

1/27/2017



Some Dam – Hydro News™ *And Other Stuff*

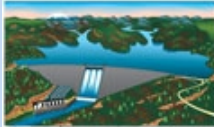


Quote of Note: *“Powerful men and beautiful women never get to hear the truth.”*

- Dutch Proverb

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“Good wine is a necessity of life.” - -Thomas Jefferson
Ron’s wine pick of the week: 2014 Château Mont Redon French - Rhone (Red Blend)
“Cotes du Rhone Reserve”
“No nation was ever drunk when wine was cheap.” - - Thomas Jefferson



Dams:

(Gotta store that water.)

New California Dam Proposed to Combat Climate Change Concerns
Nevada Irrigation District, which serves two California counties, wants to build a new reservoir on the Bear River to capture rainfall, amid concerns that climate change is shrinking Sierra Nevada snowpack.

Written by Matt Weiser, Jan. 9, 2017, newsdeeply.com

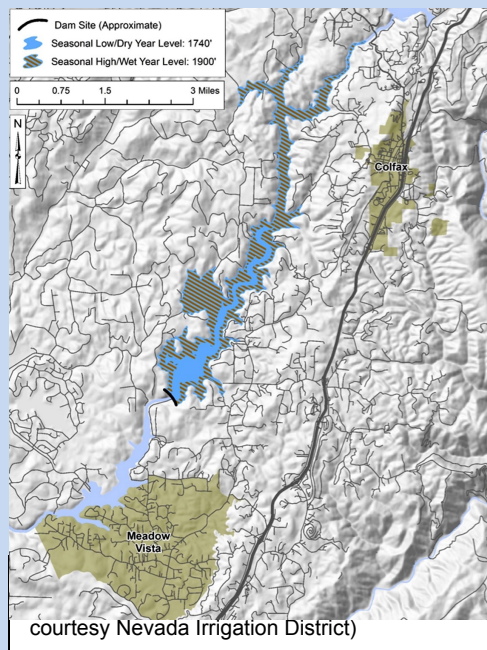
Americans have had one primary reason for building dams over the past century: capturing water for growth, whether on farms or in cities. Now a new dam proposed on California’s Bear River offers another reason: adapting to climate change. The Centennial Dam project, proposed by the Nevada Irrigation District, is intended to capture rainfall at lower elevations to make up for declining snowpack at higher elevations. It would be built at an elevation of about 2,000 feet between two existing reservoirs on the Bear River – Rollins and Combie – in a region of the Sierra Nevada where winter rainfall can be prolific but snowfall is light. The district suffered in 2015, along with the rest of California, when winter snowpack nearly vanished completely. On April 1 of that year, at the end of winter, the state Department of Water Resources measured the Sierra

snowpack at just 5 percent of average, the lowest ever recorded. The Nevada Irrigation District that year was forced to buy water from Pacific Gas & Electric Co. out of Rollins Reservoir to serve its customers. That emergency supply – 16,000 acre-feet (19.7 million cubic meters) – cost \$1 million and might not be available next time. The district doesn't want to have to go begging like that again, said Nick Wilcox, a member of the district's board of directors.

"We are being seriously impacted now by climate change, and will be more so in the future," Wilcox said. "This is an attempt to create more mid-elevation storage to capture winter rains for use later in time. We need to control our own destiny." Climate change scenarios anticipate, as temperatures rise, more Sierra precipitation will fall as rain rather than snow. That means the mountain snowpack that California has relied upon historically to survive its hot summers may no longer be sufficient. The Centennial proposal would store 110,000 acre-feet (135.7 million cubic meters) of water by building a dam 275 feet (84m) tall across the Bear River, near the town of Meadow Vista. That would make it larger than any of the district's existing 10 reservoirs, and it would be one of the largest dams built in California in some time. For example, Los Vaqueros Reservoir, built by Contra Costa Water District, was 100,000 acre-feet (123.3 million cubic meters) when first constructed in 1998 (and expanded to 160,000 acre-feet). The district hopes to release a draft environmental impact report on the project in 2017 and start construction for the district's 100th anniversary in 2021 – hence the "centennial" name.



A father and daughter pan for gold at Bear River Campground, a popular recreation site along the Bear River that would be inundated by the proposed Centennial Reservoir. Photo courtesy Placer County Department of Parks and Recreation



Although it is hardly the first dam on the Bear River, the project has prompted a number of concerns among local residents and river advocates, including:

- Less streamflow for imperiled fish downstream. The Bear River is a tributary of the Yuba River, where environmental groups and government agencies are working to restore endangered salmon and sturgeon.
- It would silence a 6-mile stretch of flowing water that residents enjoy, drowning the popular Bear River Campground operated by Placer County, as well as 25 homes.
- It will require a new bridge across the Bear River that could bring more traffic through Meadow Vista.
- It would flood dozens of American Indian cultural sites along the river.

"It's a 19th-century solution to a 21st-century problem," said Traci Sheehan, coordinator of the Foothill Water Network, a coalition of local groups formed to oppose the dam. "Especially during a time of climate change, you need to be really thoughtful. We believe there are more cost-effective and less environmentally destructive alternatives." One of those is meadow

restoration, Sheehan said. Sierra meadows have been degraded by more than a century of logging and livestock grazing, reducing their ability to store precipitation. A number of agencies are working to restore meadows as a water supply solution. The Nevada Irrigation District could do the same thing, Sheehan said, on the 70,000 acres (28,328 hectares) of mountain watershed that help fill its water system today. Another is conservation. Only 10 percent of the district's customers are residential or business customers who consume treated water.

The rest are agricultural customers who receive untreated or “raw” water. This water is delivered in a 475-mile (764km) ditch system. Much of this dates to the Gold Rush and a lot of it is unlined, resulting in losses of 10 percent or more due to seepage. The district has a program to line or pipe its ditches “when feasible,” said general manager Rem Scherzinger. In practice, this means about 2 miles (3.2km) per year, according to a recent report. “As any responsible agency should, we must explore and utilize all of our resources,” Scherzinger said. “These range from conservation and watershed management to leak loss prevention and the construction of storage facilities to try to protect our community. Centennial is one facet in a holistic approach to survive the coming reality of climate change.” The district’s treated water customers were required by the state to achieve 33 percent conservation last year because of the drought. They managed 30 percent.

Its raw water customers, however, had no conservation requirement because the state exempted agricultural water users. Although many of the district’s raw water customers are small farmers and ranchers, many are large residential property owners who use the water for other purposes, including landscaping and ponds. “While we want to make sure farmers get every ounce of water they need for their crops, we believe a lot of agricultural water is going to water the lawns of McMansions,” said Caleb Dardick, executive director of the South Yuba River Citizens League, a small but influential environmental group working to restore river flows for fish and recreation. An unusual feature of the Nevada Irrigation District system is that it diverts substantial amounts of water from the Yuba River, through a tunnel, into the Bear River, to serve a significant share of its customers in both Nevada and Placer counties.

Dardick worries that if the district doesn’t get the water it needs from the Bear River to fill Centennial Reservoir, it will divert more water from the Yuba River to fill it. Wilcox said the opposite will actually be true. Building Centennial Reservoir, he said, will allow the district to divert less water from the Yuba to serve its customers in Placer County, who could then be served by Bear River water stored in Centennial Reservoir instead. As a result, he said, the new reservoir could actually take pressure off the Yuba River. The project is likely to cost close to \$500 million, Wilcox said, which includes the new bridge as well as a possible new hydroelectric unit at Rollins Reservoir, for which the district already has a federal permit. The district would use revenues from electricity sales to help offset construction costs. No rate increases will be needed to pay for the project, he said. “It is not enough to say, ‘Well, dams are outdated; we hate dams,’” Wilcox said. “Dams are inherently destructive. I grant you that. But they really do provide some water-supply reliability. And our whole society is heavily dependent on infrastructure like that.” A critical issue for the project is water rights. Nevada Irrigation District actually conceived Centennial Dam in 1927, when it was known as Parker Dam. Wilcox says the State Water Resources Control Board has held water rights for the project “in trust” ever since. But the district does not hold title to the water, which must be granted by the state through a separate hearing process.



A Sierra Nevada reservoir in California is surrounded by barren ridges, usually covered in snow that time of year, during an aerial survey of the snowpack done by the California Department of Water Resources. (Rich Pedroncelli, Associated Press)

A lot has changed since 1927 in California’s understanding of water availability. Estimates from that time of nature’s ability to provide water are now recognized as optimistic. It is also understood that the state has already allocated much more water rights than there is actual water to divert. So it remains to be seen if 110,000 acre-feet of Bear River water is truly still available for a new reservoir. Shelly Covert, spokeswoman for the Nisenan Tribe’s Nevada City Rancheria, wants the

water district to explore every possible alternative before moving ahead with the reservoir. She said the project will drown cultural sites the tribe has used for millennia. This includes former village sites, places where cremation rituals were performed and where tribal members still go today to harvest natural resources and connect with flowing water. Known as "momilaj" (mome-lay) in the Nisenan language, flowing water is important to some tribal cultural practices, said Covert, who is also a member of the tribal council. "I can't believe that in 2016, our few remaining resources that we still have access to are in danger of being lost again," she said. "It's a big deal to change a flowing, rushing river into a big puddle. Water is a living thing, a living being."

(When you want something, go straight to the top.)

Iowa to Trump: We want better locks and dams and flood protection

Jan 12, 2017, kcrq.com

CEDAR RAPIDS, Iowa (KCRG-TV9) - Better Locks on the Mississippi River, water quality and Cedar Rapids Flood protection top the priorities list Iowa sent to President-elect Trump. The Trump Transition Team requested a list of infrastructure priorities from states. The Governor's Office put together a four-page summary of its priorities from the federal government. Those priorities in order:

- 1.) Modernize locks and dams on the Upper Mississippi River
- 2.) A Lewis and Clark Regional Water System
- 3.) Cedar Rapids Flood Protection Funding
- 4.) Interstate 80/380 Interchange Rebuild
- 5.) Des Moines Airport Terminal Upgrades



The President-elect says he will use the priorities lists to help shape his \$1 trillion infrastructure plan. It's unclear how the administration will prioritize projects among the states. Iowa's top priority focuses on increased use of the Upper Mississippi River as a shipping channel. It notes more than 60% of the nation's grain exports traverse the Mississippi River. The crux of the request is actually centered on a lock in the St. Louis area. The state describes the lock as being at high risk of failure, which would shut down the flow of goods from Iowa down the Mississippi. The state also notes "an extensive list of deferred maintenance and system enhancement projects on the entire lock and dam system in the Upper Mississippi." The Lewis and Clark Water System would provide clean water to an area that includes northwest Iowa, Minnesota and South Dakota. It has been awaiting federal funding since 2000 and still needs \$198 million for completion. "Without the (Lewis and Clark system) water, the next drought could have significant negative consequences for the economy of the three-state region," the state warns in its request.

