



# Some Dam – Hydro News and Other Stuff



6/04/2010

**Quote of Note:** "I'm a great believer in luck, and I find the harder I work, the more I have of it." --Thomas Jefferson

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

**Ron's wine pick of the week:** Toscolo Chianti, 2008 Tuscany, Italy

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

## **Other Stuff:**

(In case you have an interest in the wind vs. hydro debate, this article from Canada is an eye-opener: <http://www.wind-watch.org/news/2010/05/29/taking-a-deep-breath-on-wind-power/>)  
(Excerpt)

### **Taking a deep breath on wind power**

Credit: By Michael Trebilcock, The Sun Times, 29 May 2010

The current Ontario government's headlong rush into massive subsidization of various forms of renewable energy, including wind power and solar energy, is likely to reveal the law of unintended consequences from these precipitous policies unless we take a deep breath and calmly and rigorously re-evaluate these policies before committing billions more dollars from consumers and taxpayers to them. Such a re-evaluation would sharply focus on three key factors: a) the costs of renewable energy; b) its contributions to reducing CO<sub>2</sub> (greenhouse gas) emissions; and c) its contributions to creating jobs in the province. Much of the current government's renewable energy focus has been on the promotion of industrial wind turbine-generated electricity, and hence I focus on these three factors as they relate to industrial wind power.

(And, then the nonsense of ignoring hydro as a renewable - what does that buy?)

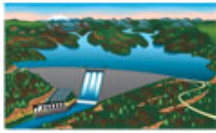
### **Mandate is the wrong way accelerate move to renewable energy**

May 30 Daily News editorial, [tdn.com/news/opinion](http://tdn.com/news/opinion)

The wind energy industry is lobbying Congress for a little help in the form of a national renewable energy standard — a federal mandate requiring utilities to satisfy a set percentage of their energy needs from renewable sources. This lobbying effort has begun to pay off in recent weeks, thanks in no small part to public outrage over the catastrophic oil spill in the Gulf of Mexico. Bills calling for renewable energy standards of 15 percent or more now are moving in the House and Senate. Washington took this step — or rather misstep — four years ago with a voter-approved mandate requiring utilities to supply at least 15 percent of their electricity through renewable sources by 2020. Citizens are paying dearly for their decision at the polls. The Washington Research Council estimates that this renewable energy mandate has increased utility rates and taxes statewide by between \$85 million and \$400 million annually. These added

utility costs for businesses can be expected to factor into hiring decisions. The council projects that the renewable energy mandate could eliminate upwards of 3,600 jobs statewide by 2020.

Washington's energy mandate always struck us as a bit nonsensical. It doesn't let utilities count hydropower — an undisputed source of clean, renewable energy — toward the green-energy target they must achieve by 2020. Hydropower currently is the source of two-thirds of this state's power. But supporters of the energy mandate generally have been critical of the dams that produce hydropower. They'd like to replace that source of low-cost power with wind, wave, solar and the like. This is an expensive trade off. Price-wise, wind, wave and solar cannot yet compete with hydropower or fossil fuels. The added expense of forcing these energy alternatives is a drag on the state economy, no doubt. Similarly, the expense of a national renewable energy mandate could be expected to slow the national economy. Ben Lieberman, a senior policy analyst at The Heritage Foundation, cites a study showing that the proposed energy mandates now moving in Congress would raise residential electric bills by 36 percent — about \$300 annually for an average household of four. Lieberman writes that industrial electricity costs would rise by 60 percent. The study estimated that job losses would total 330,000 by 2012 and top a million by 2017. Renewable energy is the way to go, no question. We fully support ongoing research and development of renewable sources. But let the markets determine when and how much we rely on those sources for our electricity needs. To be sure, market forces and public attitudes already are moving us toward a clean, renewable energy future. Trying to get there before its economically feasible with these mandates is unwise.



## Dams

### **New dam protects Shoal Creek area from flooding**

By: News 8 Austin Staff, 05/25/2010, news8austin.com

An Austin neighborhood celebrated the city's upgrade to the Great Northern Detention Pond and Dam. Austin city leaders say the new and improved dam protects the Shoal Creek area from flooding. In 1981, severe weather rolled into the area and caused what's now known as the Memorial Day Flood. The resulting flood killed 13 people and caused millions of dollars in damage. "Not too far away from here, 4-5 inches of rain in only one hour. Through about midnight, from about 7 p.m. to midnight, we had rain totals anywhere between 8-10 inches of rain falling primarily over this Shoal Creek Watershed." Paul Yura with the National Weather Service said. City leaders say this is one of at least 50 dams around the city that need to be updated.

(Excerpts)

### **GOP candidates criticize removal of Elwha dams**

By Paul Gottlieb, Peninsula Daily News, peninsuladailynews.com, May 26, 2010

SEQUIM, WA -- The federal government should take a second look at tearing down the Elwha and Glines Canyon dams, two Republican candidates for Democratic U.S. Rep. Norm Dicks' seat said Monday night.

#### **'Elwha fiasco'**

"If you proceed to Congress in January next year, will you move to cancel all expenditures on the Elwha fiasco?" asked the first questioner, who did not give his name. Young said he "absolutely" he would move to cancel expenditures. "We'll find some way to pigeon-hole some funding," Young said. "We'll do something. It's ridiculous. It's not scientifically based," he said of reasons behind tearing down the dams, which fisheries biologists said will restore the Elwha River's legendary salmon run. Cloud, who unsuccessfully ran against Dicks in 2006 and 2008 -- losing 62 percent to 38 percent the last go-round -- distanced himself from Young but still would take a new look at the river restoration project, he said. "I would support efforts to reopen the issue. That would be appropriate, to see what the science is right now," Cloud said. "I would be a little less precipitous on that, but I would support a revisit on that issue." Canceling the project would require Congress to overturn its own legislation. The estimated \$350 million project to tear down the dams was mandated by the 1992 federal Elwha Act. Construction is scheduled to begin in late 2011 and finish by late 2014. One water treatment plant to filter sediment for the city of Port Angeles water supply was dedicated April 2, while another to treat sediment at the Lower Elwha Klallam fish hatchery is under construction -- at a combined cost of \$106.6 million.

(The finished product looks pretty DAM good)

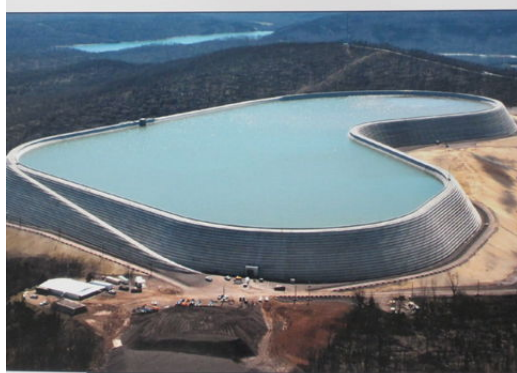
## Ameren UE takes wraps off new Taum Sauk reservoir

Brett Blume Reporting, 27 May 2010, kmox.com

LESTERVILLE, Mo. (KMOX) -- AmerenUE officially unveiled its new \$490 million, 1.5 billion gallon Taum Sauk reservoir Thursday morning. The 440-megawatt Taum Sauk "pumped storage hydroelectric plant" has been in operation since mid-April. "I believe that this dam is as close to fail-safe as you can get," said Mark Birk, AmerenUE vice president for power operations. "While you can't ever guarantee anything 100%, we can guarantee that this (new reservoir) was built with the highest safety and the highest quality," Birk said. Before concrete could be poured for the new dam, workers had to remove the remaining walls of the old reservoir that breached in December 2005, excavating to bedrock.



The final concrete was poured last November, and on February 27th pumping operations began to fill the new dam, effectively initiating the Upper Reservoir Refill Program approved by the Federal Energy Regulatory Commission (FERC).



"We are thrilled that Taum Sauk has returned to service to become a valuable generating plant for our customers and the state of Missouri, said Warner Baxter, AmerenUE president and CEO. "We also appreciate the tremendous support we have received from our key stakeholders in the community during our rebuilding of the upper reservoir and restoration activities at Johnson's Shut-Ins State Park." AmerenUE officials say several safety redundancies have been built into the new reservoir to help prevent another disaster like the one four-and-a-half years ago, including:

- A crest elevation that's above the highest anticipated water surface, with a three-and-a-half foot parapet wall rising above the crest.
- In the "unlikely" event that all systems fail and structure would allow water to flow into Taum Sauk

the upper reservoir overflows, an overflow release creek without damaging the reservoir.

- Multiple independent lines of defense, including continuous video camera monitoring of the upper reservoir water levels to ensure that proper water levels are maintained in both the upper and lower reservoirs.

- Separate instrumentation and monitoring systems that will be dedicated solely to dam safety.

"Dam safety and construction quality were our top priorities in the rebuilding of the upper reservoir," Birk explained. "Throughout our efforts, we worked closely with federal and state regulatory authorities to ensure that this project complied with all applicable standards for the safe operation of the plant."



### Hydro

(Hydropower through different eyes - [http://www.treehugger.com/files/2010/05/is-hydropower-really-clean-power-source.php?campaign=th\\_rss](http://www.treehugger.com/files/2010/05/is-hydropower-really-clean-power-source.php?campaign=th_rss))

## Is Hydropower Really a Clean Power Source?

by Matthew McDermott, New York, NY on 05.25.10, SCIENCE & TECHNOLOGY, TREEHUGGER.COM

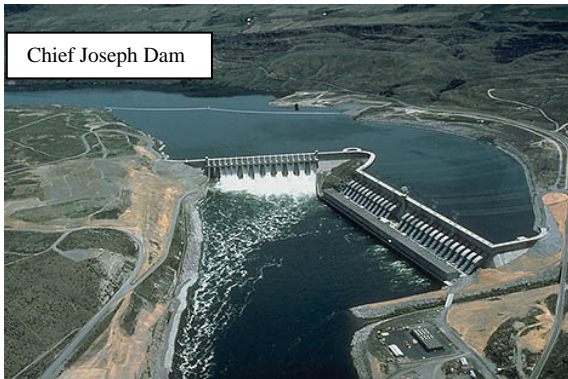
It's about 6% of the electricity in the United States, 15% in China (and climbing), 41% in Switzerland, 80% in Colombia, and 96% in Ethiopia. It doesn't involve sooty smokestacks or radioactive waste. Powered by



flowing water, it's often lumped together with wind power, solar power, and biomass as renewable energy sources. But should hydropower really be considered a clean power source? The simplest answer is 'sometimes'. Here's why: There are three broad types of hydropower we'll consider here, differentiated widely in terms of scale and environmental impact.

## Hydroelectric Dams

This is what most people think of when you mention hydropower: The Hoover Dam, the Three Gorges Dam, the Sardar Sarovar Dam on the Narmada River in India. Big, lots of concrete, lots of land submerged behind them, lots of politicians like to stand in front of them, muscle-flexing TV shows are made about them. Often multi-Gigawatts in size, lots of electricity is generated but in terms of environmental impact these are the most disruptive of the lot.



Chief Joseph Dam



Three Gorges Dam

### Run Of River

Instead of using a huge storage reservoir behind a towering dam, though still often damming the full width of the waterway, run of river hydropower projects rely on the natural flow of the water and the natural drop of the river to generate electricity. These generally have lesser environmental impact than big dams in terms of lesser displacement of people and lesser habitat disruption away from the river, but even though downstream flow is not affected as much, aquatic habitat can still be disrupted. Though sometimes termed small-hydro--which compared to massive dams I suppose is true--run of river projects of multi-Gigawatts capacity have been developed.

### Mini & Micro Hydropower



When hydropower gets scaled down past the community level you come into mini hydropower and micro hydropower--under 1,000 kilowatts and under 100 kilowatts respectively. Smaller still are pico hydro projects, under 5 kilowatts in size and capable of powering just a few lights or electric devices. Because of their scale, usually with no or tiny reservoirs, they disturb the environment far less than any of their larger cousins. Most are deployed in places that are isolated from the national network, where there is no national grid, or at the really small end as DIY projects. There's also the advantage of developing them in a small fraction of the time as larger projects. There's little impact, but also comparatively little electrical output. Absent other energy

sources though, or in conjunction with other decentralized renewable energy sources (such solar panels or small wind turbines) there is definitely a market for mini and micro hydropower. The Tungu-Kabri micro hydro project in Kenya (pictured at left), by Practical Action is a good example of these sort of projects. Others don't employ a small weir as this one does, instead relying on pipes to channel water past turbines. On to the environmental issues...

### Habitat Loss & Disruption

The most visible and immediate impact of large-scale hydropower is from the reservoir behind the dam. There's no getting around the fact that you're drowning vast areas of land that was habitat for animals, and

was likely a storehouse of biodiversity, sequestering decent amounts of carbon. You've also fragmented the habitat that remains. That's just on land; building the dam (and this is true for both large-scale and run of river projects) disrupts the aquatic ecosystem as well, both upstream and downstream. There are ways of mitigating this, in some cases (not so much with large dams) in regards to wildlife, but some level of disruption is assured. Downstream, the changes in water flow that result from the water passing through the turbines, even if total volume is maintained, can lead to erosion, differences in oxygen levels and water warmth affecting animal populations. This is all hard to quantify with a single statistic, in part because the conditions vary from project to project, but also because there are just so many areas of the ecosystem impacted. As you can imagine though, these sort of problems are greater with large-scale projects that community-level ones.

### **Greenhouse Gas Emissions**

While it is true that the actual production of electricity from hydropower doesn't release any greenhouse gases, when it comes to large dams that flood large areas of countryside that's decidedly not the case. Studies going back two decades now have demonstrated this. An article from [New Scientist](#) lays it out: This is because large amounts of carbon tied up in trees and other plants are released when the reservoir is initially flooded and the plants rot. Then after this first pulse of decay, plant matter settling on the reservoir's bottom decomposes without oxygen, resulting in a build-up of dissolved methane. This is released into the atmosphere when water passes through the dam's turbines.

*Seasonal changes in water depth mean there is a continuous supply of decaying material. In the dry season plants colonize the banks of the reservoir only to be engulfed when the water level rises. For shallow-shelving reservoirs these "drawdown" regions can account for several thousand square kilometers. In effect man-made reservoirs convert carbon dioxide in the atmosphere into methane. The exact greenhouse gas emissions from one of these hydropower reservoirs is going to vary from project to project, but in one example in Peru cited in the same article linked above emissions from electricity generation were three and a half times those if the electricity had been generated from oil (which is only slightly better than using coal). This is at one extreme, in areas with less biomass being submerged emissions are generally considered to be 2-8% of those from fossil fuels.*

As you can see, each project is going to vary in this regard, but to assume that large-scale hydropower is emissions-free isn't entirely accurate. And that's not even taking into account the massive embedded emissions from constructing them. Since run of river projects don't use reservoirs on the scale of the large dams, you've really only got the embedded emissions from construction to pay back before you're producing clean power. With small-scale hydro and its even smaller variations, for all practical purposes you've got a clean, renewable electricity source from the start.

### **Environmental Justice**

In addition to these issues, particularly with large-scale projects and bigger run of river projects, the disruptions to the environment include impacts on people large enough that they become issues of environmental justice. An estimated 40-80 million people have been displaced from ancestral homes because of hydropower projects. The problems with relocating people after the construction of the Three Gorges Dam in China are well-known, but this happens nearly every time a large reservoir is constructed. Then there's the effect on people of ecosystem changes downstream, which can certainly be significant. Even if adequately compensated for the physical relocation, there unquantifiable disruptions to cultural patterns and traditions which can occur to the people all along the watercourse around the hydropower project. All of which is made worse when the power generated by the project is carried by transmission lines to places far away, with only a small amount of the electricity used locally. As with the problems with habitat disruption and potential greenhouse gas emissions, the amount of the disruption to communities around the project goes up dramatically as the size of the project increases.

### **So Is Hydropower Clean or Not?**

Back to that 'sometimes' from the intro...

As hopefully you've grasped, **scale is everything** when it comes to environmental impact of hydropower (as it is with most environmental issues). **Large-scale hydropower dams certainly can provide a lot of power and are a renewable resource**--assuming the water source doesn't decline, a real concern with climate change but something beyond the scope of this piece. Run of river projects generally have lower impact, but there are still serious environmental issues to be considered. Small, micro- and pico-hydro projects have even lower environmental impact and in places without grid access can be a great (if inherently limited) source of electricity. **Ultimately, all these factors have to be balanced against the impact of generating the same amount of power from other sources.** In the worst-case (large dams flooding forested areas) hydropower's greenhouse gas emissions and effects on biodiversity can be as bad as any fossil fuel. More usually, the greenhouse gas emissions, even for large projects, are a fraction of any fossil fuel alternative. **The impact on**

ecosystems and the communities around the project have to be taken on a case by case basis. The way to exploit hydropower electricity generating potential with the least-environmental impact? At small-to-medium scale and community level, without reservoirs, and in conjunction with other renewable energy sources such as decentralized solar power, wind power, or sustainably-scaled biomass.

