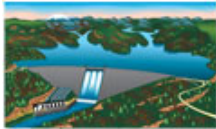


# Some Dam – Hydro News and Other Stuff



10/05/2007

Quote of Note: *“Those Who Do - Build, