

7/25/2014



Some Dam – Hydro News™ And Other Stuff



Quote of Note: *“The Buck Stops Here.” - - Harry Truman*

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“Good wine is a necessity of life.” - -Thomas Jefferson
Ron’s wine pick of the week: 2010 Marchesi de Frescobaldi Italian (Tuscany) Red “Nipozzano Riserva”
“No nation was ever drunk when wine was cheap.” - - Thomas Jefferson



Dams:

(Some dam history. A little light-hearted. Is that really a dam?)

Century-old dam helped Dallas meet growing demand for clean water

By Roy Appleton, Staff Writer, 12 July 2014, dallesnews.com

Tires and trash poke from the brown muck. Turtles and fish swim in the shallow water near century-old walls. Scenes of the present at a place of the past. The future brought Dallas leaders to this place long ago. They were concerned and hopeful. Their growing city needed water for drinking, bathing and firefighting, more than wells and springs could provide. They wanted a clean supply, not the West Fork of the Trinity River, flowing in from Fort Worth, packinghouse waste and all. As saloon keeper George Loomis told The Dallas Morning News in 1887: West Fork water was “barely good enough to wash a dirty floor.” **Studies and explorations**



identified the Trinity's Elm Fork as a promising source. A former mill site northwest of the city was among the options. A dam and pumping station were built there in the mid-1890s, changing the dynamics of a place called Record Crossing. "By the eternal gods, now is the time to act," Mayor Pro Tem A.M. Cochran told his fellow aldermen the day the \$60,000 project won their blessing. "Let it be known to Fort Worth that Dallas is not getting its sewage." Col. George Washington Record, a "well-to-do farmer," had acted years earlier along the Elm Fork. With business partner Joseph Ellett, he opened a grist mill at a bend in the river in 1858. That was five years after Record and his family arrived from Tennessee. Record was an active Dallas County settler, involved in organizing a church and school before his death in 1869, according to historical accounts. Stories about the mill are short on specifics and perhaps blurred by time. But Ellett's son, Alfred Ellett, opened up with News columnist W.S. Adair in 1926, recalling that the grinding operation drew customers with corn and wheat from hundreds of miles and helped his father manage a "wild hog claim" nearby. "Father used the waste of his mill as a connecting link between him and the hogs, and as a means of getting hold of the pigs to mark them," he recalled. For 35 years, the city's Record Crossing station fed, at times led, a water system trying to stay ahead of ever-increasing demand. Water was captured by a dam that could hold an estimated 250 million gallons, a supply pumped as needed to the city's distribution center near Turtle Creek. It was a first tapping of the Elm Fork, still an important source of Dallas water. The station's first payroll in July 1896 listed five workers drawing wages ranging from \$2.25 to 54 cents a day. Duties involved feeding the boilers that fired two steam-powered pumps with wood hauled by rail from near Carrollton, according to a history of the Dallas water system by M.E. and Eric H. Bolding. At the outset, a 36-inch, barrel-like wooden conduit delivered Record Crossing water 2½ miles to the Turtle Creek station.

Opponents challenged the use of wood, arguing that cast iron would be more dependable. And indeed the buried pipeline leaked, at times disrupting service. After a notable break, a News reporter visited the repair site, finding holes "standing full of water, which was alive with minnows and over which hung clouds of mosquitoes." In 1913, iron began carrying the load. Elm Fork water, flowing in from Cooke and Denton counties, may have been remarkable for the time and place: "clear, pellucid and potable," as the city's water commission reported in 1895. But the supply was inconsistent, a result of the vagaries of drought and flooding. "Water several feet deep over top of the dam at Record Crossing," headlined a Morning News story in July 1911. It described the sudden rush of driftwood-laden water and the pumping of the overflow through a pipe for storage in Bachman reservoir. Built in 1901 and 1902 to impound storm water, Bachman became an ever-important part of the city's expanding water system. A second Turtle Creek pumping station, a portion of which still stands along Harry Hines Boulevard, opened in 1909. Pumping from the new White Rock Lake in eastern Dallas began in 1911. Two years later, pumps began delivering water from wells in Oak Cliff. Although no longer a system mainstay, Record Crossing kept doing its part, as Dallas water planners looked north along the Elm Fork. Storage dams were built at California Crossing and Carrollton in 1912. Water from the new Lake Dallas in Denton County came on line in 1926. Decades later the lake's expansion and the addition of Lake Ray Roberts farther upstream added to the city's supply. The opening in 1930 of a central pumping and purification plant at Bachman Lake dwarfed the Record Crossing and Turtle Creek stations. Their runs were over. The turtles and fish at Record Crossing don't have much of a creek to work with these days. The Elm Fork was rerouted upstream beginning in 1928 with construction of the Trinity River levees. Water that finds the old channel flows through a gap in the cracking dam, past concrete retaining walls and years of silt. Above the channel, a foundation of reddish bricks and iron stubs marks where the pump house stood. Trees and vines are trying to reclaim the site. To the east, past Riverside Drive, stands an electricity substation. Farther on, a beer warehouse gives way to UT Southwestern Medical Center at Dallas. North of the dam site: manufacturing. To the west: the Stemmons Freeway. To the south, across Record Crossing Road: the homes of Arlington Park. The city's Arlington Park Recreation Center borders the old riverway. A marker outside acknowledges the 65-year-old neighborhood. Inside, center supervisor Lorraine Dorsey says she doesn't know about all the old concrete walls and brick out back. She says no one has asked about it in her four years on the job. Laurissa Lampkin, a resident of Arlington Park for eight years, is puzzled as well. They listen to a few words about the Record Crossing dam,

pumps and water. They hear some long-ago dates, nod and seem interested. "That's history," Lampkin says. "Pretty cool."