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## Upgrades under way at Columbia River dams

By SHANNON DININNY (AP) – May 25, 2010

BRIDGEPORT, Wash. — Workers are preparing to install a new 45-ton turbine at the second-largest hydropower producing dam in the United States, part of a multiyear upgrade that will generate power for an additional 30,000 Northwest homes. The \$120 million project at Chief Joseph Dam on the Columbia River is one of several planned around the country as the federal agencies that operate hydropower dams replace aging equipment and employ new technology to produce more power from the same amount of water. In the Northwest, about 40 percent of the region's low-cost electricity comes from hydropower dams, many of which were built decades ago and require upgrades. The region also is home to the largest power-producing dam in the country — Grand Coulee Dam — where work is wrapping up to replace 18 turbines. Ten new turbines are to be installed downstream at Chief Joseph Dam by 2014.

Chief Joseph Dam already supplies enough power for the city of Seattle. Between both dams, the new turbines will produce enough power for an additional 60,000 homes once they are fully operating. These massive hydropower projects are key to integrating an increasing renewable energy supply, such as wind power, into the electric grid, said Mark Jones, manager of federal hydropower projects for the Bonneville Power Administration, the federal agency that sells electricity wholesale to public utilities in the region. The frequent starts and stops of intermittent wind power can stress the electric grid, but hydropower can be dialed back to offset those stresses more easily than some other power sources, such as a nuclear or coal plant. The 31 dams in the Columbia River system also offset carbon dioxide emissions equivalent to 20 coal plants, Jones said.

BPA is evaluating smaller projects that could improve reliability and efficiency in the power supply. Electricity ratepayers fund all the projects. "Most of what we spend money on is to just try to maintain the system for the next generation. By maintaining the aging infrastructure, investing in reliable upgrades, we continue to be able to produce reliable, low-cost power for the region," Jones said. "And everywhere we can, we try to gain new efficiencies." The number of aging hydropower dams in the United States means an increasing need for new turbines to replace aging equipment, said Claude Lambert, vice president of Alstom Hydro North America, a Montreal-based company that produced the new turbine runner measuring 8 feet high and 16 feet in diameter. "We foresee an increase in the coming years, but it will also depend on the economy of the country, whether there will be financing to do the projects," Lambert said. The U.S. government manages more than 1,000 dams nationally between the Bureau of Reclamation and the Army Corps of Engineers. In March, the Energy and Interior departments and Army Corps of Engineers signed a memorandum of understanding to focus on increasing energy generation at hydropower dams and explore opportunities for new developments.

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(I hope the spinach salad has some balsamic vinegar and olive oil on it. I guess this is some sort of rationale for hydro - really sounds like an ad for the Nature Conservancy. If you've ever tried a river basin EIS, you know you have bit off a lot to chew on and that's the game played to slow development.)

### Heart-Healthy Bacon = Environmentally Sustainable Hydropower?

Written by Jeff Opperman, May 27th, 2010, [blog.nature.org](http://blog.nature.org)

"I am for hydropower because I'm an environmentalist." So began the remarks of U.S. Secretary of Energy Steven Chu at a recent Washington meeting about hydropower that I attended. His eyes twinkled mischievously — surely knowing that, to many environmentalists, his statement would ring as true as simultaneous support for bacon and arterial health. Here's the tension in his statement: Despite the fact that hydropower is the largest current source of renewable, low-carbon electricity, its development has exacted a heavy toll on rivers and fish populations and precipitated several of the most bitter battles in the history of the environmental movement. And while large-scale



sources of renewable energy are desperately needed to reduce emissions of greenhouse gases, rivers in the United States — and worldwide — have been more fragmented and degraded and lost more species than any other major habitat type. The Washington meeting saw Secretary Chu, Secretary of the Interior Ken Salazar, and Assistant Secretary of the Army Jo-Ellen Darcy sign an agreement for their agencies to collaborate on increasing hydropower in the United States, with an emphasis on expanding energy production from existing dams. Secretary Chu followed his opening salvo with an acknowledgment that environmental protection and hydropower are usually pitted as mutually exclusive objectives. “But this is a false choice,” he added, going on to highlight a number of technological advances that DOE has supported, such as the development of “fish-friendly turbines.”

When given a chance to speak at this meeting, I picked up on Secretary Chu’s concept of “false choices” and described the Conservancy’s strategy for moving beyond traditional conflicts between hydropower and environmental protection: **Expand the search for solutions to large geographic scales.** What do I mean by this? Perhaps it’s easiest to illustrate by starting with a negative example:

- The development and operation of energy projects generally **addresses environmental protection at the scale of a single project**, such as an individual hydropower dam.
- At this scale, **balancing between environmental and energy benefits can quickly hit a zero-sum wall**: gains for the environment come at the expense of energy, and vice versa.
- **But at larger spatial scales**, such as an entire river basin, a much broader set of solutions becomes available and the possibilities for win-win solutions increase.

Want an example? On the Penobscot River basin in Maine, a range of interests — including the Penobscot Indian Nation, state and federal agencies, and conservation organizations — have worked with a hydropower company in recent years to identify **possible solutions for both energy and ecosystem restoration at the scale of the entire river basin**. The resulting plan features the removal of two dams on the main river and the addition of state-of-the-art fish passage facilities on a third dam. As a result, biologists predict that **migratory fish** — currently blocked by dams and restricted to the lowermost part of the river — **will have access to most of the river basin**. Due to the vast increase in habitat, the biologists estimate that **the Penobscot’s populations of American shad will increase** from near zero currently to two million and **Atlantic salmon will increase** from 2,000 to 12,000. (See a feature article on the Penobscot in The Nature Conservancy magazine’s summer 2010 issue, along with photos, a video and aerial tour). And even though two dams will be removed, turbine additions and other changes at the remaining dams will result in a **slight net increase in energy generation from the Penobscot basin**. By moving beyond project-by-project debates, the various partners developed an alternative that will provide basin-scale benefits for both energy and the environment. **So can the United States expand hydropower while protecting — or even restoring — its rivers?** Two elements of the agreement between the agencies suggest yes:

- First, the agreement emphasizes the expansion of hydropower by adding powerhouses to dams that don’t currently produce electricity and through capacity and efficiency upgrades at those that do. In other words, a great deal of additional hydropower can be brought to the grid without adding new dams.
- Second, the agreement calls for “basin-scale opportunity assessments” — in the simplest terms, searching for more outcomes like the Penobscot that make the most of our existing infrastructure and achieve innovative solutions at large geographic scales.

These concepts can go a long way toward **greatly improving the environmental sustainability of hydropower**. The Conservancy has much to offer this effort, drawing on its tradition of large-scale conservation planning and collaborating with water-management agencies, such as the Corps of Engineers, to restore river ecosystems. We look forward to working alongside these agencies to improve the sustainability of hydropower in the United States. **Just like individual pieces of bacon (delicious, yet high in artery-clogging cholesterol), individual dams will always be a mix of benefits (low-carbon electricity) and impacts (lost fisheries).** But if managed smartly, even bacon — in moderation, carefully selected and strategically deployed as part of a broader mix — can be part of a heart-healthy diet. (OK, the metaphor is strained by the fact that some individual dams are like a 75-pound piece of bacon. But you get the picture.)

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(Sometimes the 4 years allowed to start construction isn't enough)

## **Key Committee Clears Murphy Bill to Power Collinsville Dams; Town-Operated Refurbished Dams Could Power 1,500 Homes**

May 28, 2010, by Connecticut RealEstateRama, [connecticut.realestaterama.com](http://connecticut.realestaterama.com)

WASHINGTON, D.C. - May 28, 2010 - (In an effort to put Connecticut residents in control of their power needs, Congressman Chris Murphy (CT-5) secured passage in the House Energy and Commerce Committee of a bill to allow the town Canton to operate its dams, in cooperation with Avon and Burlington. The Collinsville dams, once retrofitted, are expected to produce about two Megawatts of power, enough to power more than 1,500 homes. "Its projects like this one in Canton, where we are coming together to come up with creative clean energy solutions, that will put Connecticut on the path to energy independence," said Murphy. Murphy and Canton First Selectman Dick Barlow have been pushing for town operation of these dams as municipalities, states, and the federal government looks for ways to provide cleaner, domestic power sources to consumers.

The two Collinsville dams (upper and lower) were built in the 18th and 19th centuries to power the Collins Company, which closed in the 1960s. While the dams are now owned by the Department of Environmental Protection, the Federal Energy Regulatory Commission (FERC) issued licenses in 2001 to a private company, Summit Hydropower, to refurbish the dams to generate hydroelectric power. However, Summit was unable to meet the license stipulation that construction begin by 2005, rendering the licenses value moot. In order to extend control to the town, federal legislation is needed. Murphy's legislation would allow the FERC to reactivate and reissue the licenses to Canton, only after soliciting public comment and conducting the necessary environmental reviews. The state legislature has also passed legislation allowing Canton to operate the state-owned dams. "It wasn't easy, but Dick and I have been gathering support for this project since I was elected. And today, we are one big step closer to putting these dams to work and lowering energy bills in the Canton area," said Murphy.

[\(Press Release\)](#)

## **May 19, 2010 ---PacifiCorp's Bear River Project (FERC No. 20) Achieves Low Impact Certification.**

May 19, 2010 (Portland, Maine) - At their May 19, 2010 meeting the Governing Board of the Low Impact Hydropower Institute (LIHI) determined that the Bear River Hydroelectric Project meets the LIHI Certification Criteria. In reaching its decision to certify the Bear River Hydroelectric Project, the Institute's Governing Board reviewed the application for certification, as well as the Application Reviewer's report and recommendations. The Board's vote to certify the Bear River Hydroelectric Project was unanimous. LIHI received no public comments on this application. LIHI certification for the Bear River Hydroelectric Project is granted for 5-year term beginning on December 31, 2009 with two Project Specific Conditions.

[\(Anything from this web site or IR that's positive about hydro is news but you're going to have to stretch this article to the end the earth to read it as positive - it's a miracle that they said anything about hydro! I hope I can figure out what the Brazilian joke statement has to do with the subject.\)](#)

## **A Quiet Revolution in (Non-Dam) Hydropower**

Patrick McCully, International Rivers, Executive Director, *Posted: May 26, huffingtonpost.com*

A quiet revolution is underway in the world of hydropower. A suite of emerging technologies holds the promise of a benign form of power generation that, unlike today's big-dam hydro, does not ruin rivers, wipe out wildlife and destroy communities. While the global big-dam industry is desperately trying to put lipstick on a pig and rebrand conventional hydropower as "sustainable," wave, tidal and river free-flow hydro are fast developing into a viable and genuinely green hydro option. The two green hydro sectors receiving the most attention are wave power and "hydrokinetic" turbines that capture energy from the flow of water in rivers, estuaries and ocean currents. Hydrokinetic, or "free-flow" turbines can even produce power from irrigation canals and water supply and disposal pipes. It's hard to keep up with the rapidly developing sector. Just since the start of May the massive German utility E.ON launched into Scottish waters for advanced testing the Pelamis 2, a 750-kilowatt wave energy device comprised of three floating long metal cylinders; a UK company unveiled the final proof-of-concept trial of another sea-snake-type design, the Anaconda, which is made from a composite of fabric and natural rubber; and another British company unveiled the design for the next generation of its Oyster device, a floating hinged flap resembling a gargantuan bivalve.

The most recent issue of International Rivers' newsletter *World Rivers Review* has a cover story by me outlining the current status of non-dam hydro.

*Brazilians have a joke that theirs is the country of the future ... and always will be. For years, wave and tidal power similarly seemed to be on the verge of a breakthrough into the big league of power sources, but for technical and cost reasons failed to meet the promise. Today, concerns over*



*climate change and a sharply rising tide of political support for renewables, coupled with steady technological progress and investor interest, mean that the future has finally arrived for the new hydropower.*

(Mmmm - recreation is important, but is it the most important issue? People never seem to focus on the fact that you can't recreate on a coal pile or swing on a wind turbine, and still forget a hydro project pays for their play and it doesn't cost them anything!)

## **CEO in reservoir deal pledges cooperation**

### **Talks of balancing energy, recreation**

By Victor Whitman, Times Herald-Record - 05/29/10

MONTICELLO, NY — The would-be new owner of the Swinging Bridge and Toronto reservoirs promised on Friday to be a good neighbor to Sullivan County. "I personally do a lot of boating and a lot of kayaking," said Bernard "Bud" Cherry, CEO of Eagle Creek Renewable Energy Group, a subsidiary of the private equity fund attempting to buy Alliance Energy's holdings in Sullivan. "We understand there is a balance between the recreation use and the safe generation of electricity," Cherry said. Alliance has applied to the Federal Energy Regulatory Commission to transfer the licenses to the new company. Several towns, which have had a rocky relationship with Alliance since it bought the reservoirs in bankruptcy in 2007, have been requesting information. On Thursday, FERC extended the public comment period by 30 days to July 7. Eagle Creek is a subsidiary of Hudson Clean Energy Partners. Alliance's holdings include three hydroelectric dams and four powerhouses on the Swinging Bridge, Rio and Mongaup, and the associated reservoirs, Toronto and Cliff Lake. Hudson Clean Energy is also buying an Alliance plant in Ogdensburg near the Canadian border.

Cherry noted that the company could be helpful to the towns in other ways, such as lowering reservoir levels in anticipation of major storms to prevent flooding. He said it is unclear when the sale will be final, but he hopes it will be complete by this summer. He wouldn't disclose the purchase price. The sale depends on getting the FERC licenses and other permits. Once the sale is complete, Cherry will run the entire reservoir system. He has 40 years experience in the power business and as a senior executive managed or was involved in the design and financing of dozens of large plants across the globe. Alliance's staff would be offered jobs. Some managers would also stay. "In terms of something like this, you don't want to terminate the entire existing management team and parachute in," Cherry said. "We want to make sure the operations are handled in a safe manner and we comply with the FERC requirements." Cherry said that Hudson Clean Energy wants to create a portfolio that includes hydroelectric power. The fund, which was founded in 2007, invests exclusively in renewable energy. These would be their first hydroelectric dams.



## **Water**

(Can't we do anything anymore without stimulus money? Most of these projects won't create many jobs - then what?)

## **Economic Stimulus Money For Water Projects**

By: G.Oliver, articlesnatch.com, May 25, 2010

California and indeed the entire western region of the United States, face chronic issues with respect to water use management. As reported in a December 2008 article on this site, California faces special problems intensified by cycles of drought; additionally, budget shortfalls are compounding the problems by limiting what the State can accomplish. Some relief may be in sight, though; in April 2009, Secretary of the Interior, Ken Salazar, met with California's Governor to offer help in the form of economic stimulus money aimed at helping to take some stress off of the water supply of the western United States. In the midst of one of the deepest economic crises in our history, Californians have been saddled with a drought that is putting tens of thousands of people out of work and devastating entire communities, said Secretary Salazar. President Obama's economic recovery plan will not only create jobs on basic water infrastructure projects, but it will help address both the short- and long-term water supply challenges the Golden State is facing. From boosting water supplies and improving conservation to improving safety at our dams, these shovel-ready projects will make a real and immediate difference in the lives of farmers, businesses, Native

## American Tribes and communities across California.

In particular, Secretary Salazar identified a series of programs including:

- \$40 million for immediate emergency drought relief in the West, focused on California. These investments will allow for the installation of groundwater wells to boost water supplies to agricultural and urban contractors, the facilitation of the delivery of Federal water to Reclamation contractors through water transfers and exchanges, and the installation of rock barriers in the Sacramento Delta to meet water quality standards during low flows;
- \$109.8 million to build a screened pumping plant at the Red Bluff Diversion Dam to protect fish populations while delivering water to agricultural users irrigating approximately 150,000 acres;
- \$22.3 million to address dam safety concerns at the Folsom Dam near Sacramento, which is currently among the highest risk dams in the country for public safety;
- \$8.5 million to repair water-related infrastructure at Folsom Dam;
- \$20 million for the Contra Costa Canal to protect water supplies for 500,000 Californians and to build fish screens to restore winter-run Chinook salmon and the endangered Delta smelt;
- \$4.5 million to restore the Trinity River and honor the Federal government's responsibility to the Native American Tribes;
- \$26 million for Battle Creek Salmon/Steelhead Restoration project, which will help restore fisheries that support thousands of jobs in northern California.
- \$4 million to the Bay Delta Conservation Plan for conveyance systems to move Central Valley Project and State Water Project water, habitat restoration and adaptive management;
- \$4 million to broaden scientific knowledge of Klamath River sedimentation for future management decision-making;
- \$20.7 million in smaller water infrastructure and related projects across California.

Beyond the California-specific projects, Secretary Salazar announced almost \$1 billion in additional effort focused on water in the western United States. These projects include:

- Meeting Future Water Supply Needs (including Title XVI water recycling projects and rural water projects) \$450 million
- Improving Infrastructure Reliability and Safety \$165 million
- Environmental and Ecosystem Restoration \$235 million
- Water Conservation Initiative (Challenge Grants) \$40 million
- Green Buildings \$14 million
- Delivering water from the Colorado River to users in central Utah under the Central Utah Project Completion Act \$50 million
- Emergency drought relief in the West \$40 million

The Department of the Interior, on its website, states that they selected projects that address the Department's highest priority mission needs; generates the largest number of jobs in the shortest period of time; and creates lasting value for the American public. It seems certain that investing in water management in the American west will pay dividends for years to come.



