

2/28/2014



## Some Dam – Hydro News™ And Other Stuff



**Quote of Note:** "One of the advantages of being disorderly is that one is constantly making exciting discoveries." – A.A. Milne

**Some Dam - Hydro News → Newsletter Archive for Back Issues and Search <http://npdp.stanford.edu/>**  
**Click on Link (Some Dam - Hydro News) Bottom Right - Under Perspectives**

**"Good wine is a necessity of life." - Thomas Jefferson**

**Ron's wine pick of the week: 2009 St. Supert Cabernet Sauvignon**

**"No nation was ever drunk when wine was cheap." - Thomas Jefferson**



### Dams:

(Dam standards used to be about keeping the dam safe. Today it's a lot more.)

#### Dam Standards: A Rights-Based Approach

February 13, 2014, playak.com

In many countries, the most applicable means of protection for people affected by dams are national and local laws. But too often, laws alone are not strong enough to protect the rights of affected communities. Increasingly, companies, banks, and governments commit to follow internationally-recognized standards. Some of these standards are voluntary, and sometimes the financing or support for a dam project is conditional upon complying with them. But what exactly are dam standards, who makes them, and how can civil society use them? Our guide, "Dam Standards: A Rights-Based Approach," attempts to summarize the strongest social and environmental standards related to each stage of a dam's project cycle: from strategic planning, to project analysis, to implementation, operation, and dam decommissioning.

The guide takes the position that the most effective standards are those that safeguard the rights of dam-affected people, avoid risks, and allow the public to hold governments, institutions, and companies accountable. Some of the topics described include International Human Rights Law, Integrated Resources Planning, Strategic Environmental Assessment, Gender Impact Assessment, Cumulative Impacts Assessment, Free, Prior, and Informed Consent, and others.

However, as with any standard, a policy commitment is only as good as the results of its implementation on the ground. Too often, dam builders and financiers make commitments on paper, only to follow business-as-usual in practice. That's why we hope that this guide can help build the capacity of civil society organizations to monitor, track, and hold dam builders and financiers committed to high standards before, during, and after any dam is built. Learn more about dam standards and how to use them by following the links below.

Download the entire guide: <http://playak.com/news.php?id=2866563906650>

Dam Standards: A Rights-Based Approach. A Guidebook for Civil Society.

Or download the guide in sections:

Introduction

Who Makes Dam Standards?

Rights Across All Stages

Strategic Planning: Before Projects Are Chosen

Project Assessment: Once Projects Are Chosen

Project Impact Management: Once Projects Begin

Project Reassessment and Removal: Once Projects End

Conclusion: Best Practices, Best Outcomes?

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(Huh! Better fix it now! They don't have much sense of urgency!)

### **UPDATE: Lake Manatee dam at risk of collapse**

A consultant "has determined that some erosion has occurred and a four- or five-day rainfall could compromise parts" of the 50-year-old Lake Manatee Dam.

By Chris Anderson, February 14, 2014, heraldtribune.com

Manatee, FL - An annual inspection by a private consultant has determined erosion could compromise the 50-year-old Lake Manatee dam if significant rainfall lasted for days.

However, Manatee County officials said Friday investigations of critical areas of the dam are being conducted and they are hopeful the problem will be remedied in 70 days, well before the summer rain season.

"There is no cause for immediate alarm,"

Manatee County Commission chairman Larry Bustle said Friday at a press conference. "We just wanted to communicate with the public." "We were fortunate to learn about this situation during the dry season."

The Lake Manatee dam is eight miles east of Interstate 75, and the lake is the primary source of water for the Manatee County Utility System. The reservoir's storage volume is 7.5 billion gallons and it covers almost 1,800 acres, according to the county. There are 18 homes downstream in what is considered a critical area and the homeowners were notified of the situation Friday. Water Treatment Plant Superintendent Bruce MacLeod said he could not provide an exact figure as to the cost of the project, but estimated it could be in the \$3 million to \$6 million range. In the summer, when rainfall significantly increases, the dam gates are opened to relieve pressure on the lake and water is sent downstream, MacLeod said. The water below the dam will then start to rise.



MacLeod said that as the water levels start to recede, the water pulls soil from behind the dam and under the spillway. Slowly, MacLeod said, it works its way back to the dam. The dam has a clay core that acts as the water barrier, and the private consultant determined Thursday that perhaps the clay core has been compromised, according to MacLeod. Engineers will conduct an investigation to determine where the critical areas may be, and that process should take between

five days to a week, MacLeod said. Cement can be poured into the critical areas to solidify them. MacLeod is hopeful the critical areas can be fixed in 30-45 days, and the entire process will take 70 days. "The good news is there is a quick fix," MacLeod said. The dam was completed in 1967, and MacLeod said once the fixes are made the structure should be sound for another 50 years. "This isn't a current crisis," Deputy County Administrator Karen Windon said. "It's something we wanted to be proactive on."

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(Fix the dam!)

## Dam EIS meeting Wednesday

### Open meeting at Terra to discuss questions, information

Feb. 17, 2014, Written by Daniel Carson, Staff writer, [thenews-messenger.com](#)

Fremont, Ohio — What should be done with the Ballville Dam? That will be one of the most important questions facing city residents in the coming months, and everyone with an interest in the dam will get to ask questions and hear information about the U.S. Fish and Wildlife Service's draft environmental impact statement at a public meeting this week. The public meeting on the draft EIS is scheduled for 7 p.m. Wednesday at Terra State Community College's conference center. Mayor Jim Ellis said Wednesday the draft EIS meeting will be structured around several agencies with stakes in the dam's future. Those agencies, as well as the city, will be setting up tables around the college's conference center and distributing information on different facets regarding the dam and the project, Ellis said.

