes around a 5-acre lake with a dam owned by the property owners association. The dam is seeping, and the solution is expected to cost $70,000. Property owners will pay for the repairs and will get a private loan, but they need the city to assess homeowners on their utility bills. That agreement will provide the collateral needed to qualify for the loan as well as securing a dependable means of collection. Tuesday’s discussion was a continuation of the Dec. 6 Study Session, when the city council discussed three neighborhoods with varying degrees of stormwater issues: Cedar Lakes Addition, Summit Lakes and the Vineyard. While the city is working out solutions with these neighborhoods, council members said a policy needs to be created that can be applied fairly to neighborhoods in the future, even while acknowledging that each situation is unique.

In addition to local dam maintenance, the Stormwater Master Plan recommends enhanced maintenance for Imhoff Creek, Bishop Creek and Brookhaven Creek. Because private property backs up to these creeks, the city can’t always access the area to do maintenance. A policy to gain access could also be in the works soon, and some council members say that access shouldn’t cost the city since the purpose is to perform maintenance that will protect private property creekside. Norman has already used large sums of public money to make drainage improvements in conjunction with road projects where flooding affected streets as well as neighborhoods. Disaster relief funds and capital funds have also been used to address these drainage projects, but larger scale creek projects will need to be funded in the future. The Stormwater Master Plan identifies seven capital projects for Imhoff Creek between Boyd Street and Andrews Park totaling over $17 million in estimated 2009 dollars. “Yes, it’s millions of dollars, but the Imhoff Creek channel is a WPA project from the 1930s,” said Ward 4 council member Bill Hickman. “The city has not made significant investments in this stormwater infrastructure, but the city has allowed development and road expansion as the community has grown. The stormwater

from that growth has been directed into the Imhoff channel." Hickman said residents along Imhoff are losing large portions of their backyards to erosion because stormwater runoff has changed the natural flow of the water.

(When is a dam a dike or a dike a dam?)

Corps continues rehabilitation efforts at Herbert Hoover Dike

By John Campbel, 01.05.2017, dvidshub.net

BELLE GLADE, FL - As 2016 turns into 2017, staff at the U.S. Army Corps of Engineers Jacksonville District continue the monumental task of rehabilitating the Herbert Hoover Dike surrounding Lake Okeechobee in south Florida. The highlight of 2016 was approval of a dam safety modification report in August that identified the features the Corps will build in the coming years to reduce the risk of dike failure. Approval of the report provided Jacksonville District engineers with a definitive path for completion of the rehabilitation program in the mid-2020s. "The intent of the study that produced the report was to identify the risks around the dike and develop structural and non-structural options for mitigation," said Mike Rogalski, Jacksonville District's program manager for Herbert Hoover Dike rehabilitation. "We conducted this study while we continued construction of features to reduce the risk to the dike."

Photo By John Campbell | With a cofferdam in place (foreground), crews work to excavate material from Herbert Hoover Dike at the Culvert 8 work site near the city of Okeechobee. Culvert 8 is one of 28 water control structures the U.S. Army Corps of Engineers is replacing as part of its efforts to rehabilitate the dike that surrounds Lake Okeechobee

The dam safety modification report calls for installation of additional seepage barrier, commonly known as a partial cutoff wall, in the dike. It also recommends construction of floodwalls at two water control structures, and embankment armoring at a bridge on the northwest side of the lake. Since 2001, the Corps has invested more than $870 million in rehabilitation. That investment has paid for installation of 21.4 miles of cutoff wall between Port Mayaca and Belle Glade on the southeast side of the lake. It has also funded a huge program to replace old water control structures, commonly known as culverts, around the lake. The Corps identified the condition of the culverts as the greatest risk for dike stability due to significant erosion of material around the structures.

"By the end of 2016, we've taken action on 24 of the 32 structures that need to be addressed," said Rogalski. "We've removed one structure, completed replacements of four others, with the remaining 19 in various phases of construction. Over the next three years, we plan to award contracts to replace five other structures, and we plan to seal off three structures no longer in use near the city of Okeechobee." In 2017, the Corps plans to award the first contract to resume installation of cutoff wall west of Belle Glade. Engineers plan to install 35 miles of the seepage barrier through Lake Harbor, Clewiston, and Moore Haven. Additional cutoff wall is planned near the community of Lakeport on the west side of the lake. "The partial cutoff wall consists of a concrete-like substance that forms a barrier to seepage," said Rogalski. "Reducing the seepage leads to a reduction in internal erosion of the earthen structure, which increases our confidence that the dike will withstand the forces of nature it often faces." The Corps estimates the remaining construction at the dike will cost a little more than $800 million. Based on funding projections in the coming years, the Corps estimates that rehabilitation of the dike could be completed by the mid-2020s, perhaps in the year 2025.

(If they have no use, maybe it's time for them to go.)

Old dams on Passaic tributaries called drowning risk

By James M. O'Neill , Staff Writer, Jan. 6, 2017, northjersey.com

Advocacy group seeks their removal, or at least signs on Pequannock and Ramapo rivers to warn kayakers of threat.

It's the day after a storm. The sky is clear, and you are in a kayak on the Ramapo River, New Jersey enjoying the swift current generated by the prior day's rainfall. Then you plunge over a 6-foot dam you hadn't seen. You are thrown from your craft, and sucked into a hydraulic juggernaut that you can't possibly swim away from. You're wearing a life vest, but it's not helping. You go under. That's a scenario the Pequannock River Coalition wants to prevent at two old feeder dams on tributaries of the Passaic River. The coalition, in its last act before shutting down at year's end, sent letters to state, county and town officials urging that – at a minimum – warning signs be placed upstream and downstream of the dams to alert canoeists and kayakers. One dam is on the Ramapo River in Wayne and Pequannock, and the other is on the Pequannock River just east of the North Jersey Equestrian Center.

"From upstream the dams look like an infinity pool – you wouldn't even notice them," said Ross Kushner, the coalition's former executive director. "But they create unusual hydraulics that are dangerous. Somebody has to take ownership of this problem and do something."

To demonstrate the hydraulic power, Kushner dropped a tree branch into the Ramapo this week. The branch slid over the dam and disappeared into the roiling water for about 10 seconds, then shot straight into the air.

There are no warning signs near the dams now. In the past, Wayne placed signs near a short trail that leads to one of the dams; Pequannock plans to provide safety information at kiosks as part of a river trail project. Because neither dam is on lots identified on tax maps, the state Department of Environmental Protection has assumed responsibility for them. The agency studied whether to remove the dams several years ago to reduce flooding in nearby towns, but it concluded that removal would not have any impact on flooding, and decided to keep the dams in place.

DEP spokesman Larry Hajna said that, aside from the coalition letter, the agency has not received complaints about the dams. The dams, each about 6 to 7 feet high and extending about 270 feet across the rivers, are a type known as low-head dams. "Upstream, as the water gets closer to the dam, it squeezes into a smaller space as it goes over the crest, and the water velocity increases, so if you're kayaking you might not have time to escape before being pulled over the dam," said Bruce Tschantz, a safety expert at the University of Tennessee on dams.

"Once you go over, you can get tangled in the rotation circuit, like a washing machine," Tschantz said. "There's an intense velocity and hydraulic jump that create very violent conditions."

In addition, the water at the base of the dam gets aerated, which reduces the buoyancy of life jackets by as much as 30 percent, he said. The hydraulic power strengthens as stream flow increases, so children who play around such a dam when the flow is low might not realize the danger of playing there when the flow is stronger, Tschantz said.

There are nearly 400 documented cases since 1960 of people drowning in the United States after being sucked into the hydraulic rotation at the base of low-head dams, according to Tschantz's research. In some cases, first responders trying to rescue victims have also been sucked in and drowned, he said.

Drownings at low-head dams have risen in recent years, Tschantz said, because of the growing interest in kayaking and canoeing. The number of people canoeing each year has risen by 12 percent since 2006, to more than 10.2 million, the Outdoor Foundation reported, and the number of recreational kayakers has more than doubled in that time, to nearly 9.5 million. The dam across the Ramapo River in Wayne, just north of the Wayne post office on Pompton Plains Crossroad, has caused several drownings, but none in the past decade or so, Wayne Mayor Christopher Vergano said. There were thousands of such dams built in the 1800s, mainly to power mills and factories. Some have been removed to help spawning fish migrate freely along rivers. The concrete dams on the Ramapo and Pequannock, which raise the level of the rivers upstream by about 6 feet, were built in 1929 as replacements for timbered dams that helped feed water to the Morris Canal, which was finished in 1831 and connected the Delaware River at Phillipsburg to Newark.

Few states require owners of such dams to alert the public about the dangers. Pennsylvania is among the most proactive by requiring that signs and barriers, such as a row of buoys, be placed upstream of such dams. Only a few states have any jurisdictional responsibility to keep an inventory of low-head dams or to promote safety at them. Vergano said Wayne previously installed signs at the entrance to a trail that leads to the dam on the Ramapo, cautioning that it was the site of multiple drownings, but this week no sign was visible. Pequannock Township is developing a river walk along the Pompton River, which starts where the Pequannock and Ramapo meet, just south of one of the dams. “Identifying river access points for kayaks and canoes is part of this project and appropriate safety information will be included at kiosks providing trail maps and information,” David Hollberg, the township manager, said in an email.

“From upstream the dams look like an infinity pool – you wouldn’t even notice them,” said Ross Kushner, the former executive director of the Pequannock River Coalition, seen at a dam on the Ramapo River. (Photo: Mitsu Yasukawa/NorthJersey.com) In some cases, a series of low steps can be placed at the foot of the downstream side of low-head dams to reduce the hydraulic action. When the Island Farm Weir Dam was built across the Raritan River in Somerset County in 1995 to help the local water supply, there were no warning signs for boaters or kayakers. After four drownings and three near-drownings in the first three years after construction, the dam was modified by adding steps on the downstream side, according an article Tschantz wrote in The Journal of Dam Safety. When the state looked at whether to demolish the Ramapo and Pequannock dams to reduce flooding, some local officials argued the dams have historic value. “Pequannock Township is not in favor of removal of the dams,” Hollberg said. “They were constructed as part of the Morris Canal and represent a significant historical asset, which is congruous with the rich history of Pequannock. Additionally the dams create significant recreational opportunities.” But Kushner said they are not the original dams, and pose a real risk. "They are nice to see, but we don’t want to kill people to preserve history,” he said.

(Dam removal marches on.)

Likely removal of Cedar River dam will help brook trout

By Steve Griffin, for the Daily News, January 9, 2017, ourmidland.com

A trout stream that flows through Clare and Gladwin counties in MI and is home to brook trout, stands a good chance of running freer within a year or two.
An effort to remove a small dam on the Middle Branch of the Cedar River, a Tittabawassee River watershed tributary, is gaining momentum, most recently with the awarding of $15,000 in funding from the Saginaw Bay Watershed Initiative Network (WIN). Coordinating the project would be Huron Pines, a conservation organization headquartered in Gaylord. Huron Pines’ application to the Saginaw Bay WIN, posted on the latter group’s webpage, describes the dam as

“an obsolete concrete structure that has recently failed,” drawing down a four-acre pond impounded by it.

The landowner, listed by the application as Robert Gingery, and area conservation groups and state and federal resource officials have agreed the dam should go, since it presents a three-foot-high barrier to fish passage and has other harmful effects on the stream. Combined, they’ve offered $17,000 in cash and in-kind services toward its removal, and Huron Pines has applied for $40,000 more through the DNR’s Dam Management Grant Program. Given that the DNR, along with the state Department of Environmental Quality and the U.S. Fish and Wildlife Service, already supports the plan, approval of that application seems likely. Other groups supporting the project include Midland’s Leon P. Martuch Chapter of Trout Unlimited, which has long had a research and custodial interest in the river. Taking down the dam would be a solid investment in prime trout habitat. “Removing this small dam,” said Huron Pines’ application, “will remove the most significant single source of impairment on the Middle Branch Cedar River and will reconnect 9.2 upstream miles of aquatic habitat for native brook trout and other aquatic organisms in (the river).” Josh Leisen, watershed project manager for Huron Pines, said in a voicemail that planning the project and obtaining permits would take place this year, with actual removal of the dam likely in 2018.

A DNR report on the Tittabawassee River watershed said there are 143 dams in the Tittabawassee and its tributaries, including the Cedar. Six of the dams produce hydroelectric power, three are retired hydropower dams, 86 impound waters for recreation, and the others create farm ponds or are used for irrigation or water supply. Most are small — 110 of them 99 acres or less — and only 10 have heights greater than 20 feet. The region’s first dams stored water to power saw or grist mills, but many of those now serve recreational purposes. Most of the hydroelectric dams were built between 1900 and 1925. Dams built to create wildlife habitats went up in the 1940s, and many dams since then were built mainly to maintain lake levels, often connected with residential development. The DNR says dams, regardless of their intended use or origin, have major effects on rivers by reducing and changing water flow, warming waters, collecting sediment, blocking fish movement, and creating lake-like habitats. None of those things favors brook trout, Michigan’s state fish, a beautiful state native with specific habitat needs. Removing dams such as the one on the Middle Branch Cedar does.

(They’ll do anything to stop those dams.)

Environmental groups want work halted on dams

By Keith Ridler Associated Press, Jan 10, 2017, mailtribune.com

BOISE, Idaho - Environmental groups are asking a federal court to halt 11 infrastructure projects on four lower Snake River dams in Washington state that could ultimately be removed if a pending review determines the dams need to come out to help salmon. The 45-page notice filed late Monday in Portland estimates the cost of the projects at $110 million. The National Wildlife Federation and the other groups in a separate, 29-page filing also late Monday asked that the federal government be ordered to spill more water in the spring over the four Snake River dams and four more on the Columbia River to help migrating salmon.


Ice Harbor Dam

A federal judge ruled in May that the U.S. government hasn't done enough to improve Northwest salmon runs and ordered an environmental impact statement that's due out in 2021, urging officials to consider removing the dams. The environmental groups contend that infrastructure improvements shouldn't be allowed at the dams during the review. "These kinds of investments

should be suspended to ensure a level playing field for all of the alternatives agencies must consider, including the alternative of lower Snake River dam removal," Kevin Lewis of Idaho Rivers United said in a statement.

(More legal hurdles.)

Plaintiffs Call For More Court-Ordered Spill At Columbia River Dams

By Cassandra Profita | Jan. 10, 2017 4:45 p.m. | Portland, opb.org

Plaintiffs in the lawsuit over dams in the Columbia River Basin are asking the court to order federal agencies to spill more water over the dams this spring to help threatened and endangered salmon and steelhead Conservation groups together with the state of Oregon and the Nez Perce Tribe filed a motion in U.S. District Court on Monday. Todd True, an EarthJustice attorney representing the conservation groups, said new science shows spilling more water over the dams in the spring will improve the survival rate of imperiled fish by helping them reach the ocean. “So that the baby salmon that are migrating downstream at the time are flushed out in to the ocean and don’t have to go through the turbines and bypass systems and the things that are quite harmful to them,” he said.

Last year, a federal judge rejected the federal plan for managing dams to protect salmon. Federal agencies are now in the process of writing a new plan. True said the court can order the agencies to do more to help fish in the meantime. Spilling water over the dams reduces the amount of hydropower the agencies can produce. The plaintiffs are asking the court to order as much spill as the law allows. State laws set limits on how much water can be spilled over dams before the gases produced in the process become harmful to fish. “What we’re saying is these fish are in such dire straits now that if there’s something we can do that will immediately benefit their survival then we think the court should order the agencies to do that,” True said. He is hoping the court will rule on the motion by late March when juvenile salmon begin their migration to the ocean. The groups have also asked the court to stop the U.S. Army Corps of Engineers from spending money on upgrades to the four lower Snake River dams until the new plan for managing dams is complete. Environmental groups are advocating for those dams to be removed as part of the new plan.

Hydro:

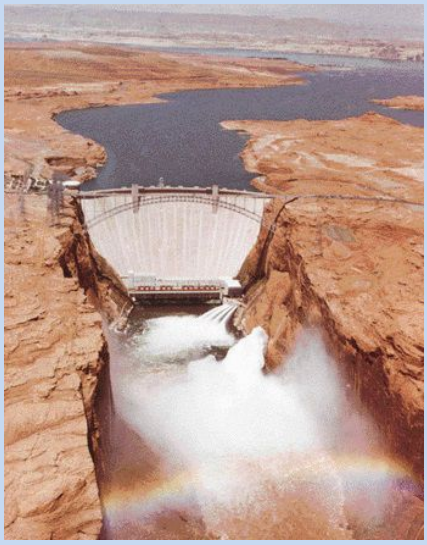
(Not everybody agrees.)

GUEST COLUMN

Other Views: Glen Canyon Dam structurally sound, no underachiever

By MARLON DUKE Special to the Daily Sun, Jan 7, 2017, azdailysun.com

Glen Canyon Dam is a National Resource. Last Friday’s editorial ("Lots to unwind if Glen Canyon Dam shuttered too soon") discussed the newly signed management plan for Glen Canyon Dam, but incorrectly attributed its 20-year focus to a possible end to federal management by 2036. Glen Canyon Dam is a crucial national resource and the federal government remains fully committed to its long-term successful management well into the future. This new plan enhances certainty and



predictability for water and power users, while protecting downstream environmental and cultural resources. The plan's 20-year focus simply provides a timeline for regularly adjusting dam operations as ongoing science and other factors inform future planning. Several other assertions merit correction as well. There are no mounting bills for dredging or structural upkeep. Silt buildup hasn't yet reached the dam and sediment deltas are more than 100 miles upstream in the reservoir. Estimates predict silt won't fill behind the dam for 700 to 1,000 years. Sediment buildup poses no threat to the dam's integrity--it is completely structurally sound. Claims of lost water through seepage are also overstated. Some groups advocate decommissioning the dam based in part on outdated water loss studies. However, a recent assessment by the Center for Colorado River Studies at Utah State University found seepage rates are much lower than those groups claim and that rates are actually declining over time. Seepage water enters the ground water system and eventually returns to the reservoir or river channel.

Without both Lake Powell and Lake Mead, basin-wide drought impacts would have been even more severe. In fact, seven of the past 17 drought years saw less than 8 million acre feet (maf) of unregulated inflow into Lake Powell—that's the amount that would flow to Lake Mead without Glen Canyon Dam. Four years saw less than 6 maf and 2002's inflow was only 2.64 maf. However, during even the driest years, storage in Lake Powell allowed full water deliveries with average annual releases of 8.71 maf throughout the drought. Examining total water storage and use further highlights Lake Powell's continued importance. Storage capacity at Lakes Mead and Powell is finite—Lake Mead's maximum capacity is 28.9 maf and Lake Powell's is 26.2 maf, for a total combined capacity of 55.1 maf. Both reservoirs were at or near full when the drought began in 2000. By the end of water year 2016, regular water deliveries had depleted combined reservoir storage by 30.7 maf—more than either Lake Mead or Lake Powell could support on its own. Without Lake Powell's storage, those obligated water deliveries would have completely drained Lake Mead before 2016. Far from being an underachiever, Glen Canyon Dam is doing precisely what is was intended to do — storing water in wet years to ensure predictable, full deliveries across the basin every year. Populations in Arizona and the west continue to grow, as do the challenges and complexities of efficiently managing limited water resources. Glen Canyon Dam has been integral to meeting those challenges for more than 50 years and will continue its role for many decades to come.