## Environment

### **BPA Reports: Salmon ride smoothly through eight dams**

by David Haviland on May 26, 2010, kbkw.com

Young Northwest salmon and steelhead migrating toward the ocean will benefit for the first time this year from easier, safer routes through all eight lower Snake and Columbia river dams. The improved passage routes will help promote fish survival in what is expected to be one of the Northwest's driest years on record. Fish protection regularly takes priority over power generation in the daily operation of hydroelectric dams that provide much of the region's electricity. But the improvements also demonstrate extensive upgrades of dam facilities to benefit fish. The new routes let fish stay close to the water's surface, where they instinctively swim. Young fish now survive their downstream trip through the dams at rates as good as or better than in the 1960s, when only four dams stood on the lower Columbia and Snake rivers. Survival now is nearly twice as high as in the mid-to-late 1970s.

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# Some Dam – Hydro News and Other Stuff



6/11/2010

***Quote of Note:** "You can't live a perfect day without doing something for someone who will never be able to repay you." - - John Wooden*

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

**Ron's wine pick of the week: Chateau Ste. Michelle Indian Wells Merlot 2006**

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

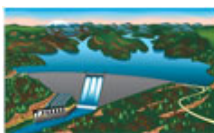
## **Other Stuff:**

(I'm advised by NHA that this bill has more hydro included than in any of the other Senate proposals in the past. In addition to this, existing hydropower would be backed out from a utility's base amount of generation to which the Renewable Energy Standard (RES) applies. So for a utility required to meet the RES that is, for instance, 100% hydro, there would be no obligation under the RES. The back-out provision for existing hydro was included to ensure that utilities are not forced to buy/build wind, solar, etc...just because they have hydro - another renewable resource.)

### **Senate to use Bingaman 'energy-only' bill as framework**

By Matthew Reichbach 6/7/10, newmexicoindependent.com

The U.S. Senate will use the framework of Sen. Jeff Bingaman's, D-N.M., so-called "energy-only" bill instead of the more comprehensive climate change bill written by Sens. John Kerry, D-Mass., and Joe Lieberman, I-Conn., Sen. Chuck Schumer, D-N.Y., confirmed on MSNBC this morning. "Kerry has a proposal that has pretty broad support," Schumer said on MSNBC. "He's going, in my opinion, going to get a chance to offer it in the form of an amendment. Talking Points Memo calls this "the latest blow to the prospects of climate and energy legislation." Senate observers cite the difficulty in rounding up 60 votes to break a filibuster as a stumbling block for climate legislation. The energy-only bill, or the American Clean Energy Leadership Act (ACELA), passed the Senate Energy and Natural Resources Committee, which Bingaman chairs, last June. Bingaman's bill would include a Renewable Energy Standard, or a provision that would require that 15 percent of energy be produced by renewable sources by 2021. These include, "wind, solar, ocean, geothermal, biomass, landfill gas, incremental hydropower, hydrokinetic, new hydropower at existing dams with no generation," according to a summary of the bill. The Pew Center on Global Climate Change compared ACELA to the American Clean Energy and Security (ACES) Act, the House energy and climate bill that passed last year.



## Dams

(Names of firms omitted because I don't want to get in middle of this one)

### **New Ragged Mountain Dam design unveiled**

#### **Earthen dam cheaper the sooner we act, says Frederick**

BY MATT DEEGAN, 06/01/2010 - 06/07/2010, c-ville.com, Charlottesville, VA

Representatives from ----- on Tuesday showed Rivanna Water & Sewer Authority board members the early designs of a new dam for the Ragged Mountain Reservoir. Two ----- spokesmen made the case that an earthen dam—essentially an embankment of compacted earth—would be a cost-effective option to manage the area's water supply, and would not greatly disturb the reservoir's neighbors once construction began. The new earthen dam would raise the reservoir's water level by 45'. ----- rep ----- addressed concerns about the dam's sheer size. Of the roughly 80,000 dams in the U.S. that are more than 25' high, about 90 percent of them are earthen, according to ----. "If you have the earth, it is a lot cheaper to move dirt than place concrete," he said—contrasting ----- plan with an earlier concrete model proposed by former dam designers ----- . The total cost of the dam would fall in the range of \$28 million to \$36 million, RWSA Executive Director Tom Frederick said. He added that the price tag could be lower if local bodies act quickly to take advantage of low construction costs.



"The construction market is highly favorable at this point," said Frederick. "Most people believe that that's going to continue for a few more months. Beyond that, it gets fuzzy. To some degree, delaying decisions could become more costly." However, Betty Mooney, a member of Citizens for a Sustainable Water Plan and a perennial critic of the water plan and of Frederick, urged RWSA board members to examine whether a lower-cost option will be sound, both structurally and economically, in the long run. In 2006, RWSA asked --- ----- to start designing a new Ragged Mountain Dam. After suggesting a pricey concrete dam, to the tune of roughly \$72 million, ----- project was halted in 2008. After a team of independent consultants found that a dam could be constructed for "substantially" less than ----- estimate, RWSA hired ----- last September. ----- earthen dam design will be on display during a RWSA public information session at 6pm on June 1 at CitySpace in the Market Street Parking Garage.

(The story continues)

### **City hires firm to study saving 102-year-old dam**

By Brian Wheeler Charlottesville Tomorrow, cvilletomorrow.org , June 1, 2010

Charlottesville has hired its own engineering firm to study repairing and raising the existing Lower Ragged Mountain Dam as an alternative to the replacement earthen dam recently proposed by Schnabel Engineering. -----, was one of five firms to respond to the city's request for professional services. The study of the dam is expected to cost up to \$348,695. Charlottesville's utilities director, Lauren Hildebrand, said that the first phase will cost about \$200,000 and the second phase will be pursued only if necessary. "We are going to look at what the maximum height is to which we could raise the dam," Hildebrand said. "If one of the options appears to be feasible, then we will move forward with the second phase." Hildebrand said the project was authorized by Charlottesville's City Council in January, and the contract, which was signed May 26, does not require further council approval. Funding will come from the city's utilities budget. Albemarle County is not contributing to the cost of the study because the approach is not part of the 50-year community water supply plan approved in 2006.

City resident Bob Fenwick said in an interview that he would prefer the city invest in dredging the South Fork Rivanna Reservoir. "Until we do dredging, anything else is an unnecessary expense," Fenwick said. "The whole point of this is good water for us, for businesses, for growth, for the benefit of both the city and the county. If that is really the goal, you should do the simple things first, and I guess I have to keep making the case for dredging first." ----- recommended last week that the Rivanna Water & Sewer Authority build a massive earthen dam just downstream from the current Lower Ragged Mountain dam, which was built in 1908. The new dam would raise the reservoir's water level by 45 feet, as contemplated in the 2006 plan, and

**submerge the old dam.** RWSA Executive Director Thomas L. Frederick Jr. has said that a decision to move forward with the earthen dam could lower its cost in the current construction market. The earthen dam currently has an estimated cost of \$28.5 million and \$36.6 million, which includes final design and engineering work, an environmental mitigation plan and protection of the Interstate 64 embankment, which the larger reservoir will reach. Albemarle County Supervisor Kenneth C. Boyd, a member of the RWSA board, said he was concerned about the time needed for additional studies. "I am still concerned given the construction atmosphere we are in," Boyd said. "People tell me they can't believe we are not moving forward with a dam concept that has been approved when doing so now could save us up to 30 percent on construction costs in this market." In February 2009, Charlottesville Mayor Dave Norris suggested that instead of building a new dam, the existing dam could be raised by 13 feet as a way to provide sufficient water storage at a potentially lower cost. The so-called Norris Plan relies on a combination of this refurbished dam with dredging, increased water conservation and a new supply pipeline to South Fork. The City Council has indicated that it wants to know the cost and feasibility of building the smaller dam before it makes any final decisions on the water plan's next steps. Two other water studies are already under way related to the costs of dredging at South Fork and a review of the demand analysis that is the basis for the 2006 plan. Norris has said the City Council will have the information it needs to make a final decision when these studies and the new project by Black & Veatch are completed. "I have no interest in prolonging this debate for many more months and years," Norris said in a recent interview. "It needs to be decided by summer or early fall."

Hildebrand said the first phase of ----- study of the existing dam would take about four months and that staff had determined the project was necessary even with the recent proposal for an earthen dam. "We still need to answer the questions that council has identified," Hildebrand said. "We are going to do the initial alternatives development, then some of the subsurface investigations. If the subsurface investigation proves that one of the alternatives will be feasible, then we will look at costing that out." ----- will conduct subsurface borings of the 1908 dam and its earthen buttress, which was added in 1934, to build on past research conducted by a previous consultant. ----- studied upgrading the dam in 2002-03. The firm identified safety issues with both the spillway and the stability of the earth buttress. In its 2003 report, ----- said, in part: "The earthfill buttress has lower than acceptable factors of safety against rotational failure under both static and seismic loading conditions. Permanent repairs are therefore required to satisfy current dam safety criteria." An independent panel of dam experts recently reviewed engineering data for the Lower Ragged Mountain Dam, including a safety report that raised concerns about the structure as early as 1913. The 102-year-old dam has a conditional operating certificate from Virginia dam safety officials. Last month, the Soil & Water Conservation Board approved a six-month extension that allows continued use of the reservoir until November. At that point, the RWSA has to update the board on the community's progress repairing or replacing the dam before it can get another extension. Charlottesville officials have maintained that the dam is safe and even emphasize in the statement of work for the ----- study that the dam and buttress meet "current structural stability criteria." The city and RWSA both agree there are safety issues with the dam's spillway. "The research that I have done and the reports I have seen reassure me that the existing dam is safe," Norris said at a Charlottesville Regional Chamber of Commerce luncheon in January. "What we heard from ----- was that it was not the stability of the dam itself, it's the spillway that needs to be repaired. The dam itself is going to be quite safe for decades to come." Hildebrand said the second phase of the ----- study, including conceptual plans and cost estimations, would take eight to 10 weeks after one or more alternatives for raising the dam is selected for further study.

[\(One problem - a dam break analyses was done and it ain't good news\)](#)

## **Canyon Creek Meadows Dam: Citizens, county eye ways to stop removal Engineer's plan coming on Canyon Creek Meadows Dam**

By Sandra Gubel, Blue Mountain Eagle, [bluemountaineagle.com](http://bluemountaineagle.com), 6/2/2010

MT. VERNON - Citizens and the Grant County Court are exploring ways to preserve and fix the Canyon Creek Meadows Dam. One scenario being discussed would have Grant County take on the dam, located about 22 miles southeast of John Day. The Oregon Department of Fish and Wildlife recently announced its intent to remove the rock-fill structure, citing liability in case the leaky dam would catastrophically fail. That prompted Grant County Commissioner Boyd Britton to ask if the agency might shed that liability by gifting the property to the county. Is this the solution?

"I don't know," said Britton. "I think it's a worthwhile project, but there's a lot more to look at and research before we know. At this point in time, with all the laws in place, it would be difficult, if not impossible, to establish another watering hole in Grant County. We need to preserve the one we've got. It's a beautiful place, and when it's full of water, it'll be one heck of a draw." Seeking a fresh look at the issues, Britton

enlisted the help of licensed professional engineer Doug Ferguson of Mt. Vernon. Ferguson suggested to the Grant County Court at its May 26 meeting that he put together a proposal. He plans to detail what he thinks is needed for a new and thorough study, and the budget it would take. The court could use the proposal "when, and if, they decide to go ahead," Ferguson said. The court agreed to hear the proposal when it is ready. "We're not ready to give up on this yet," Ferguson said last week. Before the meeting, Ferguson joined Britton, Grant County Roadmaster Mark Hensley and Morrow County Roadmaster Burke O'Brien for a visit to the dam, which because of ODFW concerns for safety, remains in a locked open position. Ferguson said he wants to know just how big a liability it would be for Grant County to take over the dam's responsibility. His initial impression of previous studies is that they "seem kind of non-conclusive, like they almost reach a conclusion, and don't quite get there."

"Obviously the issues regarding catastrophic floods are big, a deal-breaker," Ferguson said. He said he performed several cursory calculations, and conservatively estimated 280 acre feet in the reservoir. He then looked at various scenarios. "If the pond drained in an hour it would have an average flow of 3,300 cubic feet per second. That's a big flow," the engineer added. "The John Day River is 500 to 600 cubic feet per second, for perspective." "That's a lot of water. But, if it would be for a short duration, I certainly can't say definitively what would happen if (flow of a catastrophic dam break) it gets down to Canyon City," Ferguson added, "but, intuitively this makes more research needed. The bottom line is I'm not ready to say we should take the dam out of there." He also believes removal of the dam has potential for greater damage to the environment than leaving it in. "I respect the opinions of the folks who have worked on this," Ferguson added. "But based on what I know, I can't currently recommend we take it out." Ferguson said his proposal will include the assistance of a dam safety specialist, as he does not have those qualifications. "We need to use science as it's available," he added. Ferguson is also enthused about possibilities for development of the Canyon Creek Meadows area in terms of recreation and fisheries. He cited that various good examples have been implemented in nearby Morrow County. "There are all kinds of possibilities, economic opportunities," he added. "Almost unanimously, the community wants it to stay," said Britton.

"My issue is not necessarily with ODFW, but the consulting firm they hired. I take issue with the width and breadth they think needs to be done to repair the dam. I take issue that they have nothing to back this up with," the commissioner said. "Mr. Ferguson wants to give it a fresh approach." "I really have issue about the potential for catastrophic failure," Britton added. "It's not nearly what they think it is." Since ODFW announced plans to remove the dam, the commissioner said, the agency has agreed "not to aggressively pursue taking it out for a little bit, until we come up with a proposal." Britton said he's on the August agenda of the Oregon Fish and Wildlife Commission to discuss the dam. He said he's also apprised Forest Service officials and the area's Congressional delegation.

(This is a scary thought - blowing up a dam! This is the same dam where pirates from Mexico have been robbing fisherman from the U.S. It would take a lot of explosives to make a dent in this dam. Maybe someone would see that happen before it does happen! Photo thanks to Pat March.)

### Plot to blow up Falcon Dam

by Marcy Martinez, 06.03.2010, valleycentral.com



Falcon Dam and Reservoir. This international dam creates a reservoir of some 3,978,416 acre-feet for flood control, conservation and hydroelectric generation as well as recreational uses. The international boundary crosses the center of the dam.

The sight of Falcon Dam located between Starr and Zapata counties could leave any visitor breathless and the thought of it exploding, will send a shiver through us all. Fisherman Dave Rowsey of Corpus Christi says, "I did have reservations coming down because of everything you hear in the news." Zapata County Sheriff Sigifredo Gonzalez says he and other local law enforcement officials were told of a warning by a drug cartel in Mexico that they planned to blow up Falcon Dam, thus, sending more than 1.64 million acre feet of water downstream. According to the International Boundary and Water Commission, such an act is highly unlikely, but in the event of catastrophic failure, there are flood control levees in place starting in Penitas which would help contain the overflow.

As it continues its trek down the Rio Grande River, diversion dams will help move it safely away from neighboring communities. That's not to say flooding would not occur especially when you're dealing with

approximately 534 billion gallons of water, but according to Falcon State Park Police that rumor isn't affecting business here. Even those who may have been wary about fishing so close to Mexico say a rumor of an explosion plot sounds like a big fish tale when you look around this place. Rowsey says, "Might as well be Canyon Lake, just as peaceful a day as any." Fellow Fisherman Dave Dobronski of San Antonio says, "This is one of the best bass fishing lakes in the country, people here are phenomenal and make a living off lodging and restaurants." DPS was one of the agencies looking into the alleged plot and tells us only that they constantly monitor all know threats affecting the state but will not comment on tactical actions or responses.

(The comment states what should be stated more often by dam safety experts. And BTW, anywhere that drilling for natural gas is taking place rates a place on their list.)

## **Teton River eighth on endangered list**

June 4, 2010, Joyce Edlefsen, Rexburg Standard Journal

American Rivers has released its report, America's Most Endangered Rivers of 2010, and the Teton River has made the list at No. 8. Ten streams are on the 25th anniversary edition of the report. It spotlights rivers the organization says are the most threatened. The report also features key endangered river success stories from the past 20 years. **The Teton made the list due to what American Rivers views as the threat of a new dam.** "The Teton River is a Western treasure, home to abundant wildlife including the rare Yellowstone cutthroat trout," the report says. **The river supports a tremendous recreational fishery and whitewater boating. However, water users and the state of Idaho want to rebuild the Teton Dam - a dam that catastrophically failed 35 years ago.** Instead of rebuilding an unsafe and unnecessary dam, the state and the Bureau of Reclamation should promote more cost-effective, reliable water supply solutions that focus on conservation and smarter water management." **"Rebuilding an unsafe and unnecessary dam on the Teton River would be irresponsible, especially when more cost-effective and reliable water supply solutions exist," said Rebecca Wodder, president of American Rivers.** "We need wild places like the Teton Canyon," said Peter Anderson, program attorney for Trout Unlimited's Idaho Water Project. "Rebuilding Teton Dam would be a huge, expensive boondoggle and a catastrophe for the canyon's spectacular and irreplaceable natural resources. In this time of budget constraints, Idaho's leaders should work together to find more practical, commonsense solutions to our water supply needs." In April, a Bureau of Reclamation official announced at a Henry's Fork Watershed Council that a study initially proposed to look at rebuilding the dam has been broadened to include the entire Henry's Fork drainage rather than just the Teton. **The Henry's Fork Special Study will focus on conservation and changes in water management, as well as water storage alternatives, a direction conservation groups had encouraged and a direction the BOR already was headed, according to BOR official Robert Schattin.** Fremont-Madison Irrigation District Manager Dale Swensen supported the change in the study. He said then that broadening the scope could allow for more success in improving the water supply and that focusing solely on the feasibility of rebuilding the Teton Dam might eliminate other important water-supply alternatives. The irrigation district has been among the strongest advocates for rebuilding the Teton Dam.