(Picturesque dam upgrade!)

100-year-old Blooming Grove dam slated for reconstruction

Some residents decry plan

By Hema Easley, Times Herald-Record - 07/13/14, recordonline.com

Blooming Grove, NY — More than a hundred years after the current Beaver Dam Lake dam was built, plans are underway to drain its lake and reconstruct the dam to meet federal safety standards and deal with some stability concerns.

Lawrence Rossini, chairman of the Beaver Dam Lake Protection and Rehabilitation District, said the lake likely would be drained in the fall, after which dismantling of the 36-foot-high structure would begin.

Construction would start in late 2014 or early 2015, he said. "It's like any structure.

You have to keep it up," said Rossini.

"Federal safety standards have changed, and owners are required to keep up."

The dam is built at the 164-acre Beaver Dam Lake, which was created in the 1870s, and it straddles the towns of Blooming Grove, New Windsor and Cornwall. It is owned by Orange County but maintained by the Beaver Dam Lake District, made up of nearly 800 property owners who live around the body of water.



Homeowners bear all costs for maintenance of the lake and upkeep of the dam, including salaries for a handful of district employees. Because they pay for it, only lake district members have access to the lake for swimming, boating and fishing. Work on the project would start after a public information session is conducted in late August or early September, and after a public hearing by the county Legislature to authorize bonding for the project. Approval by the state Comptroller's Office is also needed. A focus of the project is making structural changes to the dam design and increasing capacity of the spillways, which allow water to pass through.

Because the original construction design of the dam is not available, officials have no way of knowing if it will slip, slide or tip under severe flood conditions. The dam normally holds 500 million gallons of water, but that number could rise dramatically under flood conditions, potentially causing the dam to fail. While the lake district and the county are still working to determine the cost of the dam upgrades, Rossini said it would run into several million dollars. A 30-year bond will be paid off by additional taxing of the 800 homeowners, Rossini said. Not all residents are happy with the plan. Rossini said concerns have centered on the fate of the fish in the lake, prospects of a dry lake bed for a few years, and whether such a project is needed. "We had Irene and Sandy, and the dam held up pretty well," said Mike Uricks, who has lived near the lake since 1987. "I don't know how urgent it is to fix the dam." Robert Eichner, 14, who comes to fish at the lake three or four times a week, didn't have good words for the plan, either. "It's going to mess everything up," said Eichner as he threw a line into the lake. "It's going to mess up the fish and the ecosystem of the lake."

(With the flooding they get, it won't be too dry!)

\$8M 'dry dam' project set for upper Maple River in ND

Fargo, N.D. – A "dry dam" on the upper Maple River has federal approval, and the OK from state officials is expected soon for the \$8 million project.

By: Patrick Springer, Forum News Service, prairiebizmag.com, 7/14/14

Fargo, N.D. – A “dry dam” on the upper Maple River in North Dakota has federal approval, and the OK from state officials is expected soon for the \$8 million project. The dam will be located on the Maple River about 15 miles northwest of Page and southwest of Hope inside Steele County. It will replace the smaller Sussex Dam, located about two miles upstream. A construction permit from the North Dakota State Engineer’s Office could come by September, officials said. With that permit in hand, the project can be let for bids, with completion by December 2015, if all goes well. “We think we have all the information needed for the permit,” said Bruce Engelhardt, the state’s director of water development. “It’s still being reviewed. “The dam will feature an embankment 5,000 feet long, or almost a mile, that will be 35 feet high and 20 feet wide. It will be capable of storing 9,950 acre-feet of water in a 925-acre pool, according to specifications by Moore Engineering, which designed the project.

As a so-called “dry dam,” the impoundment will allow water to pass through a pipe at the base, enabling a partial river flow, and the reservoir will temporarily fill during floods. “Fish can go all the way upstream on the new dam,” said Jurgen Suhr, vice chairman of the Maple River Water Resource District. The project is spearheaded by the Maple-Steele Joint Water Resource District. Once the Upper Maple River Dam is complete, the Sussex Dam will be cut in the center to allow water to flow freely and fish to migrate, he said. Flood-reduction benefits of the dam will be primarily local, protecting farmland in the area prone to frequent inundation, with negligible benefits further downstream. “Most of the benefit would be just below it,” Suhr said. “You’d notice some in Fargo, but very little. “Mike Opat, the engineer for the project, agreed. “The primary purpose is to protect agricultural land and roadways and infrastructure immediately downstream of the dam,” he said. The dam has a flood peak reduction of 86 percent in a 100-year, 24-hour rainfall and 58 percent in a 100-year snowmelt, according to Moore Engineering. The floodplain protected by the project is 22,365 acres. By comparison, the Maple River Dam, a dry dam northeast of Enderlin completed in 2007, can hold 60,000 acre-feet of water from a 902 square-mile drainage area. The Maple River flows into the Sheyenne River, which joins the Red River near Harwood, downstream from Fargo-Moorhead. The project will receive \$705,000 from the Cass County half-cent sales tax for flood control, the primary local funding sources for the planned Fargo-Moorhead diversion project. Last year, the sales tax generated \$15 million, according to figures from the Cass County Auditor’s Office. The flood tax contributed almost \$6.3 million last year to the Diversion Authority and \$494,144 to other county projects. The North Dakota State Water Commission will contribute \$3.8 million toward the Upper Maple River Dam, with the Red River Joint Water Resource District adding \$2.6 million. Property owners benefiting from the dam will be assessed \$850,000. Project backers will meet with officials of the Natural Resources Conservation Service to determine whether programs under the new farm bill can be used to help pay for the dam, Opat said. The Diversion Authority has not been asked to contribute, Opat said. The Upper Maple River Dam first was proposed, in somewhat different form, in 1996. - See more at:

<http://www.prairiebizmag.com/event/article/id/19972/#sthash.Xu25Fyj8.dpuf>

(Excerpts: Wonder why this doesn’t wait for the new PMP data?)

Chatham receives \$700,000 for dams

July 16, 2014, By TIM DAVIS, Star-Tribune Editor | chathamstartribune.com

The town of Chatham will receive \$700,000 from the Natural Resources Conservation Service to fund plans to address proposed improvements at Cherrystone and Roaring Fork dams. The Virginia Department of Conservation and Recreation’s Division of Dam Safety wants the town to enlarge the spillways at Cherrystone and Roaring Fork to prevent water from ever pouring over the tops of the dams. Such an event — estimated to occur once every 10,000 years — could cause the earthen dams to fail, leading to a catastrophic flood downstream, said former mayor Joe Rogers, a retired civil engineer. “It is possible, but the probability is extremely rare,” Rogers told Chatham Town Council in 2013. The dams are inspected and certified every three years. “There’s no problem with the dams themselves,” Rogers said. “The dams are structurally sound.”

The federal government required states to adopt dam safety regulations after a private dam failed in Toccoa, Ga., in 1977, killing 39 people. Most of the fatalities were students at a small Bible college. Rogers was a member of the U.S. Army Corps of Engineers team sent to inspect the Georgia disaster. "Having seen something like that is a sobering experience," he said. Virginia enacted new dam safety regulations in 2008 requiring state-regulated dams to conduct a dam break analysis and inundation zone map and develop an emergency action plan. Chatham received a \$22,000 state grant and spent about \$55,000 for the study in 2009. Using computer modeling, the study detailed what would happen if Cherrystone or Roaring Fork dams suffered catastrophic failures. The town, which holds operating permits for both dams, split the cost of a \$29,500 preliminary engineering report on the dams with Pittsylvania County in 2013. Cherrystone, a 120-acre lake, is classified as a high-hazard dam by the state. Roaring Fork, located just upstream, is less than half the size of Cherrystone. Both were built as flood-control projects in the 1960s. The recent state study determined spillways for both dams are undersized. "Those dams were properly designed and constructed at the time," Rogers said, noting water has never been high enough to reach the spillways. "The problem is the state has changed the criteria." Options, which could cost as much as \$6 million to \$7 million, include enlarging the spillways, strengthening the dams themselves, or buying property and removing about 10 homes from the flood zone. Noting that Chatham couldn't afford millions to upgrade the dams, the town sought help from the federal government, since the dams were built by the former Soil Conservation Service.

The Natural Resources Conservation Service placed Cherrystone and Roaring Fork in the federal dam rehabilitation program and agreed to fund \$350,000 for planning for each dam. "Hopefully, after that more money will be available for design and construction," said Town Manager Edmund Giles. Cherrystone is the region's main water source, supplying the town and county, including schools, businesses, and a nearby state prison. "Our water system is an expensive animal to maintain, and it's not going to go away," Mayor Roy Byrd said. "It sounds like a tremendous amount of money, but it's not when you think about the scope of the project." Rogers said the continued safe operation of Cherrystone and Roaring Fork dams is as important to the county as the town. "These are simply not 'town' dams," he said. "They were built to prevent flooding on the Cherrystone watershed, and both the town and county were signatories to the agreements to build the dams. Both the town and county citizens have benefited significantly from the flood protection afforded by these structures since construction in the mid-1960s." Rogers said the reservoirs are critical for any development along the U.S. 29 corridor. "Essentially every drop of processed water from the north side of White Oak Mountain to the Ag Center at Dry Bridge come through one or the other of these impoundments," he said.

Speedwell Forge Lake dam reconstruction gets key permit from state

By Ad Crable | Staff Writer. m.lancasteronline.com, 7/16/14

After a seven-month review, the state has issued a dam permit for the drained Speedwell Forge Lake, giving the green light for rebuilding the dam and refilling the public lake. "Our group is excited about it. It's a major milestone and shows progress for what we want — restoration of the lake," said Milt Lauch of the Save Speedwell group. Lauch was informed Tuesday by the Pennsylvania Fish and Boat Commission that the Division of Dam Safety of the state Department of Environmental Protection had issued the permit. The PFBC said



Wednesday that the \$6.2 million project should be bid soon with construction underway this fall. The bulk of construction would be next spring, said Eric Levis, PFBC spokesman. "This does not change the overall timeline which calls for the construction to be done by the end of 2016 and the

lake to reopen in 2017," Levis said. The 106-acre lake north of Lititz has been drained since late 2011 after heavy rains from Tropical Storm Lee caused a surge that significantly damaged the 830-foot-long spillway. **The dam was then intentionally breached and the lake drained.** Because of money considerations, its future was uncertain until a grassroots effort involving residents, public officials and legislators secured funding for its repair.

