# Some Dam – Hydro News

## and Other Stuff

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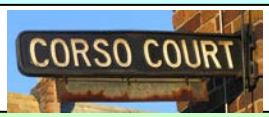



**4/02/2010**

***Quote of Note:*** *"A nation of sheep will beget a government of wolves." - Edward R. Murrow*

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

***Ron's wine pick of the week:*** **Taurino Salice Salentino Rosso Riserva - Italy 2006**

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

## Other Stuff:

(Don't you think someone is really blowing in the wind?)

### *A New Revelation: Wind Energy Needs Wind to Work*

March 24th, 2010, The Foundry, blog.heritage.org

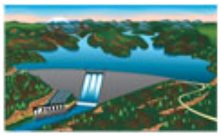
One of the common arguments made against wind power is that without government subsidies, mandates or tax credits, wind turbines would not be built. But even when companies do receive preferential treatment to build windmills, just because they're built doesn't mean they're going to work. For that, there needs to be (drum roll, please)…wind! A report from Britain says:

*"The analysis of power output found that more than 20 wind farms are operating at less than one-fifth of their full capacity. Experts say many turbines are going up on sites that are simply not breezy enough. They also accuse developers of 'grossly exaggerating' the amount of energy they will generate in order to get their hands on subsidies designed to boost the production of green power.*

*While it is possible some of the results were skewed by breakdowns, the revelation that so many are under-performing will be of great interest to those who argue that wind farms are little more than expensive eyesores. The analysis was carried out by Michael Jefferson, an environmental consultant and a professor of international business and sustainability. He believes that financial incentives designed to help Britain meet is green energy targets are encouraging firms to site their wind farms badly."*

In other wind farm news, although the event was called "exceptionally rare and highly unusual", Europe's largest wind farm had to be shut down because a 14-ton turbine snapped. It's not the first time a windmill broke and fortunately no one was hurt. A turbine snapping is no reason to stop building windmills just as coal mining accidents are not reason to completely cut off our coal supply. Accidents happen in any industry and it's a company's job to learn from them and improve both quality and safety. If businesses find it profitable to build supply energy in a variety of ways without government handouts, increased competition will only benefit the consumer. Yet, we're being told we need to transition to a clean energy economy and that the United States needs to be the leader in building these technologies because, "the nation that leads the clean energy economy will be the nation that leads the global economy. And America must be that nation," said President Obama in his State of the Union address. If renewable energy eventually competes in the marketplace, economist Don Boudreaux says, "So what if the Chinese are world-leading producers of such equipment? Specializing in the production of other goods and services – things that we produce more efficiently than the Chinese – we Americans can then buy solar panels and wind turbines from the Chinese

for use in our homes and offices. The latitudinal and longitudinal coordinates of the factories where the final assembly of such equipment occurs are irrelevant." That's not to say U.S. can't be a leader in wind mill production, but market-based policies are the best way to ensure that America's renewable energy production is as competitive as possible. In addition, the cleanliness in the President's mission to green our economy may be a bit over hyped. We not only use fossil fuels to make turbines but also provide back up power when the windmills don't spin. Since it's too costly to stop and start a power plant, wind simply creates more emissions. Or, as Todd Wynn of the Cascade Policy Institute points out, in some instances wind replaces CO2-free sources of energy, like hydroelectricity: "So when the wind blows, the dams stop generating electricity, and when the wind stops, the dams continue to generate electricity. So, in fact, wind power is just offsetting another renewable energy source. It's not necessarily offsetting any fossil fuel generation." Wind may be economically viable in some parts of the United States, but we should let businesses and electricity consumers, not the government, decide that.



## Dams

(What's a dam worth?)

### City Of Littleton Settles Multimillion Dollar Dam Dispute

**Littleton Ends Long-Running Dispute With $6.3 Million**

wmur.com, March 23, 2010

**LITTLETON, N.H. --** The town of Littleton, N.H., has agreed to pay the owner of the Moore hydroelectric dam on the Connecticut River $6.3 million to settle a long-running dispute over the value of the facility. Monday the town and TransCanada Hydro Northeast announced they had agreed to the payment while at the same time the dam owner had agreed on a value of the facility as the basis for future tax payments. The Caledonian Record of St. Johnsbury, Vt., says that in 2006, Littleton assessed the dam at $239 million, more than double its 2005 value. TransCanada felt the dam was worth $135 million. As part of the agreement, the dam will be valued at $177 million. Littleton officials said they will seek to issue a bond to pay TransCanada.

(This may be the 3rd time a newspaper has run this story. The story is not the dams; the story is the lack of will to do something.)

### *Mass. dam inventory*

The following document shows the location of dams in Massachusetts, the condition, and the date of last inspection.

http://www.boston.com/news/local/massachusetts/specials/dam_inventory/

### Many of state's 'high hazard' dams go uninspected

**As flood waters rise, repairs can't keep up with deteriorating structures**

By Peter Schworm, Boston Globe Staff / March 28, 2010

After a two-century-old timber dam nearly gave way to a storm-swollen river in the heart of Taunton five years ago, forcing the evacuation of 2,000 people, safety officials confessed that oversight of hundreds of dams had been lax, and political leaders vowed an overhaul, with regular inspections and repairs across the state. But despite the promises, little appears to have changed. A Globe review of state inspection records found that 60 "high hazard'' dams, whose failure would cause serious property damage and potential loss of life, are in poor condition, with major structural deficiencies. Five more are deemed unsafe. More than half of the 60 have not been inspected in the past two years, as required by state law. Many have not had an official inspection since 2006. The deluge of rain this month revived concerns, as rising waters threatened numerous dams in Eastern Massachusetts. Safety officials are facing renewed scrutiny over dam safety from critics who warn that the

abundance of aging, ill-maintained structures poses a growing threat. Decades of half-measures and outright neglect, they say, have taken a dangerous toll. “These structures are getting older and older, and it’s just a matter of time until one of them fails,’’ Brian Graber, regional director of river restoration at the conservation group American Rivers, said of Massachusetts dams. “It’s like a time bomb waiting to go off.’’ Officials at the state Department of Conservation and Recreation, whose dam safety office has oversight responsibility for dams across the state, say that since 2005 they have assembled an inventory of dams and their conditions, stepped up scrutiny of a number of poorly maintained public dams and made key repairs. “In the past year or so, over 20 high-hazard dams have been repaired,’’ said Richard Sullivan, the department’s commissioner. “We’re confident in their safety.’’ But, he said, the number of dams deemed to be in unsafe and poor condition has increased in recent years, possibly because improved record keeping has identified added problems. And in a time of austere budgets, it is hard to gain ground. The DCR dam safety group has a staff of five, far fewer than national standards dictate, and a bare-bones budget of $770,000 to run the office and make repairs on the neediest dams, half the budget of just two years ago.

The diminished resources, and fading public attention, vexes some elected officials who vividly recall the rainstorms brought on the Taunton dam crisis in 2005. “The facts speak for themselves,’’ said Marc Pacheco, a state senator from Taunton who chaired a Senate oversight committee that published a scathing 2006 report “Decades of Neglect’’ and continues to lobby for increased funding for dam repairs. “As soon as the rain stopped, the attention placed on this disappeared. We’re right back in the same situation. Pacheco said the state now has a far better handle on the condition of dams, and who owns them. But, he said, calls for more rigorous oversight, and the funding to support it, have gone unheeded. “We just haven’t been able to get that type of action,’’ he said. “But if there’s a high-hazard dam and it’s listed in poor condition, you don’t want to be living downstream from it. Here we are several years later, and based on what these reports say, we should be concerned.’’ Among the many problems state officials say they encounter in trying to shore up dams are cash-strapped communities with responsibility for inspecting and repairing dams inside their borders. With long lists of other spending priorities, many are deferring dam maintenance. In Berkshire County, a municipal dam in Windsor was judged unsafe in 2006, and hasn’t been inspected since, according to the state inspection records. The Norton Reservoir Dam, deemed structurally unsound, has also gone uninspected since that time, as has an ailing state-owned dam in Quincy, the Blue Hills Reservoir Dam. Sullivan said state inspectors will work with communities on plans to fortify weakened dams, but that upkeep is overwhelmingly a local responsibility. Some privately owned dams, despite pressure from local and state officials, are all but ignored. In some cases, the owners, or their whereabouts, are unknown. In other cases, efforts to convince have been fruitless. For a number of private dams in unsafe or poor condition — from Pittsfield to Marlborough to Kingston — the state has no record at all of regulatory inspections. Forge Pond Dam in Freetown stands as an extreme example, with its owner’s persistent refusal to repair the dam creating a serious safety hazard for the past three years. After heavy flooding this month, state officials decided to intervene, and the dam is slated to be breached next week.

In 2008, state officials made emergency repairs to a badly eroded and overgrown 28-foot-high dam in Chicopee. The dam had not been maintained for years, and remains in unsafe condition, according to the inspection records. Sullivan said the safety office has referred six scofflaw owners to the attorney general’s office for prosecution, the first time the state has taken that step. The widespread maintenance lapses have lent momentum to environmentalists’ hopes for removing some dams, particularly industrial-age relics that have long since outlived their purpose. “Where dams are no longer doing what they were built to do, let’s remove them, rather than fix them,’’ said Alison Bowden, who directs the freshwater program for The Nature Conservancy. “Sometimes, the real hazard is created because the dam is there.’’ Bowden and other environmentalists support a bill, now before the Legislature, that would create a $20 million revolving loan fund to help communities remove and repair dams. In Gloucester, which has several dams in poor condition, officials acknowledge they can only afford incremental, short-term repairs. “We can’t tackle them all at once,’’ said Carolyn Kirk, the city’s mayor. “Gloucester is living proof of what happens when you neglect infrastructure.’’ One of the dams listed in poor condition holds back a reservoir with 177 million gallons of water near an elderly housing complex. “People definitely worry about that,’’ she said.

(Interesting – huh! Which side would we take today?)

**March 28, 2010 | Opinions**

## Politics would kill Hoover Dam today

On a recent trip to Las Vegas from Flagstaff, I had the opportunity to drive over the Hoover Dam and marvel at the engineering achievement of this bold icon of the Southwest. This dam transformed the economies of the region, enabling immense water, agricultural, electrical power and recreational possibilities. No doubt it

has paid for itself a hundred times over. Built during the Great Depression, there was considerable deficit spending needed to construct Hoover Dam. It occurred to me that this dam could never be realized with today's divisive politics. The "tea-baggers" and libertarians would be screaming socialism and too much federal government intrusion. The fiscal conservatives would be outraged at the deficit spending and the "artificial" stimulation on the economy. The conservationists would be appalled at the ecological implications. I'm afraid the U.S. legislation needed to build this dam could never get to a vote with the just-say-no Congress that we have today. *- Eric M. Eliason, Flagstaff*

## Hydro

### Virginia sees increase in hydropower interest

By Christa Desrets, March 21, 2009, newsadvance.com

The 30-mile stretch of the James River west of Lynchburg has a long history of power generation spanning more than 200 years. A paper mill, an iron furnace, straight-up electricity — all have harnessed the power of the James. Then, new activity calmed. Perhaps because of more stringent water laws such as the Clean Water Act of 1972, no new hydropower facilities have been built in Virginia since the '70s, said Scott Kudlas, director of the office of surface and ground water supply planning with the Department of Environmental Quality. But activity is on the horizon again. At least six sites in Virginia are being considered for new hydropower facilities, Kudlas said. Among them is Scott's Mill Dam, located between the John Lynch Bridge in downtown Lynchburg and Daniel's and Treasure islands. Liberty University and the North Carolina-based Piedmont Hydropower LLC are competing for a permit to explore the feasibility of using the dam to produce hydropower. It would be the sixth hydropower station on the James. "I think there are some new federal incentives to pursue clean energy," Kudlas said. "And hydropower is probably the cleanest energy that we have. It's probably akin to wind power, but it's more reliable; it's more constant. Now that there's this push to develop more clean energy, people are looking at some of those existing (dam) structures." The 15-foot-high Scott's Mill Dam was built in the 1830s or 1840s for the James River and Kanawha Canal Company, near the site of the Water Works Canal, according to The News & Advance archives. A gristmill also was built on the site and was used to furnish flour for Confederate soldiers during the Civil War. A fire destroyed the mill in 1944. The Appalachian Power Company acquired the property around 1940, and looked into installing hydropower on the dam. APCo applied for a preliminary permit in 1981 to study building a hydropower facility, but ultimately canceled the study because the cost of building the plant was too high to offset the relatively small amount of power it would generate, according to archives. APCo sold the dam in the 1990s to Luminaire Technologies Inc., a utility solutions company based in Grayson County that has stated its support of Liberty's proposal in letters to the Federal Energy Regulatory Commission. Liberty Chancellor Jerry Falwell Jr. said this week that a hydropower facility on the dam "may or may not be feasible." "We don't know that yet. It's an old dam, and it might have leaks. But we just want to keep our options open because electricity is expensive, and it's not getting cheaper." If either entity were to pursue a facility, they may consider selling the energy to APCo or another utility, they have said. APCo spokesman John Shepelwich said that would be an option the company would consider. "We don't have anybody currently in Virginia that's doing that," he said Friday. "But we certainly would do that … purchase power is not something new to us; it's something that our corporation has done with varied projects. "One of the things that we're looking for is a lot more renewable energy to balance out our fuel mix."

APCo operates seven hydroelectric plants in Virginia, one just upstream from Scott's Mill Dam. Reusens Dam originally was called Judith Dam when it was built in 1851 by the James River and Kanawha Co., according to The News & Advance archives. About 50 years later, the Lynchburg Traction and Light Co. installed two 750-kilowatt generators. "They were the world's largest generators when they were installed in 1904," Shepelwich said, "and

there were water wheels on the dam that used ropes to turn the generators and create the power." In 1924, APCo purchased the gravity dam, rebuilt and modernized it, and renamed it after the riverside community that ran parallel to the river along Hydro Street. Reusens now is one of APCo's oldest operating hydropower facilities, Shepelwich said. APCo's Smith Mountain Lake hydroelectric pump station, built in the '60s, is the company's newest facility. Shepelwich acknowledged that a structured licensing procedure might prevent more people from pursuing hydropower projects. "It's best, certainly, if you can find an existing dam," he said. "Still, there are local, state and federal entities and requirements that must be met to construct. "The Reusens Dam reservoir collects runoff from over 3,200 square miles. What happens in that 3,200 square miles affects that reservoir." Heading upstream from Scott's Mill Dam, Reusens is the first of five operating facilities. Beyond Reusens, the Federal Energy Regulatory Commission lists plants at Holcomb Rock, Georgia Pacific in Big Island, Snowden operated by the City of Bedford and Dominion Power's Cushaw Dam. A facility also once operated at Coleman Falls, but FERC no longer lists it online among a list of licensed plants. Perhaps the oldest of those is the plant operated by the City of Bedford, which dates back to 1775, said City Manager Charles Kolakowski. "It was an iron furnace using water-powered bellows for air supply, for pumping air into the iron furnace," he said. "But the hydroelectric power station has been owned and operated by the City of Bedford since about 1911. The energy generated there is fed into the immediate grid, and is used by people in the area." Kudlas said that stretch of the river has attracted so many hydropower stations because it is on the fall line, or the transition between the Piedmont and the coastal plain. "That's where you get a lot of your most significant stream-flow velocity," he said.

## Businessman wants to start hydro-electric project locally

Please contact your Vermont Senators and Representatives and ask them to support the bill referenced below. http://www.benningtonbanner.com/

**More efficient power source?**

**BENNINGTON** — March 12, 2010. The waters of the Walloomsac River have spilled over the dam at the former Vermont Tissue Paper site since it was constructed in 1887. Electricity has not been generated by the dam since 1958, however. Now, the dam's new owner is hoping to retrofit the existing infrastructure to generate enough power to meet half of Bennington College's needs. William Scully, whose company, AOE Inc., purchased the dam and six acres of property from Pepper and MacLeod LLC, for $200,000 in June 2009, said his efforts to bring the dam back online through another company, Carbon Zero LLC, have been stymied by the state's lack of a cohesive permit process. "Until Dec. 15 of this last year there was never even an application process in Vermont. You couldn't apply," he said. "There's still no clear application." Scully said he was only able to purchase the dam after the previous owner walked away from the years-long effort he was facing in Vermont. "The guy had done 26 hydro sites around the world and he walked away from the table and said he would not do business in the state of Vermont. Very unhappy for a number of reasons," Scully said. "He went to New Hampshire and went online in six months." Bill Scully stands beside the dam at the Papermill Covered Bridge in… (Peter Crabtree)

Rep. Joseph L. Krawczyk Jr., R-Bennington, vice chairman of the House Natural Resources and Energy Committee, said legislation he has introduced — with co-sponsors on both sides of the aisle — will streamline the permitting process and promote new hydroelectric projects throughout the state. Krawczyk said his bill will require the state Agency of Natural Resources to develop a general permit process for hydroelectric power projects across the state. The Agency would be required to introduce the new process through a pilot program that would include the Vermont Tissue Paper site dam in Bennington, he said, "to make sure we get this thing correct." "They'll have one place to go. ANR will have one application for a permit," Krawczyk said. "It will cut the time down considerably." The state has enough small dams to make 60 megawatts of power if all were put back online, Krawczyk said. But enacting legislation to boost hydroelectric power production has proven to be difficult, he said. In fact, some ANR officials have been strong opponents of hydro power, he said. "We've had opponents to this that would rather see the dams come out of the rivers than see them come back. They've been pretty powerful," Krawczyk said. "We've overcome those kinds of issues. The iron is hot right now and I want it to pass." Scully said his project has been endorsed by both the town of Bennington and the Bennington County Regional Commission. It will create a minimum of one full-time job and five temporary jobs, he said. And, it will offset annually about 1,244 tons of carbon created by fossil fuels. "I think everyone agrees that this is a net gain for the community," Scully said. The site is uniquely situated to mitigate environmental concerns, too, according to Scully. That is because of a secondary natural bedrock dam near the man-made concrete dam. The man-made dam is what helps turn the two turbines he plans to install.

"For environmental concerns, it makes this a really unique site because things like fish migration, water oxygenation, water temperature, and all those things we can address with the other dam. The other dam isn't part of the energy generation at all," Scully said. Scully said he intends to relay all of that to the House Natural Resources and Energy Committee next week when it begins taking testimony on Krawczyk's bill. Clark Amadon, of the Vermont Council of Trout Unlimited, said Trout Unlimited also intends to testify. The group fears that tinkering with the permitting process will leave Vermont's rivers "treated as flowing dollar signs rather than flowing water." "This is a resource that belongs to the public. They always have," Amadon said. There is a danger in allowing a "one size fits all" general permit for new hydro projects, he said. "General permits are typically used to permit projects that are numerous and routine, but pose low risks to the environment. The development of new hydro power is neither routine nor low-risk. In fact, it's the polar opposite: Infrequent and high risk," Amadon said. In addition, hydroelectric dams pose a risk to fisherman by "dividing up streams," he said. "Imagine if we start to develop all of those sites what's going to happen to those streams," he said. "Species and organisms are not going to be able to move in a particular watershed." Krawczyk said there are obstacles to passing the bill this year because the deadline to move legislation out of committees expired Friday. However, the House could choose to suspend the rules to allow it to move forward after testimony is taken next week, or it could be introduced as a committee bill, he said. "If I can get it through committee and get it on the House floor, I'm sure we can pass it," Krawczyk said. "Realistically, and what I'm telling folks that come to me, is that we'll try our best this year. If not, we'll submit it again on the first day of the next session."