American Rivers selects rivers for its top 10 endangered river list based upon the following criteria:

- A major decision (that the public can help influence) in the coming year on the proposed action.
- The significance of the threat to human and natural communities.

**The degree to which the proposed action would exacerbate or alleviate stresses caused by climate change.** American Rivers lists the Upper Delaware, "where gas drilling threatens the drinking water for 17 million people across New York and Pennsylvania," as No. 1 on the list. Others included the Sacramento-San Joaquin River Delta at No. 2 for outdated water and flood management; the Gauley River in West Virginia at No. 3 threatened by mountaintop removal coal mining; the Little River in North Carolina at No. 4 for being threatened by a new dam; at No. 5, the Cedar River in Iowa threatened by outdated flood management; the Upper Colorado River in Colorado at No. 6 threatened by diversion projects without resource protections and the Chetco River in Oregon, threatened by suction dredge mining at No. 7. **The organization lists the Monongahela River in West Virginia and Pennsylvania at No. 9 due to the threat of gas drilling.** And the threat of hydropower dams on the Coosa River in Alabama put it on the list at No. 10. But the report isn't all bad news. Thanks to the publicity America's Most Endangered Rivers generates, the organization "enjoyed tremendous victories over the past 25 years, from the Penobscot in Maine to the Big Sunflower in Mississippi to the Klamath in California." The report lists many success stories of rivers surviving threats over the past 25 years. To see the list, visit [www.AmericanRivers.org/EndangeredRivers](http://www.AmericanRivers.org/EndangeredRivers).

comment:  
[ramc904](#)





American Rivers once again shows that they are an irresponsible organization. They make the bold statement - "Rebuilding an unsafe and unnecessary dam -----", and it gets printed as if it comes with some sort of authority. American Rivers may be many things, but it is certainly not an expert on dam construction although the media seems to go to them on dam safety issues when there are several qualified organizations that can speak far more reliably on the subject. We can argue the environmental issues regarding the Teton River, but whether a safe dam can be built is not a subject on which American Rivers should be quoted as an authority. The failure of Teton Dam was thoroughly investigated and the causes are well-known. With the knowledge that exists in this era, a safe dam can be built.

ramc904 posted at 7:45 am

(Not your typical dam, but it may help with the mess in the Gulf)

## Tiger Dams Protect Wildlife on Eco-Sensitive Marshlands from the BP Oil Spill

usfloodcontrol.com

**Experts at the National Guard, Army, and BP – with clearance from the EPA – have chosen Tiger Dams to attempt to protect Louisiana’s coastal areas from the Deepwater Horizon Oil Spill.**

The Tiger Dams can be laid out in a straight line or zig-zagged in any shape to avoid or go around sensitive wetlands, beaches, and barrier islands as not to interfere with local wildlife or fragile ecosystems in the area. They are being placed fifty feet from the shoreline minimizing tidal impact, enabling potential injured animals by the oil or natural causes to continue to take safe refuge on the beach (i.e. birds, turtles, etc.). Tiger Dam’s primary function is to act as a barrier between the ocean and the land. They will attempt to hold back oil at the dam so that it’s not washed further on shore onto wildlife and property by deploying these dams along the East Shore of the Southwest Pass to the Mississippi River in Louisiana. To accomplish this, the dams are being filled with the water directly from the Gulf of Mexico using a safety screen as not to harm any fish or crustaceans from being sucked into the pump, using water to fight the oil. The top tube on the pyramid is a special containment unit that is initially pumped with water, but may be emptied in less than five minutes, ready to be pumped full of goeey oil and muddy debris that may wash up against the dam itself. Each tube can be filled with water (or discharged) in less than five minutes, and then refilled with more than 6,000 pounds of oil and goeey debris.

Made from American fabric and delivered directly from our warehouse in Kenner, Louisiana, Tiger Dams are fifty foot by nineteen inch cylindrical tubes that can be stacked in a pyramid shape up to thirty-two feet high and interconnected to form a barrier along the shoreline of infinite length. Responding agencies have chosen a 2-1 configuration, though higher configurations (such as a 9-8-...-2-1) can be deployed. Their environmentally-friendly design is a major benefit for this application in that they can be removed without leaving any footprint. In preparation for the added horizontal pressure against the Tiger Dams system as oil washes on shore, as well as to accommodate for changing tides, special anchors are securing the dams in place. Normally in this situation the tubes would be filled with concrete instead of water for additional protection, but the heavy equipment required to do so is not able to make it into these sensitive areas.



### Hydro

(Now this is small hydro at its smallest - and that dam didn't cost much either)

## Run of Stream Hydroelectric for a Village

Can you make out the hydro equipment - see arrows and photo to right?



6

formance of



(The next best thing if you can't build your own hydro is to buy from our good friends up North)

## **Xcel Energy extends Manitoba hydropower deal 10 years**

By James Cartledgebrighterenergy.org, 6/1/2010

The deal to buy 850 megawatts of emission-free renewable power from Winnipeg-based Manitoba Hydro was due to run out at the end of April, 2015. But after signing agreements last week, Xcel's subsidiary Northern States Power Company will continue to purchase hydroelectric power through 2025. Judy Poferl, president and CEO at Northern States Power Co.-Minnesota, said: "We are pleased to continue our nearly 30-year power supply relationship with Manitoba Hydro. This partnership ensures the reliable flow of electricity to our customers across the Upper Midwest, and helps keep our rates reasonable and our environmental performance high."

### **Seasonal**

The arrangement with Manitoba Hydro involves a seasonal exchange of power – Xcel purchases additional power during the summer, when its customer demand for air-conditioning power is higher, providing power to Manitoba Hydro during the winter when its customers need more energy for heating. "These agreements enable us to not only meet our customers' energy needs, but also keep us on track toward reducing carbon emissions, and the electricity will be delivered over the existing transmission system," explained Ms Poferl. Manitoba Hydro, a provincial Crown Corporation owned by the Canadian government, generates power at 14 hydroelectric generating stations. The company's president and CEO, Bob Brennan, said, "Manitoba Hydro is very pleased to continue this trading relationship with Xcel Energy. Electricity trade provides environmental and economic benefits to all energy users in the region and makes the most efficient use of resources." Minneapolis-based Xcel Energy serves 3.4 million electricity customers in eight Western and Midwestern states, and in 2009 saw 5% of its electricity supplies sourced from hydroelectric generating stations.

(Hydro future world-wide and effects of climate change)

<http://spectrum.ieee.org/energy/renewables/future-of-hydropower>

## **The Future of Hydropower**

### **Predicting river flows in decades to come is tough, but there's still lots of hydropower potential to be had**

spectrum.ieee.org, BY Anne-Marie Corley // June 2010

## **Hydropower Potential for Tygart Lake Dam**

### **A hydroelectric dam could be built as early as 2014**

By Susan Sullivan, wboy.com, June 2, 2010

GRAFTON -- The Tygart Lake Dam was built between 1935 and 1938, and even then, engineers were looking forward to the possibility of hydroelectric generation in Grafton, West Virginia. "There's two 15-foot diameter penstocks or tunnels that go through the dam on this side; they're located deep within the lake and they're plugged right now with 5 and a half foot concrete plugs," explained Michael Estock, Army Corps of Engineers. "Those penstocks were installed for the possibility of future hydropower generation." At the dam's lowest flow, 900 square feet of water per second trickles through those pipes. Harnessing that power could generate 29 megawatts of energy for the area. "The plant would be located about 400 feet downstream of the dam, and really, as far as anything changing, the only thing that would change would be the construction of the hydropower generating plant," said Estock. Advanced Hydro Solutions has a preliminary permit through the Federal Energy Regulatory Commission to do studies to see if a hydroelectric project is possible.

"During the first year are environmental studies, cultural resources studies," explained Estock. "They should finish that up sometime this fall, and then they'll get into their second year of studies. Right now they're doing things like freshwater mussel surveys, macro-invertebrate surveys, cultural resources surveys, and they'll also be doing some flow analysis." The Army Corps of Engineers says these studies will help determine if

water power is feasible for our area. "Any green energy generation is going to benefit the nation," said Estock. "The Army Corps of Engineers really encourages the development of green energy at its projects." If no problems arise during surveys and the project is deemed beneficial, we could see that plant up and running by 2014. The total cost would be \$44 million.

(Not much power and is fish survival rate going to pass thru agencies?)

## Hydrokinetic energy on the Mississippi

By Melissa Mahony | Jun 8, 2010, smartplanet.com

Louisianans may soon find another energy source within their waterways. No, not the Gulf of Mexico, but beneath the surface of the Mississippi and Atchafalaya rivers. And the energy won't come from damming up the rivers, but by letting them flow—the faster, the better—via in-stream hydrokinetic energy. If made law, Louisiana Senate Bill 183 would let the state rent out land—in this case, river space—for the development of renewable energy. The bill has passed the Senate and now awaits the House. The Federal Energy Regulatory Commission granted **Free Flow Power (FFP) 60 preliminary permits in 2008 to test sections of the rivers**, where the currents are strong and consistent, to submerge slow-spinning turbines. **Free Flow Power's almost 10-foot turbines are meant to sit passively in the river, generating about 10 kilowatts in 7.4-feet-per-second flows and 40 kilowatts in 10-feet-per-second currents.** Last week, the Associated Press quotes FFP's Jon Guidroz: "The U.S. has never developed its own form of renewable electricity. We have an extraordinary river resource no one else has... This is an opportunity the United States has never had."



In the upper stretches of the Mississippi, **Hydro Green Energy launched in August the country's first licensed, commercial in-stream hydrokinetic project north of Hastings, Minnesota.** This energy system sits downstream from a more traditional hydropower operation, a dam (the Army Corps of Engineers Lock and Dam No. 2). Dams highly disrupt rivers and surrounding ecosystems. With in-stream turbines, one impact that comes to mind is whether they fillet the fish swimming through them. According to a report released and conducted by Hydro Green Energy in January, **fish passing through their turbine had a 97 percent survival rate.** The company is also planning a project at the Amory Lock and Dam on the Tennessee-Tombigbee river.



## Environment

### Gauley, Monongahela among nation's most 'endangered' rivers

By Ken Ward Jr., Staff writer, wvgazette.com, June 2, 2010

CHARLESTON, W.Va. -- Threats from continued mountaintop removal and expanded oil and gas drilling have landed two West Virginia waterways on an advocacy group's annual list of the nation's most endangered rivers. American Rivers put the Gauley and Monongahela in its yearly report, America's Most Endangered Rivers, scheduled for release today. The Washington, D.C.-based group cited ongoing mountaintop removal in the Twentymile and Peters Creek watersheds as a major threat to the Gauley and pollution from oil and gas drilling as a growing danger to the Monongahela. **The No. 1 river on the 2010 endangered list is the Upper Delaware, where gas drilling threatens the drinking water for 17 million people across New York and Pennsylvania.** "The threats facing this year's rivers are more pressing than ever, from gas drilling that could pollute the drinking water of millions of people, to **the construction of costly and unnecessary dams**, to outdated flood management that threatens public safety," said Rebecca Wodder, president of American Rivers.

In its report on the Gauley, American Rivers noted that the river is internationally known for its whitewater, but that coal mining in the tributary watersheds "flattens mountaintops, buries streams under debris and pollutes water." "The U.S. Environmental Protection Agency and cooperating agencies must stop the permitting of mine activity that harms the clean water and natural areas that are essential to the health and

heritage of Appalachian communities," American Rivers said. In 1988, the Gauley received some federal protections as the Gauley River National Recreation Area, under legislation pushed through by Rep. Nick J. Rahall, D-W.Va. Rahall, though, has opposed EPA's efforts to crack down on pollution from mountaintop removal mining. Previously, American Rivers listed the Coal and Big Sandy rivers as endangered because of mountaintop removal mining. American Rivers said that the Monongahela provides "exceptional wildlife habitat, recreational opportunities, and drinking water for hundreds of thousands of people in West Virginia and Pennsylvania." But, the group said, the Mon has "become highly threatened by toxic pollution arising from the recent surge of natural gas extraction activities in the region overlying the Marcellus Shale formation.

"The federal government and the states of West Virginia and Pennsylvania must act now to prevent further pollution associated with Marcellus Shale exploration and protect the already highly vulnerable water quality of the Monongahela River Basin," the group said. In 2004, American Rivers listed the Mon -- along with the Allegheny River -- as among the most endangered rivers, citing at the time the millions of gallons of polluted coal-mining waters building up in old mine tunnels. Other rivers listed as endangered in this year's report included the Sacramento-San Joaquin River in California, the Little River in North Carolina, the Cedar River in Iowa, the Upper Colorado River, the Chetco River in Oregon, the Teton River in Idaho and the Coosa River in Alabama.

(Well, they have found another way to exaggerate the effects of dams. Why don't they tell us how many people benefit from dams - from energy, food, flood protection, etc.? Because they don't like the fact that's in spite of all they say, many more benefit than are affected. Have you also ever seen a number on how many people are displaced by roads, bridges, other power projects, new buildings, and so forth?)

### **Dams Cutting Off 400 Million People From Food and Income**

Here's link to article:

<http://news.nationalgeographic.com/news/2010/06/100604-dams-economic-impact/>

### **Judge should accept salmon recovery plan**

tdn.com, June 7, 2010

U.S. District Court Judge James Redden recently received an updated version of the Obama administration's salmon recovery plan. We're not sure how long Redden will take to decide whether this latest submission meets the requirements of the federal Endangered Species Act. But we await that decision with some apprehension. Redden's Portland courtroom has not been a friendly environment for those tasked with drafting plans that balance the needs of salmon against the needs of hydroelectric power consumers throughout the Pacific Northwest. He has rejected several plans dating back to the previous administration. Critics say the current administration's updated plan is little changed from one Redden rejected last year. And last year's salmon plan was very similar to the Bush administration's 2008 salmon recovery plan - a plan little changed from one rejected by Redden in 2007.

Save our Wild Salmon, the Northwest Sportfishing Industry Association and several other advocacy groups expressed disappointment in President Obama's seeming reliance on the previous administration's strategies for saving Pacific Northwest salmon. We see Obama's general acceptance of his predecessor's work as evidence of the soundness of those earlier plans. Indeed, the Bush administration's 2007 plan put forth an aggressive strategy for salmon recovery that, nevertheless, recognized the irrigation needs of farmers and attempted to moderate the burden shouldered by hydroelectric power consumers. That burden already is significant. Cowlitz PUD ratepayers invest about \$30 million annually in salmon recovery. The federal judge's dismissal of the initial Bush plan as inadequate was baffling. The Bonneville Power Administration and U.S. Army Corps of Engineers had committed to a comprehensive, 10-year salmon recovery plan. Many involved in that recovery effort doubted the usefulness of the plan's costly, court-ordered dam spills. The recovery plan's total costs came to around \$6 billion. Still, Redden found the plan inadequate. The Obama administration apparently found the 2008 plan mostly adequate. It's adopted most of the strategies contained in the plan. One of the Obama administration's few deviations from the earlier plan is a willingness to study the possibility of dam breaching in the future if the salmon recovery strategy wasn't working. That isn't aggressive enough for critics on the left and it's too much of a concession to salmon recovery for critics on the right. Taking fire from both left and right sometimes suggests that you've

got it about right. We believe that to be the case with the Obama administration's salmon recovery plan. It strikes us as a balanced approach.

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# Some Dam – Hydro News and Other Stuff



6/18/2010

Quote of Note: "Did you ever notice that when a politician does get an idea he usually gets it all wrong." - Don Marquis

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

Ron's wine pick of the week: Casata Monticello Dolcetto d'Asti, 2008 Piedmont, Italy

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

## Other Stuff:

(Now, ain't this interesting. It's time we start revving up hydro development in the U.S. We can do more. We just need the obstructionists to pay attention to oil drilling and let us alone. I hate getting news from BP these days.)

### **Hydropower ousts coal as fastest growing fuel source**

By: Matthew Hill, 9th June 2010, [miningweekly.com](http://miningweekly.com)

TORONTO ([miningweekly.com](http://miningweekly.com)) - Last year was the first time since 2002 that coal was not the fastest growing fuel in the world, oil giant BP said on Wednesday. Hydropower took its place, after OECD demand for coal dropped by 10,4% in 2009 – the steepest decline on record, according to the BP Statistical Review of World Energy. "China became a large-scale coal importer, which prevented global coal consumption from falling," CEO Tony Hayward said. This was after China accounted for 46,9% of global coal consumption, while producing 45,6% of global supplies during 2009, the BP report said. The US accounted for 15,8% of production, while South Africa represented 4,1% of global coal production. World primary energy consumption, including oil, natural gas, coal, nuclear and hydro power – fell by 1,1% in 2009. This was the first drop since 1982. Energy use in OECD countries declined by 5% - the biggest ever fall. The BP report said the significant demand shrinkages for coal in OECD states and the former Soviet Union were owing to the recession and competitively priced natural gas. "In the OECD, energy consumption fell faster than GDP – the sharpest decline in energy consumption on record," said Hayward. "The OECD consumed less primary energy last year than 10 years ago, although GDP since then has risen by 18%." BP noted that coal remains the most abundant fossil fuel by global reserves, and accounted for 29% of total energy consumption last year.

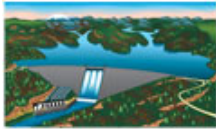
In November, the International Energy Association said energy demand would resume its long-term upward trend once the economic recovery gathered pace. "By 2030 the reference scenario...sees world primary energy demand a dramatic 40% higher than in 2007." The IEA forecast in its World Energy Outlook that from 2007-2030, global demand for coal would grow by 53%, greater than demand increases for both natural gas and oil. The World Coal Institute forecast the use of coal would rise by 60% over the next 20 years. Coal currently accounts for 26% of world primary energy, second only to oil, with 34%.

## SOLAR POWER

The BP report does not include solar power as a fuel, but last month the France-based International Energy Agency (IEA) said energy from the sun could represent up to 20% to 25% of global electricity production by 2050. "The combination of solar photovoltaics and concentrating solar power offers considerable prospects for enhancing energy security while reducing energy-related CO2 emissions by almost six billion tonnes a year by 2050," IEA director **Nobuo Tanaka** said.

## CLIMATE CHANGE

Meanwhile, United Nations climate change incoming chief **Christiana Figueres** warned on Wednesday it could take until 2050 to build the machinery that will cut out greenhouse gases, AFP reported. "I continue to be confident that governments will meet this challenge, for the simple reason that humanity must meet the challenge. We just don't have another option," Figueres was quoted as saying. Countries including Australia, Norway, the US, Germany and China have launched carbon-capture and storage plants at coal-fired power stations. The first pilot plant was launched in Germany in 2008. Richards Bay, South Africa, Coal prices have rebounded to around \$94/ton, according to globalCOAL.



## Dams

(Some people just likes dams)

### West Milton Residents Fight For Dam

Kimberly Thomson, Meteorologist, Reporter, June 9, 2010, whiotv.com

WEST MILTON, Ohio -- Water roars as it rushes over a 15-foot dam in the Stillwater River. **This dam was built in the early 1920s to generate electricity. In March, the West Milton Village Council voted to tear down the low-head dam.** Some residents aren't pleased with that decision, and are trying to save the dam. **Neighbors along the Stillwater River say they paid top dollar to live along the river and enjoy their lifestyle.** "I'm retired now," said Delphi Retiree, Mike Trego. "This is a fisherman's paradise." "This is the best of the best," said Walter Reaster, of West Milton. "It's some of the cleanest water." Residents say they are worried their fishing and clean waters will all disappear with the removal of the low-head dam. The decision to remove the dam is something the Village of West Milton has been dealing with for years.

"The EPA was coming down on them for our water system," said Tammy Crabtree, of West Milton. "So, they had to run water through the river with pipes from Troy." That project was subject to the Scenic River Law, which means the Ohio Department of Natural Resources could add measures. **Since the ODNR is dedicated to removing all low-head dams representatives asked West Milton to remove their dam.** ODNR Scenic River Program Manager Bob Gable said low-head dams impair water quality and safety. "A lot of these structures can be barely visible underneath high flow in a river and people can go over them unknowingly and capsize," said Gable. **People have drowned this way at other low-head dams, but residents say nobody has ever died at this dam.** They said they're worried its removal will lower water levels, which could drain wells and leave a muddy mess on the river banks. **"When the dam goes away we're going to have a mile and a half of mud flats on both sides of the river,"** said Trego. Experts at ODNR said the banks will grow vegetation quickly, and fishing will improve in the river bed. They also said they aren't ready to tear it down yet. "One thing we have to do is some feasibility studies and analysis before anybody moves forward with any removal project," said Gable. Residents are still concerned and are doing all they can to stop the Village of West Milton and ODNR from removing their dam.

(This is far more than a dam repair. Imagine raising a dam that is 5.5 miles long 5.5 feet. That's a lot of dirt to move.)

### District hopes to repair dam with federal grant and one-time tax hike

Editor, trivalleycentral.com, June 10, 2010

Magma Flood Control District (MFCDD) property owners may face a sharp tax increase this year as the district scrapes together local matching funds for a one-time chance at more than \$9 million in federal money to fix its dam. If the district lets this opportunity pass, it would have to "get back in line" and compete

on a national level for federal funding in future years, according to MFCDD General Manager Kent Pace. The 5.5-mile dam north of Arizona Farms Road protects 22,000 acres and perhaps 8,300 residents, mostly north of Florence, from potential flooding. The district itself is more than 10 miles long, running from an area south of Palmer Road up to a point north of Bella Vista Road in San Tan Valley. The district also includes the majority of Anthem at Merrill Ranch. The dam, which extends from Arizona Farms Road in a northerly direction for approximately 5.5 miles, was built some 50 years ago as an agricultural dam. As more houses were built in the district and the dam was responsible for protecting more people, state regulators reclassified it around 1980 as a high-hazard dam. In 1995 the district came up with the funding to fix the deepest one-mile portion of the dam. Today, the district's engineering reports and probable maximum precipitation studies call for strengthening the dam with a new sandy center, plus raising the height by 5.5 feet for the entire 5.5 miles of the structure. Current estimates to do this work are for around \$14 million to \$15 million.



Officials in the U.S. Natural Resources Conservation Service, which monitors the dam, have indicated they have almost enough money remaining in their old fiscal year budget to cover a grant of \$9.35 million. This would be a matching grant in which the local entity would be responsible for 35 percent of the total cost, or just over \$5 million. Currently the MFCDD has \$2.4 million in the bank. It is hoping to receive in-kind credit from NRCS for another \$1.15 million for engineering and design work to date. That leaves the district short another \$1.6 million or so, which it could raise with a tax assessment this year. The district's tax assessment has brought in \$1.2 million in each of the last two years, but is not likely to bring in as much this year. The 2009 tax rate was 1.3218 cents per \$100 of assessed value, on a net assessed value of \$90,785,539. The Pinal County Assessor's office has informed the MFCDD that the 2010 net assessed value has plunged 45 percent to \$49,747,347. Consequently, the old tax rate will only bring in half as much money. "Our tax rate would have to double to be revenue-neutral," Pace said. Since the district hopes to bring in what it has been receiving, plus about \$300,000 more, the 2010 MFCDD tax rate will likely be around 3.32. Most district property owners are likely to experience approximately a 37.5 percent increase in the actual property tax dollars paid to the MFCDD when compared to the prior year. A \$100,000 home could see a tax bill approaching \$400 from the MFCDD this year, Pace said. Because the county wants to know the district's property tax rate by July 14, the MFCDD will probably hold a public meeting on the issue around July 1, Pace said. Although the price seems high, it's less than paying flood insurance premiums year after year on an unprotected property, Pace said. "This way, it's a one-time tax without having to live with ... annual insurance." If the district board opted to keep its tax rate at 1.3218 and pass up federal funding, it would take at least 16.5 years to save up the needed funds — assuming the district's operating budget is zero and there is no inflation of construction costs over the years, Pace said.

If the MFCDD can't demonstrate the ability to repair the dam within a reasonable time period, a last resort for federal and state regulators could be "removal" of the dam, likely in the form punching holes in it along all 5.5 miles. Pace said this would likely result in regular flooding and the significantly increased probability of property damage within the district. It would also likely mean annual flood insurance costs for district property owners. Quarterly, the MFCDD receives a letter from the Arizona Department of Water Resources (ADWR) Dam Safety division which designates the current safety classification of the Magma Dam as an "Unsafe Dam Requiring Rehabilitation or Removal." ADWR then goes on to define the following: "Unsafe" means that safety deficiencies in a dam or spillway could result in failure of the dam with subsequent loss of human life or significant property damage. "Unsafe Dams Requiring Rehabilitation or Removal" means safety deficiencies in a dam have been confirmed and require repair or removal.

(Did they spell dam right?)

### Consultant: More dam appraisals

The Associated Press - Published: June 10, 2010, timesargus.com

WHITE RIVER JUNCTION — Municipal officials from towns along the Connecticut and Deerfield rivers are hoping a new report will boost their efforts to tax river dams at a higher rate. State Department of Taxes officials and a consultant hired to recommend updated appraisals for eight dams and a reservoir met Wednesday with municipal officials in White River Junction. The consultant, George Sansoucy, recommends in a new report that the appraisals be raised over current levels. But it's up to municipal officials whether to



heed the recommendations. Also on hand were representatives of Trans Canada, which owns the Connecticut River dams in Waterford, Barnet, Hartford, Rockingham and Vernon and Deerfield River dams in Searsburg and Whitingham.

(A leak carrying material. Mmmm, is that internal erosion or piping? Be careful where you dig! Never say never! And, this isn't a little puddle of water.)

### Officials investigate reservoir dam leak

Jun 10, 2010, By Bert Case - wlbt.com

RANKIN COUNTY, MS (WLBT) - The main dam (Ross Barnett Dam) holds back a 33,000-acre lake formed by the Pearl River. The story was first reported in a Rankin County newspaper, *The Weekly Leader*, in a story done by Linda Horton. When WLBT called reservoir manager, John Sigman, about the leak, he said he would be happy to talk with us about it and take us to the location, which he did. "It's not a boil, it's just a leak. It's seeping, and it is moving some material, and we want to control that. We don't envision surrounding it, but we do envision some excavation taking place," said Sigman.



Sigman told us every dam leaks, it is just a matter of control. The engineering company which originally built the dam in the early 1960's was hired to inspect the dam every year. The dam is also inspected on a weekly basis by Steve Clark, a special projects officer for the reservoir. Sigman said the reservoir is spending time and money to find out what the problem is and how to fix it. "You are not concerned this dam could ever break, are you John?" we asked. "I don't think this dam will ever break. Under the right conditions, it might, but any dam can break as the state dam safety engineer will tell you, but we don't envision that being a problem here," said Sigman. The Pearl River Valley Water Supply District, which operates the reservoir, has voted to hire a company to investigate the leak and determine how to fix it. That contract is for \$100,000.

(A new comment on this article from last week's Newsletter)

### Teton River eighth on endangered list

(Full Article)

[http://www.tetonvalleynews.net/news/article\\_56265c32-6ffe-11df-ba0f-001cc4c03286.html?success](http://www.tetonvalleynews.net/news/article_56265c32-6ffe-11df-ba0f-001cc4c03286.html?success)

3 comments:



Posts: 2

With all due respect Freerivers, while I understand your environmental concerns which I do agree must be considered fully in any decision regarding a new Teton Dam, American Rivers is not a dam safety expert. Their partnership with NOAA does not make them an expert either. The removal of dams that American Rivers is associated with are mostly small insignificant dams that often do not have an identifiable owner. The safety of those dams is typically determined by the state dam safety agencies that have the expertise to do so, not American Rivers. American Rivers has never been involved in the design of a significant dam structure such as would be contemplated at the Teton site. Their claim to dam safety expertise is equivalent to lying on one's resume'. ramc904 posted at 8:01 am

(The dams may be getting old but good maintenance can make them ageless.)

### By Heather Yakin

Times Herald-Record - 06/13/10, recordonline.com

MIDDLETOWN, NY — The state has tightened up safety-plan regulations for dams, and it's going to cost you some money. Last summer, a new regulation went into effect that requires all owners of high-hazard dams to submit an emergency action plan, prepared by a professional engineer, to the state Department of Environmental Conservation. Owners of medium-hazard dams must also submit an action plan. So local governments — some of which, like Middletown and Kingston, own multiple dams on their reservoirs — are working on new or revised plans for their dams to meet the state's deadlines. For Middletown, which is

seeking engineering proposals to develop new plans for three medium-hazard dams and one high-hazard dam, plus revised plans for two high-hazard dams, the cost will easily run in the tens of thousands of dollars, said Jacob Tawil, Middletown's public works commissioner. "It does make sense to do. The question is, when it's mandated by the state, who would pay?" asked Middletown Mayor Joe DeStefano. "We have to make sure everyone who's downstream of these reservoirs is protected."

"High hazard" means a dam failure might cause widespread damage, with loss of life and major economic impacts likely. Medium or intermediate hazard means failure may cause injury, less extensive damage, and economic loss. Both Kingston and Middletown officials say workers check their dams frequently, and they update certifications annually with the DEC. The City of Kingston has one medium- and two high-hazard dams, and the updating work is under way, said Judith Hansen, the city's water superintendent. The possibility of a dam failure is very low, she said — but the consequences would be huge. "It's very costly to comply, but it has to be done," she said. A number of local high-hazard dams are publicly owned; the cities of Port Jervis and Newburgh have dammed reservoirs. Other municipal owners include the towns of Cornwall, Goshen, Newburgh and Warwick. And many of them, such as Middletown's and Kingston's, are old. Kingston has dams dating to 1927; the Woodward Dam on Middletown's Shawangunk Lake was built in 1900. "These dams, they're old structures, and getting older," Tawil said. "People take for granted that they're going to last forever."

## Engineers drilling into Hyrum Dam for flaws that could leave it damaged by earthquake

By Associated Press, June 14, 2010, fox13now.com

HYRUM, Utah (AP) — Engineers are drilling to determine the composition of the 75-year-old Hyrum Dam and whether it would hold up to a major earthquake. The work will take about a week. It has resulted in the closure of some lanes on Hyrum's 300 South Street. U.S. Bureau of Reclamation geologists Ira Terry says the drilling will reveal any soft spots or sand layers in the dam that could liquefy under strong shaking from an earthquake. Terry says the dam or spillways could be shored up if engineers find a problem. The Hyrum dam on the Little Bear River holds back a 438-acre reservoir used for flood control and irrigation. Hyrum is about 60 miles north of Salt Lake City.



### Hydro

(100 years old and it will keep on ticking. You can understand backwater during a flood affecting flood levels but effects downstream make little sense. The black berries are great when you drive to the newer powerhouse downstream of the falls.)

## Works goes into high gear for Snoqualmie Falls update

By SETH TRUSCOTT, Snoqualmie Valley Record Editor, Jun 08 2010

Normally, the power generators at the Snoqualmie Falls hydroelectric plant run at a painful roar. This summer, the machinery is silent for the first time in more than a century. The silence is bittersweet for folks like Power Plant Manager Dave Magnuson, who has worked alongside mementos of history at the Puget Sound Energy-run site for two years. "I never thought I'd forget that day," he said when the generators 270 feet below the Falls were shut down. Magnuson's world is changing by the day. Underground and on the surface, changes are already evident in Puget Sound Energy's three-year, multi-million-dollar update of the Falls parks and power plants, which is now going into high gear. Works starts this month on the construction of coffer dams in the Snoqualmie River, needed to remove decaying, century-old rip-rap and fill material where the power station once stood. Workers with contractor Barnard Construction of Bozeman, Mont., will soon lower the diversion dam by two feet, changing flood levels both upstream and down. After the Falls' power plant 2 shuts down June 15, major construction will update generators in both plants. The upgrades add an additional 10 megawatts of generating capacity to the old 44-MW



system, allowing the Falls facility to power about 40,000 homes.

Already gone are the pedestrian bridge and two crumbling service buildings visible from the Falls park — the tip of the iceberg compared with big changes underground. Aboveground, the landscape is changing daily, as workers and big machines transform the landscape at both power plant intakes, removing fill and structures alike. "Once it's gone, you kind of accept it as the new picture," Magnuson said. However, the new picture is meant to be as close as possible to an older one, from the era before the Snoqualmie Falls hydropower facility was built.

### Park changes

Changes at the surface of Plant 1, including fewer buildings and a more original riverbank, are meant to give the site a more natural look. "Power facilities will be less noticeable to those enjoying Snoqualmie Falls," said Paul Wiegand, PSE's vice president for power generation. Once work is finished, the entire park will get improved trails, picnic areas, fencing and lighting, interpretive signs and kiosks, and better riverfront access, with new parking and restrooms in the lower park. Construction is mostly done at the upper Falls park and lookout. Now, work, and disruptions to visitors, shifts to the lower park. Safety requires closure of the river launch area until early 2013. Right now, all that can be seen at the surface of plant one is the elevator shaft. Soon, the penstocks, or large water pipes, will be removed, and a crane will lift aging equipment out of the underground chamber. "We're digging up history," Magnuson said. "Most of what's down there is staying." Four of the original turbines will be preserved. Lines have been strung across the Snoqualmie to allow divers to build two coffer dams along the bank. PSE's contractor will then remove the fill, widening the channel as much as 39 feet and allowing flood waters to pass more quickly over the cataract.

### Flood impacts

With a wider channel and a two-foot-lower dam, the Falls project is expected to lower 100-year flood levels in the city of Snoqualmie by six to eight inches, according to U.S. Army Corps of Engineers data. PSE has predicted a quarter-inch rise in 100-year flood levels in the Lower Valley as a result of the work. The Falls dam is about four feet tall on average, and about 15 feet tall at its tallest point. Flood mitigation was requested by the city of Snoqualmie and mandated by the Federal Energy Regulatory Commission, which approved the project. Company officials said notification on the project was given to parties of record during the federal approval process several years ago, including the city of Carnation and King County. Neighbors Against Flooding, a group of concerned Lower Valley residents, have opposed the lowering of the dam. Last year, members of the group called on Puget Sound Energy to back a new study on flood impacts. As work begins, PSE spokesmen say that no new study is planned. "We didn't think that cost-wise, it made sense," said Jason Van Nort, Government and Community Relations Manager for PSE. Van Nort said PSE is working with King County Department of Natural Resources on possible mitigation efforts for Lower Valley residents, but said that any mitigation would have to be in keeping with impacts, which PSE believes are small. PSE officials insist that the Falls dam is a diversion structure, not a flood control dam, where water goes over the falls or through the power plants — but very little stays behind. "We recognize we are part of the community," Van Nort said. "If there is a way that is consistent with our impact, we'll do something. We're keeping our options open."

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(Now, here's a sweetheart deal and handout that benefits hydro development - wouldn't it be nice if we could just stop this for everything and have a level playing field.)

### House passes Utah hydropower bill

**Energy » Bill would remove requirement for \$161M federal payment.**

Matt Canham, The Salt Lake Tribune, 06/08/2010

Washington, DC » The House passed a bill Tuesday that could lead to new clean hydropower plants in Spanish Fork Canyon. The legislation, sponsored by Rep. Jim Matheson, D-Utah, and backed by Rep. Jason Chaffetz, R-Utah, would remove an expectation that a power company would give the first \$161 million in profits from the Diamond Fork system to the federal government. A company envisions installing a hydropower plant that would generate 50 megawatts of electricity from the water flowing through the Central Utah Project. The federal government funded the project with the expectation that it would recoup its money from private energy developers. Matheson and Chaffetz argue that the up-front costs made it highly unlikely that an energy company would actually develop the clean resource. "Congress often speaks of energy security, but today we did something about it," Chaffetz said. Sen. Bob Bennett has introduced the same bill in the Senate.

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(This one is a puzzle. Does this make sense economically?)

## Oregon takes on hydropower projects

June 10, 2010, BY: Nathalie Weinstein



The **Portland Water Bureau** will soon see if its Vernon Water Tank in Northeast Portland can double as a mini hydroelectric plant. Other Oregon cities have pursued, or are pursuing, pilot projects to see if micro-hydroelectric systems installed in city water facilities can offset electricity costs. But what they have found is a difficult permitting process, long payback periods, and few places where additional micro-hydroelectric systems can be installed. A micro-hydroelectric system uses an enclosed water wheel or turbine connected to an electric generator. When jets of water spin the turbine, electricity is produced. "We're looking at ways to increase our use of green power," said **Brian Robinson**, chief engineer with the Portland Water Bureau. "This project will help lower our utility bills and offset our use of electricity from the utility."

At the Vernon Water Tank, a valve used to reduce pressure from tons of water flowing into the city's water pipes will be replaced with a micro-hydroelectric generator, which will generate 150,000 kilowatt-hours annually and save the Portland Water Bureau about \$10,000 in utility bills each year. If micro-

hydroelectric systems could be installed at each of the Water Bureau's 500 pressure-reducing valves, Portland could seemingly take a giant step in meeting its clean energy needs. But according to **Judd Jorgensen**, senior renewable energy project manager with Energy Trust of Oregon, a system can't be installed just anywhere. "Only some locations have enough water flowing and enough pressure to make a project economically viable," Jorgensen said. "Some cities may have a site with the right characteristics, but the valve is located in a place that's too cramped for more equipment." Robinson said that other sites throughout the city of Portland were examined to see where the bureau could install its next project. But so far, the only other feasible site is at Washington Park.



The Tualatin Valley Water District in 1983 installed a micro-hydroelectric system off of its main water supply line, which brings water from Portland into the suburbs. The project produces 55,000 kilowatt-hours per year and saves the district about \$5,000 annually. **Mark Knudson**, an engineer with the district, said his department has been pleased with the system, but a study performed two years ago found no new feasible sites for micro-hydroelectric projects. "Adding more (micro-hydroelectric systems) had questionable payback and depended on some other improvements that may or may not happen," Knudson said. "These projects often require a significant retrofit of an existing facility, and they have a high capital

cost compared to the return on investment from power sales." A site feasibility study performed recently by the city of Beaverton also yielded no fruit, Jorgensen said. Studies for similar projects are under way in Pendleton and West Linn, as well as in Marrow County in Eastern Oregon. "We're finding that the permitting process can be very costly," said **Gene Green**, public works director for the city of West Linn. "They can be very costly as well, and it's difficult to get a payback. But reusing our energy is important." The Vernon Water Tank project will cost approximately \$335,000, Robinson said, and a return on investment is expected to require as long as 20 years. About \$115,000 is coming out of the Water Bureau's capital projects budget, with the rest of the money coming from federal and state incentives and grants for renewable energy projects. Commissioner **Amanda Fritz**, who contributed to City Council's unanimous approval of the project on Wednesday, believes the project's environmental benefits outweigh its cost. "With the city's Climate Action Plan, the city needs to take actions that make progress towards those goals," said Tim Crail, policy adviser for Fritz. "In this case (Fritz) saw that the cost is eventually recovered and the project benefits the environment."

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## Tidal Power Company Proposes \$61 Million Project for Cobscook Bay

06/10/2010, mpbn.net

**Halcyon Marine Hydroelectric** says the demonstration and research project would be used to test and promote the company's new patented tidal power technology.

A tidal power company is proposing to build a \$62 million hydropower research and demonstration facility in Cobscook Bay. Halcyon Marine Hydroelectric, which has offices in Utah and Washington, D.C., plans to fund the project, but ownership and 85 percent of the revenues would be retained by the city of Eastport, company officials told the Bangor Daily News. Halcyon founder Ramez Atiya told the paper that Cobscook Bay, with its extreme tides, is the perfect place to build a demonstration and research facility to promote the company's new tidal-power technology globally. He says Halcyon is a finalist in bids to build a massive tidal power facility in the United Kingdom. Atiya says his company has invented an innovative "tidal wing" which generates power through the ebb and flow of the tides. He says the company holds patents for its technology in several countries, including the U.S. Atiya says the project would be financed through loans from either the U.S. Department of Agriculture or Department of Energy. He recently pitched the project to the Eastport City Council, which is likely to discuss the issue at the next council meeting on June 14, Council Chair Robert Peacock told the paper.

(There's never too much water. Shut down the dumb wind turbines and why burn fossil fuels? Geez, wish we had a bunch of pumped storage projects. These are the times when we need that never-built East-West transmission line connection.)

### **Dams on Columbia working overtime**

By Pratik Joshi, Herald staff writer, tri-cityherald.com

Too much rainwater flowing through the Columbia River system is forcing dam power turbines to operate overtime. If too much water spills over the dams, it churns air into the water and increases the nitrogen content. And experts say that can harm migrating salmon. So to reduce the dissolved gas levels to protect fish, the Bonneville Power Administration has increased generation of hydroelectric power so water goes through the turbines and not over the dams. But that creates another problem: How to consume all that power? On June 2, the dams were producing 9,000 megawatts on average, but Wednesday they produced 13,000 megawatts. All that hydroelectric power meant BPA had to find a way to limit power production from non-hydro sources, said BPA spokesman Michael Milstein. The agency markets and distributes electricity that comes from a mix of hydroelectric, coal, gas, nuclear and wind power sources in the Pacific Northwest.

Milstein said BPA asked B.C. Hydro in Canada to hold back water in its Columbia River reservoirs and asked Energy Northwest to reduce power generation at its Columbia Generation Station nuclear plant in Richland to balance the power supply, he said. BPA also alerted the region's wind farms to its inability to absorb excess power, he said. And the Army Corps of Engineers and Bureau of Reclamation also are holding back as much water as possible. Milstein said he hopes things will stabilize by early next week. As of Friday, the Columbia Generating Station was at 25 percent of capacity, said Rochelle Olson, spokeswoman for Energy Northwest. The nuclear plant generally produces about 1,150 megawatts, or enough electricity to power 1 million homes, Olson said. BPA also is selling power to Northwest and California private utilities at very low prices, and even is giving power away at some hours to keep dam spills as low as possible, Milstein said.

(Oh my, I feel like I'm getting old. It's amazing that B-G is 37 years old.)

### **Upgrade of Blenheim-Gilboa Pumped Storage Project completed**

June 14, 2010, empirestatenews.net

NORTH BLENHEIM, NY—The New York Power Authority (NYPA) marked the completion of a nearly four-year overhaul of its Blenheim-Gilboa (B-G) Pumped Storage Power Project in the northern Catskills at an event Thursday where NYPA President and Chief Executive Officer Richard M. Kessel was joined by state and local officials in highlighting the milestone. NYPA's Life Extension and Modernization (LEM) effort will improve the reliability of critical electricity infrastructure and increase the Power Authority's ability to help meet the long-term energy needs of the state. "The on-time and on-budget completion of the Life Extension and Modernization Program at Blenheim-Gilboa is a hallmark of achievement for all of those who've been involved with the nearly four-year initiative, which secures the future of this special hydroelectric facility for decades to come," Kessel said. "B-G's value to New York State is especially apparent during the air-conditioning season when the margins between available electricity supplies and power consumption narrow the most, and market electricity costs tend to rise. For that reason, the completion of the project's refurbishing ahead of the peak-demand months is good news for the state's electric power system and ratepayers, and something to celebrate."

On May 22, the Power Authority returned to service the last of B-G's four pump-turbine generating units to undergo replacement as part of the more than \$135 million upgrade of the 37-year-old facility, which

recycles water between lower and upper reservoirs to generate power when it is most needed, generally in the late afternoon or early evening. The more efficient, modern units allow the pumped-storage project to produce additional power from the falling water from the upper reservoir on Brown Mountain, with the total capacity of the facility increased by 120 megawatt (mw), or 11.5 percent, to 1,160 mw. (One mw is enough electricity for meeting the needs of 800 to 1,000 typical homes.) "Our maximizing of B-G's efficiency—and its ability to generate more power from the same amount of water—contributes to the overall reliability and flexibility of the state's electric power system," Michael J. Townsend, NYPA chairman, said. "This has been a vital initiative for enhancing the project's capability for harnessing the stored water from the project's upper reservoir to produce economical power during the times of peak demand. The Life Extension and Modernization Program also reflects the priority the Power Authority has long given to being a good steward of its hydroelectric resources, which account for nearly 80 percent of its statewide power generation."

NYPA began the LEM at Blenheim-Gilboa, which is the fifth largest pumped storage project in the nation, in September 2006 when the first of the four pump-turbine generating units was taken out of service for refurbishing. The process was repeated three times, in the fall of 2007, 2008 and 2009, with each unit returned to service by the following summer with an increase in maximum capacity from 260 mw to 290 mw per unit. (While the physical work for the LEM began in 2006, the engineering and procurement for the initiative commenced in 2003.) The phased-in approach to B-G's refurbishing limited the impact of equipment being taken out of service. During each phase of the multiyear upgrade, three pump-turbine generating units were operating, except for an approximately two-month period at the beginning of each stage, around the start of fall. In the course of that period, the water level in the upper reservoir, which has a capacity of five billion gallons, was substantially lowered in order to accomplish the replacement of a spherical valve on the unit being refurbished. The valve controls the flow of water into the pump-turbine generator. In addition to replacing the turbine-generators and spherical valves, the upgrade included replacement of main power transformers, circuit breakers, exciters and related equipment. (Video footage of the LEM is viewable on the NYPA Web site at [www.nypa.gov/video/video1006/bglem.html](http://www.nypa.gov/video/video1006/bglem.html))



## **Environment**

(Hey, nothing seems to be working that well. Maybe, this idea is worth a try. I really like the irony too. All those dams that environmentalists hate may just help with this environmental disaster.)

### **Scientist Proposes Unleashing Mississippi River to Flush Oil From Delta**

By PAUL QUINLAN of Greenwire, nytimes.com; Published: June 11, 2010

A respected scientist wants to enlist Old Man River in the battle against the BP PLC oil spill in the Gulf of Mexico. G. Paul Kemp, a former marine science professor at Louisiana State University who works now with the National Audubon Society's coastal initiative, is proposing turning loose the mighty Mississippi River to flush oil out of the river's marshy delta. Kemp said in an interview that he has given his plan to U.S. EPA and has been assured that it is being reviewed at the "highest levels." "There is no downside," Kemp said. "This is an example of being nimble to deal with a real threat. It has good science behind it."

The plan calls for the Army Corps of Engineers to tweak the massive, adjustable concrete dams about 315 miles upriver from the Gulf of Mexico to divert more water from the nearby Atchafalaya River into the Mississippi River. The Army Corps built the dams -- collectively called the Old River Control Structure -- in 1963 to keep the Mississippi River flowing through New Orleans and Baton Rouge, rather than shifting its path to the sea as it does every 1,000 or so years. The river is in mid-shift now, pushing more and more toward the Atchafalaya River with each year, Kemp said. To stop a complete switch, the corps must adjust water-management structures to ensure a constant flow of 70 percent of the Mississippi River along its traditional path and 30 percent to the Atchafalaya River. Kemp recommends sending more water down the Mississippi -- as much as 81 percent, if not more -- to push out the oil. Some scientists who have considered Kemp's plan say it contains no obvious flaws. And they say it is astonishingly simple, unlike Louisiana Gov. Bobby Jindal's (R) plan for building 120 miles of offshore sand berms to block oil heading toward marshes and beaches. Critics say that plan would take months to complete and would require heavy equipment that could destroy the seabed and disrupt nesting birds that the spill-containment effort is trying to protect. "What's the downside?" Denise Reed, who heads the Pontchartrain Institute for Environmental Sciences,

said of Kemp's plan in an interview. "I'm sure somebody has to turn a lever somewhere, but that person has a salary anyway." **Inaction could carry a cost.** Scientists say the Mississippi River's flow has limited oiling of marshes on the west side of Breton Sound and east side of Barataria Bay. But those protective currents have been weakening since June 1, making it easier for oil to infiltrate marshes. **Said Kemp, "We just don't want to get into a situation where, by not helping the river, we're inviting oil further into the marsh."**

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# Some Dam – Hydro News and Other Stuff



6/25/2010

**Quote of Note:** *"Never confuse motion with action."* -- Benjamin Franklin

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

**Ron's wine pick of the week: Twenty Rows Cabernet Sauvignon 2006**

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

## **Other Stuff:**

(The facts are finally catching up to all that hot air. The one comment from Texas says a lot.)

### **Why the Wind Market is Hurting**

by Stephen Lacey, Podcast Producer , Published: June 11, 2010 , [renewableenergyworld.com](http://renewableenergyworld.com)

Texas, United States At first glance, last year's 10 Gigawatts of wind installations in the U.S. make it seem like the market is in good shape. But those numbers don't tell the real story of the difficulties the wind industry is facing. **In 2009, financing was the big issue for the industry.** There simply weren't enough financial players healthy enough to put money into projects. The grant program created under the stimulus package helped move a number of projects forward, beefing up the installation figures for last year. But today, financing isn't necessarily the main problem; it's demand. Due to a number of factors exacerbated by the dismal economy, some developers are simply unable to take advantage of the stimulus dollars available. **Only 540 MW of wind capacity were installed in the first quarter of 2010, down from 2,800 MW in the first quarter of 2009.** **"Demand for wind is simply not at the level where a lot of these companies that are making these investments would like it to be,"** says Matt Kaplan, a senior analyst with [IHS Emerging Energy Research](http://IHS Emerging Energy Research).

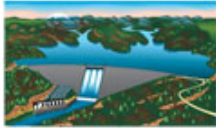
**The first major factor in the slowdown is the drop in electricity consumption.** With lower demand for electricity, utilities don't have to procure as much renewable electricity under their state targets. This has impacted a number of project owners who sell power on the competitive wholesale market. **Secondly, natural gas prices have fallen about 65% since 2008, from \$11 per MMBtu to around \$4 per MMBtu.** Given that wind competes directly with natural gas, this makes the resource much less competitive. And with more shale gas reserves being tapped in the U.S., prices will stay low in the coming years. **Finally, the lack of a long-term national target for renewables in the U.S. is causing major component and turbine manufacturers to reconsider investments in the country.** As a result, job growth in manufacturing will likely fall flat again this year.

The reduction in demand for wind means that prices for turbines are coming down. Utilities are watching the equipment prices and waiting to sign power purchase agreements, wondering if prices will continue to fall. Meanwhile, more competition in manufacturing – particularly from Asian players – is forcing turbine suppliers to focus heavily on differentiating their products in an increasingly crowded field. "It's a tough market out there...[but] we keep focusing on technological innovation," says Mike Revak, director of [Siemens' American](http://Siemens' American)



wind division. "Clearly we don't sit idly by...staying on the cutting edge of technology gives us a competitive position." Revak says that Siemens won't see installations of its turbines drop much in the U.S. this year. But if the demand picture stays the way it is today, sales will certainly be impacted into 2011. Revak believes that a federal renewable energy target could not only increase demand for wind, it could also help make the industry more competitive during challenging times like today. "Without that that long term policy, you can't drive down the cost of wind. You can't have the innovation along the supply chain," says Revak. "With that support we can make the investments and improvements to make wind more competitive with all energy." So what does all this mean for the wind industry this year? Matt Kaplan of IHS Emerging Energy Research predicts a 40% to 60% drop in installations. Things could potentially turn around over the next 12-18 months. With a long-term national target in place and an increase in demand for electricity, wind might be able to make a good comeback. Clearly, despite the short-term retraction, many of the largest companies in the world are still very bullish on wind. And some executives, like Sonia Bonfiglioli, CEO of the leading components manufacturer Bonfiglioli, believe that the downturn will eventually be a good thing for the industry. "Renewables faced a lot of speculation...from this crisis the real businesses will survive. I'm convinced that this will move toward a real industry with competent businesses and people, and no doubt it will grow," says Bonfiglioli. The big unknown is exactly when the growth will pick back up. It's still uncertain how quickly the industry can rebound, given all the factors working against it.