The mayor said the city's focus at the meeting will be to provide information on how the dam project relates to Fremont's water supply and recreational opportunities. He said he expected the Fish and Wildlife Service, Ohio Environmental Protection Agency and U.S. Army Corps of Engineers to be among the public agencies with representatives at the meeting. Ellis said Stantec, the Cincinnati-based engineering firm, should also have people at Terra on Wednesday night. "Stantec, they probably should expect some pretty tough questions," Ellis said. Issues of what to do with silt behind the dam and the possible installation of an ice control structure will be likely topics of discussion. The mayor said previously he expected Fremont City Council to make a decision on the dam's future this summer. Ellis said Wednesday's meeting would resemble the FirstEnergy public hearing in May 2013 at the Fremont Middle School gymnasium, where the utility fielded questions about a proposed Hayes-West Fremont transmission line. Residents who attend Wednesday's meeting also can submit public comments about the dam project and the draft EIS to U.S. Fish and Wildlife Service. The draft EIS spotlights the four conceptual alternatives the U.S. Fish and Wildlife Service is analyzing in relation to the agency's need in pursuing the proposed removal of the dam. Those alternatives include no action, which was expanded by the agency to say the city's most likely option would be to repair the dam. Other alternatives in the draft EIS include bringing the dam up to state safety standards and installing a fish elevator; removal of the dam and installation of an ice control structure; looking at removal over a single season; or an incremental removal.

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(How can you not like a dam that's so picturesque?)

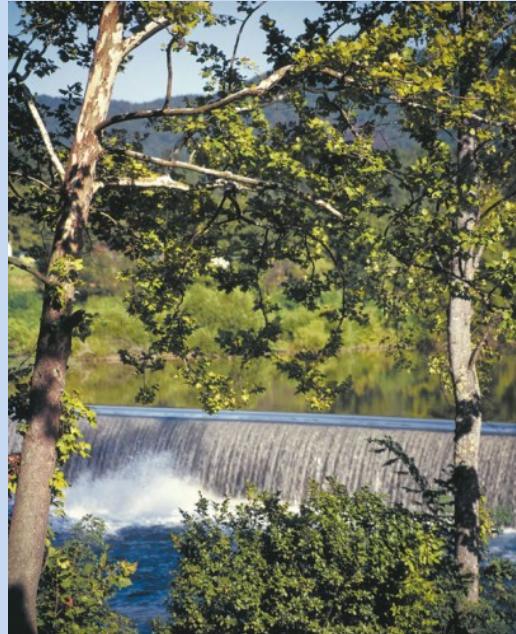
## Some think Little River dams should be demolished

By Alex Cawthorn | Daily Times Correspondent, 2/20/14, [thedailytimes.com](#)

Should the dams on Little River in Blount County, TN be demolished? Citizens were given the opportunity to voice their opinions on that issue to a panel of experts Tuesday evening at Barley's in Maryville. The informational session, part of the Little River Watershed Association (LRWA)'s "Little River Watershed 101" series, was entitled "Dam Good, Dam Bad? A Discussion About the Dams on the Little River." "We came upon the topic when we were starting to put together what's called a blueways map that shows paddlers where to put in and take out," Kim Trevathan, a panelist and an LRWA board member, told the Daily Times. "If you're a paddler, you definitely want to know where the dams are. That's kind of what started the discussion." Trevathan said the board members wanted to both educate those affected by the dams and educate themselves on the public's response through the meeting. Questions from moderator and fellow LRWA board member Brittany Ballerini and community members in the audience spanned a variety of topics,

including positives and negatives for dam removal, costs and the physical process of tearing down a dam.

"The dams were originally built for mills, some as far back as the early 19th century," Trevathan said. "They've been there a long time. I've looked into the history of the dams, and in some ways, I guess people could claim that they're cultural or historical markers. They're reminders of our past and how we got industry started here." Despite the historical significance of the dams, however, the overwhelming majority of opinions in the discussion seemed to lean toward tearing down the dams. As summarized by LRWA board member and Maryville College professor Drew Crain, the panel focused their arguments on three principles: biological positives, public safety positives and recreational positives. "When you dam a river, you do create an obstacle for fish, and it does change the ecosystem," Trevathan said. "It changes the kind of species that are there and where they can spawn." As panel member Patrick Rakes pointed out to the audience, the Little River has more than 80 species of fish living within it. Rakes described unique populations of darter fish that would finally be able to move upstream if the dams were removed. "There are also public safety concerns," Trevathan said. "At the three dams in question, there have been recent drownings at each of them. One happened at Peery's Mill as recently as last year."



#### Legal issues

Another topic concerned the legal issues surrounding dam demolition. The panel discussed the questions of who owns the land around public waterways, including the dam structures themselves, to which panel member Dorene Bolze suggested a team of lawyers be hired to find a solution. "It's not a small project," Trevathan said. "We're trying to look into both sides of the issue, and we're trying to get some community response as well. We're still very much in the research phase where we're looking at what all is involved." "We are going to continue to research all aspects of the issue, and we still have a lot of decisions to make about which dams to take down, who owns them, and who will oversee the process. There's a lot to be done, even if we have a positive response."

### US Army Corps of Engineers completes construction at Portugues Dam

Story by John Campbell, dvividhub.net, 2/20/14

Jacksonville District Commander Col. Alan Dodd receives congratulations from the mayor of Ponce, Puerto Rico, Maria Eloisa Melendez Altieri, following a dedication ceremony held at Portugues Dam Feb. 5. The \$386 million dam is expected to help reduce impacts from flooding for 40,000 people living in and around Ponce.