## U.S. agencies seek to boost hydropower supplies

Mar 24, 2010 uk.reuters.com, By Tom Doggett

* Hydropower may add 60,000 MW of U.S. electric capacity
* Turbines may be added to dams that don't generate power

WASHINGTON, March 24 (Reuters) - The Obama administration said on Wednesday it wants to boost hydropower to generate more cleaner electricity supplies, but there is no plan to return to the era of big dams that often drew the scorn of environmentalists. The Interior and Energy departments, along with the Army Corps of Engineers, signed an agreement to cooperate more closely on developing hydropower projects that won't harm the environment and would produce electricity without the greenhouse emissions that contribute to global warming such as coal-fired power plants. "While hydropower is the largest source of renewable electricity in the nation, hydropower capacity has not increased significantly in decades," said Energy Secretary Steven Chu. Hydropower accounted for 7 percent of U.S. electricity supplies last year, with almost half of that hydroelectric generation occurring in Washington, Oregon and New York, according to the Energy Department. The Interior Department and the U.S. Army Corps of Engineers already operate federal water projects that represent about half of U.S. hydropower capacity, or close to 34,000 megawatts. Up to 60,000 megawatts of additional electric capacity could come from hydropower, Chu said. "As the single largest owner of hydropower generation in the United States, it is important for the federal government to tap this valuable asset so it can continue to contribute to our clean energy portfolio and energy security," he said. The three federal agencies will focus on increasing electricity generation at government-owned facilities. For example, turbines could be installed at existing dams that don't produce power, while more energy-efficient turbines could replace ones that are decades old, resulting in bigger electricity output. "This is not ushering in a 21st century new dam era. This is taking a look at existing facilities and taking look at low power hydro," said Interior Secretary Ken Salazar. "This is a broad examination of what we can do with hydropower that does not necessitate the building of new dams." (Reporting by Tom Doggett; Editing by Lisa Shumaker)

## New turbine at Ice Harbor Dam better for salmon

THE ASSOCIATED PRESS, seattlepi.com, March 30, 2010

SEATTLE -- The Corps of Engineers recently awarded an $11 million contract to design a turbine for the Ice Harbor Dam near the Tri-Cities to help save migrating salmon and steelhead on the Snake River. Voith Hydro of York, Pa., will develop the first of a new generation of hydroelectric turbines for federal dams in the Columbia River basin to provide safer passage for the fish. The Seattle Daily Journal of Commerce reports the contract funded by the Bonneville Power Administration calls for a new runner - the part of a turbine that rotates in water to generate power. The BPA says the contract makes improving fish passage a primary goal, ahead of power and efficiency. A 30-year-old turbine at the Ice Harbor Dam should be replaced in 2015.

(More hits on hydro would be the better by-line)

## High court: PPL must pay millions in rent for dams

By MATT GOURAS - Associated Press Writer - Associated Press, pddnet.com, March 30, 2010

The Montana Supreme Court told utility PPL Montana on Tuesday that it owes the state $40 million in current and back rent — along with more in future rents — for use of the riverbeds where hydroelectric dams sit. The order came as Gov. Brian Schweitzer was considering budget cuts to fend off a looming cash crunch, and it stands to provide the state with another multimillion dollar windfall following the recent deal to sell the Otter Creek coal tracks. Montana's high court largely backed a lower court's order that the riverbed is state-owned land, and anyone who uses it has to pay rent or royalties like those who graze cattle or drill for oil on public land. PPL Montana unsuccessfully countered that the dams were governed by the federal licenses it held for the projects, and were not subject to the state claims. A company spokesman said Tuesday that the company was reviewing its options. Company spokesman David Hoffman also cautioned others who use the state waterways that they could be targeted next. "We are disappointed in the ruling," he said. "I think it still has adverse implications for other water users." The court's ruling also said that PPL must negotiate a new lease with Montana for future use. That moves the issue to the Montana Land Board, run by the Montana's five statewide elected officials.

PPL bought its dams from the now-defunct Montana Power Co., and is not a regulated utility like the prior owner. After utility deregulation, PPL is allowed to sell the power at market prices. Montana Attorney General Steve Bullock welcomed the high court's ruling. "Today's decision is a victory for generations of Montanans and confirms what we've known all along: our rivers belong to the people of Montana, not out-of-state corporations," he said. Bullock again disputed the warning from PPL that others could lose under the ruling. The attorney general said the high court made it clear that farmers and ranchers who use riverbeds for irrigation are not under the same rental obligations as the power companies. His office said that since PPL is a deregulated electricity generator, the cost of the payments will have to come from corporate coffers and not Montana ratepayers. Schweitzer, who is already easing up on budget cutting plans due to the Land Board's deal to sell coal to in a deal that provides $85 million in upfront payments along with future royalties, could now be looking at another big infusion of cash. "The hits keep coming. Sometimes good news brings good news," Schweitzer said. The dispute began in October 2003 when two Gallatin County residents, later joined by the state and Great Falls elementary and high school districts, sued the utilities for compensation for use of the riverbeds for their dams. They argued that the state riverbeds are part of the school trust lands, but the utilities hadn't paid to use them. The courts later said only the state had standing in the case, and the others were removed from the lawsuit. The state had also sued two smaller owners of dams in the state. Avista and PacifiCorp earlier agreed to pay annual rent of $4 million and $50,000 respectively. The Montana Supreme Court did disagree with the lower court which classified the riverbeds as "school trust lands." The high court, in a split 5-2 decision, said it finds them to be general public trust lands, which has little effect on the end result. And even though the court set a price for back rent, the state Land Board can negotiate its own formula for future rents, Justice Patricia Cotter wrote for the majority.

## *Environment*

## California dam project to aid endangered fish

By JUDY LIN Associated Press Writer, 03/23/2010, mercurynews.com

SACRAMENTO, Calif.—U.S. Secretary of the Interior Ken Salazar and Gov. Arnold Schwarzenegger on Tuesday applauded a Northern California dam improvement project that will help endangered salmon reach their spawning grounds. Federal and state officials attended the groundbreaking ceremony at the Red Bluff Diversion Dam, which diverts water from the Sacramento River to the Corning and Tehama-Colusa canals. Red Bluff is located about 130 miles north of Sacramento. Nearly half of the $230 million project is coming from federal stimulus funds. It's the largest stimulus grant issued by the Interior Department, officials said.

The project involves building a screened pumping plant so water can be delivered to surrounding farmland even when the dam's gates are raised for fish to pass. Besides salmon, regulators hope the project will also help steelhead and green sturgeon. Construction is expected to begin this summer and be completed in 2012. Salazar said the project will create an estimated 1,200 jobs while continuing to irrigate 150,000 acres of farmland to protect the region's agricultural economy. "We know at the end of the day, water is the lifeblood for agriculture, and agriculture is the lifeblood for these communities in Northern California," Salazar said. Schwarzenegger said the project pleased everyone from farmers to fishermen and brought all sides together, unlike the health care overhaul just passed by Congress. "I love when we solve problems, when everyone comes together, unlike of what you saw of Washington with the health care bill," the governor said. "Look at that, half of the people walk away very happy, and the other half of the people are going absolutely insane and are angry. That's not the way to go about things." Schwarzenegger urged Californians to support a water bond proposal that will appear on the November state ballot because it would provide the final $60 million of funding for the project.

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# Some Dam – Hydro News

## and Other Stuff

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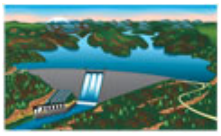
**4/09/2010**

***Quote of Note:*** *One day of practice is like one day of clean living. It doesn't do you any good." - - Abe Lemons, basketball coach and player*

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

***Ron's wine pick of the week:*** **Penfolds Koonunga Hill Shiraz/Cabernet 2007**

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



## Dams

(There is no estimate of the cost as far as I know, but the Corps' experience with this type of fix should provide that info in the near future.)

### Study seconds Army's plans for Hanson Dam

**An independent review substantially backs the Army Corps of Engineers' plans to shore up a reservoir wall at Howard Hanson Dam on the Green River.**

The Associated Press, seattletimes.nwsource.com, March 30, 2010

SEATTLE — An independent review substantially backs the Army Corps of Engineers' plans to shore up a reservoir wall at Howard Hanson Dam on the Green River. An abutment next to the dam was severely weakened during heavy rains in early 2009, increasing the flood danger to the heavily developed Green River Valley downstream. Since then, millions of dollars have been spent on flood preparations in the valley south of Seattle while the corps rushes to make repairs. The review by Battelle Memorial Institute engineers agrees with the corps' efforts to inject grout in the abutment to temporarily reduce seeping. It also concurs with a proposal to build a deep concrete wall the length of the abutment as a permanent fix. In addition, it recommends updating what risks would be posed by a dam failure, along with the dam's vulnerability to earthquakes.

(This makes me nervous. How come we're planning what no one wants to do except the environmental folks?)

### Plan outlines dam removal steps

By Kevin McCullen, Herald staff writer, tri-cityherald.com, Apr. 01, 2010

The Army Corps of Engineers on Wednesday released a plan outlining the steps to evaluate the potential breaching of one or more dams on the Lower Snake River if necessary to ensure survival of endangered wild salmon and steelhead. A study -- which would include a technical phase and public policy phase and possibly the development of an environmental impact statement -- is not imminent. A dramatic decline in the four-year average of wild salmon and steelhead listed under the Endangered Species Act or a natural catastrophe are among the "trigger" events that would have to happen to launch the study -- which would take several years to complete, Corps officials said. "There's a lot of things that would have to fall into place before we could ever get to this step," said Greg Graham, chief of planning for the Corps' Walla Walla District. And even if a plan of study -- which would incorporate information gathered for a 2002 study of breaching the four Snake River dams -- were initiated and dam removal recommended, the final decision would be up to Congress, the Corps said.

The Corps estimates that such a feasibility study of breaching the Ice Harbor, Lower Monumental, Little Goose and Lower Granite dams could cost up to $19.8 million, based on 2010 prices. The dam study contingency is included in a 2009 Adaptive Management Implementation Plan submitted to U.S. District Judge James Redden in Portland in support of the 2008-2018 Federal Columbia River Power System Biological Opinion -- the salmon recovery document mandated by the Endangered Species Act. The 2008 Biological Opinion outlines salmon restoration steps. Redden, who is deciding a lawsuit involving the salmon recovery issue, invited the Obama administration in 2009 to review it. In September, the administration said it supported the 2008 BiOp but proposed several changes. A series of other remedial actions, from adjusting operations of the dams to predator control, would happen before breaching could be considered, according to the Adaptive Management Plan. Dam removal is a "contingency of last resort and would be recommended to Congress only when the best scientific information available indicates dam breaching would be effective and is necessary to avoid jeopardizing the continued existence of the affected Snake River species," said the Adaptive Management Plan. The plan further says it is "reasonable to study breaching of lower Snake River dam(s) as a contingency of last resort because the status of the Snake River species is improving and the 2008 BiOp analysis concluded that breaching is not necessary to avoid jeopardy."

Rep. Doc Hastings, R-Wash., said the possibility of dam removal never should have been included in the plan. "If the Obama administration wants to prove that they truly consider dam removal a 'last resort,' then they must file away this Corps dam removal study in a locked drawer and be prepared to resist those who will push for the work to begin now," Hastings said in a statement. "The Obama Administration's amendment to the BiOp states that the dam removal study work outlined in the Corps plan won't begin until a far off, future trigger occurs -- and the administration must defend this plan and fight efforts by any who wish to fast-forward dam removal activities today, whether they be dam removal extremists or a federal judge," Hastings said. Wild spring, summer and fall Chinook and steelhead are the listed species in the Snake River system. Runs of adult fish, hatchery and wild, were strong last year, and biologists have predicted another big run this year in the Columbia River system. "Overall, the status of the Snake River species has improved," said Lt. Col. Michael Farrell, district commander of the Corps' Walla Walla District.

(I wonder how many dams got into trouble with the rains in NE)

## Dam Gives Way in Porter

By News 13, Mar 31, 2010, myfoxmaine.com

People in the western Maine town of Porter were on high alert after the heavy rains caused a breach in a local dam Tuesday morning. The dam break was in the Kezar Falls neighborhood of Porter, on the south side of the Colcord Pond. The Kezar Falls Fire Department was warning people on Tuesday to avoid the area. A command post was set up at Porter Town Hall so that emergency crews could monitor the flooding.

## Dam deteriorating

### State weighs action against owner of decaying dam

By Scott Stafford, Berkshire Eagle Staff, 04/01/2010

PITTSFIELD -- A deteriorating Wahconah Street dam is not likely to be repaired any time soon, even though the owner has been repeatedly notified of his responsibility, according to state officials. The owner of the Bel Air Dam, J. Barry Hollister of Pittsfield, has not responded to notifications about the dam's deteriorating condition, according to Richard Sullivan, commissioner of the state Department of Conservation and Recreation. "Mr. Hollister has continued to ignore DCR's enforcement actions," Sullivan said. "So we have

handed the case over to the attorney general's office." Hollister, of Holmes Road, said he has been in contact with the state, but acknowledged that he did not have the capital to invest in the necessary repairs. In all, six cases were transferred to the office of Attorney General Martha Coakley for enforcement -- the first time the state has taken such action to assure the integrity of dam structures, Sullivan said.

The dam, which is located in the west branch of the Housatonic River, was leaking water from nearly a dozen holes in the stone structure Wednesday after two days of steady rain. The pedestrian bridge over the top of the dam has been closed and condemned. The state has developed an emergency evacuation plan for a number of downstream structures that would be at risk if the dam fails, including a Goodwill Industries store and a number of structures along Wahconah Street, Linden Street, Columbus Avenue and West Street. Because it is a privately owned dam, DCR officials have ordered the owner to commission an inspection and a plan for repairs. Hollister said he had tried to shed responsibility for that property through a bankruptcy process, but a trustee of the property declined to take possession of it. Hollister purchased the building from Goodwill Industries in 1981 for $83,000. He bought the seven acre parcel, including Bel Air Mill, to house his Ski America printing and advertising business. The business failed in the mid-1990s, and the vacant mill burned down in 2005. Shortly after the fire, city officials announced that Hollister, a resident of Holmes Road, owes $234,200 in back taxes -- not including sewer and water fees. Hollister noted that he had been communicating with DCR officials. "There is work they've done on the property, but I'm not aware of any fines they've levied," he said. Hollister acknowledged that his business was a struggle at the best of times, and that he never had the capital to invest in repairing the dam. He is hoping to see a local effort to install hydro-electric turbines in local dams, including his Bel Air Dam, but that option is in the very early stages of development, and not something he could invest in financially. "It's overwhelming," he said. "It is beyond my reach so I'm not sure what will come of all this. But I'm doing everything I can to be a good citizen given my financial capabilities."

(Why is this a story? Well, I guess this is some sort of triumph for American Rivers (our ultimate dam expert), but the dam looks like it may be a whole 4 or 5 feet high. The removal, however, will apparently help prevent flooding a local road once-in-awhile.)

## DEP orders Oley dam demolished; co-owner, father-in-law call it loss of history

### Co-owner, father-in-law call demolition a loss of history; state, rivers group concerned about flooding

4/2/2010, By Ron Devlin, Reading Eagle

Leon Breidegam stood Thursday near the remnants of the breast of a dam on the Oley Furnace Creek and decried the loss of what he considers an important piece of the region's history. "We constantly hear about preserving the historic Oley Valley," said Breidegam, 67, a retired Fleetwood plumber whose daughter and son-in-law own the property. "Well, this is no way to preserve it. On Wednesday, a crew from John W. Gleim Jr. Inc. Excavating in Carlisle, Cumberland County, demolished the dam, which once diverted water into a sawmill along Stitzer Road in Oley Township. The state Department of Environmental Protection had found that the dam presented a moderate flood risk and ordered it dismantled.

Although there was normally no backup of water behind the dam, during heavy rain water spilled across Mill Road and flooded a nearby property. Richard and Beth Witman acknowledged that the creek flooded three times in the 17 years they've owned the dam, most recently in October 2005. Oley Township officials, who favored dismantling the dam, could not be reached for comment. The Witmans said they bought the sawmill property because of its historic character. "I'm disappointed from a historical standpoint," said Richard, 41, a Carpenter Technology worker. "It's sad to see a piece of history go in what the township touts as the Oley Township Historic District." While the Witmans' mill could be of historical significance, the Pennsylvania Historical & Museum Commission found that the dam was of no historical or archaeological importance. "Assessing the impact is part of the process of removing a dam," said Sara Strassman, associate director of American Rivers. "In this case, there was no historical or archeological loss." A grant from American Rivers,

a nonprofit river restoration group based in Washington, D.C., paid for the demolition. "We looked into modifying the dam, but we found it was more cost-effective to remove it," Strassman said. Under the state Dam Safety Encroachment Act, DEP was mandated to locate and classify all dams in the state according to their public safety risk. Dam owners are responsible for their safety, the law said. When a dam is declared unsafe, the owner is responsible for having it demolished. Witman said he would have preferred saving the dam but had little choice given the expense. As the excavating crew landscaped the banks of Oley Furnace Creek on Thursday, Breidegam recalled happier times. Since he was a kid, he'd fished for native brown trout in the calm waters below the dam. "There was a great hole just below the breast," Breidegam said. "But it's gone now."

(Some good dam news - but I don't think they mean the dam caused the flood of 1955; it's probably responsible for controlling such a flood in the future. The older dams need a little work, but amazingly at their age are doing pretty well.)

## Dams keep local rivers under control

By JULIE WEISBERG – Staff Reporter, April, 02, 2010, tcextra.com

WINSTED, CT — Though the Mad and Still rivers furiously rushed along at higher than normal levels with the heavy rains this week, the two waterways generally stayed safely within their banks here in town, thanks to some effective 1950s engineering. The Mad River, which was responsible for the devastating Great Flood of 1955, has been managed by the state Department of Environmental Protection's Mad River Dam along Route 44 near the Colebrook border. The dam, built by the Army Corps of Engineers in the mid-1960s after the big flood, ensures that during heavy rain events like the state experienced earlier this week, the river stays within its banks. But it is not the only dam in town. Winsted actually owns and manages two other dams: the Rugg Brook Reservoir Dam and the Crystal Lake Dam. Both structures were originally built more than 115 years ago to create a more robust water supply system for the borough of Winsted.

In 1893, Winsted — which had been drawing its water from Long Pond (now known as Highland Lake) — created the Rugg Brook Reservoir by constructing a masonry wall dam across the Rugg Brook Valley and sealing off other low points in the terrain with earthen dikes. That same year, Winsted's water department constructed the original Mad River Dam and a half-mile long canal to divert water from the river into the Rugg Brook Reservoir. They then created an aqueduct to connect the reservoir with Crystal Lake. After the Rugg Brook Dam project was completed, Winsted turned its attention to Small Pond (now known as Crystal Lake), where the borough constructed a dam across the outlet of the natural lake, raising the water level by 10 feet to create a reservoir. The town then connected the lake to the water distribution system in Winsted. Both reservoirs were placed in service and operating by the fall of 1895. The water distribution system continues to serve the town now in much the same way it did then. Now, however, the Water and Sewer Commission is looking to make general improvements and repairs to the town-owned dams and dikes, after some age-related deterioration has been identified within the system by the state DEP's Office of Dam Safety. The last major repairs for leakage or other deterioration on either structure occurred in the 1930s. According to a 2008 dam investigation engineering report commissioned by town as part of the maintenance project, Crystal Lake Dam is in "good condition," with required repairs consisting primarily of "modest improvements" to the earthen embankment and spillway structure.

Water and Sewer Commission Chairman Richard Nalette told The Journal Tuesday that work at Crystal Lake has been estimated to cost about $350,000. More extensive work will be required at Rugg Brook Dam. Although the report states that the dam is "structurally sound," several areas of leakage have been identified and need to be repaired. Nalette said the maintenance costs for the Rugg Brook portion of the system have been estimated at some $2.5 million.

Currently, the commission is looking into the possibility of obtaining a federal grant for the project through the United States Department of Agriculture's Rural Development. Nalette said, however, that the USDA application process is an "expensive" and "complicated" one, so the commission is still exploring the feasibility of applying. Commission members are also looking into other avenues to obtain funding to help the town complete the project. Although no timetable has been set for the project's completion, Nalette said the state is "rattling its saber" to get the maintenance and repairs underway. The commission is hoping that once funding has been secured for the project, the town can begin the process of applying for the several permits required to allow for the work, paving the way for the actual construction to begin.