State and federal funding was obtained. The dam permit is a significant milestone. But it was not a slam dunk. **One issue surrounded potential flood damage to landowners adjacent to the lake after recalculations on maximum storm flows by the National Oceanic and Atmospheric Administration showed potentially higher floodwaters.** Surveys had to be done on about 30 properties and drainage easements obtained. And the spillway had to be enlarged to handle more stormwater. The backside of the earthen dam also will be reinforced so floodwaters will flow into the spillway and not over the earthen dam that could erode. Also, a new earthen berm will be added along Brubaker Valley Road to prevent any floodwaters from flowing onto farmland. Sediment currently being dredged from the lake bottom will be used to construct the berm, said Lauch, who called the review for the dam permit "intense." Now that the dam permit is in hand, the state Department of General Services will prepare the project for bidding. Meanwhile, a separate project undertaken by Save Speedwell to dredge sediment from the bottom of the dry lake bed is about 60 percent complete, Lauch reported. Removing the sediment that has filled the lake since it opened in 1966 will improve fishing, boating and paddling on the lake. Save Speedwell secured a \$432,509 state Growing Greener grant for the project. About 5 feet of silt is being removed from the lake bottom in the most-used parts of the lake. About 1,059 truckloads of sediment are to be removed. Lancaster Bassmasters is working with PFBC to establish fish habitat before the lake is refilled. In another new development, the Lititz Sportsmen's Association will replace the old public pavilion at the lake near the boat launch. The current pavilion was built by the farmer who owned the property before the lake was built. It has been patched and is unstable, Lauch said. Rocks to be placed along the shoreline will prevent erosion when the lake is refilled. "We're getting there," said Andrea Becker of Save Speedwell. "In 2016 we should have water. I can't wait to get my kayak in there again." Speedwell Forge lake bed showing the dam area in the lower part of photo and Zartman Mill Road at Left. (Richard Hertzler/Staff) This aerial photo shows the Speedwell Forge lakebed, bordered by the trees at center. The dam breast is in the lower part of the photo, with Zartman Mill Road to its left. The dam's spillway is at left near Zartman Mill Road and a row of trees, and the dam breach is at lower right. Brubaker Valley Road is at the top of the photo.



Hydro:

(More about hydro than dams.)

Potomac River Dams

By Christine Snyder For The State Journal, July 11, 2014

Berkeley County is home to a pair of historic sites that could make the list not only of good things in the Mountain State, but also West Virginia's Dam Good Things.

Originally constructed more than two decades before the Civil War, Dams 4 and 5 continue to operate on the Potomac River. Both are situated off the beaten path — they cannot be described as tourist attractions — but fishing enthusiasts, history lovers and others who seek out the locations describe them as serene and



picturesque. They're also full of history, not only as still-working relics of the hydroelectric industry, but for their ties to the Civil War. Confederate Gen. Stonewall Jackson targeted Dam No. 5 for destruction starting in late 1861, explains Don Silvius of the Berkeley County Historical Society. Jackson's idea was to cut off water to the upper Chesapeake & Ohio Canal and thus disrupt coal shipments to Washington, D.C.

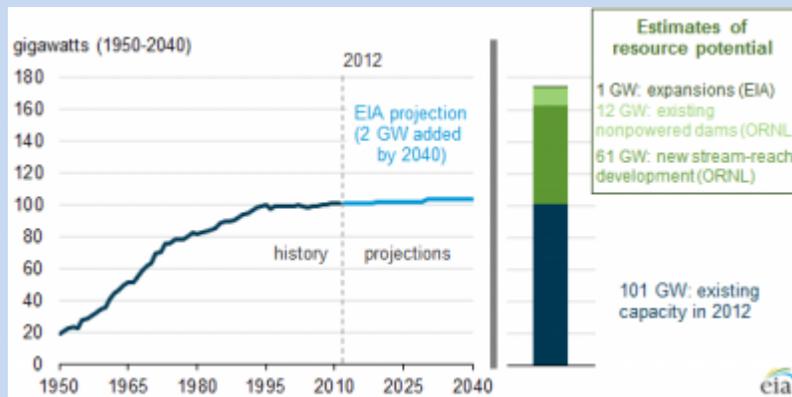
While Jackson had hoped to destroy the dam, Silvius said Southern forces succeeded only in slightly damaging it. Also known as the Honeywood dam, the site in Falling Waters in northern Berkeley County was deemed the more attractive dam to destroy. It had been built as a wooden crib, and then filled with stone, Silvius said, while Dam No. 4 on the Berkeley-Jefferson county line near Shepherdstown is of masonry construction. The late Don Wood, the long-time head of the Berkeley County Historical Society, worked to get both dams on the National Register of Historic Places in the early 1980s, Silvius said. Beside Dam No. 4 is a single-story, limestone power plant atop a tall stone foundation. With five bays and a gable roof, the structure is built into the hillside, making the top level the main floor. The Martinsburg Electric Co. built the power plant in 1835. It's located in the historic village of Scrabble, a community that's partly in Berkeley County and partly in Jefferson. Beside Dam No. 5 is a two-story brick power plant built in 1900 as the Honeywood Paper Mill. An earlier mill constructed as the dam was being built in 1835, was burned, rebuilt and then burned again during the Civil War, according to documents filed by Wood for the National Register designation. Earlier this year, FirstEnergy Corp. completed the sale of 11 hydroelectric power stations, including the two Berkeley sites, to Harbor Hydro Holdings, a subsidiary of LS Power Equity Partners.