(Slow but sure!)

First Turbine Equipment Goes In at Red Rock Hydroelectric Project

Author: KNIA/KRLS News - Andrew Schneider, January 5th, 2017, kniakrls.com

Construction work has transitioned from preparation to installation at the Red Rock Hydroelectric Project. Vern Cochran with Missouri River Energy Services says the first parts of the new turbine have been installed. "We've completed the staging or the structural enhancements of the reservoir, so now we've got our excavation dug and we were actually able to install the first two major components of the hydro turbines themselves that will be generating electricity," he says. Cochran says the move represents a significant milestone after years of preparation. He says there is more installation work to come this year. Overall, the Red Rock Hydroelectric Project is expected to be complete in the second half of 2018.

(Hydro is renewable. Give them some money.)

A SE Alaska village thinks reneweable hydropower should be implemented

By Elizabeth Jenkins, Alaska's Energy Desk - Juneau - January 6, 2017, alaskapublic.org

A multimillion dollar dam in Kake would make it easier to bring renewable energy to the village, which currently runs off diesel. But the definition of "renewable" isn't the same in everyone's book. Federal grants for hydro projects can be limited — compared to what's available for wind and solar. Jodi Mitchell puts up a different kind of inspiration in her Juneau office. There's a yellow sticky note on her computer that warns about how much carbon dioxide diesel emits. "I write that there to remind myself everyday of why we're doing this," Mitchell said. Mitchell is the CEO of the Inside Passage Electric Cooperative, a nonprofit that supplies energy to small Southeast Alaska communities. She said sometimes the only way to power remote Alaska is by burning diesel. And as her yellow sticky note attests, she thinks there's a better way. "If I could build a hydro project in each of those communities, even if it wouldn't cover the full load, at least they would have some energy security," Mitchell said. But Mitchell said building a hydro project from scratch can be About three years ago, Mitchell said the utility was getting close to completing a hydro project in Hoonah and the village of Kake was next on the list. The utility sent a couple of engineers to scope it out. "I was surprised. I was shocked when they sent me the pictures," Mitchell said. "I was like, where are you? And they were like, we're at Gunnuk Creek. There's a dam here already, Jodi!" What the engineers discovered was an estimated $12 million tank and dam intended for Kake's drinking water. Mitchell said it was built around 2006, using mostly federal funds. But its electric pumps made it too pricey for the village to operate. What makes this unused dam special is that it can be converted to generate electricity. "As far as I know, it's the lowest hanging fruit in the state and perhaps in the nation," Mitchell said.

The U.S. Department of Energy sees untapped potential, nationwide, for retrofitting non-power generating dams, and Mitchell thinks this one could be done for about $6 million dollars. It would supply more than half of Kake's electricity. In the past, Mitchell said the utility would have relied on the Renewable Energy Fund, a state program, but because of Alaska's mega budget deficit, that funding has gone away. Loans aren't out of the question. Still, that's an expense that could be passed on to ratepayers. Something that Mitchell said she doesn't want to do. So, what options are left? "Most of the grant funds that are available through the federal government do not include hydro," Mitchell said. "And anyone who lives in Southeast Alaska thinks that's completely bonkers." Jeff Leahey, the deputy executive director of the National Hydropower Association, said that's partly true, but it's more complicated. "Do people recognize that hydropower is a renewable resource? Yes, they do believe that at the federal level," Leahey said. "But sometimes they have not included that in the definition of renewable energy." Leahey thinks that's why there aren't more federal grants for hydro projects. There isn't consistency across the different federal agencies. Sen. Lisa Murkowski was working on a bill that would have made that definition more clear, potentially opening up more federal grants for hydro, but Congress ran out of time. Leahey said solar and wind seem to get all of the attention.

"I think some of that comes back to the misconception that the real growth in renewables can only come from wind and solar technologies," Leahey said. "And the myth that hydro is all built out, that there were no new opportunities for growth." Back at the office at the Inside Passage Electric Cooperative, Jodi Mitchell read a rejection letter: "Your project was not one of the highest ranked projects selected for funding at this time," it read. It's from the United States Department of Agriculture, one of a handful of federal grant opportunities that includes hydro. "I mean, I do a lot

of crying when I'm alone because I want it so bad," Mitchell said. "I want it so bad to help my people." Mitchell still thinks Kake's best bet for cheaper electricity is retrofitting its existing dam. She'll try to reapply in the next grant cycle. But she'd like to see the floodgates opened on more federal funding.

(30 years is what the FERC decides. Some compromise, all for me.)

Hawks Nest relicensing decision will have 30-year impact

By Sarah Plummer Register-Herald Reporter, 1/9/17, register-herald.com

As the public comment period for the Hawks Nest Hydroelectric Project's license renewal ends, the Federal Energy Regulatory Commission must now make a decision that will significantly impact the future of tourism in the Upper Kanawha Valley for the next 30 years. The Hawks Nest dam on New River currently produces an annual average of 544,253 megawatt-hours for a nearby Alloy smelting plant. Industry stakeholders have filed an application to renew its 30-year license, which is set to expire in December 2017.