(History of a dam failure that occurred April 7, 1900 - this is worth a look and the photos are pretty impressive)

## Austin Dam Failure, TX

**Article on history**
http://www.statesman.com/opinion/williams-a-structure-that-backs-up-foresight-of-513164.html

**Photos of failure**
http://images.google.com/images?q=Austin+Dam&rls=com.microsoft:en-us:IE-SearchBox&oe=&um=1&ie=UTF8&ei=Sjy3S8GtH8P48Abr9cGUCQ&sa=X&oi=image_result_group&ct=title&resnum=5&ved=0CB4QsAQwBA

## Dam bill means refunds at LOW

### Lake of the Woods group to return special assessments to homeowners

*fredericksburg.com,* 4/4/2010, BY ROBIN KNEPPER

Lake of the Woods Association members are waiting impatiently for the governor to sign the bill that will relieve them of having to build a new spillway on their high-hazard dam. That relief will be even greater when they receive a refund of the money they've paid to finance the $6 million construction project. Gov. Bob McDonnell is expected to sign the bill next week, and the checks from the homeowners association will be in the mail shortly afterward. On March 9, the state Senate passed the bill co-sponsored by Sen. Edd Houck, D-Spotsylvania, and Del. Ed Scott, R-Madison, which seriously altered state dam-safety requirements that previously required LOW to build a new spillway. It contained an emergency clause that allows it to take effect as soon as the governor signs it rather than on July 1. According to Lake of the Woods Association board member Tom Sheridan, the association will hold back $300 from each assessment-paying member and refund the rest. If the full $1,200 assessment has been paid, the member will receive a check for $900. The special assessment on each of the 4,257 lots at LOW was levied last October with a Dec. 1 due date. Later, the board of directors eased up and allowed split payments with a token service charge added.

In the meantime LOW signed a construction contract, and preliminary work on the new spillway proceeded. When the cost of that work, the associated legal and lobbying costs and the refund due the state for its $1 million grant are determined, the outlays will be divided among members and, if appropriate, the remainder will be refunded. If a member has not paid the special assessment, or has paid an insufficient amount to finance his share of the costs, the member will be billed for the balance. At yesterday's board of directors meeting, LOW members Bill Nowers and Ralph Hollm, both longtime opponents of building the spillway, argued that LOW could save a lot of money by applying the refund to the annual assessment that is due May 1. Mailing costs, said Nowers, could top $4,000 for each of the two mailings required for the refund in addition to the annual assessment mailing. According to LOWA President Bruce Kay, attorneys have advised the association that a refund must be made to comply with state law. In other business, the

directors voted unanimously to levy a $79 charge for semiannual payments of the $1,164 annual assessment.

(Sometimes to get people's attention, you have to smack them in the wallet, although a piece of their anatomy may be a better target)

## State sues owners of dams seen as unsafe

**Names Pittsfield, Plympton sites**

By John M. Guilfoil, Boston Globe Staff / April 6, 2010

Attorney General Martha Coakley has filed suit against the private owners of two of the worst-maintained and most potentially dangerous dams in Massachusetts, asserting that they defied state orders and failed to make repairs necessary to protect local residents. In the two lawsuits, the state alleges that owners in Pittsfield and Plympton defied state orders and failed to repair dams deemed unsafe and potentially deadly to residents. J. Barrett Hollister, owner of the Bel Air Dam on the Housatonic River in Pittsfield, and Roger W. O'Neil Jr., owner of Dennett's Pond Dam in Plympton, are named as defendants. Neither owner returned calls seeking comment yesterday. The two lawsuits mark the first time the state has taken such legal action against dam owners.

"Years of inaction on behalf of these private dam owners is unacceptable and has forced the state to file these lawsuits to ensure the safety of those who live near the dams,'' Coakley said in a statement yesterday. A state-ordered study found in 2008 that people would probably be killed if the Bel Air Dam failed, according to court documents. Hollister's dam was declared unsafe in 2002 and was ruled a "high hazard'' to residents and property in 2005. Coakley said that over much of the past decade, Hollister "repeatedly failed to comply with orders issued by the Department of Conservation and Recreation to repair the dam and address safety issues.'' The Dennett's Pond Dam is categorized as a "significant hazard potential'' to people and property. In the lawsuit, the state contends that O'Neill failed to comply with a March 2007 order to repair the dam and address numerous safety concerns, forcing the state to step in and spend taxpayer money to prevent a potential catastrophe at the dam during recent storms. Recent inspections ordered by the state have found the dam to be in a state of disrepair, according to court documents, with "significant leakage.'' "As the recent storm has demonstrated, keeping dams in good condition is critical to public safety,'' said Ian Bowles, secretary of energy and environmental affairs. "Dam owners who do not live up to this obligation will be held accountable.''

The suits were filed on behalf of DCR, whose dam safety office has oversight responsibility for dams across the state. DCR commissioner Richard K. Sullivan Jr. told the Globe last week that the safety office had referred six scofflaw dam owners to the attorney general's office, which was the first time the state had taken that step. Each lawsuit seeks a court order for the owner to repair or breach the dam and fines to reimburse the state for any emergency repairs. Across the state, 308 dams are classified by the state as posing a "high hazard'' to residents or property. Of those high-hazard dams, a recent Globe review found 60 of them were in poor condition, and many of them have not been inspected since 2006. Recently, 39 dams, including both named in the lawsuits, faced significant risk of failure during the historic March rains. "Recent heavy rains have served as a reminder of how important it is to maintain the integrity of dams throughout the Commonwealth in order to keep our communities safe and protect homes and businesses,'' Coakley said. "Unfortunately, the state has had to step in and expend state resources several times to address safety risks at these dams, when the responsibility clearly resides with the private owners of these structures.'' Of the 308 worrisome dams, the DCR owns 56, towns and cities own 186, and the rest are privately owned.

***Hydro***

(Wow, I'm glad they put a comma after the word Dam)

## Dam, hydro project to begin in May

*by Cassandra Colson | Reporter, jacksoncountychronicle.com*, March 31, 2010

The Black River Falls City Council gave the official green light to the upcoming dam and hydroelectric project, which now is slated to begin in May. “This is really good for the community. It spreads over multiple generations,” said Utility Manager Jerry Ewert. “The value of hydroelectric power is only one asset — one facet — of the structure. That will return, in avoided costs, power we don’t have to purchase starting out between $350,000 and $400,000 a year. “The value in the production of those hydros over the next 50 years ... is substantial in avoided costs to the community. And what that does — it’s a throttle that this community has a hedge against those rising power costs that very few communities have.” In two joint meetings of the utility commission and city council held last week, the utility commission recommended and city council approved issuing $5.69 million in Build America Bonds, which will fund the first half of the nearly $10-million project. The council also approved the commission’s recommendation to award the contractor bid to Lunda Construction Company, the lowest bidder. The council will later need to approve the project’s interim financing, which is needed to serve as a bridge from the time the Build America Bonds are depleted until the utility can access its $5-million loan from the United States Department of Agriculture after the project’s completion in fall 2011. Lunda Construction will be responsible for executing the project’s design as outlined by its engineer Mead & Hunt. Lunda will remove the existing gated spillway and reconstruct it, construct a new intake and powerhouse, install a third hydroelectric unit and conduct some work in the tailrace and the forebay. The company will not be responsible, however, for the procurement of the tainter gates and hoist and the low-flow generating unit, which the city will directly purchase. After providing its bid bond and receiving the notice to proceed from the utility, Lunda is anticipated to move forward with finishing its design for the cofferdam, which has to be submitted to the Federal Energy Regulatory Commission for approval, Ewert said. Other hurdles need to be cleared as well, such as assembling an emergency action plan and a quality-control inspection plan, he said.

The project, whose planning began nearly four years ago, cleared several other important hurdles earlier this year when the utility received FERC’s approval of the license amendment, which was necessary for operation of the third hydroelectric unit, along with the Office of Rural Development’s approval to advertise for the contractor bids. Over the course of planning, the utility needed other agencies’ approvals, which included the Public Service Commission of Wisconsin’s certificate of authority, environmental assessments, along with the Wisconsin Department of Natural Resources’ water quality certification. Ewert noted several stakeholders were involved in the planning process and advisory committees for the project. Such a project, he said, is unique and the community will reap its benefits, not only in hydroelectric power but in recreational opportunities, tourism and more. “Very few communities have a river they can resource hydro power from — it’s unique to only a handful in Wisconsin,” Ewert said. “It benefits the area.”.

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(Excerpts. There - take that Greenpeace. Don't you just like it when someone doesn't have a clue and then criticizes someone like Microsoft or Google.)

## Microsoft responds to Greenpeace data center concerns

blog.seattlepi.com, 4/2/10

2010 is supposed to be the "year of cloud computing." And that means it also should be the year of the data center. And according to Greenpeace, that makes 2010 the year of increasing carbon emissions from the ridiculous amount of electricity data centers consume. The nonprofit issued a report Tuesday on its predicted environmental effects of the growth of cloud computing. Using data from Gartner, Climate Group and Global e-Sustainability Initiative reports, Greenpeace estimated that global emissions from cloud computing will increase by two-thirds from 2007 to 2020. Greenpeace pointed a finger at Microsoft, Google, Yahoo and Apple for their data centers' partial use of "dirty energy." The environmentalist group said that at Microsoft's new Chicago data center, 72.8 percent of power was generated by coal and 22.3 percent was nuclear. And 37.1 percent of the power used at Microsoft's San Antonio data center was generated by coal, Greenpeace said. On Wednesday, Microsoft's senior director of environmental sustainability, Francois Ajenstat, issued a statement in response to the Greenpeace report:

> *In planning for and running all of its operations and facilities, Microsoft takes into account its environmental impact, including energy use and carbon footprint ----------. In our own operations, Microsoft is committed to maximizing energy efficiency and to innovating in support of environmental sustainability. For example, our Quincy, Wash., data center was designed to reduce its carbon footprint by using the available hydropower as its primary source of energy and in Dublin, Ireland, we use the naturally cool outside air to cool the data center, helping to improve efficiency by approximately 50 percent.*

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## Boundary Dam Relicensing Agreement Reached

powerlines.seattle.gov, 4/1/10

After two years of careful study and negotiations, Seattle City Light and Pend Oreille Public Utility District, along with several state and federal agencies, the Kalispel Tribe, conservation groups and concerned local citizens, filed two comprehensive settlement agreements March 29 with the Federal Energy Regulatory Commission (FERC). The filings signify the culmination of many years of effort to resolve issues related to relicensing of the Boundary Hydroelectric Project and the surrender of the Sullivan Hydroelectric Project. "Rarely is FERC presented with two jointly filed settlement agreements that will enable FERC to take action on two projects simultaneously," stated Jorge Carrasco, Superintendent of Seattle City Light. "What makes these agreements unique are the cost savings and environmental benefits that were made possible by combining the re-licensing of a hydroelectric dam owned by one licensee, with the dismantling of a dam owned by another licensee on a tributary of the same river." The Boundary Project includes Boundary Dam and is located on the Pend Oreille River in northeast Washington State. It is owned and operated by Seattle City Light and accounts for more than half the power the utility produces. The Sullivan Creek Project, owned and operated by the Pend Oreille Public Utility District, is located on Sullivan Creek – a major tributary entering the Pend Oreille River about 10 miles upstream from Boundary Dam. The Sullivan Creek Project includes the Mill Pond Dam, Sullivan Dam and Reservoir, and the Sullivan Creek Diversion Dam. Hydroelectric operations at Sullivan Creek were discontinued in 1956. The project currently provides summer recreational opportunities and additional water for downstream hydroelectric dams October through May.

In submitting these agreements, the US Forest Service, US Fish & Wildlife Service, Bureau of Indian Affairs, National Park Service, WA Department of Ecology, WA Department of Fish & Wildlife, American Whitewater, Lands Council, Selkirk Conservation Alliance, Kalispel Tribe and several members of the public support the continuation of power generation at Boundary Dam, while agreeing to the removal of the Mill Pond Dam, a major fish barrier. In addition to addressing dam operations, these agreements provide for the protection and enhancement of fish and wildlife habitat, native species protection, improved public recreation facilities and programs, and a commitment to maintaining the regional quality of life enjoyed by residents and visitors alike. Removal of Mill Pond Dam will provide potential access to more than 16 miles of spawning, rearing, overwintering and foraging habitat for fish. Upstream fish passage will also be provided at Boundary Dam to connect habitats and fish populations above and below Boundary Project, which should lead to healthier populations of native fish throughout the Pend Oreille basin. Also included in the settlement agreement provisions are measures to enhance recreational opportunities in the watershed. These include new reservoir operations at Sullivan Lake to improve angling and sport fish populations in the Lake; measures to benefit native fish in Sullivan Lake, Sullivan Creek, and Outlet Creek; improved summer recreation lake levels; and improved fall paddling opportunities on Sullivan Creek. Under the terms of the agreements, the Boundary Project will continue to provide electricity much the same as it has during the past 50 years. With the filing of this joint agreement, FERC will conduct its own environmental review of the proposal before making a final licensing decision in 2011. Seattle City Light is the ninth largest public electric utility in the United States. It has the lowest cost customer rates of any urban utility, providing reliable, renewable and environmentally responsible power to nearly 1 million Seattle area residents. City Light has been greenhouse gas neutral since 2005, the first electric utility in the nation to achieve that distinction. Pend Oreille PUD is a public utility district located in Northeast Washington State, providing quality service at low cost including power, drinking water and wholesale broadband service to residential, commercial and industrial customers in Pend Oreille County.

## NewPage hydroelectric facility sold

fox11online.com, 01 Apr 2010

KAUKAUNA - The sale of the NewPage hydroelectric facility in Kimberly is complete. Kaukauna Utilities announced the $6.1 million purchase Thursday. The hydroelectric facility supplied approximately two percent of the Kimberly mill's electric, with 2.7 megawatts of installed capacity. NewPage officials say the sale has no impact on the remainder of the facility. The company says it is still looking for a qualified buyer. Kaukauna Utilities owns and operates seven additional hydroelectric facilities on the Fox River.

(This case could be bad news if other states decide this is an easy way to get tax money. Whatever happened to federal pre-emption?))

## PPL MONTANA RESPONDS TO RULING

Apr 2, 2010, kfbb.com, kkbb5 TV

PPL Montana is reviewing their options after a Montana supreme court ruling found that the state could charge rent on the riverbeds under the company's hydroelectric dams. In Tuesday's 5-2 decision, PPL Montana now owes the state $41 million dollars in back rent. A lower court had ruled that the riverbed was state-owned land and subject to rent like other public lands. But PPL Montana had fought back, arguing that the company's ten hydroelectric dams were governed by federal licenses. PPL Montana External Affairs Director David Hoffman believes the decision could hurt future investments in the state. The money collected from the rent will be directed to the state's general fund. The state land board now has the power to decide what the company will pay for future rent and rent dating back to 2008.

## UPPCO Seeks Bids for Cataract Hydroelectric Project

March 30th, 2010, pressreleasepoint.com

Ishpeming, MI - Upper Peninsula Power Company (UPPCO), a subsidiary of Integrys Energy Group ---------, has issued a Request for Proposal (RFP) to sell its Cataract Dam and hydroelectric project property near Gwinn MI. The company is currently examining all its options for the dam, which needs significant renovations to the existing penstock. The cost of modifications to the dam and currently forecasted electricity prices suggest that this asset is not competitive with other generating resources available to UPPCO. Selling the dam and land to an independent power producer (IPP) is one of the options UPPCO is considering in lieu of petitioning the Federal Energy Regulatory Commission (FERC) for approval to abandon and remove the dam. "IPP's are allowed a different method of accounting for these projects," said Charlie Severance, General Manager of Whole Electric and Renewable Energy for Integrys Energy Group, UPPCO's parent company. "It's quite possible that an IPP could find the economics of the Cataract Project would meet its needs." UPPCO expects to receive responses to its RFP by the end of April 2010. In addition to seeking the proposals, UPPCO is studying options for removing the Cataract Project from the FERC licensing process and transferring it to State of Michigan jurisdiction. That option may allow the dam to be sold to entities that would not use it to generate electricity.

(Hey - I didn't write this letter, but it's interesting)

## We should develop hydropower

### Out on a Limb

postindependent.com, April 5, 2010
By Ross L. Talbott, Glenwood Springs, CO Colorado

An interesting aspect of living in Central Western Colorado is the continual arm wrestling over land use and water. Water wars I can understand. Without irrigation water agriculture would virtually disappear. It was not uncommon in the past for someone to be beaten to death with an irrigation shovel. Today, the big concern is over the fish, frogs and other stream-related wildlife. Nuts to the farmers. We can ship our food in from China. California dried up thousands of acres of productive farm land to supposedly save some little minnow.

Our nation is buying energy from countries that support terrorists while we refuse to tap one of the greatest sources of clean and renewable energy. Colorado alone could generate enormous amounts of electricity from water power, but recreation seems to trump that potential. Shoshone power plant is an incredible example of that unlimited source of cheap, non-polluting energy. The power of falling water is just awesome! You might prefer huge wind turbines sticking up on our mountain tops, but remember that when the wind stops the water is still flowing. Think of the incredible recreation potential of a series of dams and hydro plants. In fact the water park could have been built at the discharge of a couple of huge turbines. Look at it this way. Did you ever try to water ski on a coal train? Which is more environmentally intrusive, an open pit coal mine or a beautiful lake? Don't misunderstand my sarcasm. I am not against coal production and use. I just don't follow the logic of those who complain about coal but flip the light switch just like everyone else and can't see the logical alternative. Coal will not last forever so we should be actively working on the next

step.

America will continue to weaken in world influence unless we devise a strategy to free ourselves of dependency on other nations. We drive manufacturing and food production overseas by excessive taxation and regulation. We buy the large majority of our petroleum from other countries, some of whom are our enemies. At the same time we forbid industry access to our own huge resources such as the Bakken oil formation in North Dakota and Montana. Developing our own resources would not only free us from dependency on other nations but would create a host of new jobs. Our nation's balance of trade is way in the negative. Just think what lower fuel prices and cheaper energy would do to stimulate our economy. Now there's a stimulus package that really makes sense. Good sense and logic are the true endangered species.

Personal sensibilities are the greatest block to common sense. You can quote that.
Remember the plan to extract minerals from the hot springs water in Glenwood. Such a plant would have created a product, generated tax revenue, created jobs and improved the quality of the Colorado River. Improving the water alone would have benefited agriculture and domestic use from here to the Pacific Ocean. The whole project was quashed because the truck traffic it would have generated offended someone's sensibilities. The definition of sensibility, I'm using here from Webster is, “refined sensitiveness in emotion and taste with especial responsiveness to the pathetic.” Our economy in this valley is really hollow. By that I mean that the foundational activity of providing recreation and entertainment creates nothing of real value but is predominantly narcissistic. The limestone quarry is gone, the mines are shut down and agriculture is being swallowed up by urbanization. Both mineral extraction and hydropower would create real wealth production and guarantee the future locally and nationally. Where the heck did I store my kayak?
*Ross L. Talbott lives in New Castle.*

## ***Environment***

(Ever closer to the end for the Elwha River dams)

### Milestone Toward Elwha Dam Removal

Tom Banse, 04/02/2010, kuow.org

The National Park Service, community leaders, and a Northwest Washington Indian tribe marked a major milestone Friday toward removing two dams on the Elwha River. They're on the north Olympic Peninsula. A damp but happy crowd celebrated the completion of two water treatment plants to serve Port Angeles, Wash. That area gets its water from the soon–to–be altered Elwha River. Olympic National Park spokeswoman Barb Mayes says the water projects are necessary precursors to the removal of Glines Canyon Dam and Elwha Dam. The two hydroelectric dams are the nation's biggest scheduled for destruction to date. Maynes: "Once the dams are taken out, there will be sediment released that's been backed up behind the dams for almost 100 years. As that is released, it could cause — and we know it would — cause some adverse affects for drinking water and industrial water. That's why we're building these water treatment plants." Maynes says new levees will also be constructed along the lower river later this year. She says that puts the actual dam removal on track to start next year. Both Elwha dams will be dismantled simultaneously. Glines Canyon Dam is 210 feet high. Maynes says the process will take two to three years.