Ponce, Puerto Rico - "Entonces, felicidades en sus logros," (Congratulations on your accomplishments). That was the key message from Jo-Ellen Darcy, assistant secretary of the Army (Civil Works), to those who



attended a dedication ceremony Feb. 5 celebrating completion of Portugues Dam, a \$386 million structure designed to reduce flooding impacts in Ponce, Puerto Rico. Darcy was among several high-ranking federal and Puerto Rican government officials who attended the ceremony, which was held at the top of a hill on an access road with the 220-foot high structure in the background. "This dam will reduce the impacts of flooding for 40,000 people," said Darcy. "Thanks to this dam, fire stations, hospitals and schools are now better protected."

Among the VIPs joining Darcy was the elected leader of Puerto Rico, Gov. Alejandro Garcia Padilla; the mayor of Ponce, Maria Eloisa Melendez Altieri; the deputy chief for the Corps of Engineers, Maj. Gen. Todd Semonite; the Corps' South Atlantic Division commander, Brig. Gen. Ed Jackson; and the Corps' Jacksonville District commander, Col. Alan Dodd. The newly-built dam is the final component of the Portugues and Bucana flood reduction project and is the first thick-arch roller-compacted concrete (RCC) dam in the U.S. Army Corps of Engineers' inventory. "I learned yet another acronym," Darcy joked with audience members. The RCC methodology uses a dryer style of concrete when compared to conventional means. It is transported and placed using standard earth-moving equipment owned by many construction firms. "It would have taken us three years to complete using the common conventional concrete," said Pablo Vazquez-Ruiz, the Corps' resident engineer for Portugues Dam construction. "By using RCC, we have accomplished (construction) in one third of the time." Padilla praised the Corps for completion of the project, saying residents will no longer have to worry when heavy rains fall. "This concern will be a thing of the past," said Padilla. "This area will now come to be a safe place of joy, to appreciate nature. We will protect it for the enjoyment of generations to come." The Portugues and Bucana project was initially authorized by Congress in the 1970s. The project included Cerillos Dam, an earthen structure completed in 1991 located northeast of Ponce. Additionally, stormwater channelization structures were constructed throughout the city, with the final structure being completed in 1997.

Portugues Dam presented several challenges due to unique geological issues at the site. The Corps attempted to begin construction in the early part of the 2000s, but higher than anticipated costs on a thin-arch design for the dam sent engineers back to the drawing board. After a number of years, a thick-arch, RCC design emerged. Construction began in 2008, and was completed in December. The Corps has used the project as an educational tool through its "Dam Safety University" program. The program is intended to improve the knowledge of dam safety practices with newer engineers, as those who have worked on dams the Corps has previously constructed have retired or are nearing retirement. "This is the first time we have used RCC technology in Puerto Rico," said Vazquez-Ruiz, "so this has served as a form of education to many engineers, students, and people on the benefits and virtues of RCC technology." Now that construction has been completed, the focus shifts to filling the reservoir and testing the dam under various loads. Jacksonville District is also working on plans to turn over operation of the dam to the local sponsor, the Puerto Rico Department of Natural and Environment Resources (DNER). DNER is expected to begin operating the dam in early 2015. For Vazquez-Ruiz, completion of the dam is very gratifying. "I am proud that the government is providing sound protection for the people," said Vazquez-Ruiz. "I have witnessed people dying as victims of flooding. With these structures, we shouldn't see the same incidents that we've seen in the past with flooding of these rivers."



### **Hydro:**

(Another article on Pike Island. The first article was in the 2/7/14 Newsletter. Like the title of this article to lead off this section!)

### **Hydro Power**

February 16, 2014, Times Leader, timesleaderonline.com

A HYDROELECTRIC power plant on the Ohio River in our locale sounds like a worthwhile project. The project was proposed for the Pike Island Locks and Dam. If it came to fruition, it would have served as an economic boon to Eastern Ohio. American Municipal Power, however, has opted to put the halt on the idea. AMP officials noted that four other hydroelectric projects are under way, the closest being in St. Marys, W. Va. With so many other hydro plants in the offing, the need for another at Pike Island was minimized. That is a disappointing turn of events. The project would have had wide-ranging impact.

The Yorkville-Rayland-Tiltonsville (YTR) area would obviously been a major beneficiary of the hydro plant. However, St. Clairsville, Oberlin and Woodsfield are AMP members and have been linked to hydroelectric projects. The plant would have generated 256,000 megawatt-hours of renewable power per day for use in AMP participating Ohio municipalities. With power being such a needed commodity, a hydroelectric plant makes a great deal of sense. AMP, which operates the New Martinsville Hydroelectric Plant at the Hannibal Locks and Dam, hasn't ruled out a similar plant eventually becoming reality at Pike Island. We hope such plans do come to fruition, as the benefits would be immeasurable. The Pike Island Locks and Dam has been in place since 1963 and falls under the auspices of the Army Corps of Engineers. We hope that in the not so distant future the Pike island facility takes on even greater importance.

(Don't know about this. Most dams in Western PA have low head but plenty of water!)

## Western Pa.'s rivers an 'untapped resource,' Boston company says

By Melissa Daniels, Feb. 15, 2014, triblive.com

A Boston company is seeking approval to build 10 hydroelectric power stations on the Allegheny, Ohio and Monongahela rivers. Tom Feldman, Free Flow Power's vice president of project development, said his company targeted Western Pennsylvania about three years ago. After it completes environmental and engineering studies, the company will submit final license applications to the Federal Energy Regulatory Commission. On Feb. 7, Free Flow submitted its first application, which seeks a license to build a power plant at Allegheny Lock and Dam No. 2, owned by the Army Corps of Engineers, downstream from the Highland Park Bridge. "Our thesis is that there's an untapped resource," Feldman said. "There's economic development opportunities for the local community associated with building what will be a very long-lived asset that will deliver a lot of renewable energy for several generations."

The low-impact facilities would produce five to 40 megawatts of power. A 10-megawatt facility, Feldman said, can provide enough energy to power about 4,600 homes a year.