*Comment: In the final analysis wind is an erratic expensive energy source which depends on government mandates for its existence. In the summer of 2009, wind supplied about 1% of Texas electric demand with a capacity factor in the 10% range. And don't live within a mile of one of those noisy turbines.*



## Dams

### **McDonnell signs dam safety legislation**

By Nate Delesline III, June 16, 2010, starexponent.com

LOCUST GROVE, VA — Gov. Bob McDonnell visited the Lake of the Woods residential community Wednesday to ceremoniously sign legislation that modifies Virginia's dam safety standards. Senate Bill 276 grandfathers in all dams built before or under construction before July 1, including those classified as high hazard. That classification means a dam failure would cause loss of life or serious economic damage, according to the Department of Conservation and Recreation. Introduced by Sen. Edd Houck, D-17th, the governor and the bill's supporters say the legislation protects communities like LOW from unnecessarily upgrading dams that are generally safe and adequate for all but the most catastrophic weather events. Located in Orange County about halfway between Culpeper and Fredericksburg, Lake of the Woods is home to two dams.

"Why would you take a structure that has been recognized for being safe, being efficient, being well maintained and all of the other history that goes into this fine community, why in the world would we want to change that or tear it down and rebuild it?" Houck said. "It simply was an example of government action not making sense." McDonnell agreed. "It really didn't make sense to have a regulation that was crafted based on a weather event that had never occurred in Virginia," said McDonnell. "That did not seem to be a reasonable regulation."

(Oh oh, this is going to cost big time! Let's see,  $45+27+23+5 = 100$ . Yep, that's everybody. How the heck did they come up with those percentages? And, the State was absolved of any wrongdoing before it all began.)

### **Verdict: Dam collapse liability split**

#### **Hadlock dam builder, designer, town get share of blame for 2005 failure**

By BRIAN NEARING, Staff writer, June 18, 2010, timesunion.com

FORT EDWARD, NY -- The builder and the designer of the failed Hadlock Pond dam will share most of the financial blame for a 2005 disaster that sent a wall of water crashing downstream, a Washington County jury decided Thursday. Now, a second jury will decide how much they pay to the plaintiffs. A seven-week civil trial ended with jurors deciding that Glens Falls-based Kubricky Construction Corp., which built the dam, was responsible for 45 percent of flood damages, said Paul Wein, a Guilderland lawyer who represents

homeowners. As part of the verdict, the firm that designed the dam, HTE Northeast, of Bedford, N.H., was found responsible for 27 percent of the damage, Wein said. More than 120 homeowners sued after the earthen dam, then barely two months old, gave way completely on July 2, 2005, draining the 220-acre man-made lake in mere hours, and leaving downstream homes with serious damage and lakefront homeowners on a sea of mud. During the trial, lawyers for Kubricky and HTE each blamed the other's client for the dam failure. The town of Fort Ann, which was supposed to monitor the dam after it was finished, was found responsible for 23 percent of damage, while Atlantic Testing Laboratories Ltd., of Clifton Park, which tested dam construction, was found to be 5 percent liable, Wein said. In the coming weeks, a separate jury will be called to tally up the financial damages. "I think the jury was spot on with the percentages. I cannot quibble with the way they divvied it up," said Wein. "If any of the defendants want to talk numbers, we can start tomorrow."

Terry Hannigan, a lawyer for Kubricky, said that jurors "spread the blame around," which he saw as refuting claims the builder was solely responsible. "The biggest chunk of liability is still less than all," he said. "When some people were claiming this was all our fault, I think Kubricky now has been vindicated." He said it was too early to talk about a possible appeal. Hannigan said jurors also decided Fort Ann must pay about \$440,000 in overdue construction bills, with interest, under a breach of contract claim filed by Kubricky. Attempts to reach town officials for comment were not successful. Before the trial, Washington County Judge David Krogmann ruled against any arguments being made that the state Department of Environmental Conservation, which approved the dam design plans, was responsible for the failure.

(They just rebuilt this dam and now this! What the heck is vinyl sheet piling doing in a dam design?????)

## Top priority for Hope Mills officials is reopening bridge

By Rodger Mullen, Staff writer, fayobserver.com

HOPE MILLS, NC - Town Manager Randy Beeman said residents shouldn't expect Hope Mills Lake to be refilled any time soon. "It certainly won't be back in a week or two or a month or two," Beeman said. "It'll take time." Beeman said the town's first priority will be to reopen the bridge over the dam that was breached Thursday. He said that could happen in a week or two. Town officials and engineers with the state Dam Safety Division spent Friday discussing how to proceed after material in the foundation of the dam gave way early Thursday, sending water gushing and emptying out the lake.



The break occurred as the water level in the lake was being lowered after an inspection turned up possible problems. State Dam Safety engineer Steve McEvoy said Friday that vinyl sheet piling in the foundation of the dam gave way, causing the spill. "It was a failure of a material in the foundation of the spillway," McEvoy said. "It was basically an undermining of the spillway. Water did find a way through a breached vinyl sheet piling section in the foundation." McEvoy said vinyl sheet piling is flat, narrow plates that are driven into the ground individually and connect with one another. He said he didn't know how thick the pilings in the Hope Mills dam are. McEvoy said he didn't know why the pilings failed. "This is currently under investigation," he said.

State dam officials are waiting for engineers' reports on how to proceed, McEvoy said. He said engineers and the dam's contractors are meeting to discuss the issue, and couldn't speculate on when they will have a report. Beeman said the dam's design team and contractors will meet Monday morning to discuss the situation. The Hope Mills Board of Commissioners holds its regular meeting Monday night, but the dam situation is not listed on the agenda. The dam was designed by engineers Gordon Rose and Timothy LaBounty. Crowder Construction Co. handled the \$14 million construction of the dam, which replaced an 80-year-old earthen dam that was destroyed by



floodwaters in 2003. The lake wasn't refilled until May 2009. Timothy LaBounty, one of the dam's engineers, Friday referred all questions to the town. Beeman said the bridge over the dam should open much sooner than the lake is filled. "My estimation is a week to 10 days, could be as much as two weeks," he said. "But we would certainly want to get it operational as soon as possible."

Beeman said that because of the construction of a Hope Mills Road bypass between Camden Road and Legion Road in 2007, emergency vehicle response time should not be affected by the bridge's closure, as it was when the earthen dam broke. McEvoy said state engineers want to make sure the dam doesn't deteriorate further and that the dam's drain remains open so water doesn't collect in the lake bed while the investigation is going on. "We're just thinking forward now about how to prevent the remains of the dam from becoming a public threat," he said. Surveyors from the firm of McKim and Creed were working at the dam Friday. Surveyor Chris Johnston said the workers were pinpointing the exact location of the breaks in the dam. "We're just going to locate the sinkholes as carefully as possible," Johnston said. "From there, the engineers will take a look." A crew from the Public Works Commission was also at the lake site Friday. PWC spokeswoman Carolyn Justice-Hinton said there is a 48-inch sewer line about 50 feet from the dam. "Our guys are out there just to watch what's happening and to make sure that it's still secure and see if anything needs to be done," she said. "Right now, everything seems OK, but as with anything else, they're trying to keep a close watch on it."

## NEMA says 10 Neb. dams failed during heavy rains

Associated Press - June 19, 2010, nebraska.tv

LINCOLN, Neb. (AP) - The Nebraska Emergency Management Agency says 10 dams failed when heavy rains fell and led to flooding earlier this week. State assessment teams on Saturday continued to survey damage to bridges, roads and other infrastructure amid ongoing flooding. NEMA said Saturday afternoon that dams had failed in Atkinson, Burwell, North Loup, Sargent, Scotia, Spalding and Taylor. The failure of Bredthauer Dam added water to the swollen Mira Creek and may have contributed to the need to evacuate North Loup last Saturday. Meanwhile, NEMA said, flooding continues along the North Platte River in the Panhandle, the Platte River in Kearney and Ashland, the Elkhorn River at Pilger, West Point and Hooper, and the Missouri River at Nebraska City, Brownville and Rulo.



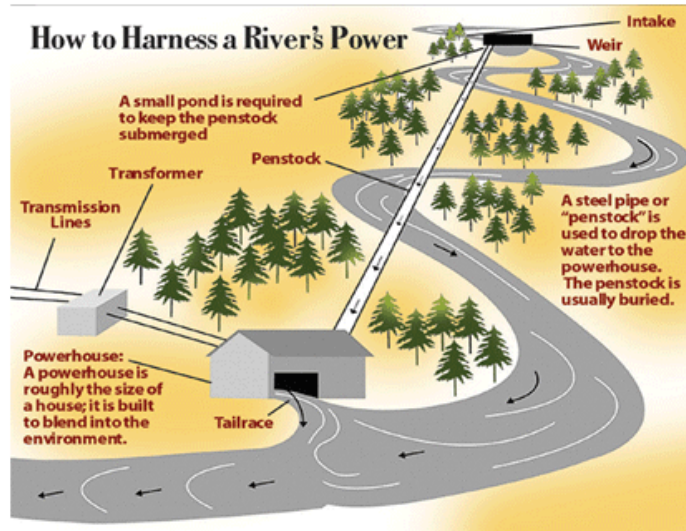
### Hydro

(This article is a classic example of why we need more articles written by people who know hydro. This is not one of them for sure! A play on words from a movie title. This is what you get from a novice. Imagine, he thinks run-of-river hydro was somehow invented in the 1970's. Actually, for electric generation they have been around since the late 1800's when the first one was built and way before that when mechanical power from water was used. What planet does he come from? The author does make a few key points though about the value of hydro.)

### **Hydroelectric Revolution: A River Runs Through It**

June 15, 2010, Marin Katusa is chief investment strategist for Casey Research's energy division, blogs.forbes.com.

Two years ago, British Columbia's premier electric utility company, BC Hydro, issued its "Clean Power Call" – a bid for the province to achieve electric self-sufficiency through renewable energy by 2016. That aggressive goal sparked an intense competition. Renewable energy companies of all stripes were jostling each other to prove that their project was the best, and to win a coveted Electricity Purchase Agreement (EPA). When the EPAs were finally handed out, one green technology captured over half of the sixteen contracts awarded. The overwhelming winner? Not solar and wind, but a relatively obscure type of hydroelectric power that is quickly becoming all the rage: run of river. It's no secret that hydroelectricity sits near the top of the renewable energy list. But hydro invariably conjures images of soaring concrete dams, rerouted rivers and flooding, environmental damage and displaced people. Not to mention the stiff price tag that comes with such an immense engineering project. However, as British Columbia is proving, hydroelectric power generation is not limited to just dams. For junior hydroelectric companies, these run-of-river projects are a less expensive, more efficient, and fish-friendlier way to get in on the energy game. They're also a ground-floor investment opportunity.



Run of river exploits the elevation drop of a river. Power stations are built on rivers with a consistent and steady flow, either natural or regulated by a reservoir at the head of the facility. There is no need to flood large tracts of land to keep the plant humming during the dry season; run-of-river projects simply use a weir (a small, only partially blocking dam) to divert some water via a penstock (delivery pipe). As the water flows downhill, it picks up the speed necessary to spin the turbines in the powerhouse and create electricity. The diverted water then joins the river again through a channel known as a tailrace. Everything is done within the natural range of the river. There's no need for the concrete monstrosities that come with large-scale damming – or the

associated environmental controversy. At the most, a weir is constructed to submerge the mouth of the penstock. Capital outlays are relatively low, the ecological footprint from the projects is quite small, and if the geology is right, engineers can tailor the technology to the terrain, rather than having to wrestle with it. Run of river just might be the ultimate in green power. On the one hand, with its near-zero emissions, it stacks up favorably against conventional, polluting sources of energy. At the same time, it has a distinct advantage over other renewables, like solar and wind. There's no need for the costly backup generation units these technologies require to operate on calm days or at night. These power plants have actually been around since the 1970s, but the technology has only started to take off in the last few years. In countries that can, and do, use hydro as a power source, the competition for contracts is becoming fierce. And thanks to the comparatively low costs, junior, small-cap companies are making out especially well, leaving the big boys to handle the staggering debt and the environmental protests associated with huge dams. Smaller-scale projects mean fewer headaches while providing excellent returns on investment.

Of course, nothing's perfect, and run of river has its challenges. One is that without a large dam or reservoir, there is no way to store energy and adjust power output according to peak periods of consumer demand. There are also still environmental issues, albeit much less drastic than with a traditional dam. Somebody will always object to new roads and transmission lines. And while the projects are usually sited away from fish-spawning grounds, aquatic life still can get trapped behind the weirs or at the mouth of the penstock. But one of the beauties of the technology is its flexibility. Engineering solutions like fish ladders, water-velocity regulators, and careful site design can mitigate many of these concerns. The smarter companies also work closely with local communities, to head off problems early on. The biggest limitation is geology. These generators can't be built across just any old river; only regions with a favorable lay of the land will do. And the next biggest is probably politics. Some African nations that could really benefit are too unstable to attract sufficient investment capital. Other countries, like Venezuela, deter investors because of the risk of nationalization. Still, the good news is that there is immense potential to be found on almost every continent, while utilization remains in its infancy. And as construction designs improve and engineers innovate, project sites that were formerly only theoretically feasible will become economically viable.

Run of river will not completely replace conventional hydro. It's not meant to. There's no way naturally running water can compete with something like the Three Gorges Dam across the Yangtze River in China, a project which will eventually have a total electric generating capacity of 22,500 megawatts. By comparison, the premier U.S. run-of-river plant – the Chief Joseph Dam on the Columbia River in Washington State – produces a “mere” 2,620 MW. Be aware, though, that 2,620 MW is hardly trivial. Apply the usual rule of thumb, where one megawatt will supply the needs of 500-900 average houses, and this run-of-river plant could serve as many as 2.4 million homes. Not bad. As the era of cheap fossil fuels winds down, governments and entrepreneurs alike are searching for alternative energy sources. Given run of river's advantages – low initial cost and maintenance, flexibility, environmental friendliness – it is poised on the brink of a major construction boom, in many more places than British Columbia. It's going to be an exciting ride, for end users and investors alike.

(This controversy keeps popping up. I wonder what the GIPA response to this looks like.)

## Experience matters in Green Island project

By GAVIN DONOHUE, timesunion.com, June 16, 2010

Ronald Reagan once remarked, "The nine most terrifying words in the English language are, 'I'm from the government and I'm here to help.'" I was reminded of that quote after reading John T. Sullivan's May 23 Perspective article, "More power to Green Island." He argues that the municipally owned Green Island Power Authority has a better plan to operate a hydropower facility above Cohoes Falls than the current operator, Brookfield Renewable Power. For the past six years, GIPA has pursued virtually every legal and procedural avenue available to it to make the case for its project. At each and every turn, GIPA's project has been rejected in favor of Brookfield Renewable Power's current project -- and for good reason.

Brookfield Renewable Power's experience and reputation for environmentally sound hydropower projects is unsurpassed. The license to operate the School Street facility in Cohoes has been thoroughly vetted and agreed to by the state Department of Environmental Conservation, the New York Power Authority, the U.S. Fish & Wildlife Service and a number of environmental groups.

In contrast, GIPA's proposed hydropower plant would have truly devastating effects on the environment. While it has worked hard to keep it from public view, GIPA proposes to build a 30-foot-high, 700-foot-long dam just upstream and clearly visible on top of Cohoes Falls, blast tunnels through the falls and disrupt the natural flow of the Mohawk River. It is an ecologically reckless plan that in our view would severely and permanently damage the environmental, historical and recreational significance of the Mohawk River and Cohoes Falls. In addition, GIPA's plan to generate significantly more power is highly questionable. Building twice the turbines doesn't mean there will be twice the water to run through them. According to the Federal Energy Regulatory Commission, Brookfield's project is "properly sized to use available water resources." Some of GIPA's recklessness can be directly attributed to inexperience. GIPA's track record is limited to the operation of a seven megawatt plant -- a far cry from the 100 megawatt behemoth GIPA has proposed. Serious questions exist about GIPA's ability to safely operate such a facility, given its limited experience, not to mention the ability to efficiently finance and construct such a project. After six long years, it's time for GIPA to stop wasting public money and let a qualified, experienced independent power producer move forward to protect the environment, preserve the historical and recreational opportunities on the Mohawk, and provide reliable and clean power to the region. *Gavin J. Donohue is president and CEO of the Independent Power Producers of New York.*

(I'm confused. I don't know how the USBR can give a permit to build the hydro project. Mmmm, I wonder if they know they need a license from the FERC.)