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# Some Dam – Hydro News

## and Other Stuff

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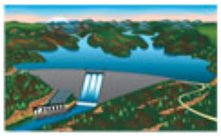
**4/16/2010**

***Quote of Note:*** *"'You may be disappointed if you fail, but you are doomed if you don't try." -- Beverly Sills*

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

***Ron's wine pick of the week:*** **Crios de Susana Balbo Torrontes - Chile 2009**

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



## Dams

(Some people know when to hold them, and some people don't know when to fold them)

### Group wants to save Boardman River dams

**Society members want decision to be reconsidered**

BY SHERI McWHIRTER, April 07, 2010, record-eagle.com

TRAVERSE CITY, MI -- Boardman River dams supporters are still at it. A renewed effort to convince local officials to save three former hydroelectric dams is afoot by a group called the Boardman Valley Preservation Society. Members include familiar faces who've tried to sell the community on the dams' benefits, and they haven't surrendered, despite Traverse City and Grand Traverse County officials' moves last year toward removal. Norbert Tutlis, of Traverse City, last week spoke to county commissioners about how hydroelectricity can help the region meet new state renewable energy mandates. "I think the decision was made in a bit of a hurry and maybe there were some regrets," Tutlis said. County officials decided last year to remove Boardman and Sabin dams, while city commissioners opted to pursue funding to remove Brown Bridge Dam and modify Union Street Dam. Tutlis initially will focus on the county's dams, he said.

At least one county commissioner thinks there are remaining questions. "I didn't personally feel they had exhaustively investigated whether the dams would be economical as hydroelectric generators," said Beth Friend. "I don't think the analysis was complete." Tutlis calls for the county to establish a new investigative committee. Friend said county officials should study the issue more, but isn't sure Tutlis' suggested committee is the best answer. Tutlis worked for Northport resident Charles Peterson, who still wants to operate dams in a revenue-sharing arrangement with the county and city, as previously pitched. "It is foolish to remove the dams and give up the renewable energy from hydroelectricity," Peterson said. "The process

was pre-determined from the beginning. Despite public involvement, those drawing the agenda wanted the dams removed." Not so, contends Todd Kalish, a state fishery biologist and chairman of the multi-million dollar project implementation team. "This was the most open process I've ever been involved with," Kalish said. "This process started in 2005 and we collected a plethora of information ... . According to our analysis, those dams are not economically feasible." Tutlis and Peterson argue perceptions about the dams' viability may receive new life after recent and contentious community discussions about wood-burning biomass power. "The renewable energy from the dams would help meet their renewable energy for the next however many years. It would always be a firm percentage they could always count on," Peterson said. Kalish said the decision to remove the dams is based on more than renewable energy. Impacts to the environment, economy, society and recreational opportunities also were considered, he said.

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(Interesting observation. One needs to look closely at long-term records of stream flows going back as much as 100 years. The more you pave the watershed, the higher the runoff.)
April 08, 2010, andovertownsman.com, Andover, MA

## Letter: Andover's dams have no effect on flooding

Editor, Townsman:
March 2010 was the wettest on record in our area. As a result there has been significant flooding along the Shawsheen River. This flooding comes in the midst of discussions about the potential removal of the three major dams in Andover as a part of the Shawsheen Renaissance Project. It is tempting, therefore, to worry that the removal of these dams will somehow increase this problem. Fortunately, the facts and the science are clear: These dams have no impact on flooding at all. Any flooding that has occurred in the past few weeks of torrential rain would have occurred with or without the dams. These are simply not flood-control dams, but rather two mill dams and an ornamental dam, as stated in a recent editorial. Once water begins flowing over their spillways, as it does most of the year, any additional water that rainfall brings just adds to the flow over the top. They can only cause downstream flooding when they suddenly fail, as sometimes happens with over-100-year-old dams. The Forge Pond Dam in Freetown nearly failed in the recent floods and is now being dismantled for public safety's sake.

What does cause more flooding is filling in wetlands and increasing the area covered by concrete, asphalt and other impervious surfaces. These changes allow less precipitation to filter into the ground where it can be released slowly into streams and rivers. Furthermore, climate scientists argue that as human-influenced global warming speeds up the hydrologic cycle by causing more water to evaporate and enter the atmosphere, extreme weather events will become more common. This is all the more reason to maintain the health and resilience of what remains of our natural environment. Although flooding would not be increased by the removal of the Shawsheen's three major dams, the health of the river would be. There are more than 3,000 dams in the Commonwealth, with multiple dams on every river the size of the Shawsheen. We have no shortage of ponds and lakes. What we lack are our historical free-flowing rivers. The Shawsheen is the last major tributary on the undammed lower Merrimack River. That means marine fish such as herring, shad, and even salmon have free access all the way to the Gulf of Maine. With their numbers depleted by over-fishing and recovery impeded by loss of freshwater spawning habitat, we have the unique opportunity to contribute to their restoration by bringing the Shawsheen back to free-flowing life. That we might someday be able to canoe or kayak with our families from Ballardvale to the coast could be reward enough for our efforts. *Jon Honea, Chapman Avenue & Floyd Greenwood, Rose Glen Drive*

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(This is one for each person to judge on their own)
**Guest columnist**

## Dams, dikes and dredging: Can we 'fix' our rivers?

**The Northwest landscape has changed dramatically as humans modified rivers to control floods for more development — Green River flooding concerns show the challenge. Guest writers Bob Freitag and David R. Montgomery suggest a different way to think about dams, dikes and dredging.**
By Bob Freitag and David R. Montgomery, Special to The Times, seattletimes.nwsource.com

'We need to fix this river" is the sentiment that seems to work its way to center stage at most gatherings of recently flooded residents. It may not be the first statement, but it seeps out, usually after some official presents revised federal flood maps, or tries explaining why bigger dams, higher levees or more dredging will not reduce their risks. These highly charged statements are often followed by equally passionate cries to keep the river natural — whatever that means in 2010. But is there a reasonable role for dams, dikes and dredging? When Captain George Vancouver visited our shores in the late 1700s, rainwater was either absorbed into the forest or ran a hydrologic gantlet through soil, roots and vegetation as it worked its way to the ocean through networks of beaver ponds and meandering rivers choked with large woody debris. When

there was a flood, water spread out and built floodplains, enriching soils and improving water quality. We changed this landscape. There was no overall plan. As problems arose, they were addressed. At first, people adapted to the landscape. You just have to drive North along Interstate 5 to the Skagit Valley to see the oldest homes built comfortably above and away from the river. Over time, we began to rely on flood-control efforts. You just have to drive along the Green or Puyallup rivers to see newer homes built at grade on reclaimed lands "protected" by levees towering above them.

This year, concerns associated with risks from the Green River and Howard Hansen Dam reminded us that we have placed buildings and infrastructure on lands that flood. We have built dams to control flows, straightened channels to provide more buildable flat land, sandwiched river corridors between dikes and in the process not only greatly reduced flood-storage areas, but degraded water quality and aquatic life. And we continue to cover our watersheds with an impermeable built environment creating more flood damage and reduced water quality. Now we face a changing climate predicted to increase flooding in Western Washington. What can we do to "fix our rivers"?

**Do we need more dams?**
Big dams can control flows, prevent flooding and store water. Big dams also trap sediment and can cause downstream rivers to incise, destabilizing valley bottoms. And let's not forget we live in earthquake country; big dams present a risk to downstream residents should they fail. But our foothills, plateaus and floodplains provide extensive small-scale detention possibilities that offer an abundance of surface and aquifer storage opportunities. And, thanks to past glaciers, our valleys are filled with unconsolidated sediment that provides excellent storage. Beavers helped in the past; now we must follow their lead. We could benefit from more dams, but not big ones; small dams scalable by salmon each offering a few acres of detention, scattered throughout the watershed.

**Do we need more dikes?**
Where we have created a dike-dependent built environment, removing entire systems is not a viable option. But do levees really protect? Herein lies a contradiction. Levees seldom reduce risk. They reduce the frequency of flooding at the cost of increasing the magnitude. Again, think of the Green River. Before the Howard Hansen Dam, the valley flooded a lot — only a few feet in most places, but often. After the dam was built, new development moved into these "protected" lands but with the dam compromised we now face the possibility of a multibillion-dollar disaster if too much rain falls too fast. The dam and dikes have increased risk. Frequencies are lower, but the associated impacts have greatly increased. We need to rethink levees as they are becoming prohibitively expensive to build, maintain, and cannot assure safety. Instead of building them up, we need to build lower ones that are not continuous on both sides of the channel and set farther back from the river. We need to think of flooding as inevitable on floodplains and need to build our communities to accommodate shallow flooding that allows water to spread over the land. This approach would store water on the land, aquifers, and allow natural processes to improve water quality.

**Should we dredge rivers?**
Dredging can reduce risk but it is very expensive. When we dig a hole in the channel it just fills up again. Removing too much sediment can result in extensive channel cutting downstream. Instead of dredging we need better soil management and harvesting practices, and allowing rivers to meander and lengthen within wider corridors. Here are some rules of thumb: Dams are OK — just not big ones, and we should seriously begin reclaiming habitat and reintroducing beaver communities. Dikes are fine — just not as big, close to the river, or as lengthy or continuous. And we should let rivers dredge themselves.
*Bob Freitag, author of "Floodplain Management: A New Approach for a New Era," is director of the Institute for Hazards Mitigation at the University of Washington, region director representing the Association of State Floodplain Managers and executive director of the Cascadia Region Earthquake Workgroup. He came to these positions from a career with FEMA. David R. Montgomery, author of "King of Fish: The Thousand-Year Run of Salmon" and "Dirt: The Erosion of Civilizations," is professor of geomorphology at the University of Washington and a MacArthur Fellow.*

(But, the dam DID fail)

## Inspector: Porter Dam Did Not Breach

### 2 Dams Recommended To Be Labeled Hazardous

wmtw.com, April 9, 2010

**PORTER, Maine --** Maine's state dam inspector said the Colcord Pond Dam in Porter did not breach last week as initially reported. The inspector visited the Colcord Pond Dam and the Bickford Pond Dam on March 30. The inspector determined the Coldcord Pond Dam's spillway and stoplog failed during flooding.

Road damage caused downstream was attributed to storm flow unrelated to the dam. The inspector also said that a block culvert on the damaged road may have made the road damage worse. The inspector has recommended that both dams be designated as "significant hazard" dams. This does not reflect on their condition, but rather on that fact that a catastrophic dam failure would likely result in washing out Route 25 in Porter.

(This isn't my favorite Lapel button)

## Last summer for dams on the Elwha River

By Paige Dickerson, Peninsula Daily News, April 10, 2010


PORT ANGELES, WA — Olympic National Park is gearing up for the “Last Dam Summer," and park officials have begun distributing 5,000 buttons with the message commemorating next year’s dismantling of the Elwha River dams. The buttons tout a slogan focusing that summer 2010 will be the last before the dam removal project starts in the summer of 2011, Superintendent Karen Gustin told about 75 people attending a recent Port Angeles Regional Chamber of Commerce luncheon meeting. The buttons were created and paid for by the nonprofit organization Discover Your Northwest, formerly the Northwest Interpretive Association, which stocks the park’s bookstore and also provides funding for informational and promotional items — such as the buttons, Gustin said. “The purpose of those is to have a way to involve and prepare the community and highlight the next 18 months as a preparatory time,” Gustin said. The buttons are an inexpensive way to do that. “I’m anticipating that there will be other things, such as informational cards that we will have available to either pass out or to refer to as we get closer to dam removal.” The organization generates income from book sales at national parks and through donations, according to its Web site, www.discovernw.org. According to its most recent annual report available on the Web site, the group earned about $1.5 million through sales. Private grants contributed $12,000, individual contributions totaled $67,594 and in-kind goods and services contributed totaled $72,130. The park also is considering hiring a contractor to develop a marketing plan for documentaries, stories in such publications as National Geographic and local education in connection with the dam removal project, Gustin said. The contract will fall under the “small contracts” category of less than about $3,000.

The 210-foot Glines Canyon Dam, which forms Lake Mills in Olympic National Park 13 miles upstream from the river’s mouth, and the 105-foot Elwha Dam, which creates Lake Aldwell outside the park’s boundaries, will be removed in the $308 million National Park Service project that starts in 2011. The request for proposals for the dam removal will go out “any day now,” Gustin told the chamber audience. Contractors who wish to bid will have between 45 and 60 days to respond, and by September the bid will be awarded, she said. “This is a huge milestone in the process,” she said. The bid solicitation process will be handled out of the National Park Service’s Lakewood, Colo., office, Gustin said. Brian Winter, Elwha project manager, told the chamber that milestones include the completion of a water treatment plant for Port Angeles — which draws its water from the Elwha River — and working with the Lower Elwha Klallam tribe on a sewer system. The levees below the dams are also being improved so they will provide the same level of protection as they currently do, Winter said. The first major change North Olympic Peninsula residents will start noticing in summer 2011 will be the draining of Lake Mills and Lake Aldwell behind the dams, Gustin said. “That will be when things really start to happen and it will be very noticeable because those areas with the lakes will look very different,” she said.

## Newark must repair 2 dams

BY DAVID ZIMMER, THE RECORD, April 11, 2010

WEST MILFORD — Newark will repair two dams in the township determined by the state to be decrepit. A letter from the state Department of Environmental Protection said that a structural inspection done by Civil Dynamics of Stockholm determined both the Cotter’s Brook Diversion Dam and Cedar Pond Dam on the Pequannock River to be in "poor" condition. The findings, which were accepted by the DEP’s Bureau of Dam Safety and Flood Control, call for city officials to create a schedule for either bringing the dams, owned by the City of Newark, into compliance through repairs or simply for decommissioning the dams.
The Cedar Pond Dam is on a tributary of Clinton Brook. The 8-foot-high, 225-foot-long earthen structure was built in 1920 and holds back a 112-million-gallon pond covering 140 acres. The 20-foot-high, 120-foot-long Cotter’s Brook Diversion Dam on the Pequannock River is used to divert the river’s natural flow. A third dam mentioned in the reports by Civil Dynamics, the Macopin Reservoir Dam, was deemed to be in "satisfactory"

condition. That dam on the Pequannock River, which was created in 1892, retains up to 67 million gallons of water for drinking purposes collected from an area of 63.7 square miles. The 34-foot-high, 434-foot-long structure is made of stone and masonry and has a maximum discharge rate of 17,600 cubic feet per second. Newark officials could not be reached for comment.

(A real world-renowned expert has spoken. Great, now we're supposed to pay Brazil to not build the project. We're broke - go somewhere else!)

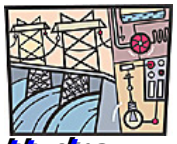
## AP Interview: James Cameron says hydroelectric dispute creates real-life 'Avatar' in Amazon

By: MARCO SIBAJA and BRADLEY BROOKS, Associated Press, 04/13/10, washingtonexaminer.com

BRASILIA, BRAZIL — Director James Cameron said Monday that a real-life "Avatar" battle is playing out in Brazil's Amazon rain forest, where indigenous groups are trying to halt the construction of a huge hydroelectric project. In an interview with The Associated Press, Cameron said he was in Brazil's capital to support Indian and environmental groups as they stage protests against the Belo Monte dam project. Cameron attended an environmental summit in the Amazon last month with former U.S. Vice President Al Gore. He returned this week to Sao Paulo to promote the DVD version of his blockbuster movie "Avatar," in which the fictitious Na'vi race fights to protect its homeland, the forest-covered moon, Pandora, from plans to extract oil. He said he came to Brasilia on his own initiative because he was drawn to the activists' plight. "Avatar" has struck a chord with environmentalists worldwide, from China, where millions have been displaced by major infrastructure projects, to Bolivia, where Evo Morales, the nation's first indigenous president, praised the film for sending the message of saving the environment from exploitation. "I'm drawn into a situation where a real-life 'Avatar' confrontation is in progress," Cameron said in a telephone interview while en route to protests taking place in front of the Mines and Energy Ministry. "What's happening in 'Avatar' is happening in Brazil and places like India and China, where traditional villages are displaced by big infrastructure projects," he added.

The $11 billion Belo Monte hydroelectric dam — which if completed would be the world's third-largest such project — was cleared for construction Feb. 1 by the Environment Ministry. Bidding for prospective builders is expected to take place later this month. Brazil's government has said that even if it can't find private partners for the dam's construction on the Xingu River, which feeds the Amazon River, the nation has the funds to finish the project itself. The administration of President Luiz Inacio Lula da Silva argues that the dam will provide clean energy and is needed to meet current and future energy needs. Environmentalists are sharply opposed. They say it will devastate wildlife and the livelihoods of 40,000 people who live in the area to be flooded. They also argue that the energy generated by the dam will largely go to big mining operations in the Amazon, not benefit the average person. Cameron said he sent a letter to Silva five days ago requesting a meeting and urging him to stop the project. He has not received a reply from the president, who is currently visiting the U.S. "I wrote to him that, 'This is an opportunity for you to be a hero, a visionary leader of the 21st century, and modify Brazil's path in such a way that you have sustainable economic growth instead of economic growth that has serious consequences for certain sectors of the population,'" Cameron said. He said if he were able to meet with Silva he also would tell him that he believes North America and Europe have to help pay to preserve the rain forest, which he said "provides a service to the entire world" by helping fight global warming.

The Brazilian Amazon is arguably the world's biggest natural defense against global warming, acting as a "sink," or absorber, of carbon dioxide. But it is also a great contributor to warming. About 75 percent of Brazil's emissions come from rain-forest clearing, as vegetation burns and felled trees rot. "If North America and Europe have been responsible for the carbon pollution that started us down this inevitable slide of global warming, then they should take financial responsibility for those services that nature naturally provides," Cameron said.



Hydro

(Now, let me see - aren't there some people in the NW who have been clamoring to tear down dams that produce hydropower? Too many people sometimes lose sight of why the economy in the NW works!)

## Hydropower draws BMW carbon-fiber factory to Washington

**BMW and a German supplier chose Moses Lake for a new plant to make carbon fibers that will be shaped into components for a new, lightweight electric car.**

By Eric Pryne, Seattle Times business reporter, April 6, 2010

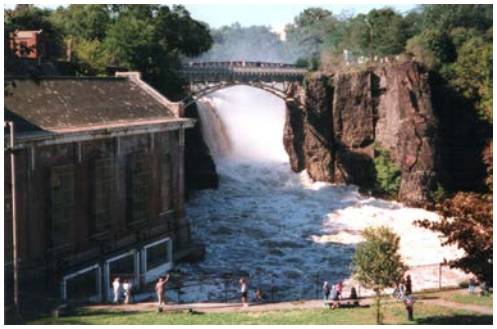
Cheap, abundant hydroelectric power. That's the chief reason BMW and another German company chose Moses Lake as the site for a new plant to make carbon fibers to use in building a new, lightweight BMW electric car, company executives said in Seattle Tuesday. The $100 million factory will employ 80. Groundbreaking is scheduled for June, and that will create another 150 to 200 construction jobs, said Theodore Breyer, deputy CEO of SGL Group, the other German company. It is hoped that it's just the first phase, he added: The BMW-SGL joint venture, dubbed SGL Automotive Carbon Fibers, has acquired 60 acres in Moses Lake for the plant, and has an option on 60 more. The venture had also considered a site in Eastern Canada.

Gov. Chris Gregoire, who courted the companies personally, said the factory wouldn't end unemployment in Washington. "But building a manufacturing plant that will create as many as 200 construction jobs, as well as 80 permanent jobs once the plant is complete, is an important step in the right direction," she added. The carbon fibers, which require large amounts of electricity to manufacture, will end up in components of the Megacity, an electric car BMW plans to start marketing before 2015. The vehicle's lower weight will allow it to travel farther between charges, said Friedrich Eichiner, BMW Group's chief financial officer. Moses Lake will be part of a global supply chain. The raw material for the carbon fiber, a coarser chemical fiber, will be produced in Japan by a joint venture of SGL, which makes carbon products, and Mitsubishi Rayon. From there it will be shipped to Seattle and trucked to Moses Lake, where it will be spun into carbon fibers one-tenth as wide as a human hair. The fibers will be woven into fabric at another new factory in Wackersdorf, Germany. BMW will turn the fabric into structural, body and interior parts for the Megacity at another German plant. State and local governments in Washington offered SGL and BMW more than $4 million in incentives to locate the carbon-fiber plant in Moses Lake. In January the state Community Economic Revitalization Board approved a $1.5 million loan and a $500,000 grant to the Port of Moses Lake to help build a substation to provide power to the factory. Other state funds will be used for energy-conservation and waste-recycling equipment and worker training, Susan St. Germain, economic-development manager for the state Department of Commerce, said in an email. The factory also qualifies for a sales-tax exemption for some equipment, and a sales-tax deferral on construction, she said.