But residential power isn't the goal. If Free Flow builds the plant, it would sell the power to utilities or directly to industrial and commercial customers. Construction for the plant near the Highland Park Bridge would cost about \$82 million. Feldman said the company is not seeking tax credits or grants. Once built, the plants' operating costs would be low, given there is no need to purchase fuel, Feldman said, and the appeal is high for commercial customers that can lock in long-term rates.

Although Free Flow has studied the area and its possibilities for years, the approval process for construction is lengthy. By December, the Federal Energy Regulatory Commission will issue an environmental analysis of the Highland Park application. It also could open a public comment



period before issuing the license. The Army Corps and Pennsylvania would require additional permits.

Feldman said the goal is to begin construction in 2017 or 2018.

Jeff Benedict, hydropower coordinator with the Army Corps, said hydroelectric power facilities were built along Western Pennsylvania rivers in the 1980s. Benedict said power facilities don't change the operation of the lock and dam. "They operate based on flows that would typically come out of a lock and dam," he said. This week, FirstEnergy Corp., the parent company of West Penn Power, sold three hydropower facilities at locks and dams in Warren, Schenley and Ford City as part of a \$395 million deal with Harbor Hydro Holdings. Collectively, the 11 facilities in the deal have a capacity of 527 megawatts. Jim McCarville, executive director of the Port of Pittsburgh Commission, said his organization encourages power-generating facilities as long as they don't disrupt navigation of the river. "We think these are good ideas," he said. "We've got a great resource here, with these locks and dams."

(This isn't the first time this has happened nor will it be the last!)

## Protecting Maine jobs was the original intent of 2002 law

By Whit Richardson, BDN Staff, Feb. 17, 2014, bangordailynews.com

It's sometimes a dangerous game to play to try to understand the original intent of legislators when they pass certain laws. In 2002, a law was passed that prohibited the owner of the Millinocket and East Millinocket paper mills from entering into an agreement which would allow it to benefit from the sale of electricity. The law was enacted to protect papermaking jobs. That much is clear. Beyond that, there's been much confusion about what led to the law's passage. While many have said on the record that the 120th Legislature passed the original law because lawmakers were worried that Brascan Corp. (now Brookfield Asset Management), which owned the hydroelectric dams before buying the Great Northern Paper mills out of bankruptcy in 2003, would sacrifice papermaking jobs in order to sell more power. Though, that's not how Jack Cashman remembers it.

The original law went into effect in early 2002, the last year of former Gov. Angus King's administration. It was after the original Great Northern Paper spun off of its hydroelectric facilities to Brascan. Before that, the paper company was vertically integrated, owning the timberland, the hydroelectric dams and the paper mills. When the company spun off the dams, legislators wanted to ensure the mill would still have access to low-cost power generated by the dams. They did not, however, want the owner of the mills to be able to buy that low-cost power by cutting production and selling it for a profit in such a way that selling power became more lucrative than making paper. It wasn't until early 2003, as Gov. John Baldacci was entering office, that Great Northern Paper closed the mills and filed for bankruptcy, according to Cashman, who helped broker the deal that eventually led to Brascan purchasing the paper mills out of bankruptcy in April 2003. Cashman would later become Baldacci's commissioner of the Department of Economic and Community Development. In the end, the intent of the legislators who passed the original 2002 law and that of the current legislators who want to change the law are the same: keep the paper mill in East Millinocket viable and preserve valuable jobs in the area.

(Who is Gravity? Ask Newton!)

## Hydro plans spark interest | CSA explores electric-generating options

The Tribune-Democrat, February 19, 2014, tribune-democrat.com

Johnstown, PA — If someone mentions hydroelectric dams, Hoover Dam, Niagara Falls and maybe the Tennessee Valley Authority probably pop to mind. Nobody would ever think of the Quemahoning or Hinckston Run reservoirs or Peggy's Run. Nobody, that is, except the Cambria Somerset Authority, owners of the three sites. For years, the authority has been exploring hydroelectric generating stations on its holdings and had enlisted the help of Kleinschmidt Associates, energy consultants based in Maine, to come up with a feasible design. Kleinschmidt recently referred CSA to Gravity Renewables of Boulder, Colo. CSA and Gravity have entered into talks about a potential partnership agreement that would place a mini-electric-generating turbine

on Peggy's Run, near its terminus with the Conemaugh River in Franklin Borough. "This is all still very early in the (discussion) process," CSA Chairman Jim Greco told our David Hurst. "But it could be a positive step. It certainly won't hurt to explore it." Gravity seems to be a perfect partner for CSA. "The company has extensive experience in small hydros," said authority manager Earl Waddell.

The Peggy's Run location would be an atypical generating site, given that it is not an impoundment generally associated with a hydroelectric generating operation. The mini-turbine, instead, would take advantage of the 30-cubic-foot-per-second water flow rate of Peggy's Run. The turbine would be installed in the 30-inch line that carries Peggy's Run underground through the former Bethlehem Steel Corp. operations in Franklin Borough. The turbine would be housed in a tiny, metal building near the EMF Development Corp. operations along River Avenue. Gravity also is interested in placing a turbine at the Quemahoning dam, which is located near Hollsopple. The flows from the Que and Peggy's Run could produce about 1.8 mega-watts of energy annually. The cost of the project, which currently is on hold, would exceed \$5 million, but CSA said it could realize about \$534,000 a year in revenue from the Que and Peggy's Run turbines. CSA has several options for the electricity. Putting the electricity back into the grid by selling it to utility companies would be one of them. This is very exciting news for our area. Some of our ridgelines already are dotted with wind-energy turbines. Add hydroelectricity into the equation, and it's possible that the extra electricity could take some of the strain off the coal-fired generating plants. But as Waddell said: "All of this is very preliminary." Preliminary, yes, but it has sparked our interest, and we look forward to hearing more about the project, and possibly seeing it come to fruition soon.