The hydroelectric license held by Brookfield Renewable Energy Group requires a minimum flow of 100 cubic feet per second to be released on a 5.5-mile stretch known as "The Dries" of New River. It is the longest stretch of dewatered river in the United States. American Whitewater, the largest river rights group in the world, submitted a proposal Wednesday that National Director Kevin Colburn says will support river recreation, power generation, industrial power customers and river ecology. The group's proposal calls for 41 days of recreational releases, which would result in around 32 days of paddle-worthy depths on the section during the summer season. It also suggests reserving 1,600 cubic feet per second for power generation at all times. Bobby Bower, executive director of West Virginia Professional River Outfitters, said local rafting companies support the proposal, which he deems a compromise. "We are talking about a decision that will affect the area for the next 30 years," he said. "Times have changed since the 1930s when it was built. Millions come here for tourism, but The Dries are forgotten although they are next door to a national park." Bower said tourism industry representatives don't want to see jobs at the Alloy plant harmed, and he believes the proposal protects industry workers.

"The Alloy plant is critical to southern West Virginia, and the American Whitewater proposal guarantees them enough water to maintain operation. It would be great to see industry and tourism work together for a better southern West Virginia," he said. Bower said runs on The Dries portion of the New would be family-friendly Class III. This would be the only short and accessible run of its kind in the area and could open up West Virginia to a new family-oriented whitewater market. "Tourism is one of the fastest growing industries in West Virginia. We need to embrace sustainable industries, and if we give our resources away to out-of-state companies, we are ultimately hurting our future," he added. Bower said water in The Dries can become stagnant when it is extremely low, and scheduled releases would help improve fishing. An increase of tourism along The Dries could impact communities like Montgomery, Smithers and Ansted. But the small town of Gauley Bridge, which sits on a hill above where the Kanawha and New rivers combine, stands to gain the most. "Right now companies watch the public gauges along the river to see if it rises enough for runs, but being able to schedule runs would bring commerce into the community," said Gauley Bridge Mayor Jonathan Grose. "When you talk about Gauley Season and see how that partnership (with the Army Corps of Engineers at Summersville Dam) impacts the community, it does make you think about having the river resource and not having control over it."

(Making sure it's safe.)

$52 million construction project for structural update of Bagnell Dam to start this spring

Jan 10, 2017, lakenewsonline.com

"This project is about keeping this vital asset providing clean energy in the long term, using the best possible engineering available today," said Warren Witt, director of hydro operations at Ameren Missouri. "Osage Energy Center just marked its 85th year in service. Work we're starting in March will ensure it operates reliably and safely, affording the quality of life for hundreds of thousands who enjoy all that the Lake of the Ozarks has to offer each year." A major construction project is set to begin at Bagnell Dam and Osage Energy Center. Starting this spring, Construction crews will begin a $52 million project installing a series of new anchors and concrete on the downstream side of the dam, which provides power to 42,000 homes. "This project is about keeping this vital asset providing clean energy in the long term, using the best possible engineering available today," said Warren Witt, director of hydro operations at Ameren Missouri. "Osage Energy Center just marked its 85th year in service. Work we're starting in March will ensure it operates reliably and safely, affording the quality of life for hundreds of thousands who enjoy all that the Lake of the Ozarks has to offer each year." The last major structural update at Bagnell Dam was completed in the early 1980s. At the time, 277 post-tensioned anchors were installed to hold the dam into the bedrock.

Project by the numbers

- 68 new anchors.
- 66,217,500 pounds of new concrete, which is equivalent to more than 5,500 Asian elephants.
- 600 billion gallons of water held back by the Bagnell Dam.
- 86 square miles area covered by the Lake of the Ozarks, one of the largest man-made lakes in the world.
- 42,000 homes powered by clean energy each year.

"These post-tension anchors were the best technology at the time," Witt said. "They have performed very well since they've been installed and the dam remains structurally sound."
Over the past 10 years, Ameren has been a world-wide leader in developing best practices and spearheading initiatives to inspect the integrity of post-tension anchors, which Ameren engineers will now implement as part of this project. As a result of Ameren's innovative work, steps have been taken in several countries, including as far away as Australia, to enhance dam safety.
As part of its safety protocols, Bagnell Dam is inspected annually by an independent safety engineer.

The approximately 18-month project consists of three parts: new post-tension anchors will help hold the dam to the underlying bedrock; concrete will be added between the highway piers to add weight to the dam; and a new concrete overlay will replace worn and cracked concrete on the east and west sections. "Adding more than 66 million pounds of new concrete along with the new anchors pulls the dam down towards bedrock, which is what holds back the incredible force and pressure of nearly 100 feet of water," Witt said. "Combining these new anchors and additional concrete achieves the best result in the most cost-effective way possible." The plan has been reviewed and certified by independent engineers as well as the federal government. "In consideration of our customers and lake residents, construction is scheduled for weekdays," Witt said. In addition, there are no long-term road closures scheduled for the area. The work will have no effect on the energy generating capacity of Osage Energy Center.