The request for funding for a Cedar Rapids flood mitigation system gained renewed importance when the Cedar River flooded again last September, though far below 2008 levels. The \$630 million project already has funding from the state and city but needs \$230 million of promised federal funding. The request for a new Interstate 80/380 interchange asks for an influx of funding to speed up the project. The Iowa Department of Transportation has plans to rework the interchange over 7 years but federal funding could open up the project for bids as early as this year. "This acceleration would eliminate the choke point three years earlier than scheduled, prevent approximately 200 crashes, and would save one million hours of productivity lost in traffic delays, providing significant benefits to the region and to the extensive amount of freight traffic traversing the country on I-80," the request states.

(At least it's raining somewhere.)

Drought ends in the Northstate, Shasta Dam opens spillways

By: Josh Copitch, Jan 12, 2017, krcrtv.com

SHASTA LAKE, Calif. - With recent rain and snow storms, the drought has been declared over for all of Northern California, that is according to the U.S. Drought Monitor.

Shasta Dam, for the first time in six years, opened its spillways to release water from Shasta Lake on Thursday. Shasta's Dam is releasing up to 36,000 cubic feet per second. Half of that comes through five of the 18 river outlet valves that are open on the spillway and about another half through all five turbines that generate power.



"Right now we'll be managing the inflows, which are too much for us at this point in time. We have to make sure we keep space in the reservoir so what we're doing is trying to evacuate enough water to make sure we've got enough room for the upcoming storms," said Don Bader, an Area manager for the Bureau of Reclamation. Randall Hayes was taking pictures of the iconic three Shastas: The dam, lake and mountain. He was enjoying a view from the overlook. When asked about what he thinks of the view he said that he liked it.

"I like it. I mean it's nice to see. The thing I don't like is I know I'm still going to hear the people saying we're in a drought, but I think the drought's over." said Hayes. The public is able to take the dam tour which allows you to get the spillway experience. The river valves should be open for at least a couple of weeks for public safety reasons. If the lake gets more expected rain and snow there's no place for it to go. "Right now you know everything is so saturated. Most of what's coming down is going right into the reservoir. Early in the year, we'll get rainfall events and we'll get very little runoff into the reservoir because everything's going into the ground." said Bader. The bureau of reclamation is constantly monitoring river levels so if they get too much rain in the upcoming stories they'll cut back the release.

(Show me some money.)

County seeks outside money for future Horlick Dam work

By MARK SCHAAF, journaltimes.com, Jan 11, 2017

YORKVILLE, WI — As it ponders the future of the Horlick Dam, Racine County will pursue outside money to help offset the costs of whatever work is to come. The county is looking at several options related to the dam after the state Department of Natural Resources ordered the dam be repaired or removed by 2024.



The Racine County Board on Tuesday unanimously authorized officials to seek grant funding from federal, state and other sources. No matter what the county pursues, costs will likely range in the hundreds of thousands of

dollars, said Julie Anderson, the county's director of public works and development services. Removing the dam could cost more than \$500,000, she said. Making repairs to bring the dam into compliance would also be in the six figures, plus ongoing maintenance. "We want to try to seize as much money as we can," Anderson told the board. "If we're able to get grant money, great. If we can't, we at least tried." Any grant funding the county receives will come back to the board for formal approval. A full County Board briefing on the Horlick Dam is scheduled for the board's 5 p.m. Jan. 24 meeting at Ives Grove Office Complex, 14200 Washington Ave., Yorkville. A public informational meeting is set for 6:30 p.m. Jan. 30 at Ives Grove.

19th century design

Built in 1835 and reconstructed four times since, the dam does not meet state codes for flood storage capacity and the height of the structure is too high, Anderson said. In a 2014 report, the DNR said the dam would likely fail during a once-in-a-century storm, causing stormwater to pour over the dam's abutments on either side of the river. Regional planning experts have recommended the dam be demolished. The county also could look at various options to modify the dam, like lowering it 3 feet, lowering it and creating a fishway or cutting notches to allow more water to flow. "We don't need to get the dam in compliance for another several years," Anderson said. "But by the time we gain consensus, get funding together, get permits, get engineering done, and all the other things that are required to make this happen — all of a sudden years are going to pass and it's going to be right in front of us. So we're trying to stay ahead of the curve."

(A youngster.)

Normandy Dam turns 40

By JASON REYNOLDS ~ t-g.com, January 12, 2017

A key landmark in Normandy turned 40 years old just last month. Normandy Dam was completed in December 1976, said Scott Brooks with the Tennessee Valley Authority's public relations unit. "It's one of the youngest dams in TVA's system," Brooks said. "We didn't even have a birthday cake here," he added as a joke. TVA's website lists the dam as being 2,807 feet in length, including the earth-filled bank, making the dam more than seven and a half football fields long. The dam is TVA's largest non-power generating dam on a tributary, said Alice Rodewald, senior program manager/dam safety. The agency has 49 dams, 29 of which generate electricity.



Normandy Dam received a major safety checkup last year, which went well, Rodewald said. The dam, along with all of TVA's river dams, had samples drilled out to check the structure's health. Additional monitoring sensors were put in place last year, Rodewald said. Sensors, which monitor water level and pressure on the dam, are read either manually on-site or electronically at a TVA office, she said. Since the dam does not generate electricity, one may wonder why it was built.

In addition to helping prevent flooding downstream, the dam provides for economic development in Normandy as well as recreation, Rodewald said. Actually, people in the area requested that the dam be built to help with economic development and recreation, Brooks said. The dam's 17-mile-long reservoir also provides drinking water for communities downstream, including Shelbyville and Tullahoma, Rodewald said. And, two pipes run from the reservoir to provide water for the nearby Normandy Fish Hatchery operated by the Tennessee Wildlife Resources Agency.

Normandy Reservoir, on the Duck River, attracts bass anglers, campers and boaters from a wide area, TVA's website says. Barton Springs Recreation Area on the south shore of the reservoir is especially popular. There is an 11-foot variance in the reservoir's water levels between summer and winter, Brooks said. There are two 36-foot gates, which are large for a dam like Normandy, he said, as well as three sluice gates that help control water levels underneath the dam. The gates are operated manually from atop the dam. The agency's River Forecast office in Knoxville makes the decisions on when to release water. Maintenance workers have access to a tunnel inside the bottom of the dam to check the structure as well as pressure sensors and other controls.

Some facts on the dam and reservoir are:

* The Duck River watershed is one of the most biologically diverse river systems in the nation. Over 500 species of fish, insects and other aquatic life inhabit the ecosystem, including two species of mussels -- the Cumberland monkeyface and the birdwing pearly--on the endangered species list.

* The dam is 110 feet high and stretches 2,807 feet across the Duck River. The bottom of the dam is 785 feet above sea level, while the top of the dam is 895 feet above sea level.

* The concrete portion of the dam is comprised of 13 sections.

* Normandy has a Jan. 1 flood-storage capacity of 48,000 acre-feet. (Sources: TVA website and Alice Rodewald)

(A new attack on dams, This little guy should probably go.)

Less can be more: Nelson Dam offers infrastructure vision

By Mike Leita and Kathy Coffey, 1/15/17, yakimaherald.com

Our nation has a long history of investing in infrastructure that serves our business and personal interests and supports our communities, including roads, bridges, power grids and other infrastructure that serve all Americans. These critical components of our society are not one-time purchases. They must be maintained and updated over the years, or they can become outdated and no longer serve their original purpose. Over the decades, we've also learned a lot about the unintended impacts of our infrastructure. America's dams and levees have



helped us manage our waterways, protect against flooding, and provide water storage for domestic and irrigation uses, but while every new project was constructed for a good reason at the time, some impacted the health and functionality of our rivers. Here in Washington state's Yakima River Basin, we know what an important resource our waterways are, and we know how important it is to manage those waterways with effective and reliable infrastructure. We built dams and levees along the Yakima and Naches rivers in the mid-1900s to divert water for domestic uses or irrigation and to protect our growing towns from floods. Today, some of these dams are having unintended consequences for our community. They do not properly control flooding, they affect the salmon integral to our history and culture, and they disconnect our community from the beautiful rivers running through it.

When the city of Yakima built the Nelson Dam in the 1920s, and rebuilt it in 1985, it included then-state-of-the-art designs that represented our region's best collective thinking. Today, we know that there are better ways to achieve the goals we set out to accomplish 30 years ago. To address these challenges, our community joined together to envision a path forward that restores our natural resources while maintaining the irrigation and community benefits that we all want for the future. Collectively, the City of Yakima, irrigators, the Yakama Nation, environmentalists, Yakima County, and state and federal agencies designed a project that balances today's needs with today's ecological and technical knowledge. With that new information, we determined that our best pathway will be to remove the Nelson Dam and replace it with less invasive and more effective infrastructure utilizing modern designs and technology. We are extremely proud of the work we have done. Instead of fighting in the courts, we relied on each other to find lasting solutions. Our strategy has been to work hand in hand not fist to fist — and it has been effective. With the new plan, the city will continue to divert river water, fish will be able to pass upstream to their spawning grounds, and natural habitat forming processes will be restored to six miles of the Naches River.

Importantly, the project will reduce flood risks to approximately 2,300 acres of commercial, rural residential and agricultural properties in Yakima County. Consolidation of several irrigation diversions as part of the project will also reduce flood hazards to commercial areas in the city of Yakima. This project, and the consolidated irrigation diversion, will be cheaper to operate and maintain than the existing flood management system. The health of our community is directly tied to the health of our rivers, the availability of clean water, and the infrastructure that protects it. By removing structures that have outlived their intended purposes and replacing them with a modern plan for managing our waterways, we can protect our economic interests in the safest and most

cost-effective way possible. A waterway management plan rooted in dam removal won't just create a better habitat for our fish, it will create a stronger community for us all.

(Many questions about breaching the Lower Snake River dams.)

Lewiston floats dam options

By Joel Mills Lewiston Tribune, spokesman.com, JAN. 16, 2017

Even though the city of Lewiston, WA has a raft of questions for the federal government indicating that dam breaching would cause massive and expensive headaches, city officials say they aren't yet taking a position. "I'm worried about the future of the community, and about the financial impacts," Community Development Director Laura Von Tersch said. "We're not in the phase of the project where it's even relevant to say we either support or deny an alternative. We're just trying to make sure that our questions are on the table and addressed." **The city recently submitted its list of concerns to the U.S. Army Corps of Engineers, the U.S. Bureau of Reclamation and the Bonneville Power Administration as those agencies prepare an environmental**



A sunny and calm day provides smooth sailing on the Snake River for a sail boat passing under the Red Wolf bridge in Clarkston, Wash., Monday, Feb. 6, 2006. (KYLE MILLS / Associated Press)

impact statement on the Columbia River system operations in anticipation of 14 projects. The Lewis-Clark Valley Metropolitan Planning Organization, Lewis Clark Valley Chamber of Commerce and other local agencies have also prepared documents listing their questions and concerns. If dams are breached someday, the functioning of critical infrastructure like the water treatment plant, sewer lift station and the stormwater pond and outfall system would all be affected, Von Tersch said. They were all designed to work with the rivers at a specific level, so the city is worried about who would pay to reconfigure them in the event of a drastic change. "We had an operating system before slackwater came in," she said. "I guess we could have a different one if it goes out. I just don't know what that would look like."

Clearwater Paper, the area's largest employer, also depends on the river being at a specific level for its water intake and discharge. There is uncertainty about impacts to the city's pollution discharge permit if the storm drainage ponds that filter runoff are affected. Questions arise about ownership and cleanup of the land uncovered when waters recede. And the departure of the large mass of water will deprive the area of a moderating effect on the climate, Von Tersch wrote in her list of questions. **Economic impacts loom large in the document. Cruise ships contribute about \$1.4 million to the local economies, according to the city.** Slackwater has also created value in riverfront and riverview properties, recreation and boat building. "If (boat builders) can't sell any product locally, then they might be interested in moving closer to their market," Von Tersch said. "And then I worry about everybody who owns a boat right now. Does it become valueless because you have to drive such a long way to use it? The ripple effects just keep going." The chamber of commerce said cruise ships bring about 27,000 visitors and crew members to the area each year, with a broader economic impact of between \$6 million and \$10 million. Chamber officials also worry about reduced access to Hells Canyon, and increased power rates if hydroelectric capacity is diminished.

Then there are questions about whether the levee system would remain, and who would pay to remove it. If it stays, city officials wonder who would be on the hook for maintaining it and certifying its integrity on an annual basis. Von Tersch wrote that when the water was temporarily drained in 1992, the levees dried out and began collapsing. That would require costly repairs, she said. The sediment and mud that has accumulated over the decades would also have to be dealt

with, and possibly cleaned up if it is contaminated with heavy metals. The Metropolitan Planning Organization shared this concern, stating that roads and rail lines suffered during the 1992 drawdown. And bridges in other areas have needed to be replaced where dams have been removed. Agriculture would be affected through the loss of the ports, which provide an environmentally friendly way for farmers to transport large volumes of crops. That transportation mode carries 57 million tons of product each year, and its loss would require an additional 2 million tractor-trailer trips to replace, according to the Bureau of Reclamation.

The Metropolitan Planning Organization expanded on this, stating there is already a shortage of freight trucks and drivers. Regional roadways are also not prepared to carry the impact of such a huge shift in traffic, and the rail system is in need of significant repairs and upgrades. Lewiston city councilors approved the submittal of Von Tersch's list of questions earlier this week. Some councilors commented that the dams in the system have never lived up to their promise for irrigation and power generation, but all agreed their removal would have a major effect on the city. Von Tersch's main concern was that if breaching does happen, that her community and its neighbors don't get stuck holding the bag. "I've heard from other people who have gone through things like this before that if we don't identify an impact that we want them to evaluate, or a question answered, there might be an impact, but they won't be obligated to mitigate it," she said.

(Don't mess with that dam.)

Sorenson: Horlick Dam is valuable to community

Jan 17, 2017, journaltimes.com

Gerald Karwowski began his bottle collecting in the bottom of the Root River when the old Horlick Dam, WI washed out in the early 1960s. By the mid-'70s, when people realized what an asset that dam was for recreation on the river, a new dam was built at a cost of about \$200,000. The new dam made the river navigable up to about the bridge on High 31. Boats, canoes, kayaks and other water recreational activities became possible again at Armstrong Park and across the river at River Bend Nature Center. A beautiful park was built on the river just above the dam which included a boat lunch. If the dam is removed, at a cost of \$500,000, the boat lunch would be worthless, the fishing poor and the park would lose its beauty.



If the DNR did the research they would realize that because of the large flood plain of the river above the dam there is no damage caused by flooding above the Horlick Dam. During the flood of 2008, the water level below the dam was as high as the water level above the dam. The damage caused by the flood in Racine down river from the dam had nothing to do with the Horlick Dam. Doing anything to that dam would be huge mistake, more than a half-million-dollar mistake. Al Sorenson, Caledonia

(Always wondered if this was true.)

Letter: Fisherman kill more salmon than dams

JANUARY 18, 2017, tri-cityherald.com



It is nice to hear from a chief scientist of whale research ("Snake River dams have decimated salmon productivity," TCH, Dec. 25). He knows whales, but does he know anything about dams? The editorial beside his had honest figures that salmon are growing in numbers. What is the gorilla that nobody is talking about? How to increase fish? How do fisherman and Indians affect salmon? On the White River near Mud Mountain dam, the Indians have a fish trap across the river from the Corps of Engineers trap that moves them above the dam. Several

employees see a cat food company come with a truck to collect the pink salmon from the tribe. They do good work with the desirable salmon. In this area, I have heard stories of how natives put nets in the river by sinking everything so nothing is on the surface, and how they sell fish. I have seen the maze of nets on the river and am amazed how anything can get to McNary Dam. Not saying anything is illegal. The bottom line to improve numbers is to adjust the thing that kills the most salmon. The facts show that dams kill very few fish compared to fishermen, or the native fisherman. WALTER HAMMERMEISTER, HERMISTON



Hydro:

(Someone recognized hydro as renewable. Excerpts.)

Two area projects support renewable energy goal

midhudsonnews.com, January 3, 2017

MID-HUDSON, NY – Two of 11 large-scale renewable energy projects in New York are located in the Hudson Valley and provide strong support for the Clean Energy Standard that 50 percent of the state's electricity come from renewable energy sources by 2030. A total of \$360 million will be divvied up among the 11 projects to leverage almost \$1 billion in private sector investment for clean technology projects including wind, solar, fuel cell and hydroelectric installations. At Swinging Bridge in Sullivan County, Eagle Creek Hydro Power LLC will add 0.85 MW to an existing hydroelectric facility in the Town of Lumberland resulting in a total installed capacity of more than seven megawatts.-----



(Hydro is carrying the load.)

Carbon footprint shrinking in Northwest thanks to energy efficiency

spokesman.com, JAN. 13, 2017

The Northwest's carbon footprint is shrinking, thanks to energy efficiency measures that have reduced electric use, and cleaner burning fossil fuels. In 2015, annual carbon dioxide emissions from electricity for the four-state region were around 51 million metric tons, which is about what they were in 2000, according to the Northwest Power and Conservation Council. Emissions peaked at 60 million metric tons in 2009. About 50 percent of the electricity in the four-state region comes from hydropower, which has historically kept the region's carbon emissions low. Energy efficiency has also played a big role in shrinking emissions, along with a reduction in coal-fired electricity, according to the council. In recent years, natural gas-fired turbines have replaced part of the coal generation. Natural gas emits about 45 percent less carbon than coal.

(Long article and no mention that it's an RCC dam.)

Inside the Stagecoach Dam: Harnessing the Power

Story by Matt Stensland, January 15, 2017, steamboattoday.com

Steamboat Springs, CO — It is a careful balancing act at the Stagecoach Dam, where electricity is generated for homes, fish habitat is managed and water is stored for a time when cities, ranchers and industry need it. Behind the steel door, mineralized sludge covers the concrete walls and incandescent bulbs dimly light the narrow corridor. These are the guts of the Stagecoach

Dam southeast of Steamboat Springs, and it can be a little unnerving knowing that at the other side of the wall, 9,360 pounds of pressure push against each square foot of concrete. Water drips from the ceiling and falls from drain pipes that collect water from the seeping concrete.

“All dams get water into them,” said Kevin McBride, adding that not having a system to drain the water would create pressure and put the dam’s integrity at risk. McBride is general manager for the Upper Yampa River Water Conservancy District, a taxpayer-funded organization that built, maintains and oversees the complex operations for the hydro-electric dam that was conceived in 1982 for southeast of Steamboat Springs.

Since the dam was dedicated in 1989, it has fostered a thriving trout fishery and created a reservoir with a state park that is visited by thousands annually and serves as an homage to one of Colorado’s most celebrated water conservationists. Most importantly, it collects runoff from a 228-square-mile area that helps surrounding communities ensure their taps will not run dry and ranchers don’t have to worry about empty irrigation ditches as in previous drought years.



Construction of Stagecoach dam in August 1988.

After the water district built Yamcolo Reservoir in 1979, board member Tom Sharp suggested the building of the Stagecoach reservoir to John Fetcher, a Routt County legend who was an electrical engineer, longtime rancher, co-founder of Steamboat Ski Area and manager for the water district. “He (Fetcher) goes back to his office, pulls out his pad of paper and noodled around with some numbers,” Sharp told the Steamboat Pilot & Today in 1997. “Eight-and-a-half years later, we have a reservoir.” Last week, Sharp explained the process was actually more complex. Decades before the land was built, the Bureau of Land Reclamation had identified the site for a future dam, at a time when the western United States was expanding, but the land was not available.

Colorado-Ute Electric Association, the company that owned the Craig Station power plant, had purchased the land after the Stagecoach development went bankrupt. When Colorado-Ute encountered financial trouble, it became unlikely the company would build the dam. The water district took advantage of the opportunity. Sharp said he was driving to Denver with Fetcher when he mentioned the idea of building the dam.

“John Fetcher went further to seek some federal loans and modest grants,” Sharp said. To show politicians there was support for the project, the dam project was put to a local vote in May 1984. “The election was successful — not by a lot,” Sharp said. The building of the dam structure began June 7, 1988. Concrete was poured around the clock, and the structure was complete 38 days later. The total construction cost was \$18 million. The Bureau of Reclamation loaned the water district \$7 million, \$7.9 million came from the Colorado Water Conservation Board and the water district contributed \$2.6 million. State and local dignitaries dedicated the dam Aug. 12, 1989. “Getting a reservoir built — the idea in 1982 to completion in 1989 in seven years — is unheard of in Colorado,” Sharp said. In 2010 and 2011, the water district had secured permits, and the dam was raised by 4 feet to boost capacity by 3,185-acre-feet to 33,275-acre-feet at a cost of \$3 million. Today, Tri-State Generation and Transmission’s Craig Station, which pays the water district \$304,500 annually to store 7,000-acre-feet of water, is the water district’s biggest customer. Local municipalities and ranchers also store water at Stagecoach.

Harnessing the power

Following a strong January storm, a plow truck had to be called in to clear the road to the dam where operators Eddie Rogers and Matt Blankenship monitor sensors, log activity and maintain equipment. Sometimes, it takes a snowmobile to reach the dam in the picturesque canyon.