## Ridgway Hydropower Plant Poised to Go Online

by Samantha Wright, Feb 20, 2014 | [watchnewspapers.com](#)

Ridgway – For decades the Ridgway Dam's pent-up power production potential has gone unrealized. Now, that is about to change. Over the past year and a half, two hydropower generators have sprung up at the foot of the dam: a smaller, 800kV generator that should run efficiently on the low, 30-60 cubic-feet-per-second flows in winter, and a larger, 7.2 megawatt generator to run on summertime release levels. Next week, on Feb. 24 or 25, the smaller of these two units will be turned on and start producing a steady stream of green electricity, said Mike Berry of Tri-County Water Conservation District, the entity that manages the Ridgway dam and is building the power-generating facility at its base. The big generator should be ready for testing by April or so, Berry said. When the project goes fully online later this spring or early summer, it will have a total plant capacity of 8 Megawatts – enough renewable power to run 2,250 homes and take the equivalent, in greenhouse gases, of 4,400 cars off the road. Both units will operate during high reservoir releases in the summer, and only the smaller unit will operate during lower wintertime releases. Tri-State Generation and Transmission, the wholesale electric supplier for San Miguel Power Association and the Delta-Montrose Electric Association, has built two short transmission lines at the hydropower plant. One will connect to the existing 115kV line running alongside the highway, and another will connect with the generating station. Power generation will have to be carefully calibrated in order to maintain historic release patterns at the dam – one of the requirements of the Bureau of Reclamation's final Environmental Assessment of the project – while maintaining healthy lake levels and maximizing power production.

In times of drought, the water rights of downstream irrigators, industries and municipalities will trump power generation.

"I am told these machines have what they call sweet spots, and we are going to try to discover what those sweet spots are of each machine, and target release around the sweet spots to maximize power generation and minimize wear and tear," Berry said. "It's a trial and error thing up front, but sooner or later we hope to have it dialed in." Power generated at the hydro plant will be sold to two entities: Tri-State, and the City of Aspen. Tri-County WCD first started discussing a partnership with the City of Aspen in 2002. Eventually, this partnership evolved into a Power Purchase Agreement, or PPA. In an agreement inked in 2010, Aspen agreed to purchase the

wintertime output from the hydropower project, from Oct. 1 through May 31, for 20 years, to help further its goal of powering the city with purely renewable energy. Tri-State has agreed to purchase, for 10 years, the higher summertime output. If projections hold up, about 10,000 MWh worth of energy will be "transferred" to the City of Aspen through the PPA annually (although it is doubtful that any of the actual electrons flowing into the grid from the new hydropower plant will travel that far). This amount is not set in concrete – Berry emphasized that there will be annual fluctuations in the amount of power that is delivered to Aspen, depending on a number of factors including whether it is a wet or a dry year, the timing of the spring runoff, and the demands of downstream water rights holders.

Tri-County WCD has secured \$15 million in financing for the project – including a \$13 million loan from the Colorado Water Conservation Board, and a \$2 million loan from Colorado Water Resources and Power Development Authority – and has sunk an additional \$3 million of its own money into the project. "We did an economic analysis based on \$18 million, and we will probably build this thing for \$17.5," Berry said. Based on existing PPAs with Aspen and Tri-State, the project will be paid for by 2045, after which time the hydropower facility could net Tri-County WCD up to \$1 million annually in revenues. "If mother nature cooperates, we will have money to pay our bills," Berry said. "If not, we will have to address that at the time. I hope that is not the case."

#### **HYDRO LEGISLATION UNDERWAY IN COLORADO**

As the new hydropower plant at Ridgway Reservoir prepares to go online, legislation has been introduced at the state capitol to help streamline development of smaller hydropower projects throughout Colorado. Last week, the Colorado House of Representatives overwhelmingly passed HB14-1030 by a vote of 62-3. The bipartisan legislation complements the recent streamlining of federal permitting requirements for small hydro through the Hydropower Regulatory Efficiency Act. HB14-1030 was introduced in the House by Reps. Mitsch, Bush and Coram. Senator sponsorship includes Senators Schwartz and Roberts as well as Hodge. **In essence, the bill "makes it possible to simultaneously complete federal and state review at the same time,"** said Kurt Johnson, the president of the Colorado Small Hydro Association. It also seeks to streamline the electrical inspection process for small hydro, using precedents set in the small wind industry decades ago. The Senate Agriculture, Natural Resources and Energy Committee will hold a hearing on the pending legislation on Feb. 27.



#### **Water:**

(Need more dams and answers to questions you often thought about. It only takes money! Don't ask Congress, they'd have to borrow it!

#### **In drought, even dam sites are scarce**

Bee Metro Staff, Feb. 16, 2014 - sacbee.com

From dams to pools to bathtubs, things that hold water big and small prompted questions from readers in week No. 3 of The Bee's drought Q&A. Our team of drought reporters answers a question a day at [www.sacbee.com/water](http://www.sacbee.com/water), where you can submit your own question.

**Why aren't we building more dams to store more water, instead of wasting money on a bullet train? – David LaChance, Oroville**

First, a little history. There are thousands of dams in California, and most of the “good” dam sites have already been taken. There are not a lot of places left with a narrow slot canyon downstream of a large watershed. Most of the locations that remain require very large, expensive dams that would not yield a lot of water. This makes the economics iffy. In the 1990s, the now-defunct CalFed Bay Delta Program undertook a detailed study to search for the best remaining dam sites across the state. It weighed topography, water

yield, cost, environmental risks and other factors. Four emerged as the most promising, and are now in various stages of final study:

- Sites Reservoir in Colusa County, an “off-stream” reservoir filled from a canal diverting Sacramento River water. Water yield: 470,000 to 640,000 acre-feet. Cost: \$2 billion to \$3 billion.
- Temperance Flat Reservoir, on the San Joaquin River east of Fresno. Water yield: 400,000 acre-feet. Cost: \$1 billion to \$1.4 billion.
- Raise Shasta Dam on the Sacramento River. Water yield: 265,000 to 634,000 acre-feet. Cost: \$900 million to \$1.2 billion.
- Raise Los Vaqueros Dam in Contra Costa County. Water yield: 115,000 acre-feet. Cost: \$500 million.