"Osage Energy Center delivers reliable, clean energy that our customers depend on to power their lives every day," Witt said. "The investment in clean energy produced here is part of Ameren's commitment to deliver more of our power from cleaner resources." Ameren Missouri has been providing electric and gas service for more than 100 years, and the company's electric rates are among the lowest in the nation. Ameren Missouri's mission is to power the quality of life for its 1.2 million electric and 130,000 natural gas customers in central and eastern Missouri. The company's service area covers 64 counties and more than 500 communities including the greater St. Louis area.

Water:

(Now, they're dumping water – go figure.)

Water Releases Scheduled For Nimbus, Folsom Dams

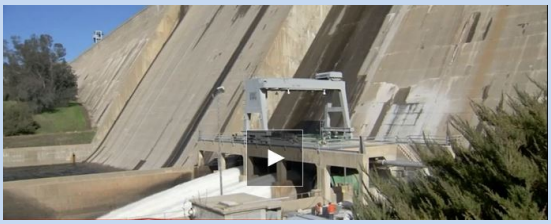
Capital Public Radio Staff, January 5, 2017 | Sacramento, CA | capradio.org

The Bureau of Reclamation is scheduled to incrementally increase water releases below Nimbus Dam from 3,500 cubic feet per second to 15,000 cubic feet per second Thursday morning. People along the lower American River downstream from the dam to the confluence of the American and Sacramento rivers can expect river levels to increase and should avoid the area. The bureau says further adjustments will be made depending on the changes to the volume of water flowing into Folsom Lake. Current American River conditions may be found at the Department of Water Resources' California Data Exchange Center.

(Are they wasting water? Got to go by that flood control rule curve. Maybe something needs changed!)

While Friant Dam releases thousands of gallons, farmers hope water storage project is the answer for the future

By Dale Yurong, January 06, 2017, abc30.com



FRESNO COUNTY, CA (KFSN) -- Over five years of drought, we haven't seen a flood release at Friant Dam since 2011. On Friday, the amount of water being released was increased 30 percent to make room for the next round of storm runoff. Right now, 5,000 cubic feet of water pours out of Friant Dam per second. To put that into perspective, think of 5,000 basketballs bouncing out each second. The water streams down the San Joaquin and is not used for irrigation purposes. "As a farmer, my stomach is so upset because we're releasing all this water," Kings County supervisor Craig Pedersen said.

Valley farmers and leaders gathered at Friant Dam hoping the Temperance Flat project can someday, a decade from now, be their pot of gold at the end of a rainbow. The project calls for another dam inside the existing lake. "These releases are waters that are not benefiting anything," said Steve Worthley, who's with the San Joaquin Valley Water Infrastructure Authority. "They're not benefiting wildlife, they're not helping farmers. It's just water going down a channel which will,

ultimately, go into the San Francisco Bay." Millerton Lake holds 520,000 acre-feet of water, but with more rain and more storm runoff expected as much as 300,000 acres of water may be released by the Bureau of Reclamation over the next 30 days to make room. Fresno County supervisor Buddy Mendes says it's more than a flood release. "We're losing jobs," he said. "I mean, this a deal for future jobs down the road, this is the east side disadvantaged communities." But critics of Temperance Flat say the amount of water, which could be collected during wet years, does not justify a $2.6 billion price tag. They also cite the environmental impact of the project. The project's feasibility is being studied. If approved by Congress, Temperance Flat would more than double the storage capability of Millerton Lake.

(Where else can it go? This is news in Nevada – water.)

Flood waters overtop old power dam

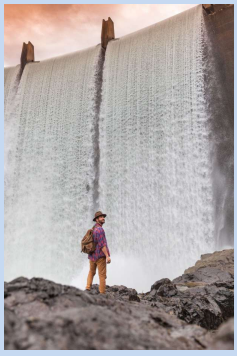
January 8, 2017, recordcourier.com

Water rushed over the old power dam south of Gardnerville, NV on Sunday, threatening the southernmost crossing of the East Fork in Carson Valley. The river was still short of overtopping the crossing at Memdewee Run between Highway 395 and Dresslerville at lunchtime. Just below the crossing is the Riverview Mobile Home Park.
The river gauge at that site is out of service, according to the National Weather Service. The National Weather Service has cancelled a flood warning along the West Fork of the Carson River at Woodfords affecting Alpine and Douglas counties and the West Walker River near Coleville.

(A welcome sight in CA.)