(Saw this question submitted to Yahoo and wondered if some people have a death wish - sent in an answer that said plainly - Not a good idea!)

**Open Question:** April 9, 2010, answers.yahoo.com

## I saw people swimming near a hydroelectric dam intake?



Hey,
They have this hydroelectric dam in Paterson, New Jersey. Here is a picture.
There is a small stream leading to the dam from the river (the river goes to the waterfall which is about 7 floors high.) There is a sign that says "Danger, dam intake, keep clear." Although the stream leading to the dam intake pipe is surrounded by barb-wire. I have seen people hop the barb wire (it's not that difficult to do) and even enter the water near the intake pipe itself. The intake pipe does not appear to have any meshwork on it. The only mesh is on the barb-wire fence as the stream enters. If you happened to be swept into that intake pipe, what is the best way to survive. That is the pipe leading to the turbines. Is there any way you can go through that and survive. This is a fairly small dam, like a small house, so you surely would not drown in that time period, you can hold your breath long enough. The transit time would be at most 20 second, but how do you get through the turbines? If you are swept into the intake and out into the river bellow, is it actually possible to survive? People have invited me to swim there but I am scared.

(Maybe some people in the State of WA just think it feels good to keep shooting yourself in the foot or other parts of the anatomy)

## Hydropower the key to Washington's future | Don Brunell

By DON BRUNELL, Covington Reporter Columnist, Apr 11 2010

Ever since the generators at the Grand Coulee dam started spinning in 1942, low-cost hydropower has been the key to our economic strength and way of life. During World War II, its abundance enriched uranium at Hanford produced aluminum for Boeing's bombers, built Navy vessels at Kaiser's shipyard in Vancouver and provided plenty of affordable heat and light for our homes, schools and hospitals. That low-cost water power comes from the Columbia-Snake River System. While dams present a challenge to salmon runs — many of which have been successfully addressed — hydropower is a clean, affordable, renewable energy source that produces no carbon dioxide. It has been a key reason Boeing, pulp mills, refineries and other manufacturers flourish here, creating family-wage jobs for generations. And its low-cost, reliable electricity is vital to keeping cutting-edge semiconductor manufacturers like WaferTech in Camas and solar manufacturers such as REC in Moses Lake — all of which have huge electricity requirements.

More recently, "greenhouse gas-free" hydropower was the primary incentive cited by German manufacturers SGL and BMW in their decision to locate a $100 million carbon fiber plant in Moses Lake. Lightweight carbon fibers — one-tenth the size of a human hair — are stronger than steel and lighter than aluminum but, like both metals, require enormous amounts of electricity to produce. Carbon fiber is the perfect material to build battery-powered cars, such as BMW's Megacity electric car set to debut in 2015. Just as carbon composites are the basic component in the next generation of airplanes, they are rapidly becoming the preferred material for future cars. Why would those German companies ship raw materials 5,000 miles from Japan to Moses Lake to process into fibers and then send them another 5,000 miles to Germany to be fabricated into car parts? It is because low-cost electricity is available in Grant County from Wanapum and Priest Rapids dams on the mid-Columbia River. That's how important affordable energy is in today's global marketplace. In announcing the Moses Lake project, BMW's chief financial officer, Dr. Friedrich Eichiner, told business leaders, "The energy demand from producing carbon fiber will come from environmentally friendly hydropower."

If hydropower is environmentally friendly, why isn't it considered renewable energy in our state? Dam opponents who drafted I-937 a few years ago intentionally omitted electricity produced at dams from the types of energy utilities could use to meet their renewable energy requirements. Even today, legislators still rebuff attempts to include hydropower as a renewable energy source under the law. Why? Why do those who want to remove the four lower Snake River dams wrongly claim the lost power can be replaced by wind and solar? Where will they find another "greenhouse gas-free" source of electricity that is equivalent to lighting Portland? Why are they intensifying their efforts to further restrict the generating capacity of the Columbia River from the Chief Joseph Dam to the ocean? Executives with SGL and BMW could clearly see the advantages of Washington's hydropower from Germany 5,000 miles away, but our own legislators cannot. Perhaps, they need an additional shove from the governor who stood with those CEOs at the Seattle press conference on April 6. A healthy economy runs on abundant, affordable energy. To succeed, we will need a diverse and reliable supply of electricity, including hydro, wind, solar, nuclear, clean coal and natural gas plants. Washington must be in a position to attract employers like SGL and BMW and keep companies like Boeing, Longview Fibre and WaferTech. In a state where the cost of doing business is high, a reliable supply of affordable energy is the key to our future. *Don Brunell is the president of the Association of Washington Business. Formed in 1904, the Association of Washington Business is Washington's oldest and largest statewide business association, and includes more than 6,900 members representing 650,000 employees.*

## Hydroelectric project on tap for New Jersey Water Supply Authority

By Abby Gruen/The Star-Ledger, April 12, 2010

The 60-day public comment period for the New Jersey Water Supply Authority hydroelectric project in Clinton is now open, according to a notice in the Federal Register last week.
The application for a preliminary site permit, which will allow the authority to do a feasibility study, was originally filed last March, but was not deemed complete until April 2 by the Federal Regulatory Energy

Commission. The hydroelectric project, called the Spruce Run/Round Valley Project would be located on tributaries of the south branch of the Raritan River in the town of Clinton in Hunterdon County. The project would include a 90-foot-high dam with a 550-foot-long spillway on the Spruce River and a new powerhouse on the Round River with a single turbine generating unit with a capacity of 1,128 kW, and a new 20-foot-long, 34.5 kV transmission line.

***Water***

## Meeting set on Missouri River study

Associated Press - April 10, 201,0 ktiv.com

BISMARCK, N.D. (AP) - The Army Corps of Engineers plans a public informational meeting in Bismarck later this month on an upcoming study on possible changes in Missouri River management. The meeting April 28 will detail the study process and give the public a chance to ask questions. The Corps says the meeting is not part of formal meetings this summer that will help define the size and shape of the study. The study will compare modern uses of the river to those that were authorized by the federal Flood Control Act of 1944: flood control, hydropower, water supply, irrigation, navigation, recreation, water quality, and fish and wildlife. Federal lawmakers approved $25 million for the study. Congress would have to approve any changes to the law.

***Environment***

## Feds want to barge salmon past Snake River dams

By JEFF BARNARD (AP) – April 8, 2010

GRANTS PASS, Ore. — The Obama administration is asking a federal judge to allow the government to stop spilling water over four Snake River dams this May and rely instead on barges to carry young salmon and steelhead downstream on their spring migration to the sea. The NOAA Fisheries Service proposal filed in U.S. District Court in Portland argues that the science shows this is the best course for fish in low-water years like this one. Salmon advocates counter that spilling water over the dams — rather than running it through power-generating turbines — has the proven track record. Judge James Redden controls dam operations while he considers whether the latest federal plan for helping endangered salmon survive the dams complies with the Endangered Species Act.

**Editorials / Opinion**

## Water over the dam works for salmon

**The Obama administration is getting good advice to keep spilling water at federal dams in the Columbia and Snake river basins to move young salmon toward the Pacific.**

seattletimes.nwsource.com, April 7, 2010

THE Obama administration is being told by federal fish biologists and fishing groups to keep spilling water over dams in the Columbia and Snake river basins. Heed the advice. Stick with what has been successful since 2006, when federal District Judge James Redden ordered the spills kept in place, even through a low-flow water year. Science supports spilling water to help move juvenile salmon quickly and safely toward the Pacific Ocean. Better-than-expected returns have reinforced the decision to expedite fish passage at the dams. The administration served notice it wants to eliminate spills next month, opting to transport young salmon and steelhead in barges and trucks past the dams. A recommendation is expected soon from the

Independent Science Advisory Board of the Northwest Power and Conservation Council. The council's role is to balance power generation and environmental considerations for the region. This kind of decision goes to the heart of the council's dual mission.

Sending water and salmon over the dams means less power is generated and less money is made. But the region has also aggressively litigated salmon survival and spent billions of dollars to restore healthy salmon runs. Acknowledging the role of spills, with less water flowing past turbines, comes at a time when the power side of the council is promoting the potential for conservation to provide a substantial amount of future power needs. The administration is hearing from the U.S. Fish & Wildlife Service and the Fish Passage Center in Portland, as well as the Northwest Sportfishing Industry Association and the Pacific Coast Federation of Fishermen's Associations, among others. The common theme is to stay with what has worked. Spring spills move young salmon toward the ocean.

(This pretty much puts the idea of barging salmon into a controversy of expert vs. expert)

## Scientists don't like NOAA plan to barge salmon

**An independent panel of scientists does not like the Obama administration's plan to rely on barges, rather than spilling water over dams, to carry young salmon making their spring migration down the Snake River in Eastern Washington.**

By JEFF BARNARD, AP Environmental Writer, April 12, 2010, seattletimes.nwsource.com

GRANTS PASS, Ore. — An independent panel of scientists does not like the Obama administration's plan to rely on barges, rather than spilling water over dams, to carry young salmon making their spring migration down the Snake River in Eastern Washington. Their review of the NOAA Fisheries Service plan to rely exclusively on barges due to low water conditions says the best course is still a mix of carrying fish in barges and spilling water. The question is important as a federal judge continues to control federal dam operations in the Columbia Basin. Spilling water for fish means less water for generating electricity. NOAA Fisheries had no comment, but salmon advocates suing the agency over dam operations applauded the review.

(I bet the Québécois wish they would mind their own business.)

## Groups to study Hydro-Quebec

By DAVE GRAM The Associated Press - Published: April 9, 2010, rutlandherald.com

MONTPELIER, VT — Environmental groups on both sides of the U.S.-Canadian border are teaming up to study the impacts of the big hydropower developments of the provincial utility Hydro-Quebec. The move comes as Hydro-Quebec has been renewing its courtship of the northeastern United States as a market for its abundance of hydroelectric power, which it describes as a clean alternative to electricity from generators that use fossil fuels such as coal. Quebec Premier Jean Charest has been pushing for legal recognition in the U.S. of Quebec hydropower as renewable, which would allow it to be sold at a premium to utilities in states requiring power companies to get some of their power from renewable sources. The Vermont Legislature is considering legislation to label large hydropower projects renewable. Environmental groups agree that hydropower is renewable. "The water you don't lose. It's there," said Suzann Methot, Quebec director of the one of the groups involved, the Canadian Boreal Initiative. But renewable doesn't necessarily mean green, the groups are quick to add. They point to increasing concern about the effects of building giant reservoirs behind power dams in the boreal forests of northern Quebec.

Mathew Jacobson, manager of the international boreal conservation campaign of the Pew Environment Group, an arm of the Pew Charitable Trusts, said the peat bogs, wetlands and evergreen stands of the boreal forests store nearly twice as much earth-bound carbon dioxide as the word's tropical rainforests. One issue the groups, which include Jacobson's and Methot's as well as the Quebec-based Equiterre and the New England-based Conservation Law Foundation, want to study is releases of greenhouse gasses caused by construction of new dams. Newly flooded vegetation rots release carbon dioxide and methane, a greenhouse gas 20 to 30 times as potent as carbon dioxide, into the atmosphere, Methot said. Hydro-Quebec spokeswoman Marie-Elaine Deveault said she did not wish to comment overall on the environmentalists' call for studies. On the release of greenhouse gases by hydroelectric projects, she said it declines to background levels in six to 10 years. Over the life of a typical hydroelectric dam, it ends up with "something around what wind power emits" in greenhouse gasses per kilowatt of electricity produced, she said. "What we can tell you is that hydroelectricity is clean and renewable," Deveault said. "It has numerous advantages, particularly in the fight against climate change." Other long-standing criticisms of northern

Quebec's massive hydropower development have included damage to caribou herds when their ancient migration routes are disrupted by new lakes, and flooding of the aboriginal Cree Indians' traditional hunting grounds. Charest has been working to address these concerns to avoid a repeat of the 1990s, when New York state pulled out at the last minute from a multi-billion-dollar deal to buy Quebec power under pressure from environmentalists and advocates for the Cree. Last year, he announced a plan to preserve an area of northern Quebec about twice the size of Texas, with half to be free of all industrial development, including hydropower, and the other half to have new development restrictions.

"When they do a project, they try to lower the impacts more than they did 30 years ago," Methot said of Hydro-Quebec. "They're now always trying to have consent and agreements with the communities" of Cree. But there are concerns south of the border as well, said Jacobson and Sandra Levine, a lawyer in Vermont for the Conservation Law Foundation. If Hydro-Quebec is labeled renewable, it could satisfy the requirements faced by the region's power companies that they buy renewable power, taking the market away from developers of solar, wind and biomass power, Levine said. "We need both" Hydro-Quebec power because it is cleaner than the fossil-fuel-fired plants that generate most of New England's electricity now, as well as homegrown renewables, Levine said. "We don't want one ... undermining the other."

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# Some Dam – Hydro News

## and Other Stuff

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**4/23/2010**

***Quote of Note:*** *"There is no use whatever trying to help people who do not help themselves. You cannot push anyone up a ladder unless he be willing to climb himself." -Andrew Carnegie*

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

***Ron's wine pick of the week:*** **Luli Chardonnay 2008**

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

## *Dams*

(A little dam history)

### The place where Shasta Dam was built

blogs.redding.com, April 13, 2010

This is what it looked like before Shasta Dam was built. That's the Sacramento River, not much of a river at the time because it was summertime. The photo was taken on June 13, 1938, just before construction began. The dam was built at the first bend in the foreground. This photo is compliments of the Bureau of Reclamation and local history buff and blog reader David Kerr. David's email to me was so interesting, I'm passing most of it along to you with his blessing:

Here's a few more pictures taken in just about the same area shown in the picture in the previous blog. The metal tower is what everyone today calls the "headtower". The dam was built right beside it on its downstream side. When the dam was finished, the top half of the headtower was cut off and all that remains today is the bottom half. When the lake level gets really low, the remaining bottom half pops up through the water and lots of people drive up to the lake for a looksee. Me included.


(Oh oh, I never heard of ROTTEN gravel, but this doesn't sound like a good place for a dam.)

## Commissioners expected to vote on Krueger Dam

By Chris Cobb, The Herald-Zeitung, April 14, 2010

After delaying a decision the past two weeks, Comal County Commissioners are expected to vote Thursday on whether to try and finish construction of the Krueger Canyon Dam. Construction has been stopped since October, after engineers would not certify the dam's construction because of "rotten gravel" at its foundation. Commissioners could be considering a change order with Ballenger Construction to have the contractor excavate the foundation, and see if it's possible to proceed with building the rest of the dam. "We're trying to go in and see if it's feasible to move forward with the project," said Comal County Judge Danny Scheel. The dam would sit along the Dry Comal Creek, west of Krueger Canyon Road and north of Farm-to-Market 482. Its purpose would be to stop floodwaters on the Dry Comal from flowing downstream, primarily into New Braunfels, TX.

(This one isn't simple. Sounds like more harm will be done with dam removal)

## Activist group targets Searsville Dam

### Proponents of dam-removal plan to pressure Stanford University

by Sue Dremann, Palo Alto Online Staff, paloaltoonline.com, April 14, 2010

Saying the time is now to get Stanford University to commit to removing Searsville Dam, a group of local activists galvanized more than 200 people at a kickoff event Tuesday evening. Beyond Searsville Dam Coalition, spearheaded by Portola Valley native Matt Stoecker, gave a slideshow presentation and talked to a crowd that packed the outdoor-gear store Patagonia on Alma Street in Palo Alto, which hosted the event. Steelhead trout have historically inhabited the creek and many tributaries flowing into San Francisco Bay, according to a 2004 report prepared for the San Francisquito Creek Joint Powers Authority (JPA). The dam, which was built by the Crystal Springs Water Company and completed in 1892, is the biggest limiting factor to steelhead spawning in San Francisquito Creek and its tributaries. It blocks 10 miles of habitat, he said. Stoecker said there's more to his mission than just recreating a gateway for the fish. And he doesn't want to restore the creek to go fishing. "People accuse me of being a crazy fish head and it's true," Stoecker said. But "it's not just an issue for our watershed." The steelhead is an "umbrella species" that supports many other animals. The fish can swim across the entire northern Pacific Ocean to Japan where it provides food for whales and ocean birds, Stoecker said. He flashed images on the screen of birds, frogs and snakes all affected by the trout locally. A kingfisher plunged into the creek waters to snag a steelhead; an osprey snatches a fish out of the water and takes wing over the foothills.

Stoecker has been waging a lonely campaign for 10 years, ever since he saw a steelhead vainly try to breach the 60-plus-foot-high dam. Stanford is currently seeking approval for a 50-year Habitat Conservation Plan from federal and state officials that would be the guiding principle of conservation, restoration and areas of potential development.

Stoecker and supporters want Stanford to put dismantling the dam into the Habitat Conservation Plan, he said. Stanford favors dredging the sediment and keeping the dam, a position favored by scientists at Jasper Ridge Biological Preserve, where Searsville Dam is located. Searsville Dam has been silting up for 119 years. Nearly 90 percent of its water-holding capacity is blocked with sediment. The dam is expected to top off with sediment in 15 to 40 years, depending on environmental factors such as storm events, erosion and earthquakes, according to scientific reports. Jean McCown, a Stanford spokeswoman, said the Habitat Conservation Plan proposes to keep the Searsville Dam as it is. If the university were to propose at a future date to make changes in the dam it would commission a study to evaluate fish passage. If no change is made, the Habitat Conservation Plan commits Stanford to a study in 10 years, she said. The university has been considering what to do with the dam since at least the late 1990s. Possibilities include dredging the sediment, removing the dam or allowing the dam to fill with silt.
McCown said the university's perspective is summed up in a position paper by the Jasper Ridge Advisory Committee. Jasper Ridge officials' views are "first among equals," she said. The document supports dredging as the best alternative and outlines assessments for each option, including dam removal. A restored stream provides the best opportunity for steelhead habitat, but successful restoration is not certain, committee members said. "Managing a century's worth of sediment accumulation so the impacts are benign presents enormous challenges.

"Removing Searsville Dam would be a highly experimental project. The large size of Searsville Dam, the alluvial fan character of the creek and the urbanized floodplain combine to make removal complex and challenging," the committee wrote. Removing the dam would be a huge undertaking and its removal is not as straightforward, or necessarily beneficial, as proponents would have people believe, according to Philippe Cohen, administrative director of Jasper Ridge Biological Preserve. "Conditions have changed a lot. ... (Stoecker) often cites other places where dams have been removed. In most cases, they were structurally unsound, so it was a non-issue. Very few of the others are located where the lower flood plain is fully developed," he said. When Searsville Dam was built, the residential areas downstream were sparse, Cohen said. The main problem with removing the dam today is that sediment currently being held back behind the dam would flow further downstream, through creeks in Woodside, Portola Valley and Palo Alto, then further through the San Francisquito Creek to East Palo Alto and the San Francisco Bay. No one knows exactly what that would mean for residents, he said. "With the change in the amount of sediment, how it's going to change flooding is a really tricky question," he said. Searsville Lake, created by the dam, has also changed the freshwater ecosystem, providing habitat, feeding and breeding and wetlands for countless species of birds, bats and other creatures, he said. Removal of the dam could change that the ecosystem, he said.
Steve Rothert, California regional director of American Rivers, which has helped get numerous dams removed, said Tuesday night there are ways to prevent downstream problems after the dam is removed. Most dam-removal projects receive funding to prevent downstream flooding while the structures are being removed. Computer modeling for other projects proved to be accurate in figuring out where problems could occur, he said. The creeks were reconfigured in places to take into account sediment erosion and deposit further downstream, and levees were raised in some areas. Concerns about losing open-water habitat, which Searsville Lake now provides to waterfowl, can be lessened by creating other ponds and lake areas that would handle some of the runoff after the dam is removed, he said. Taking steps to ease sediment and flooding problems for the similarly sized San Clemente Dam in the Carmel area costs an estimated $70 to $80 million. Much of the costs are paid for by funding from federal, state and private sources, he said.
McCown said Stanford has not singled out dam removal but hasn't done a study. Stanford is studying the problem, Cohen said.