Another proposal recently emerged to expand San Luis Reservoir near Los Banos. The dam needs to be strengthened to withstand earthquakes. State and federal officials are considering raising the dam 20 feet at the same time to create capacity for an additional 130,000 acre-feet of water. Cost: \$360 million. Once the studies are done, the next challenge is paying for these projects. That will require an act of Congress, a state bond measure, local tax increases or all of those things.

– Matt Weiser

**What about pools? I have a friend building a pool. While I don't want pool businesses to go out of business, I also don't think she should be filling a new pool with water this year. – C.E., Sacramento**

If properly maintained and covered, pools are not as big a drain as you may think. If the pool is replacing a lawn, it may actually save water use. The average backyard swimming pool holds 18,000 to 20,000 gallons. After it's filled, the pool needs water only to replace water lost to evaporation (or too much horseplay). Pools generally are not emptied unless repairs are needed or due to poor water quality (on average, every three years). By comparison, a lawn that covers the same square footage as the average-sized pool (18 feet by 36 feet) uses more than 24,000 gallons a year in irrigation. Lap pools are built shallow, usually about 39 to 42 inches deep, and hold much less water than standard pools. That can cut the water capacity down substantially. A 45-by-8-foot lap pool holds about 9,500 gallons. Used pool water doesn't have to go down the drain; it can be dechlorinated and used to irrigate landscaping. The major issue with pool water is evaporation. In summer, a pool can lose an inch a week if left uncovered. But pool covers can cut down on evaporation 40 percent to 90 percent, depending on the model. In addition, systems can be used to capture rainwater (when it does rain) to replace pool water lost to evaporation.

– Debbie Arrington

**What uses more water – a 10-minute shower or a full bath? – Sam Vargas, Lancaster**

The answer depends on the size of the tub, the depth of the water and the efficiency of the showerhead. But usually, the shower will use less. Most people use about 30 gallons of water for a bath, according to industry estimates. When filled to capacity (just below the overflow), a standard bathtub holds 42 gallons, but some of that water will be displaced when you get into the

tub. So, the tub is rarely filled to capacity before taking a bath. A low-flow showerhead uses about two gallons a minute, or 20 gallons for a 10-minute shower. A standard showerhead uses 2.5 gallons a minute, or 25 gallons for 10 minutes. Either way, the shower saves water – as long as you don't go past 10 minutes. The shorter the shower, the greater the savings.

– Debbie Arrington



## **Environment:**

(No one said this was going to be was easy!)

### **Environmentalists fighting Otter's dam projects**

seattlepi.com, February 14, 2014

Boise, Idaho (AP) — Environmentalists are worried about new and expanded dams on southwestern Idaho rivers after lawmakers voted to inject millions into studying water storage projects pushed by Gov. C.L. "Butch" Otter. Idaho Rivers United Thursday formally opposed what could be \$1.3 billion in dams on the Boise and Weiser rivers. A day earlier, the House voted unanimously to spend \$3.5 million to complete initial studies. In a press release, however, the Boise-based group touted 650 signatures on a petition urging lawmakers to scuttle the projects and instead work on healthy river flows, natural habitat and water quality. On the Weiser River, Otter wants a \$500 million dam. He's also pushing an \$800 million expansion of Arrowrock Dam on the Boise. The bill funding studies of the projects now is in the Senate.

(Passionate plea for dam removal based on scenic beauty and a good one!)

### **Wild Side: Where are the falls in River Falls?**

By Pat Hunter, 2/15/14, piercecountyherald.com

I can't recall how many times I've been asked to explain to people inquiring about where the waterfalls are in River Falls. The falls of the Kinnickinnic River are hidden under hydropower dams within the city. Now the City of River Falls has a unique opportunity to reconsider its namesake. After working with regulated rivers for more than 40 years, I appreciate the economic utility and the social and environmental costs of dams. It's human nature to want to control water. Starting before statehood, dams were built in Wisconsin to mechanically power sawmills and gristmills, for navigation, water supply, industrial water use and for hydroelectric power. Historically there were many dams built in River Falls on the Kinnickinnic River and on the South Fork. There were as many as six dams in town at one time. Most were rock-and-timber mill dams that were washed out by floods. Only two concrete hydropower dams remain.



Nearly all of the hydropower dams in Wisconsin are licensed by the Federal Energy Regulatory Commission (FERC) under the Federal Hydropower Act. The FERC authorizes the initial construction of hydropower facilities, issues licenses for operation of hydropower projects, and reconsiders mandatory license renewals every 30 to 50 years. Hydropower is a renewable energy source. The hydropower dams in River Falls are relatively small. According to the FERC, the River Falls hydro project (both dams) has an authorized generating capacity of 375 KW. According to Chuck Beranek, Electric Operations Superintendent, the city of River Falls purchases all its electricity on the wholesale market. The hydropower dams in River Falls supply

the electrical needs of approximately 150 households. The rest of the electricity used in River Falls is generated elsewhere. The city of River Falls has applied to the FERC to relicense the two hydropower dams on the Kinnickinnic River. As Wisconsin's hydropower plants undergo reviews to renew their federal licenses, the state and the public aim to reclaim economic, recreational and environmental benefits lost when the dams were built. Dam owners aim to continue operation and positive generating revenues. The FERC licensing process requires consultation with stakeholders. This is a unique opportunity. "There aren't that many situations where you can affect such a range of natural resources in a legally-binding agreement for 30 years," said Bob Martini, a 30-year DNR water resources veteran now on the Board of the River Alliance of Wisconsin. "It's worth whatever effort we can give to it." Helen Sarakinos, policy and advocacy director of the River Alliance, said, "Wisconsin has been a leader in bringing (hydropower) stakeholders to the table, keeping the issue out of the courts, and balancing needs — economic, ecological and recreational." Dams are built structures that get old. Rivers are powerful, constant and patient. Most dams in Wisconsin, including the two hydro dams on the Kinnickinnic River in River Falls, are over 40 years old. Dam owners like the city of River Falls face difficult decisions about costly maintenance, major rehabilitation or removal. Many dams no longer pay their way; their economic reason for being is no longer profitable. Old dams are safety hazards. In addition to increasing risk of failure during floods, many dams are "drowning machines" with dangerous trapping currents. Many communities have removed obsolete dams to once again enjoy the real economic and social benefits of healthy, free-flowing rivers; the scenic beauty, improved water quality, fisheries, recreation, and parks. Wisconsin leads the nation in removing dams, over 130 dams in the past 60 years, with over 50 removed since 1990.

We are attracted to pools of fresh water, even to a green millpond behind a dam. We are also attracted to clear, cold, and clean free-flowing rivers. Nearly all of us like to throw the switch to turn on electric lights and enjoy the comforts of an electrified home. Decisions to remove dams are difficult with emotional attachment to artificial water bodies, in-place pollutants in reservoir sediments, historic structures and past investments. There is, however, a wealth of experience in dam removal and stream restoration that can help make the decision-making and planning more objective. Much of that experience comes from here in Wisconsin. Now is the time for those of us who value the Kinnickinnic River and the city of River Falls to join the city, the DNR, the Kinnickinnic River Land Trust, Trout Unlimited Kiap Tu Wish Chapter, the River Alliance of Wisconsin and other interested people to participate in an informed debate about the future of the hydropower dams in River Falls. Remember your images of free-flowing rivers and waterfalls and the words of Wendell Berry: "Men may dam it and say that they have made a lake, but it will still be a river. It will keep its nature and bide its time, like a caged animal alert for the slightest opening. In time, it will have its way; the dam, like the ancient cliffs, will be carried away piecemeal in the currents."

(They are reveling in their success. One wonders what the next target will be)

## With Second Dam Nearly Gone, New Era Blossoming On The Elwha River

By Bellamy Pailthorpe, kplu.org

The slow-motion demolition of two hydroelectric dams on the Elwha River is radically changing the landscape near Port Angeles, but it's not a scene you can witness on your own. Just a handful of dedicated photographers and filmmakers have been given permission to place their cameras at key posts near the Glines Canyon Dam to capture the changes as crews of



skilled technicians carefully notch into the concrete walls and place dynamite in just the right places. The demolition can only take place when endangered fish are not running up stream, and even getting up to the site during drilling work requires a special escort approved by the National Parks Service.

(There are good fish [wild] and there are bad fish [hatchery]. Another push to remove dams.)

## As hatchery fish come to dominate rivers on West Coast, lawsuits target impacts on wild runs

February 18, 2014, Associated Press, foxnews.com

Parkdale, Ore. – People on the West Coast have counted on fish hatcheries for more than a century to help rebuild populations of salmon and steelhead decimated by overfishing, logging, mining, agriculture and hydroelectric dams, and bring them to a level where government would no longer need to regulate fisheries. But hatcheries have thus far failed to resurrect wild fish runs. Evidence showing artificial breeding makes for weaker fish has mounted. And despite billions spent on significant habitat improvements for wild fish in recent decades, hatchery fish have come to dominate rivers. Critics say over-reliance on costly breeding programs has led to a massive influx of artificially hatched salmon, masking the fact that wild populations are barely hanging on and nowhere close to being recovered. Recently touted record runs were made up mostly of hatchery fish, and scientists are concerned that hatchery fish could completely replace wild fish — though state and federal officials say they are working to address the problem.

Now, the practice of populating rivers with hatchery fish rather than making greater efforts to restore wild runs is facing a battery of court challenges in Oregon, California and Washington state.

The disputes illustrate a crucial tension in the Pacific Northwest, where salmon and steelhead are iconic fish — of enormous cultural and nutritional significance to tribes, job creators for commercial fishermen and big draws for recreational anglers. Hatcheries also help meet legal obligations to provide fish while dams are in place and fulfill Native American treaty rights.

"We as a society have made conscious decisions to significantly alter habitat, and we also made commitments to people who utilize fish - tribes and non-Indians - that fish will be available," said Stuart Ellis, harvest biologist at the Columbia River Inter-Tribal Fish Commission. "To the extent that hatchery programs may pose some sort of risk to remaining natural populations, you have to balance those risks with the promises that were made." With 13 species of salmon and steelhead listed as endangered or threatened under the Endangered Species Act in the Columbia River basin, the government also has a legal obligation to restore wild runs. Court battles on just how to do that have been going on for years. Environmentalists and many scientists argue the only way to bring back wild fish is to remove dams that produce the region's cheap power, but the government has ruled that out. The hatchery lawsuits are trying a different tack.