[http://telluridewatch.com/view/full\\_story/7951723/article-Hydroelectric-Plant-at-Ridgway-Dam-May-Become-a-Reality?#cb\\_post\\_comment\\_7951723](http://telluridewatch.com/view/full_story/7951723/article-Hydroelectric-Plant-at-Ridgway-Dam-May-Become-a-Reality?#cb_post_comment_7951723)

## Hydroelectric Plant at Ridgway Dam May Become a Reality

by Gus Jarvis, Jun 16, 2010, telluridewatch.com

**OURAY** – After being in the works for 26 years, Tri-County Water, the water-supplying utility for Montrose, Ouray and Delta counties, now intends to submit an application to build a hydroelectric facility at the Ridgway Dam. "We hope to have a permit in our hands inside 15 months," Tri-County General Manager Mike Berry said at Monday's Ouray Board of County Commissioner meeting in Ouray. "At that point in time, we will start designing this project." According to Berry, two weeks ago the federal Bureau of Reclamation issued a federal register announcement calling for applications, which are due by December. The process is open to anyone and is intended to be an open and competitive process.



After the deadline, it could take the Bureau of Reclamation anywhere from three to six months to select an applicant and then complete negotiations for a permit. "The size of the plant will be somewhere between 1.8 and 2.5 megawatts, depending on how we can configure the construction of it," Berry said, adding that the cost of the hydroelectric plant could be anywhere from \$9 million to \$15 million. "We are still talking about exactly what we [would] build."

If Tri-County is ultimately awarded a permit, Berry said it is the utility's intent to run the plant on historical flows to "minimize the environmental impact" and to continue to maintain the Uncompahgre River's water flow in similar form as it has in the past. "We are primarily responsible to provide water and irrigation downstream," Tri-County Board member Frank Starr said. "So we will not alter the release of water in order to create power." Berry said Tri-State will probably own the plant but that could depend on how the power-purchase contracts are finally worked out. "We do have a partner out there," Berry said. "We have been working with the City of Aspen since 2002 to develop a project and purchase the power. They are still interested but we have not negotiated a power-purchase contract with them." While the application selection process will be open and competitive, Berry believes Tri-County has an edge because it owns the water rights in the reservoir and it has the dam operation maintenance and repayment contract. "The bottom line is we have an edge on this one," Berry said. "There is a high likelihood that it will be Tri-County."

It has been a long time coming to reach the point where applications for a hydroelectric facility are being taken. During the construction of the dam in 1984 (it was completed in 1987), Tri-County commissioned a study to look at the possibility of hydropower at the dam. At the time, the study didn't convince the Bureau of Reclamation that it should install a facility at the site. "It was an economic decision, in my guess," Berry said. The project was revisited in 1996, but it was once again determined that it was not the best time to build a hydropower plant. "That was because power was under-priced and the infrastructure couldn't be built to produce electricity for more than somebody would pay us for it," he said. Berry said the political environment shifted in 2002, when the green power industry began taking hold. It was decided then that the time was right to once again pursue the construction of a hydropower plant at the dam. And again, according to Berry, the Bureau of Reclamation put up another roadblock because it wanted to study and address some safety concerns at the dam. First, the agency was concerned about a "paleo-hydraulic" issue that focused on evidence that the Uncompahgre River had ancient historic river flows greater than the dam's outlet and emergency spillway could handle. "They just recently concluded and dismissed the hydraulic study because they, themselves, decided it was on the edge of absurd," Berry said.

Another safety concern, Berry said, was related to the seismic safety of the dam. Apparently the Bureau of Reclamation had had some experience with foundations of dams failing due to seismic activity, and the dam's location on two active faults caused concern. "At that point in 2003, they started poking holes in the foundation of the dam," he said. According to a recently released report on the seismic issue, "We have a risk downstream that we need to minimize." With those findings, the agency commissioned a second-phase of the seismic study – a corrective action study – that will help the agency decide what it plans to do about the issue. With that study ongoing, it was just two weeks ago that the Bureau of Reclamation decided to seek applicants for a hydroelectric facility at the dam. It remains unclear when the results of the second seismic study will be released. As for the application to build the hydroelectric facility, "It's going to start to come together a little clearer in the next 12 months," said Berry.

## City faces hostile environment at Castle Creek hydro meeting

Writer: Curtis Wackerle, Aspen Daily News Staff Writer, (<http://www.aspendailynews.com>)

The city of Aspen has a study in hand that says 13.3 cubic feet per second of water is an appropriate baseline flow during the winter months for Castle Creek. But a group of homeowners who live along the creek are skeptical of the effect a proposed hydropower facility would have that would draw up to 25 cfs from the creek. What happens when the creek is running at 50 cfs? Will the plant still take its 25 cfs? And how is that not going to adversely affect the stream? Those questions and others were posed in a meeting on the Castle Creek hydropower facility Wednesday night at the Aspen Center for Environmental Studies. Most of the 17 or so members of the public in attendance were Castle Creek homeowners who question whether the project is the right thing to do. Aspen voters, by a 77 percent margin in 2007, gave the city permission to borrow and spend up to \$6.1 million to build a hydropower plant that would produce up to 5.5 million kilowatt hours of electricity annually. This would represent about 8 percent of the city electric utility's energy portfolio, which aims to be comprised of 100 percent renewable energy by 2015. Bill Miller, a Fort Collins environmental consultant who authored the study setting the 13.3 cfs minimum stream flow, said that reducing stream flow in Castle Creek from 40 cfs to 20 cfs reduces the "wetted perimeter," the width of a creek bed touched by water, by approximately 10 percent. "There is an effect," he said. Miller noted, however, that in a naturally flowing mountain stream like Castle Creek, the peak flows seen during the spring runoff are the most critical to ecology. Spring flows on Castle Creek tend to peak in the 700 cfs to 800 cfs range. This year, the creek peaked above 900 cfs. This inundation of water helps reinvigorate the channel and the plant life on the sides, Miller said. "Protecting that peak is probably as important or more important than preserving minimum flows," he said.

Mark Uppendahl with the Colorado Division of Wildlife defended the 13.3 number, calling it the "amount of water we feel preserves the natural environment to a reasonable degree." But Castle Creek homeowners at the meeting were unconvinced. Tom Hirsch, who lives alongside the creek, said that in his estimation, the creek very rarely sinks as low as 13.3 cfs. **Increasing the amount of time the creek flows at 13.3 cfs amounts to "an ecological train wreck," he said.** The city, which is using stream flow data taken in 1994 4 miles upstream from where water would be diverted to the hydro plant, needs to do a new stream flow study that is more germane to the proposal, many in the audience said. Dick Butera, who also lives along the creek, questioned if the project still penciled out economically given that the hydropower turbine would likely have to shut down from January through the beginning of April because of a lack of water. The project proposes to pay for itself by selling the electricity it generates. City public works director Phil Overeynder said the project still would provide the returns, and that the city considered the low-flow portions of the years when drawing the project up. "We feel the project's economics were very good to being with," Overeynder said.

Although the city does not yet have the permitting it needs to build the facility, it is currently constructing a pipeline that will run from Thomas Reservoir and could eventually deliver water to the hydropower generator, which would be located in a new building under the Castle Creek bridge. But the city says the pipeline serves the dual purpose of enhancing the safety of the reservoir by allowing it to drain quicker in the event of an emergency. **The city wants to apply for a "conduit exemption" from the Federal Energy Regulatory Commission to allow for the facility. This would negate the need to go through a full-blown environmental impact statement. The city has not yet applied for the exemption.**

(I guess this is the companion to a "River ran through it")

### **Canal power project to start next month**

By KARL PUCKETT • Tribune Staff Writer • June 18, 2010, greatfallstribune.com

For a century, Spring Valley Canal four miles west of Fairfield has delivered water to farmers who irrigate land to grow food. By next year, the canal also could deliver electricity. **Construction is scheduled to begin next month on an \$11 million hydroelectric project on the canal that will turn its powerful flows into 13 megawatts of electricity.** The developer is Turnbull Hydro LLC., a partnership between an Idaho hydropower engineer and a Montana farmer/rancher. "We think it's a great project," said Bob Hardin, the manager of the Greenfields Irrigation District, where the canal is located. "A lot of electricity can be made out of that water that's just going down the chute. It would be nice to generate some electricity from that."

Greenfields, which diverts water from the Sun River to between 600 and 700 customers who irrigate 83,000 acres, is considering investing in the project. **On the Great Falls of the Missouri River near the city of Great Falls, five hydroelectric dams use natural drops in the river to make electricity.** The same concept will apply on the canal project. Richard Long, manager of the Bureau of Reclamation's Facilities Operations and Maintenance Division for the Montana area office, said the Turnbull project is the first he knows of to be constructed on a BOR-owned canal structure in eastern Montana. His office oversees the canal and irrigation system, which is managed by Greenfields but owned by the BOR. However, it might not be the last. **Several projects have received Federal Energy Regulatory Commission licenses for a similar concept in the Sun River Valley, but haven't proceeded to the construction stage, Long said. He suspects the push for more renewable energy and incentives to produce it are driving the interest.** "Green credits are being factored into the cost-effectiveness of development of hydro on smaller structures," Long said. Canals are considered "low-head" hydro, because the water doesn't fall very far. Generally, the higher the drop the better because less water is needed to produce a given amount of power and smaller and less-costly turbines and piping can be used.

(An interview by public radio on small hydro. If you've never been to this part of NE, it's worth the trip. More covered bridges than anywhere and the scenery is great. Ya gotta love the Bill Scully's of the world.)

### **Small Hydro Projects Move Forward**

vpr.net, 06/21/10, Susan Keese - Bennington, VT

(Host) Many of Vermont's villages and towns were built around water power, and many of the small dams that produced that power still exist. But despite the current demand for renewable energy, few of the old dams have been revived. Critics have blamed the state Agency of Natural Resources for the holdup. Officials say that's beginning to change. VPR's Susan Keese has more. (*Sound of dam rushing*)

**(Keese)** Bill Scully stands on a concrete deck that once housed the turbines that ran the Bennington Tissue mill beginning in the 1880s. A few feet away, under a red covered bridge, the Walloomsac River roars over an 85-foot spillway.

**(Scully)** "This'll make in excess of one million kilowatt hours a year."

**(Keese)** Scully, who owns several local businesses, bought the paper plant in 2009, after fuel reached \$4.50 a gallon.

**(Scully)** "I had this little epiphany that we live in a mill town. There's energy all around us and nobody's using it. So I really went after trying to find a dam that was suitable for redevelopment."

**(Keese)** Scully was surprised to learn that Vermont hadn't approved a new hydroelectric project in decades. The Agency of Natural Resources didn't even have an application for the permit required by the federal agency that licenses hydro dams.

**(Scully)** "Vermont is known for being very anti-hydro."

**(Keese)** But Brian Fitzgerald of the ANR's Department of Environmental Conservation says that's not so.

**(Fitzgerald)** "There has been this popular perception that it's almost impossible to get a project certified in the state, and, the record we're developing now shows that's just not true."

**(Keese)** Fitzgerald says there's been little interest in developing hydro since federal incentives dried up at the end of the 1980s. It's only been a few years since interest has revived. He says now, new incentives are once again making marginal projects feasible.

**(Fitzgerald)** "There are several projects in various stages of the process now. And as we gain more experience and develop a track record, we're looking at areas where we can make improvements."

**(Keese)** Last year at the legislature's request the department developed a procedure for applicants to follow. Fitzgerald says he knows not everyone is satisfied. But he adds that of the half dozen applications now in the pipeline, one very small homestead project has been certified. Another two, proposed for existing flood control dams in Jamaica and Townshend - have won preliminary approval and are scheduled for a public hearing. In Bennington, Bill Scully says his project is moving along better than he expected. He received a letter from the ANR in May calling for \$100,000 worth of impact studies - enough to make his project economically unrealistic.

**(Scully)** "Spending that kind of money in the early stages, you're really taking a leap of faith. Who knows if you're even going to get a license in the end?"

**(Keese)** But a recent meeting with state officials led to design changes that Scully says are better for the waterway and reduce the need for tests. He says he came away encouraged by the spirit of collaboration from the agencies involved.



(This is a 2nd article in recent times.)

## Hydroelectric plant plans expansion

By Janene Gier, kansan.com, June 21, 2010

Construction on the Bowersock Mills and Power Company's new hydroelectric plant could begin before the end of this year, which would expand recreational opportunities for boaters and fishers and triple the amount of clean, renewable energy that the plant produces. "We're excited because we're going to have a safer place to recreate," said Bowersock owner Sarah Hill-Nelson. Bowersock's new plant, the North Plant Project, will sit at the northeast end of the Massachusetts Street Bridge, and will probably be one of the first things visible when driving into town, said Nathan Walker, owners representative for Bowersock, which now sits at the southeast end of the bridge.

The architectural renderings, created by Sabatini Architects, depict a shiny new fishing dock, planned to hold up to 12 people, and a new canoe portage, Walker said. Long-time Lawrence resident and KU alumnus David Brewer said that he was pleased to hear about the improvements planned. "The more river access we have - paddlers and whoever - the better we are," Brewer, also an avid kayaker, said. The new canoe put-in will be a safe distance from the hydroelectric plant, and signs will be posted to alert boaters to prepare to exit the river, Walker said. A number of Lawrence groups were consulted in the planning process, including Friends of the Kaw, which



helped give an idea of what to expect and how to create safe and lasting access to the river, Hill-Nelson said. "This will be a good improvement for them. We're happy for them and we're happy that there's going to be better portage. Right now it's not very safe," said Laura Calwell, Kansas River keeper and Friends of the Kaw employee. Friends of the Kaw is a group whose main objective is to protect and preserve the Kansas River, Calwell said. Calwell said it would be best for river ecosystems if there were no dams but Bowersock's dam has been around for more than 100 years, providing power and holding back water. One river access point is about a mile west of the Massachusetts Street bridge and another is a half of a mile east the Bridge, Calwell said. With the North Plant Project, if a boater floats too far down the river, they'll have a safer place to get out before reaching the dam. "It will be nice to have a portage so close to here," Hilary Janney, a senior from Lawrence and Sunflower Outdoor and Bike employee. "There are other places to dock but they're not necessarily nice or easy to access." Janney said that getting in and out of the water near the dam was doable but not safe or smooth. Hill-Nelson said that Bowersock's North Plant Project will also be a good addition for fishermen because so many people have gone out on the dam to fish areas that are not safe for fishing. She said a new painted warning sign has improved, but not eliminated the problem.

The plans for the new plant include a safer fishing area, she said. Bowersock's existing plant creates enough energy to power about 1,800 homes right now and, with the addition of the North Plant, Bowersock will be producing enough energy to power nearly 6,000 homes, Hill-Nelson said. The project will cost roughly \$20 million, including the design, permitting, building and start-up, Walker said. More information will be available regarding progress of the project after August 1, when the Federal Energy Regulatory Commission completes its environmental assessment, Walker said.



## Water

### **Wyo. reservoirs full because of snowmelt**

trib.com, June 16, 2010

Reservoirs are full to the brim because of excessive snowmelt and rainfall. In southwest Wyoming, Reed Reservoir near Mountain View is leaking around a pipe through the reservoir. The extent of the leakage isn't clear. No homes are in the area that would be flooded if the dam fails. A flash flood watch is in effect through late Wednesday. In south-central Wyoming, the Bureau of Reclamation says water is going over the spillways of four dams on the North Platte River for the first time since 1984. However, area manager John Lawson says the dams are sound and doing what they were designed to do, which is lessen flooding downstream. He says the amount of water flowing into the Seminoe Reservoir so far this month has set a record.



## Environment

### **Salmon must be our top priority**

#### ***Refurbishing the dams must include improvements in fish passage***

dailyastorian.info, 6/15/10

Columbia River dams have been around long enough to engender thoughts that they are as immutable as the landscape in which they were built, but in fact some noteworthy and laudable changes are under way. As described in an Associated Press story last week, a \$120 million project at Chief Joseph Dam is among

several around the country that aim to replace aging equipment and employ new technology to produce more power from the same amount of water. Ten new electricity-generating turbines will be installed at the dam by 2014. At nearby Grand Coulee Dam, work is wrapping up on 18 new turbines. The two dams are numbers one and two in the nation in terms of producing hydropower. Because of advances in turbine technology, the modernized equipment will produce enough extra power to run an additional 60,000 homes.

For all the heartburn dams cause here in salmon country because of impacts on fish and fishing seasons, there's no denying that the Pacific Northwest hydro system remains one of the engineering marvels of the 20th century. The 31 dams in the Columbia River system are enough to eliminate the carbon dioxide emissions that might otherwise be necessary from 20 coal plants, while also offering safe and rapid response to fluctuations in the power generated by new wind-turbine farms. News about improving these dams also makes it clear that the enhancements offer potential fisheries benefits. It's also clear that there are unrealized gains still to be achieved in terms of getting fish around some dams and back into habitat that has long been off limits. Michael Garrity, Washington state conservation director for American Rivers, told AP that upgrades like those the Chief Joseph and Grand Coulee can help operators facilitate salmon migration elsewhere in the river system. More power created at one dam can allow additional water to be released somewhere else. But Garrity also notes that dam operators should be moving toward a time when fish passage is restored to the Upper Columbia River, obstructed at Chief Joseph Dam since the early 1950s.

Considering all the money and agony that has gone into salmon restoration, it is ridiculous that the vast Upper Columbia region is still blocked. Yes, there are enormous physical and technological constraints to be overcome. Helping salmon over dams and through large bodies of slack water will take incredible effort. But the payoff could be significant if salmon are restored to unblocked tributary streams in northern Washington and southern British Columbia. The hydropower system proves that Americans can do just about anything we really set our minds to, and after half a century, it's time to set our minds to getting ample salmon back into the Upper Columbia.

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