[\(Show me the money!\)](#)

EIA: Hydropower Limited by Money, Not Resources

July 11, 2014, dailyfusion.net

According to the projections made by the U.S. Energy Information Administration (EIA), the growth of hydropower electricity generating capacity is limited by economics, not by the hydroelectric power potential. A recent study conducted by Oak Ridge National Laboratory (ORNL) for the U.S. Department of Energy, the New Stream-reach Development Resource Assessment (pdf), finds that 61 gigawatts (GW) of hydroelectric power potential exists at waterways without existing dams or diversion facilities. This value excludes Alaska, Hawaii, and



Total U.S. hydropower electricity generating capacity, 1950-2040. (Source: U.S. Energy Information Administration, EIA-860, and the Oak Ridge National Laboratory, ORNL)

federally protected lands. ORNL's hydropower resource estimates contrast with the 2 GW of additional hydropower capacity projected to be added through 2040 in EIA's latest Annual Energy Outlook (AEO2014) Reference case. The difference in the two sets of numbers represents the significant gap between technical potential on the one hand and economic and operational potential on the other hand.

SEE ALSO: Report Finds

Potential for 65 GW of New Hydropower in U.S. ORNL's assessment used topographical, hydropower, hydrologic, and environmental datasets to assess the energy density at stream reaches (segments), while spatially linking to each stream's respective ecological, social, cultural, policy, and legal constraints. The report quantified the technical resource capacity available at more than three million U.S. streams, qualifying its findings by saying "the methodology alone

does not produce estimates of generation, cost, or potential impacts of sufficient accuracy to determine project-specific feasibility or to justify investments.”

Hydro resource studies typically estimate potential hydropower capacity by resource class: undeveloped sites without dams (new stream reach); existing dams without hydroelectric facilities, or nonpowered dams (NPDs); and existing hydroelectric facilities with potential for additional generating capacity, all included in the chart above. In addition to its current study of undeveloped sites, in 2012 ORNL completed a DOE-sponsored assessment of NPDs (pdf). In that report, ORNL estimated that nonpowered dams could contribute as much as 12 GW of additional hydroelectric capacity. In addition to the first two resource classes, EIA's AEO2014 also considers 1.4 GW of potential from the third resource class—expansion of existing hydroelectric facilities. Although resource potential quantifies maximum feasible capacity additions, EIA's AEO2014 Reference case also considers market and policy hurdles that can limit actual development of a new hydroelectric power plant. These include economic factors, performance characteristics, federal regulations, electricity demand, and the cost of competing sources for new generation. Because hydropower is a mature technology, most of the technically and economically superior sites have already been developed. Current EIA projections do not reflect the recently released data from ORNL. However, the resource assessments for the AEO2014 Reference case do account for new stream-reach development and nonpowered dams potential and overlap between the two datasets is likely. Even though current EIA projections suggest that much of the undeveloped hydro resources may not be economic in the near- or mid-term, the latest ORNL report provides new information to assess the technical potential of hydropower and improve the understanding of resources that can take advantage of new technologies such as in-stream turbines.

(No water, no hydro!)

Hydroelectric suffering from drought

By Kelli Ballard, portervillerecorder.com, July 11, 2014

Agriculture, residents and businesses are not the only ones feeling a heavy toll from this third year of a severe drought. Electric utility Southern California Edison (SCE) is feeling a heavy strain as well. “Every aspect of Edison’s facilities are affected by the drought,” said Cal Rossi of SCE. He said the utility is now producing “roughly 35 percent” of the amount of hydroelectric power it produces in a typical year. **A lot of the energy SCE produces comes from hydroelectric facilities, which use water sources to generate energy.** SCE has limitations on when it can store water in its reservoirs and how much. In drought years the ability to store water can be significantly limited. Water users downstream from the reservoirs will need more water because of the drought, such as farmers, and will require more water earlier than usual in the season, which will put more of a strain on SCE’s system. **Because of minimal rainfall and a limited snow pack to create runoff, the amount of water available to be stored is significantly less than normal.**

“The fact that we’re not producing locally, that puts a bit of a burden on our transmission system,” said Rossi. “People are drilling new wells or upgrading new wells, which not only requires upgrading on our systems, but also puts a strain on the resources.” Springville is already feeling the effects as the flume was shut down Sunday morning. Historically, according to Rossi, if the flume must be shut down, it happens sometime in August. This year the closure came considerably sooner. **“That flume provides the water supply to the community of Springville,” said Rossi. “It’s not uncommon for that flume to become nonoperational, [but] it will happen earlier this year.**” Jim Peacher, chief of operations for Springville Public Utility District, or SPUD, said, “In normal years it might not happen at all.” Now that the flume has been shut down, Peacher said they began Monday pumping water from the Tule River, which is also very low because of the scant snow pack. “We pump water out of the river to the treatment plant. Instead of using gravity to transport the water, we have to pump it up to the plant.” **The Tule River is running about 10 cubic feet per second,** which Peacher said Edison has to release for the fish. “And that’s where we’re at now,” he said. “Normally it’s this low in September or October.” SPUD has moved from Phase I of the water conservation program to Phase II. Where before all water regulations were

on a voluntary basis, they are now mandatory, enforceable by fines for noncompliance. “As far as the river goes, this is probably about the worst that I’ve seen,” said Peacher who has been with SPUD for 20 years. “I think we’ll make it this year. We need a normal winter to maintain. If we have another drought year, I don’t know what we will do.” The rates for power, according to Rossi, will not be raised due to the drought, but for the increased usage. However, last year’s shortage of natural gas on the East Coast will likely cost customers as SCE works towards recovering the costs this year.