Its Department of Civil and Environmental Engineering has been working on studies in the last four years related to the accumulation and management of sediments and how water flows through the system. David L. Freyberg, a professor of civil and environmental engineering, is also studying how removal or alteration of the dam would impact the movement of sediment. This summer, the department will research the sediment-reservoir-wetland interactions between the inflowing streams and the large sediment deposit trapped in the reservoir. Researchers hope their work will help make management decisions about the dam. "The more difficult question is whether it would be cost-effective to remove the dam -- whether the benefits would justify the costs," Freyberg said. He said the costs would be challenging to estimate but that they would likely be "very substantial." Among the concurrent goals would be:

- not damaging or destroying the mission of an ongoing research at Jasper Ridge Biological Preserve
- managing the sediment currently retained in the reservoir
- managing the increased downstream transport of sediment after removal
- compensating for the loss of upstream wetlands and wildlife.

These would have to be evaluated relative to the benefits to the steelhead, he said. Stoecker and Rothert

said their groups will try to pressure Stanford, holding informational meetings, engaging residents in letter-writing campaigns, adding a legal and outreach component and forming student-based groups. Any project wouldn't happen overnight. They estimate some current dam-removal projects will take 10 years or more to complete. San Francisquito Creek watershed is the last in the Bay Area to remain in a natural state, meandering 44 square miles and emptying into the bay, Stoecker said. Most others have been straightened or confined to cement channels. "We have an amazing opportunity to improve the watershed health," he said. Other longtime watershed supporters are not yet committing to a position on the dam. The Committee for Green Foothills was considering a position a few months ago but decided not to make a commitment until the factors related to downstream flooding are known, said Lennie Roberts, San Mateo County advocate for the committee. There needs to be much more study of the potential impacts, she added. "There are a lot of countervailing concerns," she said.

## Earthquakes caused by dams!!

FreePressInternational.com, BeforeItsNews.com, 4.16.2010, By Greg Ericson

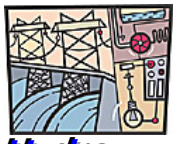
The China earthquake that killed at least 80,000 people in 2009 may have been caused by a dam just miles from the epicenter. The 511ft-high Zipingpu dam holds 315 million tonnes of water and lies just 550 yards from the fault line. The effect of water weight and it penetrating into the rock, could have unleashing a chain of ruptures that led to the quake. Fan Xiao, the chief engineer of the Sichuan Geology and Mineral Bureau in Chengdu, said “There have been many cases in which a water reservoir has triggered an earthquake.” “This earthquake was very unusual for this area. An interesting note is Researchers have been denied access to seismological and geological data to examine the earthquake further. Christian Klose, a scientist at Columbia University’s Lamont-Doherty Earth Observatory, said there had not been any “major seismic activity” on that fault line for millions of years. Surprisingly, There is a history of earthquakes triggered by dams, including several caused by the construction of the Hoover dam in the US, but none of such a magnitude.
Read the longer article here:
www.telegraph.co.uk/news/worldnews/asia/china/4434400/Chinese-earthquake-may-have-been-man-made-say-scientists.html"

(You gotta like the toys we have in this age of technology)

## Howard Hanson dam movement to be measured by GPS

by GLENN FARLEY / KING 5 News, April 15, 2010, cwunews.wordpress.com

HOWARD HANSON DAM, Wash. – When Central Washington University first approached the U.S. Army Corps of Engineers about hooking up a Global Positioning System antenna to the area surrounding the Howard Hanson Dam, the idea was to add another node to their network that monitors stress in the continent’s tectonic plate in an effort to anticipate earthquakes. The Army Corps then asked CWU if they would wire up the whole dam to keep a very close eye on any changes in the dam. “All dams move,” says Ron Burkhard, the Corps operations manager for Howard Hanson and Mud Mountain dams. Those are the two earthen flood control dams located in the Cascade mountains that provide flood protection to people living in the Green and White River valleys below. He says even big concrete dams in Eastern Washington can move several inches as they expand and contract between hot summer days and frigid winter nights. And for many of those same reasons, along with soil conditions and water pressure, Howard Hanson also moves. Burkhard says the GPS array is all about making the dam safer. It’s not movement, but the type of movement that engineers are looking for, particularly after an earthquake. GPS would give engineers that information instantly. A particular kind of movement could signal the opening of cracks in the dam or settling in the dam. The GPS can monitor those movements in terms of millimeters. But it’s not just earthquakes. CWU and the Army Corps says the GPS system will alert them to any shift in the dam for any reason. Rex Flake, the field engineer with CWU who is leading the installation of the system, says it’s the densest GPS array he’s seen. There are 13 antennas, most of them mounted to the dam. Several are attached to the natural abutment that ties into the dam. It was in that abutment where the Corps found excessive leaking more than a year ago. That forced the Corps to limit how much water the dam can hold during the worst winter storms, opening valley communities like Kent, Auburn, Renton and Tukwila up to the potential of flooding for the first time since about 1960. Over the winter, contractors pumped a million gallons of slurry-like grout into the underground voids in the abutment to dramatically slow down leaking. Since the so-called “grout curtain” was installed the Corps says the odds of a major flood have dropped from about 1-in-4 to about 1-in-25. In a typical year, the odds are 1-in-140.



**Hydro**

## Turbine manufacturing co. eyed for Eastport

By The Mainebiz News Staff, April 14, 2010

A hydropower company based in Portland is hoping to establish a new manufacturing company in Eastport that could create up to 75 jobs. Ocean Renewable Power Co. Monday announced to the city council a plan to create a turbine-manufacturing company at the Eastport Business Center, according to the *Bangor Daily News*. ORPC would recruit an entity to operate the new company, which could supply turbines to ORPC and other hydropower firms. The council supported the plan, and ORPC plans to submit an application for funding from the U.S. Department of Commerce's Economic Development Agency next week that will fund site improvements and equipment. Washington county commissioners, Eastern Maine Development Corp. and the Sunrise Economic Development Council will assist with the application. ORPC in February unveiled a tidal turbine unit that will be deployed in Cobscook Bay off the coast of Eastport, the largest of its kind ever in U.S. waters.

**News Release: April 15, 2010, Docket No: AD09-9-000**

## FERC looks to ease development of small hydropower projects

The Federal Energy Regulatory Commission (FERC) took a step toward making its small hydropower licensing program more user-friendly today by announcing a series of Web-based tools that will help developers understand the FERC licensing process, help improve coordination with other agencies, and help license applicants complete the process more quickly and efficiently. "Efforts to reduce carbon emissions and meet the growing number of state renewable energy standards are drawing increased attention to small hydropower project development," FERC Chairman Jon Wellinghoff said. "These new tools will help provide additional resources to applicants considering developing hydropower." "Small and micro hydropower has enormous potential, but these projects often cannot be developed under traditional licensing methods," Commissioner Philip Moeller said. "By our action today, the Commission is working to ease the regulatory burden of harnessing this clean and renewable form of energy."

The new resources, to be available at www.ferc.gov in August 2010, came out of discussions at FERC's December 2009 technical conference on small, non-federal hydropower projects. The resources will provide a roadmap that walks applicants through the process of selecting a project site, determining if a project is jurisdictional, selecting a FERC licensing process, consulting with stakeholders, and preparing a license or exemption application. New tools, such as fill-in-the-blank license and exemption application templates and tips on how to expedite the application process, are intended to make it easier for a potential applicant to apply for a license or exemption. Staff also intends to update existing agreements, or Memoranda of Understanding (MOUs), with other agencies to improve coordination, and will employ a new outreach program to educate potential small hydro developers. Staff also will continue to provide a small hydro hotline and email address to answer applicants' questions. At the December 2009 technical conference, participants noted the increasing interest in small hydropower in recent years. Last year, FERC staff received almost twice as many inquiries on small hydro issues than in 2008. And the Commission has received more preliminary permit, license and exemption applications for these types of projects.

## FERC rules against Green Island's hydro plant for Cohoes

April 15, 2010, by Larry Rulison, blog.timesunion.com

The Federal Energy Regulatory Commission ruled against the Green Island Power Authority this morning and its plan to build a 100-megawatt hydro plant above the Cohoes Falls. Officials at GIPA today said they were "disappointed" in the decision, but not surprised. The order restores a previous 40-year license that FERC had given to Brookfield Renewable Power of Toronto in 2007. A federal appeals court revoked the license last fall after finding that FERC did not consider GIPA's plan as part of the licensing process. As part of its

order, FERC also rejected GIPA's plan outright. It's unclear what next legal step GIPA could take at this point. Here is a summary of the decision recently posted on the FERC Web site:

**FERC reinstates new School Street Project license**
H-3, Erie Boulevard Hydropower, L.P., Project No. 2539-003. This order responds to the court's August 10, 2009, decision in Green Island Power Authority v. FERC, which vacated the new license issued to Erie Boulevard Hydropower, L.P. for the 38.8-megawatt (MW) School Street Project No. 2539, on the Mohawk River in Albany and Saratoga Counties, New York, and remanded the case for further proceedings. This order finds that the offer of settlement was not a material amendment and, therefore, the Commission need not consider as timely a motion to intervene filed by Green Island. This order nevertheless considers Green Island's proposal, and further finds that the proposed Cohoes Falls Project does not present a feasible alternative to the School Street Project. The order therefore reinstates the license for the School Street Project as issued.

**Here is a statement from GIPA Chairman Jack Brown:**
"Green Island Power Authority is deeply disappointed with FERC's decision. However, no FERC decision surprises me. The United States Court of Appeals for the Second Circuit clearly ruled last August that by not considering alternative projects in this matter, FERC had "violated its statutory duty to give full consideration to alternative plans." Clearly, FERC did not heed the language of the Second Circuit Court's ruling that FERC could only license a project that was "best adapted to a comprehensive plan for improving or developing a waterway." It is inconceivable that FERC went even further and summarily stated that GIPA's alternative was not feasible even though they never reviewed the project and stated so during the court proceedings. In fact, GIPA's project is a far superior alternative for Cohoes Falls, which would have a tremendous positive impact on the Capital Region economy and environment. Today, the Capital Region has lost 100 MW of modern hydropower, an opportunity to restore Cohoes Falls, and the opportunity to use that power to bring jobs here. Waterways are public assets, and as such, GIPA believes strongly that hydroelectric power generated on the Mohawk River should put the interests of the people of the Capital Region ahead of private shareholders of a foreign company. The current operator, a company based in Canada, sells the power on the market for profit, with no energy whatsoever being directly provided to local schools, municipalities or regional economic development projects. As a public benefit corporation, GIPA's efforts at Cohoes Falls have been aimed at creating a far greater benefit for the people of the Capital Region and providing low cost and renewable energy that can be provided directly to local users. GIPA wanted FERC to shake the stagnant status quo at Cohoes Falls and provide a full and thorough review as outlined by federal regulation and by clear legal precedent. We did not receive a full, fair and open hearing in this important matter, and we will weigh all of our options after discussion with our counsel and trustees."

**Here too, is a statement issued by a Brookfield spokeswoman:**
"We are pleased by today's ruling by FERC. Throughout this entire process, we have remained confident that Brookfield's School Street project is the highest and best use of the Mohawk River, consistently balancing environmental, historic, public, recreation and generation needs. FERC's reinstatement of our 40-year license effectively confirms our position, and determines that GIPA's 'Cohoes Falls Project does not present a feasible alternative to the School Street Project.' Brookfield Renewable Power is committed to the School Street facility and to the surrounding communities. We are a national leader in operating hydropower facilities in ways that protect the environment. Brookfield built Falls View Park, which provides exceptional views of Cohoes Falls and has attracted thousands of visitors to the area. We have invested millions of dollars into upgrading the facility and surrounding grounds, including work last year that added 22,000 MWh of new generation, or enough to cleanly power over 3,000 New York households. We look forward to continuing and strengthening our partnerships in the community while responsibly operating the School Street Facility for many years to come." GIPA is reviewing the decision and should have a response soon. We are also expecting U.S. Sen. Charles Schumer, a big supporter of the GIPA proposal, to also make some noise.

## Power project may lose Canadian partner

By Luther Turmelle, North Bureau Chief, nhregister.com, April 16, 2010

Questions are being raised about Hydro-Quebec's commitment to a massive power transmission project that has been in the planning stages for more than a year. The project would deliver 1,200 megawatts of electricity from hydropower plants in Canada to New England. The joint venture with Northeast Utilities and NStar of Massachusetts has already received some of the regulatory approvals that it needs. But in interviews with Bloomberg News and Canadian media outlets last week, Hydro-Quebec Chief Executive Officer Thierry Vandal said the company's board of directors is still trying to determine whether low power

prices in the U.S. and the higher value of Canada's currency against the dollar would make building it too risky. "Export markets haven't been very strong, gas prices are low, and this is what determines power prices," Vandal said Thursday in a phone interview. "The Canadian dollar is high and, as exporters, this is bad news for us."

Hydro-Quebec is expected to make a decision on the project by the end of the year. NU and NStar officials insist that Vandal's comments don't jeopardize the project, which needs the hydropower that the Canadian company generates if it is to move forward.
"We remain confident that this project will go ahead as scheduled," said Al Lara, an NU spokesman. "We are negotiating with our other two partners in the project and, while there's always a risk that something of this size will not go through, we are optimistic that this will get done." Caroline Allen, an NStar spokeswoman, said the company "is still very committed to the project and from what we understand, Hydro-Quebec is as well." But Stacey Masson, a spokeswoman with Hydro-Quebec, offered a less enthusiastic assessment. "The parties are still negotiating and that's really all I can tell you at this point," Masson said. This is the first time that Hydro-Quebec executives have publicly expressed concerns about the project, which gained Federal Energy Regulatory Commission preliminary approval in May 2009.

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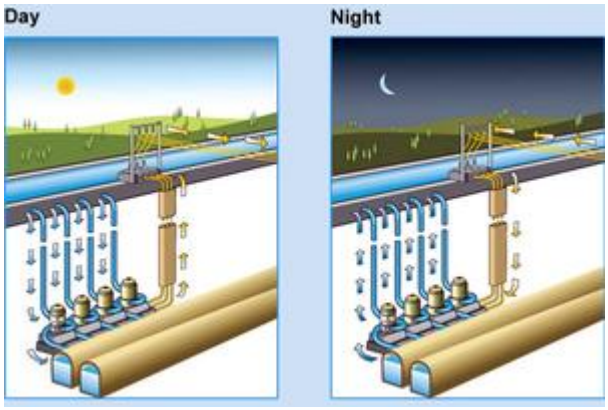
(Underground Pumped Storage - many proposed but not much action: name is actually Chippewa County Pumped Storage. Not sure what the patented method happens to be because it looks like many other underground proposals???)

## Two billion dollar underground hydroelectric facility a possibility just outside of Granite Falls

By Scott Tedrick, Editor, Advocate Tribune, Apr 15, 2010




On Friday the City of Granite Falls received notice that the company, Riverbank Minnesota LLC., is seeking to explore the feasibility of a $2 billion, 1,000 Megawatt (MW) underground hydroelectric plant proposed just outside of the city limits of Granite Falls within Chippewa County. The application, seeking a preliminary permit for the "The Granite Falls Pumped Storage Project" was filed with Federal Energy Regulatory Commission by application agent Nelson Energy, Wayzata, in mid-January. A notice of acceptance was issued on April 2. The permit is the initial step in what is expected to be a three year planning and licensing process, should the project move forward, according to information within the application.

**What is pumped storage?**
Described in the text as "innovative but proven," pumped storage facilities involve the release of water from a higher elevation to a lower elevation where hydroelectric turbines generate electricity in much the same way as a dam. This type of production is considered energy storage or load balancing because it uses off-peak hours in the evening – when energy is plentiful and cheap – to pump the water to the higher elevation so that it can be released during the day when the energy is in the greatest demand and most profitable. It does not create additional energy for the grid. Nelson Energy owner, Robert Larson said the facility acted liked a giant battery. "It creates predictability and load balancing in the electrical system, and pump storage appears to be the most effective way to provide that," he said. According to the hydroelectric company Symbiotics, pump storage facilities have been in existence since 1909. They vary in type, some are surface-based, like the Ludington Pumped Storage Plant that draws water directly from Lake Michigan, while others require massive excavating such as the Dinorwig Power Plant in North Wales, which located the facilities powerplant within a mountain. The type of pump storage plant proposed near Granite Falls will use a patented new method referred to as the Aquabank system.

**Aquabank**
According to the application, the Granite Falls project would contain significant facilities both above and below the surface. Topside, the design calls for a 135 acre, 30-foot-deep earthen reservoir, as well as a

330-foot-long, 55-foot-wide and 400-foot-high transformer gallery that would connect with an approximately 1.2-mile-long, 230-kilovolt transmission line. Situated approximately 1,800 feet deep into the granite bedrock, the project would incorporate six 150-foot high, 90 foot-wide reservoirs as well as a 380 foot-long, 83-foot-wide, and 400 foot-high powerhouse. The powerhouse would include four 250 MW underground reversible pump-turbines with a combined generating capacity of 1,000 MW. Because the system is 'closed loop,' the project is said to require very little water beyond the initial "fill-up," needing only enough to compensate that lost by evaporation. Water would be drawn from the Minnesota River in both instances – recirculated to the upper reservoir in the evening and released over a six-hour period into the underground reservoir during the day.

**Benefits, questions**

Riverbank Minnesota is a collaborative business arrangement between Nelson Energy and the developer of the Aquabank system, Toronto-based, Riverbank Power. Riverbank Power boasts that its underground Aquabank method of generation as able to bypass many of the "pitfalls" associated with traditional renewable energy production methods. The company says the process avoids undesirable visual impacts, needs for subsidies, higher electricity prices, strained sources for agriculture, spoiled fish habitats, amongst other issues. Riverbank Power spokesperson Scott Ladd said the method provides, "a huge advantage in terms of servicing the needs of populated areas while also taking advantage of renewables so that we don't have to add as much of a thermal burning load to our circuits and electrical systems. Aquabank is going provide opportunity to put that type of facility in where it will be needed most." Questions regarding pumped storage facilities that have arisen with projects like that being proposed near Granite Falls have revolved around the potential of negative effects on aquifers, truck traffic during excavation and a negative power production ratio.

**Top five**

According to Larson, the company will look at surrounding transmission capabilites, energy needs, railroad access, and a number of other factors before deciding to seek construction of the facility in the area. If the location is selected, it would create an estimated 600 - 1000 jobs over a four year construction period and 50 - 100 permanent jobs thereafter. The process from preliminary permitting to construction would likely take 8-12 years, Larson said. Riverbank Power is said to be reviewing a number of sites across the country that could potentially house Aquabank facilities. According to Ladd the Granite Falls Pumped Storage Project "is one of our lead sites; I would say it is one of the top five." The deadline for filing comments, motions to intervene, competing applications (without notices of intent,) or notices of intent to file competing applications must be received within 60 days of the April 2 notice issuance. More information about the project can be view or printed on the "eLibrary" link of the Federal Energy Regulatory Commission's website at http://www.ferc.gov/docs-filing/elibrary.asp. Enter the docket number (P-13654) to access the document.