"It's pretty much paradise here," said Blankenship, who most recently worked at a coal mine and previously worked in the power house of the USS Enterprise for the U.S. Navy. Rogers has an electrical engineering degree from the Colorado School of Mines. In addition to monitoring the integrity of the dam, they oversee the hydroelectric power plant, which was named the John Fetcher Power Plant in 1997. He pushed to make electricity generation part of the dam design. "I think John was a natural conservationist and to have this capability in a project that size and not do it was a bad thing," said McBride, referring to Fetcher, who died in 2009 at age 97 after being recognized as one of the state's water leaders. Above the loud turbine in the power house sits a sign warning people not to stand underneath. That is because above, there is a large, weighted steel lever that will come crashing down if the power generated at the plant needs to immediately come off the grid. On Tuesday afternoon, the electrical turbine was generating upwards of 500 kilowatts. The system can generate as much as 800 kilowatts, but generation is limited by the amount of water that is flowing into the reservoir.



Construction of Stagecoach dam in September 1987.

"The generation, it fluctuates wildly," said Andi Rossi, the water district's engineer. "If the flows get too low, we shut down for power generation. In a big wet year, we'll make a lot of power."

The water district had been selling the power to Xcel Energy, but Yampa Valley Electric Association began buying the power last year for six cents per kilowatt hour. In 2016, YVEA paid more than \$230,000 for the 3.85 million kilowatt hours generated at the dam. That is enough energy to power about 355 homes. Power generation varies and is dependent on runoff. During the drought year of 2002, only 1.85 million kilowatt hours was produced. When there was abundant snowfall in 2011, 4.7 million kilowatt hours was produced. Since 1999, an average of 3.8 million kilowatt hours has been made each year.

What if?

Located in a rack on the wall of the power plant at the Stagecoach Dam is the emergency action plan, with detailed instructions on what to do and whom to call if the unthinkable is imminent.



Stagecoach valley in October 1986 before construction of the dam.

McBride said the procedures are rehearsed each year like all dams are regulated and inspected annually by state and federal agencies. McBride said the monitoring is most important after a dam is built. "It's more or less functioned as designed without any surprises," he said. McBride said the dam was designed so it will never fail, and it could withstand a wall of water 12 feet high coming over the spillway in a scenario known as the probable maximum flood. In that event, impacts from the extreme flooding in the region would overwhelm emergency responders. "We'd have big problems already," McBride said. There are maps in the emergency action plan that show what could occur if the unthinkable happened and the dam failed. With a probable maximum flood, a predicted 1,000-year or 10,000-year flood and a dam breach, water from the reservoir would arrive at the Haymaker Golf Course in slightly less than three hours and inundate it with a peak flow of 227,600 cubic feet of water after about five hours. The water would flood

U.S. Highway 40 and approach Walton Creek Road to the north. The Old Town Hot Springs pools would be overcome and flood to the entire downtown corridor.

An angler's paradise

The amount of water released from the dam is determined by obligations to customers who pay to have water stored, the amount of water flowing into the reservoir and the environment, including the thriving trout habitat below. The water district also carefully monitors the snow that is projected to build up in the surrounding mountains. "It is a balancing act," McBride said. "We've got all these moving targets." There is a spillway on top of the dam to handle overflowing water, but it is not preferred to have water spill over because trout-eating pike from the reservoir can make their way into the Yampa River. A tower of concrete in the reservoir beside the dam has three gates that allow different temperatures of water to be mixed and sent through a pipe under the dam toward the generator. From there, the water is either sent through the generator or through a pipe called a jet flow, which shoots water out of the power plant and helps oxygenate the water for fish habitat in the section of river in front of the dam known as the tailwaters.

The area is an angler's delight and can only be accessed by snowmobile from the Catamount area or by hiking along a county road from Stagecoach State Park. "It's phenomenal," Colorado Park and Wildlife fish biologist Billy Atkinson said. With improvements by Parks and Wildlife to the river habitat, the area has thrived for fishing, partly because of the dam and reservoir. Relatively warm water released from the dam keeps the section of river from freezing over, and the water from the reservoir is rich in nutrients for the fish. "The system is very productive," Atkinson said. In 2016, 25 percent more people visited the section of river, and 4,000 trout were measured per mile. Not all tailwaters below dams in Colorado are experiencing similar success. "It depends on the dam and the operations of the dam," Atkinson said.

(More hydro is always better. Pumped storage is even better.)

San Vicente Reservoir considers hydroelectric project Might take ten years, but demand for clean juice won't wane

By Dave Rice, Jan. 16, 2017, sandiegoreader.com

As the world gradually shifts its energy focus to renewable sources such as solar and wind, utilities are faced with a demand for secondary sources — those that are available when the sun isn't shining or the wind doesn't blow. One option is so-called "peaker plants," traditional power plants fired by natural gas that operate only during periods of peak demand. Like other gas plants, efforts to install them have drawn heavy criticism from nearby residents and the environmentally minded in general. Another strategy being pursued by San Diego Gas & Electric is the installation of energy storage facilities, essentially massive battery banks that load up during the day when renewables are pumping more power into the grid than is needed and depleting during peak demand times in the evening. The San Diego County Water Authority is floating a similar idea, using water from the San Vicente Reservoir near Lakeside as an alternative means of storage to lithium ion cells. Partnering with the City of San Diego (which owns the reservoir), the water authority has received a preliminary permit for the project, which will allow the partnership to solicit parties that would be interested in the power were it to be built.



A dam-raising project completed in 2014 created the potential for the water authority's so-called San Vicente Energy Storage Facility. It would consist of a second reservoir in the hills above San Vicente and an underground pump house with four 125-megawatt reversible pump-turbines. During times of excess power supply, the devices would pump water from San Vicente into the secondary reservoir, where the water would essentially serve the same function as a battery.