(Not everyone thinks it’s a good deal!)

Consumer witness: NW dam purchase a bad deal for consumers, unless altered

By Mike Dennison IR State Bureau, helenair.com, 7/15/14

A consumer expert Tuesday said if regulators approve NorthWestern Energy’s \$900 million purchase of a dozen hydroelectric dams without any changes or conditions, the company gets lucrative, guaranteed profits — and ratepayers get electricity prices that may be above-market for years on end. John Wilson, an economist for the Montana Consumer Counsel, said NorthWestern should be open to compromises that shift more of the risk and cost of the acquisition to the company and its shareholders. “The company seems to be unable to accept a compromise on any of these things,” he told the Public Service Commission on the sixth day of a hearing on whether to approve the dam purchase. “They are the ones saying, ‘Give us everything that we want, or we’re going to walk.’ “There has to be some compromise, some give, so that the only beneficiary here is not the hedge funds and the institutional investors that own 93 percent of NorthWestern’s common stock.” Wilson, the first consumer witness to testify at the hearing, said the PSC should consider lowering the company’s allowed “rate of return” or requiring NorthWestern to bear the risk of other future costs.

The five-member PSC, which regulates utilities in Montana, will decide later this year whether to approve the \$900 million purchase, allowing NorthWestern to charge ratepayers for the cost. NorthWestern, which serves about 340,000 electric customers in western and central Montana, has argued that buying the dams and their hydroelectric plants would provide a reliable, stably priced source of power for customers for years to come. That stable source is better than relying on a largely unregulated wholesale market, which NorthWestern and its predecessor, Montana Power Co., have been doing since MPC sold the dams in the wake of Montana’s 1997 utility deregulation law. The proposed purchase would increase NorthWestern’s homeowner electric rates by about 6.5 percent, making them nearly the highest of any major electric utility in the region. Wilson said Tuesday while market prices may be volatile, they’re likely, for some time, to remain below the price consumers would have to pay if they cover most of the \$900 million dam purchase cost. “If I have a choice between prices that vary widely, say from \$30 to \$50 (per megawatt hour) and a stable price of \$55, I’d certainly take the volatile prices,” he said. “I think rational consumers, and sensible businesses, would rather have a lower total cost with some variability in it ... than a stable cost at a substantially higher level.” Wilson also noted that NorthWestern is justifying the cost of the purchase by forecasting higher market costs in the future, by folding in an assumed cost of carbon regulation, starting in 2021. If those carbon-regulation costs come in lower — and he predicted they would — then consumers would still be on the hook to pay them, under the company proposal, he said. Wilson said the company should bear some of that risk, such as accepting a proposal where it would get the benefit of higher rates only if the carbon-regulation costs actually occurred. “The company is accepting virtually no entrepreneurial risks with regard to (its) proposal at all,” he said. Wilson also said the increased cost of paying for the dams falls primarily on residential and small-business customers of NorthWestern. NorthWestern’s attorneys only briefly questioned Wilson Tuesday, noting that he had not prepared his own future-price forecast and that the company had submitted a slight compromise, reducing its first-year revenue request from \$128 million to \$121 million.

(The price of a license or a good steward!)

Agreement clears way for Duke Energy hydro license

By Bruce Henderson, charlotteobserver.com, Jul. 17, 2014

South Carolina environmental groups have reached an agreement with Duke Energy that will pave the way for renewal of Duke's federal hydroelectric license for the Catawba River.

The 50-year license expired in 2008. Renewal will extend Duke's control of the Catawba for up to another half-century and unleash millions of dollars in promised recreational upgrades and conservation spending. The agreement announced Thursday commits Duke to improving conditions for two endangered species of sturgeon, which the environmental groups have argued could be hurt by Duke's 11 dams on the 225-mile Catawba. "I think we're all delighted, all the parties, that we've got this whole relicensing moving again," said Gerrit Jobsis, an official in Columbia with American Rivers, one of three conservation groups involved in the settlement. Sturgeon, a species that is hundreds of millions of years old, swim up coastal rivers to spawn and have ranged into the Wateree River below Duke's Wateree dam in South Carolina's Kershaw County.

Duke agreed to release water from the dam, during two annual 10-day spawning periods, to create even flows of water that won't wash away eggs. Dams normally release water in surges, then shut them off. Duke also will adjust releases to periodically inundate the Wateree River floodplain, important habitat for herring and other fish species, and let the water recede in a way that mimics nature. While Duke had previously committed to similar measures in negotiating its license terms, Jobsis said, the new settlement doesn't leave them to Duke's discretion to carry out. Parties to the settlement also included the Southern Environmental Law Center, the South Carolina Coastal Conservation League and the S.C. Department of Health and Environmental Control. Duke agreed to stop legal challenges of DHEC's ability to issue a state water-quality permit that is needed before a federal license can be issued. South Carolina initially issued the permit but revoked it in 2009 as the Carolinas fought over water rights to the Catawba. They've been in court since. Under the agreement, Duke will reapply for the state permit by Aug. 22, said spokeswoman Catherine Butler. Once that is granted, the Federal Energy Regulatory Commission would be in position to issue the hydro license. "This agreement will have positive, long-term benefits for water quality, wildlife and important habitats like the downstream Congaree National Park" near Columbia, said Natalie Olson of the Coastal Conservation League. Duke has previously agreed to license terms that include transferring 1,255 acres for public recreation and conservation, giving up to \$12.3 million to state agencies for more land and spending an additional \$5 million to improve wildlife habitat.