## Meldahl hydrokinetic project gets a green light

By WENDY MITCHELL, Staff Writer | April 15, 2010, maysville-online.com

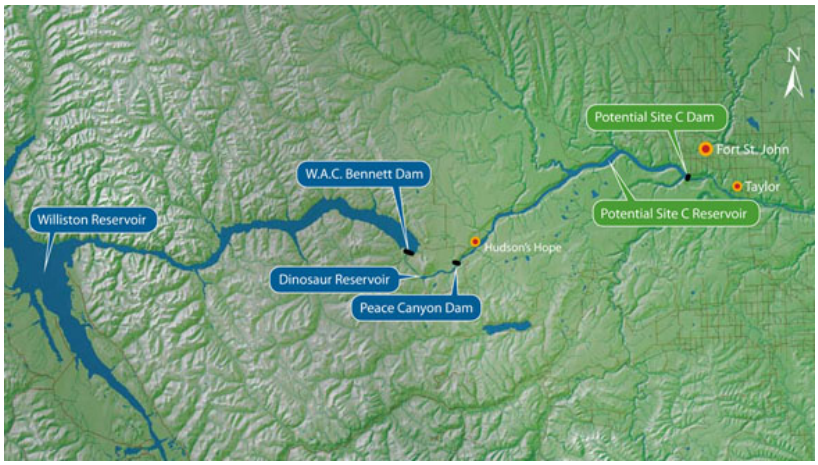
FOSTER -- Plans to build a hydrokinetic electric plant along side the Meldahl Dam in Bracken County can move forward, officials said on Wednesday. City of Hamilton officials overseeing the project received the Section 404 permit to work in a waterway, on April 8, and Bracken County officials signed the final work permit on Wednesday. "The last permit they needed was from us; (Bracken Flood Plain Coordinator) Harold Woodward and I needed to sign the building permit," said Bracken County Judge-Executive Gary Riggs. Riggs met with Hamilton officials following the Bracken County Fiscal Court meeting Wednesday and traveled to Augusta to have Woodward sign the paperwork. Though nearby Augusta had held the license and attempted for several years to develop a plan to build a hydroelectric plant at the site, due to lack of progress on such plans, Augusta was not considered a viable candidate for the project, Federal Energy Regulatory Commission officials said in 2007.

The project is designed to utilize more than 80 acres of federal lands at the existing U.S. Army Corps of Engineers site at Meldahl Dam, plus acreage purchased from bordering property owners. In 2008 Hamilton

was awarded licensing from FERC for the construction of the 112 MW hydroelectric power plant at the Meldahl Dam site. The Meldahl Dam Hydroelectric Power Plant will be Hamilton's second hydroelectric power plant on the Ohio River, the other is at Greenup. Officials anticipate Meldahl will produce about 520,000 MWh per year. In partnership with AMP-Ohio, Hamilton has committed placing the $550 million facility into commercial service in 2013. Meldahl will become the largest hydroelectric power plant on the Ohio River, officials said. Once operational, the Meldahl plant, combined with the Greenup site, will provide the city of Hamilton with approximately 65-70 percent green power, officials said. According to stipulations of the current 50-year license, construction must begin by August, officials said. Site preparation work can begin almost immediately, but an official ground-breaking is not planned until June, officials said. "We have a lot of people to thank. there has been an extraordinary outpouring of support for the project. We start counting today. Phase I should be completed in 18 months and by spring 2014 we should be completed with the powerhouse and operational," said Tom Leibham, Meldahl project manager for Hamilton. Information on job opportunities at the project should be available by consulting the Kentucky Office of Employment, he said.

## Decision on massive B.C. hydro project could be near

CBC News, cbc.ca, April 17, 2010




The province is about to announce a decision on the decades-old proposal to build a massive hydroelectric-generating dam, known as Site C, in northeastern B.C., says Energy Minister Blair Lekstrom. Lekstrom won't say exactly when the government plans to announce the decision, but suggests it will be soon because the province has promised to deliver a decision in spring 2010. The Site C megaproject near Fort St. John would cost an estimated $6 billion, but would produce enough electricity to power 460,000 homes. Heralded by some as B.C.'s energy saviour since the 1970s, the project has been reviled by environmentalists and farmers because of the amount of land it would flood. "The key issue is that we're going to live up to the commitment that we made. One way or the other we're going to make a determination to either proceed or not proceed," said Lekstrom. If the government decides to move ahead, the proposed project will undergo environmental assessments and consultations with local First Nations, area residents and governments, he said. "Ultimately, it will be government's decision to proceed or not proceed to the next stage." Site C would be the third hydroelectric dam on the Peace River, joining the W.A.C. Bennett and Peace Canyon dams. Crown-owned BC Hydro says the proposed dam would be located about seven kilometres southwest of Fort St. John on the Peace River. Site C, providing about 900 megawatts of power, would create an 83-kilometre long reservoir and flood more than 5,340 hectares of land in the Peace River Valley.

**Renewable energy vs. vast reservoir**

BC Hydro says the dam would create clean, renewable energy while emitting minimal greenhouse gases. But people, buildings and roadways will have to be moved and wildlife and farmlands will be lost. Matt Horne, of the Pembina Institute, said he expects environmental groups and some area First Nations to voice strong concerns about any decision to move ahead with Site C. Environmental groups are concerned that the government appears to be considering huge projects on an individual basis rather than looking at developments and their potential environmental impacts on a more province-wide basis, Horne said. "It would be concerning to see the province move ahead, or continue moving ahead with the project, without any meaningful decision-making process about the types and scale of projects we're pursuing," he said. BC Hydro has said the project would undergo a number of reviews and assessments before it could proceed. "Should the provincial government decide to continue pursuing Site C, the project would be subject to provincial and federal regulatory review including comprehensive environmental assessment and permitting processes," said a report on the corporation's website. "Effects on the environment include flooding and

water flow impacts on fish, wildlife and agricultural land, local air quality impacts and construction impacts," said the Hydro website.

## $3 Million Grant Will Push Green Jobs and Sustainable Hydrokinetic Power

by Tina Casey, cleantechnica.com, April 17th, 2010

Tulane University has just won a $3 million grant from the U.S. Economic Development Administration to build RiverSphere, a renewable energy center that will focus on developing new hydrokinetic turbines. The project includes floating barge facilities that will be available to private technology companies for testing prototype hydrokinetic turbines in the slow moving currents of the Mississippi.

(One small step for hydro - maybe not a giant step, but a step nevertheless for the Country)

## Hydro Projects Get US $663,881 from Massachusetts

Boston, United States [RenewableEnergyWorld.com], April 19, 2010

The Massachusetts Clean Energy Center (MassCEC) last week announced that it was releasing grants to support six hydropower projects under the Commonwealth Hydro Initiative. MassCEC's board of directors approved the grants totaling more than US $600,000 and the awards includes design and construction grants for upgrades and repairs to two hydropower projects totaling the equivalent of about 1 megawatt (MW) in capacity, and four feasibility studies for hydropower projects that would total the equivalent of more than 600 kW in capacity if built. The six grants go to public and private projects, including municipal water departments. The Commonwealth Hydropower Initiative is funded by MassCEC's Renewable Energy Trust Fund, which is funded by renewable energy charges on electric bills, generating roughly $24 million a year to support renewable energy installations and companies throughout the Commonwealth.

The two projects receiving design and construction grants are in Holyoke and Russell. MassCEC awarded a $260,418 grant to Woronoco Hydro LLC for upgrades to its FERC-licensed hydropower generating station on the Westfield River in Russell. This facility has three turbines with a total nameplate capacity of 1.9 MW and currently generates approximately 9,345,000 kilowatt-hours per year (kWh/yr) on a long-term average basis. The planned upgrades will increase generation by approximately 1 million kWh/yr and include installation of an automatic trash rake that will clear debris and ice from the trash racks, repairing the draft tube and dredging the outlet of the tailrace pool. The grant represents 50 percent of the total $520,836 project cost. "MassCEC's grant will help pay for the efficiency improvements that will increase annual generation by about ten percent," said Peter Clark, manager of Woronoco Hydro LLC. "We have wanted to make these upgrades for a while – with this grant, we'll be able to do so." MassCEC awarded a $309,825 grant to Holyoke Gas & Electric (HG&E) for the repair and upgrade of its No. Four Project, a FERC-licensed hydropower generating station on the Holyoke canal system. The facility has two 375 kW-rated generating units, one of which has been out of service since a 2004 fire. The planned rehabilitation will repair damaged equipment and upgrade the controls and automation. Once completed, the facility will generate approximately additional 997,000 kilowatt-hours per year of electricity. The grant represents 50 percent of the total $619,650 project cost.

Awards for the four feasibility studies go to projects in Pittsfield, Holyoke, West Springfield and Fitchburg. A&D Hydro, in conjunction with Alden Research Laboratory will study the feasibility of increasing generation and improving upstream fish passage at the West Springfield Project. This hydroelectric station currently produces approximately 5 million kilowatt-hours per year, which the owners believe can be increased by up to 10 percent by excavating the tailrace to increase the operating head. The City of Fitchburg will study the feasibility of replacing a pressure reducing valve with an energy recovery system that would utilize the pressure differential at its Narrows Road station. MassCEC will provide a grant of $15,600 for the study. The City of Holyoke will study the feasibility of installing two in-conduit turbines, totaling approximately 41 kilowatts, in water delivery conduits in the vicinity of the McLean Water Treatment Facility. The electricity produced, estimated to be approximately 270,000 kilowatt-hours per year, would be equivalent to approximately 80 percent of the electricity consumed by the water treatment plant. Finally, the City of Pittsfield will study the feasibility of upgrading its existing Ashley Hydropower Plant, which currently generates power from water flowing from one water supply reservoir to another, to generate additional electricity. MassCEC will provide a grant of $35,000 for the study. The grantee is supplying a 20 percent cost-share to meet the total study cost of $44,000.

**Water**

## Low snowpack could cut regional dams' surplus power sales, hurt fisheries, council says

By MICHAEL JAMISON of the Missoulian | April 14, 2010

KALISPELL - An extremely low-snow year should not dry up the region's hydroelectric power supply, but the lack of water behind dams could mean fewer surplus electricity sales, as well as troubles for downstream fisheries. Since October, precipitation throughout the Columbia River basin has reached just 79 percent of average, and snowpack is 73 percent of the historic norm. The forecast for runoff calls for flows at just 65 percent of average, through August at the Dalles Dam. If that prediction is correct, analysts say 2010 will be the second-lowest runoff year in two decades; only 2001 was drier. A review of the Columbia River system dams, however, shows that enough water will flow to provide adequate power supplies to the region. Throughout the basin, federal dams generate more than half the region's electricity. "Low flows will reduce hydropower generation below normal," warned Bruce Measure, "but there is no danger of a serious curtailment to electricity service." That's according to the Northwest Power and Conservation Council, which Measure chairs. He is one of two Montanans appointed to the multi-state council.

"The power available from generating plants, including hydropower dams, wind turbines and power plants that burn fossil fuels, is more than adequate to meet the anticipated demand for electricity this year," Measure said. It may not be enough, however, to sustain normal levels of "surplus power" sales, which in the past have bolstered budgets while supplying much-needed juice to other regions. In addition, the lack of water could mean less power available to "back-up" alternatives such as wind, when the wind doesn't blow. Analysts also are concerned that the dry year might mean trouble for downstream fish passage, and warn migration will likely be more difficult for juvenile salmon and steelhead. Low flows will slow travel time, the council reported, and could result in an unhealthy increase to river temperatures. During times of lowest flow, a federal fish plan calls for maximizing the use of barges to shuttle endangered fish downriver; but that plan is currently tangled in the courts, making this summer's migration uncertain. The judge could rely on barges, or could order additional water spills at several dams. If the judge orders spills - as he has each year since 2007 - it could mean an additional loss of about 350 average megawatts through spring and summer. That's enough electricity to power about a quarter million homes - a substantial amount, the report concludes, but not enough to affect the reliability of the region's overall power supply.

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# Some Dam – Hydro News

## and Other Stuff

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**4/30/2010**

***Quote of Note:*** *"Doing nothing is very hard to do - you never know when you're finished" - - Leslie Nielsen*

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

***Ron's wine pick of the week:*** **Hanna Russian River Valley Sauvignon Blanc (CA) 2008**

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

## Dams

***Factoids:***

*The Association of State Dam Safety Officials has found that the number of dams in the United States that could fail has grown 134% since 1999 to 3,346, and more than 1,300 of those are considered "high-hazard" - meaning that their collapse would threaten lives.

*More than a third of all dam failures or near failures since 1874 have happened in just the last decade.

### Folsom Dam gets $16.6M in earthquake improvements

Sacramento Business Journal, April 21, 2010

Kiewet Pacific Co., a Concord company, won a $16.6 million contract to make seismic upgrades to Folsom Dam's spillways and gates. The award, part of the American Recovery and Reinvestment Act, was announced Wednesday by Secretary of the Interior Ken Salazar. The stimulus money will go to improving the dam gates and piers, installing pier anchors and bracing, replacing gate arms and other earthquake safety improvements. "These Recovery funds will accelerate the improvements necessary to reduce the risk and protect the people of Sacramento and vicinity in the event of an earthquake or other dangers to their safety," Salazar said in a news release. "The funds are a good example of the president's program to jumpstart the economy while addressing safety, environmental and other challenges so the country can thrive in the 21st century. The Interior Department got a total of $3 billion under the stimulus act.

(Had the privilege of visiting during construction and dam safety did, in fact, get highest priority. Looks like the shape of a heart. Is there a message there?)

## AmerenUE's Taum Sauk plant operating again

St. Louis Business Journal, April 22, 2010

AmerenUE said Wednesday that its Taum Sauk hydroelectric plant is generating electricity again after four years of rebuilding and $490 million in construction following the reservoir's catastrophic breach in 2005 that sent a 20-foot-high wall of water cascading through Johnson's Shut-Ins State Park. The plant is located on Proffit Mountain near Lesterville, 110 miles southwest of St. Louis. "Dam safety and construction quality was our top priority in the rebuilding of the upper reservoir," Mark Birk, AmerenUE's vice president for power operations said in a statement. "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 and the upper reservoir." Ozark Constructors rebuilt the upper reservoir under the guidance of the project's engineer of record, Paul C. Rizzo Associates Inc. of Monroeville, Pa. Ozark Constructors is a venture partnership formed by ASI Constructors Inc. of Pueblo West, Colo., and St. Louis-based Fred Weber Inc. Other firms that worked on the project included PayneCrest Electric and Communications, Haberberger Inc., B&P Construction, Castle Contracting and Tarlton Corp. About 1,000 employees were engaged at some point over the course of the project, AmerenUE said.


The breach in 2005 was called Missouri's worst man-made disaster. The flood injured the park superintendent and his family, damaged the east fork of the Black River and scarred a 6,000-foot-long section of the mountainside. An investigation by regulators found that water-level sensors had been placed too high to work so the reservoir filled up and water spilled over the top, eroding the dam. In late 2007, Ameren agreed to pay the state of Missouri nearly $180 million to rebuild Johnson's Shut-Ins, including $52 million to execute the park's master redevelopment plan. AmerenUE, led by President and Chief Executive Warner Baxter, is part of St. Louis-based Ameren Corp., which supplies 2.4 million electric customers and nearly 1 million natural gas customers in Missouri and Illinois.

## Project to raise San Vicente Dam to begin

By Staff, City News Service, April 23, 2010, sdnn.com

Crews in the next few months will begin the main phase of a project to raise the 220-foot-tall San Vicente Dam in Lakeside by 117 feet, it was announced Friday. When completed in early 2013, the project will increase the San Vicente Reservoir's capacity by 152,000-acre-feet of water, according to the San Diego County Water Authority. "The San Vicente Dam raise project is a critical part of the Water Authority's $1.5 billion plan to ensure that our region can call upon locally stored water reserves during emergencies or other periods of limited imported supplies," said Maureen Stapleton, the SDCWA's general manager. The SDCWA board recently approved a $140 million contract for the third phase of the project, which involves the application of roller-compacted concrete to raise the dam. The overall project, touted by the SDCWA as the largest of its kind in the world, will cost $568 million.

## Hydro

(This is going to get ugly)

### Brazil awards rights to develop Belo Monte dam

**A consortium of nine companies has won the right to build a hydroelectric dam on a tributary of the Amazon in Brazil.**

news.bbc.co.uk, 20 April 2010


Brazil's electricity regulator said the Norte Energia consortium would build the Belo Monte dam, to which indigenous groups and environmentalists object. It is led by the state-owned Companhia Hidro Eletrica do Sao Francisco. Officials say the dam on the Xingu River is crucial for development, but critics argue thousands of people will be displaced and an ecosystem damaged. The bidding had been halted three times before a final appeal by the government allowed the winning bidder to be announced.

**Low returns**

About 500 people gathered on Tuesday outside the offices of the Brazilian Electricity Regulatory Agency (Aneel) in the capital, Brasilia, to protest against the auction. The environmentalist group, Greenpeace, dumped several tonnes of manure at the door to demonstrate what it said was "the legacy that the Lula government is leaving by insisting on this project". But after a last-minute injunction was lifted, Aneel announced that Norte Energia had won the rights to develop the Belo Monte dam with an offer of 77.97 reals ($57.12) per megawatt produced. There was only one other competitor - the Belo Monte consortium. Earlier this month, two of Brazil's biggest construction companies walked away from the bidding process, saying the financial returns were too low. The government had set a maximum price of 83 reals per megawatt. The proposal to build a hydro-electric dam on the Xingu river, a tributary of the Amazon in the northern state of Para, has long been a source of controversy. The initial project was abandoned in the 1990s amid widespread protests both in Brazil and around the world. Environmental groups say the Belo Monte dam will threaten the survival of indigenous groups, and the lives of up to 40,000 people could be affected as 500 sq km of land would be flooded. Luis Xipaya, an indigenous leader in the city of Altamira, near the proposed dam, said 150 Xikrin Kayapo Indians would move to the construction site by Wednesday. "There will be bloodshed and the government will be responsible for that," he told the Reuters news agency. The government has dismissed the criticism and promised the winning consortium would pay $800m to protect the environment. The 11,000 MW dam would be third largest in the world, after the Three Gorges in China and Itaipu, which is jointly run by Brazil and Paraguay. It is expected to provide electricity to 23 million homes. With Brazil's economy continuing to show signs of growth, ministers say hydro-electric plants are a vital way to ensure power supplies over the next decade - and at least 70 dams are said to be planned for the Amazon region. Critics say the Belo Monte plant will be hugely inefficient, generating less than 10% of its capacity during the three to four months of the year when water levels are low.

## $500M hydroelectric plant work starts May 1

By Dave Greber, April 21, 2010, journal-news.com

HAMILTON — It will make 70 percent of the city's electric consumption renewable. It will mean even lower rates for residents and add stability to a volatile utility market. And, after years of perseverance and mounds of paperwork, it will start next month. Ground will be broken May 1 on the $500 million hydroelectric plant at the Meldahl Lock & Dam in Bracken County, Ky., city officials announced Tuesday, April 20. Following nearly a month of decisions and approvals from the federal government, Hamilton will sign a deal with the contractor that will begin the 3½-year project by building a cofferdam in the Ohio River. Hamilton received the final go-ahead — a Notice to Proceed — from the Federal Energy Regulatory Commission Thursday, April 15, just weeks after receiving two key permits to build and operate the plant. "The amount of time and effort, worry and concern, that has gone into this has been phenomenal," said Charles Young, deputy city manager. "It has been an amazing effort." The city was actually given the nod to build and operate the half-billion-dollar facility by FERC in June 2008. The interim has been spent applying for permits, conducting studies and doing preliminary work on site. The pace picked up last month thanks to the help of Congressman John Boehner (R-West Chester) and U.S. Senators George Voinovich and Sherrod Brown, Young said. Young said Boehner has been helpful in leading Hamilton "through the labyrinths of the federal government" for project licensing and permitting. Construction of the cofferdam — the project's first phase, expected to cost approximately $25 million — should take 14 months, Young said. That will be followed in July 2011 with construction of the Meldahl power house with three units going online between March and July 2014, Young said. Hamilton will own 51.4 percent of the hydroelectric output from the plant, with the remaining going to American Municipal Power, a conglomerate of Ohio cities that will benefit from the project.

(Comment sent to FT:
There is one large omission in the article when referring to hydropower in the United States and other countries. There are over 80,000 dams in the U.S. and only 3 % are used for hydropower. The issue of displacing people in the U.S. is not relevant because most of the new hydropower, which is a significant untapped renewable resource, will come from adding hydropower at existing dams originally built for other reasons and from upgrades to existing hydropower plants. There is also a great deal of interest in hydro technologies that do not use a dam such as hydrokinetic and energy from the oceans.)