When the grid needed to tap into power, water would be released, generating up to 500 megawatts of power as it passes through the turbines — roughly enough to power 325,000 homes for eight hours. Per the authority, the project would have no adverse effect on water quality, fisheries, or other recreational uses of the lake. After soliciting for interest from utilities, developers, and others interested in partnering on the project, the group expects to report back sometime in April, though actual construction could be as much as a decade from completion.



Water:

(Hope they're right.)

Green vegetation, overflowing rivers and a deep snowpack: Stunning image from Space shows California's drought is truly over after record rainfall

- **For the past five years California has been devastated by a severe drought affecting the vegetation**
- **Due to storms in January, green vegetation has returned as Northern California has mostly recovered**
- **California is only 42 per cent drought free, but it's an improvement from 2016 when only three per cent was**
- **Satellite images from NASA show the stark contrast from January 2014 to now after the rain hit the dry land**
- **Even with the rain, most of Southern California is still experiencing extreme drought**
- **More storms are heading for the state this week bringing more heavy rain and snow**

By Dailymail.com Reporters, 15 January 2017, dailymail.co.uk



Stunning images from Space show the dramatic difference in California's drought-stricken vegetation thanks to heavy rain pummeling the state during a storm last week, as more rain is predicted. Satellite color images released by NASA show the striking changes that have occurred from January 2014 to January 2017 in California, as there's now a widespread and deep snowpack, greening vegetation, strong river discharge into the Pacific Ocean and rivers overflowing their banks.

For the past five years, the entire state has suffered a severe and devastating drought, but now billions of gallons of water have been dumped on the state's watersheds in Northern California thanks to a series of powerful rain and snowstorms that have occurred during this winter season, specifically last week. 'This series of storms has done more than make a dent in the drought, which is a huge relief,' Felicia Marcus, the head of the State Water Resources Control Board, told the New York Times. 'But it's a little early to have a drought's over party.' More photos here: <http://www.dailymail.co.uk/news/article-4122258/Green-vegetation-overflowing-rivers-deep-snowpack-Stunning-image-Space-shows-California-s-drought-truly-rain-predicted.html>



Environment:

(This won't make the anti-dam folks happy. It's the ocean too.)

Spring chinook forecasts down for Columbia tributaries above Bonneville Dam

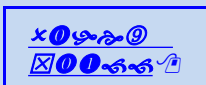
By Mark Yuasa, Seattle Times staff reporter, January 15, 2017, seattletimes.com

The spring chinook forecasts for Columbia River tributaries above Bonneville Dam are expected to be above last year's actual returns. This spring, the Wind forecast is 3,600 spring chinook (6,500 was forecast last year with a 3,200 actual return); Drano Lake is 7,500 (9,800 and 6,500); and Klickitat is 2,100 (1,600 and 2,000). The Wind return is down considerably where the recent average is about 9,000, and not as high as it was in the early 2000s when returns hit 25,000 to 26,000.



When looking back at the past 10 years for Drano the average is about 10,000 spring chinook, so this spring dips below it. The Klickitat 10-year average is 1,800, which shows a slight improvement this spring. The peak of the returns historically is late April or early May. As the fish move upstream, the Wind can be good in mid-to-late May. Water flows and snowmelt runoff will all come into play on how good the run is and when the fish will show up.

Last month, a forecast of 160,400 upriver-bound Columbia River adult spring chinook was announced, compared to last year's forecast of 187,816 (232,500 in 2014 and the actual return was 289,000). According to Joe Hymer, a state Fish and Wildlife biologist, this spring forecast ranks 14th of all runs going back to 1990. The largest spring adult chinook return on record is 541,000 (forecast was 364,600) in 2001, and the worst is 12,792 (12,000 was the forecast) in 1995. In the spring of 2016, 126,826 angler trips (151,713 in 2015) on Lower Columbia produced a catch of 12,666 adult spring chinook (19,586) and 2,621 steelhead with 3,776 spring chinook (5,052) and 693 steelhead released. These figures are gathered through aerial surveys and creel samples taken along 10 sections. Anglers will find time to fish on the Lower Columbia in spring, but the total number of days hasn't been determined. The fishing seasons should be finalized by late January or early February.



Other Stuff:

(Hate them all.)

5 Most Hated Companies in US

One on the list may surprise you

By Jenn Gidman, Newser Staff, Jan 10, 2017, newser.com

(NEWSER) – To be equally loathed by employees, customers, and the general public, a company really hasn't been taking care of its brand. Per Yahoo Finance, 24/7 Wall St. looked at American Customer Satisfaction Index surveys, worker diatribes on Glassdoor, and its own questionnaire to gauge which firms ranked lowest in customer satisfaction. It came up with a dozen companies at the bottom, the majority of which "had among the highest share of respondents reporting generally negative customer experiences." Sitting in the



"winner's" spot at No. 1: Comcast, though the descriptor for that company acknowledges that "internet service provider and subscription television service industries are not known for superior customer service" overall. The five most-hated companies in the US:

1. Comcast
2. Bank of America
3. Mylan
4. McDonald's
5. Wells Fargo

The complete list here: <http://247wallst.com/special-report/2017/01/10/americas-most-hated-companies-4/2/>

(Here are the most and least successful companies of 2016").

<http://www.newser.com/story/235903/5-most-least-successful-companies-of-2016.html>



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