Water:

(Wonder why this guy writes an article that makes sense?)

Clear Lake level could reach minus-1 foot

While wetter winter is predicted,

By Terry Knight, record-bee.com, 07/15/2014

Clear Lake's level has finally dropped to less than a foot on the Rumsey Gauge. As of Monday the lake level stood at .94 feet and it should reach its lowest point in late October or early November. The lake level is projected to be minus-1 foot on the Rumsey Gauge by Nov. 1. If it reaches that point it will be the lowest the lake level has been in nearly 40 years. Even though the county should receive its first rainfall in October the lake won't start to fill until December or January. It initially takes at least six inches of rainfall to saturate the hills before runoff flows into the lake. Most of the runoff occurs between the months of January and March. Once the hills are saturated the lake can fill rapidly. Of course there is very little runoff in drought years. This past winter the lake level reached only a little more than 2 feet on the Rumsey Gauge. The long-range forecasts call for a mild El Nino this winter but there is no guarantee. Looking 30 years in the future there is little argument that the West will see less available water. There are estimates that within 50 years the state's population will nearly double. More water will be used for farming and domestic use. The bottom line is that when it comes to water, the state is going to be in trouble. This year's drought is a signal for government officials and citizens to do some long-range planning of their own.

One solution is to build more dams. Of all the local lakes, Clear Lake is the only natural lake. All the others were created from dams. **Of course environmental groups will protest** because they would like to see most of the present dams dismantled. Dams aren't always bad and they can be built in areas that would have little impact on the environment and provide not only water but recreational opportunities as well. Creeks normally dry during the summer months could be dammed up so that small lakes could be formed during the wetter winter months. Indian Valley Reservoir is a good example. Prior to the dam being built in 1972, the North Fork of Cache Creek either completely dried up during the summer or was little more than a trickle of water. Now there is a lake that's 6 miles long and 2 miles wide. When the lake is full it not only provides water to Yolo County, which has resulted in less water being taken from Clear Lake, but the lake also has an excellent trout, kokanee and bass fishery, which provides recreational opportunities. Similar dams could be built in other areas in the county. For years there has been talk of building a dam on Scotts Creek. Most of Scotts Creek dries up during the summer months and the surrounding hills are little more than thick brush. A dam would have minimal impact on the environment but would provide valuable water for the county. There are also other areas in the county where small dams could be constructed. The Highland Springs Reservoir is another good example. A taller dam would store more water for use during the summer months. The new lakes would also recharge the ground water and give local wells a boost. This year the static water levels in most of the wells in the county have dropped significantly and some have even dried up. The truth is the state and counties are going to have to come up with a water plan and actually do something or our area will soon look like Death Valley. There have been predictions that this winter will be wetter than normal. I certainly hope so. Whereas I don't want to see the lake rise to the flood stage, I'm hoping it rises to at least 8 feet on the Rumsey Gauge. It would not only help the fishery but would be a deterrent against algae blooms and excessive aquatic weed growth next summer.



Environment:

(This long running battle over the salmon comes to a solution.)

Sockeye salmon to be returned to Skokomish River

By Christopher Dunagan, Kitsap Sun, July 13, 2014, sfgate.com

Hoodsport, Wash. (AP) — **Sockeye salmon, missing from the Skokomish River for at least 90 years, will get a lift — literally — as Tacoma Public Utilities and the Skokomish Tribe work together to restore lost salmon species to the North Fork of the Skokomish.**

A \$50-million project, now under construction, includes two new salmon hatcheries plus an inclined railway and tram for transporting spawning salmon up a near-vertical cliff. The program also involves transporting fish by truck around the two Cushman Dams in the Olympic Mountains near Hoodspport. For years, Tacoma and the Skokomish Tribe were stuck in litigation over a new license for the dams. In 2008, serious negotiations by both sides led to a deal and a renewed license two years later. The resulting agreement paid the tribe cash and lands valued at about \$35 million plus a share of the revenues from power generation, along with a plan to improve the environment and restore salmon runs. In addition to sockeye, a new native run of spring chinook will be established, while existing native runs of steelhead and coho will be expanded, all through hatchery operations. Sockeye salmon, known for their red bodies and greenish heads, spawn in or near lakes, where they grow for one to three years before heading out to sea. Some tribal elders from the Skokomish Tribe recall seeing sockeye going up into a natural lake, which was inundated by the Cushman Reservoir when the first dam went in. Habitat may have been limited by the small size of the original lake, but the idea of restoring sockeye has remained a goal of the tribe, and it became an integral part of the settlement, according to Alex Gouley, the tribe's habitat manager.