Last month, an Oregon judge ordered officials to do more to ensure hatchery fish don't stray into wild fish habitat and harm wild fish on the Sandy River, a Columbia River tributary. Lawsuits have been filed to limit or block the release of hatchery-raised fish into Oregon's McKenzie River and Washington's Elwha River. And in California, a lawsuit recently resulted in a settlement requiring a hatchery on the Mad River to institute a genetic management plan to better protect wild salmon from hatchery fish. Another suit is still pending regarding the Trinity River hatchery in that state. The impact of the lawsuits on other hatchery operations is unknown, but environmental groups say the Sandy River ruling sets an important precedent. Courts could mandate hatcheries do less harm to wild runs, including releasing fewer artificially-bred fish into rivers, more monitoring and stronger barriers separating wild from hatchery stocks, said Bill Bakke, director of the Portland-based Native Fish Society, which filed the Sandy River suit. Such reforms, he said, could put wild fish on the road to recovery — and benefit the fisheries.

"We need to maintain healthy and abundant wild populations not only for their own sake, but to be a supply of fish for hatchery production and to keep hatchery programs cost effective," Bakke said. About 400 hatcheries operate throughout the West Coast today. In the Columbia River

basin, about 180 hatchery programs breed millions of fish in plastic trays, transfer them to rearing "ponds," and then release them to join wild ones travelling down river to the Pacific Ocean, to later return to the same river to reproduce and die. Most hatcheries are devoted to turning out fish for fishermen to catch. Over the past few decades, numerous studies have shown that breeding in captivity makes for fish that are less capable of producing offspring. Hatchery fish also out-compete wild fish for food as they inundate rivers and oceans. Their presence lowers the number of offspring produced by wild populations, disrupts local adaptations acquired over centuries, and leads to loss of genetic diversity. **Hatchery proponents acknowledge the risks of artificial propagation.** They say reforms are already in the works. Many hatcheries now use native breeding stock. They also avoid mixing hatchery and wild fish on the spawning grounds. Other hatcheries have been scaled back or turned off. But "much of the effort is to try to figure out ways to both maintain significant hatchery production and limit impacts to wild populations," said Mike Ford, conservation biology division director for NOAA Fisheries' Northwest Fisheries Science Center in Seattle.

Ford and other proponents say artificial breeding has benefits: it can bring back fish to rivers where they have been wiped out. That's already happening on the Hood River, where the Confederated Tribes of Warm Springs and Oregon biologists have reared Chinook salmon for over two decades. Their population has increased, enough to re-establish limited fishing for the tribe and other fishermen. **But hatchery fish and their progeny now dominate the run, just as they do on the Snake River,** where another tribal hatchery has vastly increased the numbers of returning fall Chinook salmon. "If the only societal goal for salmon was conservation and recovery of wild populations," Ford said, "I think hatcheries would play a much more limited role than they do now."



### ***Other Stuff:***

(Here's a headline the solar power folks didn't want to see!)

### **Horror at the world's largest solar farm days after it opens as it is revealed panels are SCORCHING birds that fly over them**

The Ivanpah Solar Electric Generating System, the world's largest solar plant of its kind, recently switched on

The plants is located on five square miles of the Mojave Desert, near the California / Nevada border

State energy officials have released photos of bird with singed feathers from flying into the hot 'thermal flux' around the towers, which can reach 1,000 degrees Fahrenheit

The plant is made up of three generating units surrounded by more than 300,000 reflecting mirrors

At full power it produces enough electricity for 140,000 homes but is still attracting controversy over environment

By Daily Mail Reporter

Full article here: <http://www.dailymail.co.uk/news/article-2560494/Worlds-largest-solar-farm-SCORCHING-BIRDS-fly-it.html>

(A better title would be: "Save our tax breaks"!)

### **Do not compromise the Energy Independence Act**

The Olympian February 19, 2014, theolympian.com

When a state senator doesn't understand the purpose of a law, or the citizens' initiative that created it, she might see no harm in reversing it. That must be the explanation for Sen. Sharon Brown's (R-Kennewick) latest attempt to eviscerate Washington's Energy Independence Act, Initiative 937. Brown introduced a bill that would change the 2007 law to count incremental energy created by hydroelectric efficiencies toward the renewable energy goals for power utilities.

Her Republican Senate colleagues passed the measure 28-20 along party lines. Under the law created by I-937, large utilities must get 9 percent of their power from new renewable resources and at least 15 percent by 2020. The law also requires them to actively promote energy conservation among its customers, in effect, reducing demand for its own product. The law purposely excludes hydropower, even though it is a clean energy source. Washington already generates 74 percent of its energy from hydropower. The point of the initiative was to encourage utilities to develop new sources of renewable energy, such as wind, solar, geothermal and others. Allowing utilities to count hydropower would make the law meaningless. Because past generations of Washingtonians had the foresight to build hydroelectric dams doesn't release this generation, or future ones, from the responsibility to discover, test and perfect other sources of renewable energy. This work cannot stop until we have eliminated our reliance on fossil fuels. Slightly more than a quarter of Washington's energy comes from coal- or gas-burning power plants, the source of dangerous carbon emissions into the atmosphere. Without an incentive to close that gap, utilities would rest on the laurels of hydropower. Brown's bill is a front for many of the state's public utility districts, which have tried several times to get out from under the burden of developing wind and solar power generation. Brown has taken their financial argument to a ridiculous extreme.

"People are suffering in this economy, and every dollar spent on higher utility bills is a dollar that can't be spent on food or rent, or by an employer to put some Washingtonians desperate for a job back to work." Baloney. An examination of the utilities' 2012 filings required by I-937 – conducted by the Northwest Energy Coalition and Climate Solutions – shows that the law was not responsible for any rate increases. Washington already has the third lowest electrical rates in America. Consumers, businesses and the economy in general are not suffering because of our quest for clean energy. Brown's scare tactics run contrary to the facts. Thanks to the New Deal's Rural Electrification Act of 1935 and the 20th-century builders of Washington's dams, our state runs on mostly clean energy. But it's no time to coast. Until Americans have found non-carbon-emitting sources for 100 percent of our energy needs, the state's Energy Independence Act should not be compromised.



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