## Hydropower's other problem

blogs.ft.com, April 21, 2010, by Kate Mackenzie

Brazil's planned new 11-GW hydroelectricity station, to be located in the Amazon jungle, has attracted protests from celebrities from Sting, Sigourney Weaver, and James Cameron, who said it was a "real-life Avatar" situation. It looks like going ahead anyway now that Brazil has sold a contract to build the station, despite protesters arguing that the project will destroy the homes and livelihoods of thousands of people living beside the Xingu River, when 516 square kilometres of land is flooded for the project. It's a familiar story for hydropower and one that is increasingly heard with other sources of renewable energy. The impact on local residents (whether by destroying their homes or just their views) and on local flora and fauna is a big issue for many large wind and solar plants, not to mention CCS.

Hydropower certainly gets a worse rap. The scale and location of some new big hydro projects, such as the Three Gorges in China and the Ilusi dam in Turkey, have seen them linked with human rights abuses in a way that is rarely seen for other renewable projects. Meanwhile, hydropower's emissions credentials are somewhat tarnished by reports that projects where land clearing is not properly carried out prior to flooding can actually lead to more emissions than a comparable fossil fuel power plant. Still less endearing to environmentalists is the fact that big dams are sometimes sited in order to power mining projects.
But hydroelectricity has benefits that are sometimes overlooked. It accounts for 20 per cent of the world's electricity, making it by far the biggest source of renewable energy. Its supporters point out that after a big initial outlay, hydro projects tend to have a good payback ratio, partly thanks to their longevity and low running costs. It's also one of the few large-scale ways to store energy; and is touted as a good companion to wind and solar for this reason; excess energy can be used to pump more water into a hydropower dam, and used later. This is why Denmark exports excess wind energy to Norway. It's not limited to huge-scale projects either; 'micro' and 'mini' hydro projects (somewhere around the 10MW to 300MW range, depending on your definition) are growing faster than big projects — partly because much of the terrain suitable for hydropower has already been used, especially in Europe and America. Also, supporters also point out, it's good for both baseload and peak power supplies. Except when there's a drought. And this has been a

problem recently for several countries, such as Vietnam. The NY Times reported this month that south-east Asian countries were blaming China's hydropower, something that China has strenuously denied - and China itself has seen its hydropower output suffer from droughts. Meanwhile in the US, the Hoover dam is being upgraded to cope with lower water levels, which have tested its ability to keep generating large amounts of electricity. It just goes to show — there are few easy options in energy.

(Some hydro history about tidal power. The Passamaquoddy Project was considered a number of times in the early years at the Federal Power Commission - predecessor to FERC)

## *F.D.R.'s Brief Dip Into Tidal Energy*

By HENRY FOUNTAIN, April 22, 2010, green.blogs.nytimes.com


Eastport, a city of about 1,600 people that is about as down east in Maine as you can get, has seen better days. At one point in its history it was the sardine capital of the East, but overfishing and resulting catch restrictions led to that industry's long slow death. The old canneries along the shore are shuttered and decaying, and the last one in the region — indeed, in the country — about 50 miles to the southeast in Prospect Harbor, closed just last week. Now, as I write in Thursday's Business of Green section, a start-up company, Ocean Renewable Power, is hoping to bring some economic renewal to Eastport with a tidal energy project. Their goal is to install underwater turbines that would spin in the tidal currents, generating power. The company is one of a handful in the United States working to develop tidal power as another alternative to fossil-fuel plants. Eastport, with tides of 20 feet or more that are among the highest in the United States, has seen this kind of thing before — in the 1930s, during the administration of Franklin D. Roosevelt. F.D.R., who spent many summers on Campobello Island just across the water (and across the Canadian border) from Eastport, was well aware of the tides, as was another part-time Campobello resident, an engineer by the name of Dexter Cooper. Cooper had a plan to harness the tides to generate electricity, and he had F.D.R.'s ear, and the result was what came to be known as the Quoddy Dam Project. It's a fascinating bit of American engineering history.

The plan was for a huge public-works project that would include the construction of dams across two bays. The dams would impound the incoming tide and then, when the tide receded, the higher waters would be released through turbines, generating power. The project was budgeted at $36 million — a huge sum in those days — and construction of workers' barracks and a dike began in 1935. But the economic feasibility of the project had always been in question, and a year later Congress pulled the plug, so to speak, without any dams being built.

The idea has occasionally been revived since then (most notably in the Kennedy administration), but this kind of tidal power — what's called a barrage project — has generally fallen out of favor because of the high cost of building dams and the environmental damage they can cause. The in-current turbines being developed by Ocean Renewable Power and others are less expensive (although whether they will be cheap enough to be competitive in the energy market is an open question). And, while their potential environmental impact is still being studied, it's probably fair to say they won't have as widespread an impact as a couple of dams. When I visited Eastport recently to talk with the people at Ocean Renewable Power, one of the first things they did was take me a few blocks away to a clapboard building on Water Street. Inside was a room-size scale model of the Quoddy Project dating from the era, with all the bays, towns, dams and other proposed structures labeled. (It's a working model, too, when filled with water during the warmer months.) They also asked me if I noticed the causeway that I drove over when coming into town; the road was built atop the dike that was constructed back in 1935. The causeway and the model are about all that remains of the grand scheme.

## Utilities' new hydroelectric plant up and running

April 22, 2010, R. SCOTT RAPPOLD, THE GAZETTE

Hoover Dam. Glen Canyon Dam. The hydroelectric energy from these legendary behemoths helps to power much of the West. Colorado Springs Utilities, with no Colorado River, has always had to think smaller in its effort to harness this type of renewable energy. And using the trickles that run off Pikes Peak is starting to add up. The newest mini-plant, the Cascade Hydroelectric Plant, began operating three weeks ago. Thursday, to mark Earth Day, Utilities showed off the facility. South of U.S. Highway 24 near Cascade, it's no bigger than a two-car garage, and the power is enough for just 450 homes, but officials say this and its three other small hydroelectric plants are a key part of Utilities' renewable energy portfolio. "It just makes sense. You've got this water coming down the hill, you break pressure with it and you generate electricity with it," said Drew Rankin, general manager of energy supply. The water comes by pipeline from the North Slope reservoirs on Pikes Peak. Before, there was a pressure release valve at the site, to slow the rushing water as it runs to French Creek, then Fountain Creek, and then by pipeline to the hydroelectric plant in Manitou Springs. The new plant cost $5 million, funded by interest-free renewable energy bonds, and generates 850 kilowatts.

Hydroelectric power is cheap, about $35 per megawatt hour, compared to $140 for wind power, Rankin said. Utilities gets 8 percent of its power from hydroelectric energy, but 80 percent of that is bought from the Western Area Power Administration. So why spend the effort and money on what amounts, at the new plant, to one-tenth of 1 percent of Utilities' energy generation? Because, Rankin said, every little bit helps. Power suppliers are under mandates to generate more power from renewable sources, and Utilities will meet a 2019 requirement of 10 percent through a combination of hydro, wind, biomass, biosolids and the purchase of credits. But 70 percent of its power comes from coal — at a cost of $15 per megawatt hour. Utilities has exhausted all the low-hanging fruit in hydro power, and while other opportunities exist, Rankin said, "Everything from here is kind of small." By Colorado Springs hydroelectric standards, that would be really small.

(I guess no corner of the world has a corner on the market for controversy)

**Electricity generation**

## Opposition mounts against massive Site C hydroelectric dam

RICHARD GILBERT, staff writer, journalofcommerce.com, April 26, 2010

B.C. First Nations and environmental groups are opposing the provincial government's decision to give BC Hydro the green light to build a massive hydroelectric dam on the Peace River, in northeastern B.C. "We are gravely concerned about this, given the government's recent watering down of environmental regulatory processes," said Chief Roland Willson of the West Moberly First Nations. "That could enable this mega project to move through with little or no challenges to the application." Campbell and members of the Liberal Cabinet gathered at Hudson's Hope on April 19 to give approval to move to stage 3 of the regulatory process for the $6.6 billion Site C dam project. This stage is expected to take two years.

Treaty 8 Nations said they are disappointed that the Stage 2 consultation process with BC Hydro remains incomplete, making the government's decision to move to Stage 3 premature. "Treaty 8 First Nations continue to be frustrated with British Columbia's disregard of their treaty rights when it comes to the cumulative impacts of resource development," said Tribal Chief Liz Logan. "The government has decided to move forward on Site C without ever having addressed past infringements of treaty rights respecting the construction of the W.A.C. Bennett and Peace Canyon Dams." The Treaty 8 First Nations are concerned with the integrity of the regulatory processes.

The Site C dam, which was first proposed in the 1970s, will be the third dam and hydroelectric generating station on the Peace River. One proponent of the Site C Dam said the opposition needs to consider the economic benefits of the project for northern communities. "The opponents of the Site C Dam, both environmental and First Nations groups, have legitimate concerns, but they also have to acknowledge that this project will create 35,000 direct and indirect jobs in a region that needs them," said Chris Feller, president of the Allied Hydro Council of B.C. His group is made up of building trades unions, which jointly negotiate collective agreements for BC Hydro construction projects "The training opportunities are fantastic, providing B.C. with a new supply of apprenticeships in key skilled trades that would be impossible

otherwise." Premier Gordon Campbell and Blair Lekstrom, Minister of Energy, Mines and Petroleum Resources are promoting the proposed project as a major green power initiative. They said the project will provide clean, reliable and low-cost power for more than 100 years. In sharp contrast, Joe Foy, national campaign director with the Wilderness Committee said Site C has nothing to do with green energy. "It actually looks like much of the electricity from Site C will be used to develop gas fields in Northern B.C., which will then be used to power the tarsands," he said. "If the environmental and regulatory review looks at the facts instead of the B.C. government's spin, the Site C project won't be going ahead. It makes no sense from an environmental or economic perspective." Sierra Club B.C. executive director George Heyman agreed. "The huge loss of boreal forest due to flooding would eliminate a major carbon sink for B.C., and increase our CO2 emissions far into the future as reservoir matter decays," he said.

The dam would be 60 metres high above the river bed and the reservoir would be 83 kilometres long. Both Heyman and Foy are concerned that the project would flood a large share of the prime agricultural land in the Peace River Valley. There are also concerns about the dam's impact on wildlife and migration corridors. "Coupled with existing forestry, mining and oil and gas development, the cumulative impacts of the Site C dam reservoir will cause irrevocable damage to fish and wildlife habitats, local agriculture and flooding of important cultural and archaeological sites," said Chief Lynette Tsakoza of the Prophet River First Nation. In addition to these problems, many opponents of the project believe the provincial government and BC Hydro haven't adequately demonstrated the real need for energy. Heyman said B.C. needs to develop a full provincial framework for future energy development before making a final decision on Site C.

(This sounds like an ad, but it is a timely article and it makes some good points about how hydro is overlooked. Just came from the NHA Hydro Conference and many of the same was the point of the conference theme. And, here's a news flash for some folks - it's renewable energy.)

## Garner & Culbertson: No Clean Energy Future Without Hydro

By Mark Garner and Tim Culbertson, Special to Roll Call, April 26, 2010, rollcall.com

As the Senate prepares to debate climate and energy legislation in earnest, it's very clear what our priority must be: passing a bill that's effective at creating jobs and reducing emissions. An ideal policy would tap into new energy technologies and renewable sources like wind and solar, while also exploring new, sustainable ways to develop more traditional sources. But there's one largely overlooked solution, a major generator of clean energy that was dubbed "America's best kept secret" by Energy Secretary Steven Chu — hydropower. Already responsible for more than 70 percent of all U.S. renewable energy generation, hydropower eclipses all other renewable sources, feeding electricity to 30 million homes. Hydropower is affordable, sustainable and, with the right policies, can double its capacity — providing affordable electricity for millions more Americans and creating millions of jobs. And because it uses the energy stored in our domestic freshwater supply, it's 100 percent renewable and doesn't depend on volatile commodity markets or the politics of foreign regimes.

Unfortunately, many Americans — particularly inside the Beltway — seem unaware of the promise of hydropower. The debate over our renewable energy future has focused largely on wind and solar — both of which must be part of the solution. But all along, hydropower has been the sleeping giant of renewable energy, quietly providing dependable, base load renewable electricity generation for countless communities and ensuring a reliable electric grid. As representatives from both sides of the hydro economy, we know that its potential is real and immediate. We come from the perspective of a West Coast public utility that is in the midst of investing more than $800 million to install more efficient hydropower turbine and generator technologies and a Pennsylvania-based manufacturer with more than 550 employees that has grown 27 percent and added 194 family-supporting jobs during a recession. We've seen this technology's ability to spur economic growth and provide utility-scale clean power in communities that need it. It's something that can be utilized across the U.S., and the time to embrace it is right now.

A recent study from independent firm Navigant Consulting Inc. found that investment and growth in the hydropower industry could create a cumulative 1.4 million jobs by 2025. These jobs would employ a range of skilled American workers in manufacturing, development, engineering, operations and maintenance — in particularly job-hungry places such as Ohio, Tennessee, Florida and Virginia. And because many of these jobs will be located at existing hydropower facilities and non-powered sites that would be retrofitted to generate electricity, they will improve the economies of nearby communities without additional environmental impacts. This potential is a central reason why the Obama administration has recently expanded its commitment to hydropower. In March, Energy Secretary Chu, Interior Secretary Ken Salazar and Assistant Secretary of the Army Jo-Ellen Darcy signed a memorandum of understanding to increase

hydropower generation at federal facilities. They recognize the role this technology has to play. The question is, does Congress? Past policies such as the Investment Tax Credit, Production Tax Credit and Clean Renewable Energy Bond program have gone a long way in supporting growth in hydropower. But it's time to take the next step and support hydro technologies that not only create jobs themselves, but are crucial to enabling other renewables to come to scale. The most important of these is pumped storage, the only commercially viable form of utility-scale energy storage in existence. The recent explosive growth in wind power generation has created a need for large-scale energy storage, and pumped storage allows us to retain tens of thousands of unused megawatts of electricity, dispatching it at times of peak demand and "smoothing" availability from other sources of power. Energy Secretary Chu last September called pumped storage "astoundingly efficient" and noted the "massive amounts of energy" it stores. Indeed, this proven technology already represents 20 Gigawatts of domestic energy capacity, with another 31 Gigawatts in the approval pipeline now. Supporting pumped storage and valuing it properly through national policies such as a strong Investment Tax Credit, transmission incentives and inclusion in a national Renewable Electricity Standard would let America deploy the most economical, most available and most effective solution to the power storage question hanging over our clean energy future. It's a problem we simply have to solve — and hydro is the answer. Washington will be focused in the coming weeks on climate and energy legislation. At the end of the day, we absolutely must have a strong, smart policy that simultaneously deploys more renewable energy assets and ensures they're viable at scale. That policy also must not leave affordable megawatts or available jobs on the table. Hydro should be at the center of achieving all of those priorities. The power of clean, moving water has already served the nation for generations. With the right signals from Washington, we are poised to continue turning water into good American jobs, continued economic growth, greater energy independence and a clean and sustainable future.

## Environment

(Gees - we'll let anyone vote. At least this vote is a good thing.)

### Salmon approve of nesting habitat

**Chelan County PUD biologists and engineers have received the "salmon stamp of approval" for their $16 million project to add nesting habitat and restore year-round flow to the Chelan River.**

By Christine Pratt, The Wenatchee World, April 22, 2010

CHELAN FALLS — Chelan County PUD biologists and engineers have received the "salmon stamp of approval" for their $16 million project to add nesting habitat and restore year-round flow to the Chelan River. "The fish approved," PUD fisheries biologist Steve Hays told commissioners Monday, of the 250 Chinook salmon nests, called "redds," observed last fall in and around the new habitat area. An aerial photo taken last fall of the habitat area shows a river bottom virtually covered by the whitish redds. Each redd can produce some 5,000 fish that will eventually migrate to the ocean to mature and then return in years later to spawn.

The project involved building a new stream from the ground up at the lower end of Chelan Gorge, near the dam's powerhouse. The area contains gravel, vegetation and stream flow that fish like for spawning. Water is released from the dam through an underground conduit to keep the flow constant. A pumping system just upstream of the habitat area ensures optimal flow during spawning. "We're just thrilled that it actually works," said PUD fisheries biologist Jeff Osborn on Tuesday. "You never know what the fish are going to do. To actually see them come in and use it and have successful spawning. It's like, wow, we've really provided a tremendous benefit to this species." Steelhead, an endangered fish, may find their way to the new habitat as well. Osborn says the next big Chinook spawning season will happen from mid-October to mid-November. Public viewing is ideal from Powerhouse Park in Chelan Falls and from the old Chelan Falls Highway bridge that crosses at the powerhouse tailrace, he said. The PUD was required to undertake the Chelan River Project for its license to operate Lake Chelan Dam and powerhouse. The dam had interrupted year-round flow through the gorge since the 1920s.

(Follow-up)

kpq.com, Wenatchee, WA

## Chelan County PUD was honored Monday by the National Hydropower Association as one of three Outstanding Stewards of America's Waters for 2010.

At ceremonies in Washington, D.C., as part of the annual NHA conference, Chelan PUD received a plaque recognizing its work on the Chelan River Habitat Restoration and Enhancement Project. The $16 million project completed last year restores year-round flows to the Chelan River, added four acres of new spawning and rearing habitat at the lower end of the river and provides additional water from a new pump station at key times of the year for steelhead and salmon spawning. The enhancement project was completed as part of the new 50-year operating license for the Lake Chelan Hydro Project. Chelan PUD biologists say Chinook salmon built hundreds of spawning nests last fall so there are indications that the project is working the way it was designed .

## Research aids Northwest salmon

BY GRACE SAVIDES | APRIL 27, 2010, dailyiowan.com

Three scale models of hydroelectric dams designed by University of Iowa researchers are good news for salmon — and those who enjoy eating them. A team of researchers from the Iowa Institute of Hydraulic Research-Hydroscience & Engineering are trying to solve problems posed by hydroelectric dams to salmon. The dams can hinder the fish when they try to travel upstream to mate and lay eggs where they were born. The UI has been on the forefront of fish-passage technology for the last three decades. The hydroscience and engineering department recently renewed its contract with Public Utility District No. 2 of Grant County, Wash., which will provide $15 million to continue research into improvements to hydroelectric dams in the Pacific Northwest. In the Coralville-based James Street Laboratory on Monday morning, Larry Weber, director of the UI's hydroscience labs, noted the UI and the Washington public-works company have been collaborating since 1983. "Because of our long history, we created a lot of specialized knowledge no one else had," he said. Though the building where Weber and his colleagues work resembles a warehouse from the outside, the interior looks more like a cross between an aquarium and a waterpark — full of rushing water and complex machinery.

Scientists originally thought salmon could swim through the dams' turbines, but later discovered those mechanisms could leave fish disoriented, easy targets for predators, Weber said. The water from the dams can also trap nitrogen from the air in the water. Though this only happens occasionally, the excess nitrogen can cause gas-bubble disease, sickening or killing the salmon. According to a report by the Pacific States Marine Fisheries Commission and the Oregon Fisheries Congress, dams in the Upper Columbia River Basin are responsible for 70 to 96 percent of the downstream migrating young fish deaths and approximately 40 percent of deaths in upstream migrating adults. Past UI research has aided salmon during a different part of their life cycle — when they travel upstream. Now, they're looking to help juvenile salmon swim downstream through the dams to the sea. Their solution? The Juvenile Fish Bypass. The bypasses, designed by UI officials, are built into pre-existing structures of dams and can be opened to allow salmon an easy exit that doesn't leave them dazed. The bypasses also keep them at the surface as they exit, lessening the effect of any excess nitrogen. "The whole purpose of this is to increase the survival of the fish," said Troy Lyons, a staff engineer for hydraulic institute. Officials only open the Juvenile Fish Bypasses during the time of the year when the salmon, who are often tracked by radio tags, are near the dam. The survival rate for salmon tracked through a bypass has been 100 percent. Andy Craig, a staff engineer for the institute, said engineers weren't sure how the dams would affect fish when they were constructed, and they are now looking to alter them to be ecologically responsible. The institute's contract with the Washington public-utility district, which was renewed in January, will extend for the next five years. Since 1983, the fish-passage program has generated more than $40 million in research funding.

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