"We got that into the settlement as a priority, based on oral accounts of the elders," Gouley said. "It will provide another fish for ceremonial and subsistence use by the tribe, as well as recreational opportunities for the state (anglers)." About 2 million sockeye eggs will be obtained from the state's Baker Lake sockeye hatchery in northern Puget Sound, according to Andy Ollenburg, manager of Cushman Fish Facilities for Tacoma Power. The fish will be reared to fingerling size at a new sockeye hatchery on Hood Canal near Potlatch. Because sockeye are prone to disease, the hatchery will release its freshwater into Hood Canal rather than risking exposures to fish in the Skokomish River. The young sockeye will head from there out to sea. When they return as adults, they will become the parents of what Ollenburg hopes will become a new native run of sockeye making its home in Lake Cushman. If successful, it would become the only run of sockeye in Hood Canal. A second hatchery is under construction near the lower dam, Cushman Dam Number 2. Plans call for rearing up to 375,000 spring chinook each year, with eggs taken from the state's Marblemount Hatchery in northern Puget Sound. The North Fork Hatchery also will be used to supplement native runs with annual releases of 15,000 steelhead and 35,000 coho. When the new fish-collection facilities are completed this fall, the dams will no longer be a total blockage for migrating salmon swimming up the North Fork of the Skokomish, Ollenburg noted. When originally built, Cushman Dam Number 2 essentially diverted all the flow out of the North Fork and into pipes down to Hood Canal, providing maximum power to the turbines near the shoreline. Over the years, Tacoma has been required to shift some of that water back into the natural channel. The new license establishes minimum flows based on the time of year. Beginning this fall, when adult salmon swim upstream and arrive at the lower dam, they will be attracted into a fish trap by flows of water through a new power plant, built to take advantage of the increased flows in the North Fork.

"Since they can't jump over the dam," said Ollenburg, "we had to build an adult collection facility." The captured fish will go into a hopper and move by tram up the side of the cliff and into a sorting facility, where they will be separated by species. If not needed for hatchery production, the fish will be trucked beyond Cushman Dam Number 1 and released into upper Cushman Lake, where they can find their way into the upper part of the North Fork. A natural waterfall about 2.5 miles downstream of the lower dam has become a significant fish barrier, given the controlled flows coming through the dams and down the North Fork. Work is underway at Little Falls to create resting pools and improve passage for salmon that can jump — particularly chinook, coho and sockeye. Chum and pink salmon that make it over the falls and to the dam are expected to be returned downstream, since these species tend to favor the lower portion of rivers. Young salmon reared in habitat above the dams will naturally migrate downstream when they feel the urge to head out to sea. As they approach the upper dam, Cushman Dam Number 1, they will begin to sense a rush of water — 250 cubic feet per second — going into a floating collection facility. The flow will carry the fish into a fish trap for transport to the sorting facility at the lower dam. After a portion of the fish are counted, measured and marked, the young fish will be ready for release.

"They will then take a ride down the tram," Ollenburg said, noting that they will be freed at the base of the lower dam. Tacoma officials list the costs at \$22 million for the floating collection facility at the upper dam; \$15 million for the new powerhouse plus collection and sorting facilities at the lower dam; and \$14 million for the two salmon hatcheries — one on Hood Canal, the other near the lower dam. An extensive monitoring program is part of the project, and about \$3.5 million a year has been set aside for ongoing habitat restoration. "We're trying to get our arms around how many fish the lake can support," Ollenburg said, "and we're trying to figure out what we can do to increase the carrying capacity of the lake and the river."



Other Stuff:

(There are so many articles on this story it's driving me batty!)

Battery covers give bat homes at Consumers Energy

By Tarryl Jackson, Jackson Citizen Patriot : July 15, 2014, mysananantonio.com

Jackson, Mich. (AP) — More than 2,000 bats could have a new home at Consumers Energy hydro power plants thanks to collaboration between the utility, General Motors and a Boy Scout from Clarkston. Using scrap Chevrolet Volt battery covers donated by GM, 16-year-old Matthew Netherland from Clarkston, (about 40 miles northwest of Detroit) and some helpers built 30 bat boxes in a few months, according to the Jackson Citizen Patriot (<http://bit.ly/1naWTSj>). Consumers Energy, which operates 13 hydroelectric plants along the Au Sable, Grand, Kalamazoo, Manistee and Muskegon rivers, will install 22 of those bat houses at select properties. "I thought it would be nice to give them a place to stay," said Netherland, who will enter his junior year at Clarkston High School this fall. "They have a place to stay for the winter." Netherland created the bat houses for his project to earn Eagle Scout, the highest achievement in Boy Scouts of America. The houses are about 2 to 3 feet long and 1 foot wide and will give the bats a place to live, other than people's attics, he said. Each house can fit more than 100 bats, if not 200, Netherland said. Consumers Energy and GM have both been recognized for their dedication to preserve natural resources, and properties for each company have received certification by the Wildlife Habitat Council.

"Hydro dams generate clean electricity, and cars that run on electricity are a cleaner form of transportation," said Rich Castle, Consumers Energy's natural resource manager for hydro generation. "The battery covers from the electric-powered vehicles are being kept out of landfills, and by being utilized as bat homes they allow biodiversity to thrive along the river habitats that produce renewable energy." Emily McDonald, environmental engineer for GM, coordinated with Netherland on his project and was impressed by his energy and dedication. GM has built more than 520 wood duck, bat and bluebird nesting boxes from Volt battery covers, with many spread out among its facilities' grounds. "We've worked with renowned bat experts on our bat house design and are grateful that we can partner with others who share our passion for conservation and will help us make a lasting impact," McDonald said. "The Volt covers are made with durable material and will result in wildlife nesting opportunities for a long time."



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