Storm turns Auburn dam into a mini-Niagara Falls

By Mike Moffitt, January 9, 2017, sfgate.com



If you happened by Lake Clementine near Auburn on Sunday, you might find it hard to believe California is still in a drought. The rain-swollen lake could not contain the rising waters from a series of storms. They cascaded over the North Fork Dam in an awesome display of aquatic force. Lake Clementine is fed by the North Fork American River. It was formed in 1939 when the Army Corps of Engineers built the dam to prevent gold mining debris from flowing downstream. The dam is a short hike upstream from the 730-foot-tall Foresthill Bridge, the highest bridge in California and the fourth highest in the United States. The trail to the lake is about a 4o-minute drive from Sacramento.

(Dumping water everywhere.)

Flows increased from Shasta Dam

01/11/17, redbluffdailynews.com

The Bureau of Reclamation was scheduled to incrementally increase releases below Keswick Dam from 14,000 cubic feet per second to 19,000 cfs by Wednesday, with releases increasing up to 36,000 cfs by Thursday. The increased releases are necessary to meet flood space regulatory requirements within Shasta Reservoir. If inflows continue to increase or start to decrease, operational adjustments will be made as necessary and may occur on short notice.

Shasta Reservoir, 10 miles north of Redding, provides water for people, fish and wildlife, hydropower and environmental and salinity-control requirements in the Bay-Delta. People recreating in or along the Sacramento River downstream of Keswick Dam can expect river levels to increase and should take appropriate safety precautions. Midnight reservoir elevation and flows from Keswick Dam may be found at Reclamation's Central Valley Operations Office website at https://www.usbr.gov/mp/cvo/vungvari/wtr_rpt.pdf. Sacramento River conditions may be found at the Department of Water Resources' California Data Exchange Center website at http://cdec.water.ca.gov/river/upsacto1Stages.html.

(In case you wondered why?)

This is why California has dams

Water storage is not the only reason California forefathers dammed streams and rivers; the benefits of flood control can be seen up and down the state because of these structures.

Jan 11, 2017, westernfarmpress.com

What a difference a year makes. Last year at this time California was basking in weather that makes it famous: warm temperatures and sunny skies were comfortable to everyone but the farmer. This year heavy snow and blizzard conditions forced the lengthy closure of two major trans-Sierra highways as water officials were in flood control operations at major dams. The latter is much more visible to folks as rivers rise and some use the circumstances to further blame California and federal officials for not building more dams to store more water. While it's easy at times to criticize water officials for some of their activities, flood control is one of the major reasons we built these dams in the first place. Were it not for Shasta and Oroville dams in particular, people could not live and farm in the Sacramento Valley like they do.

A Fresno Bee article reports about the frustration of some farmers after the U.S. Bureau of Reclamation began releasing water from Millerton Lake near Fresno ahead of what could be a deluge of storm runoff. That water flows into the San Joaquin River, which is supposed to drain into the Pacific Ocean, but some say it really doesn't – not anymore. One farmer I know who grows crops along the San Joaquin River once told me that he liked the USBR's summertime river releases from Friant Dam because that water helped replenish aquifers from which he irrigated. For the San Joaquin River in particular this could be quite beneficial as growers along the river have been forced to pump from aquifers in the region to irrigate their crops. Even typically dry stretches of the Kern and Kings rivers are running hard, which will also help replenish aquifers.

While northern California farmers and water users appear set for this year – Shasta Lake is well on its way to filling once-again and Lake Oroville is up even more dramatically in the past month – the rain and snow south of the Delta should bode well for growers who have suffered most during the state's lengthy drought. This is what California needs – active watersheds moving water towards the ocean. Along the way some of this water will fill aquifers, leach natural salts from root zones and further benefit the rich soil that makes California the agricultural powerhouse it is.

Other Stuff:

(A legend is gone.)

Storm Takes Out Famous Calif. 'Tunnel Tree'

Pioneer Cabin sequoia toppled in Calaveras Big Trees State Park after heavy rains, flooding

By Jenn Gidman, Newser Staff, Jan 9, 2017, newser.com

(NEWSER) – Thunderstorms wreaked havoc throughout northern Nevada and California over the weekend, causing heavy rain, mudslides, and the demise of one of the region's most famous giant sequoias. The Pioneer Cabin tree, described by the Los Angeles Times as "one of Calaveras County's oldest residents," fell to the ground Sunday in Calaveras Big Trees State Park, bringing to an end one of the park's most famous attractions. A tunnel had been dug through its base sometime in the late 1870s or early 1880s; cars had even been allowed to drive through it at one point, though as of late only hikers could venture underneath the woodland giant.

Before failure

KSBW notes that although the exact reasons for the tree's demise aren't known, the trail surrounding the tree had been flooded, and the tree's root system didn't dive very deep—only about 2 to 4 feet into the ground. "This iconic … tree … enchanted many visitors," the Calaveras Big Trees Association said on its Facebook page, showing pictures of the fallen tree taken by park volunteer Jim Allday. "The storm was just too much for it." Allday's wife, Joan, tells KSBW the tree was "barely alive" before it fell and had been tilting to one side for a few years.

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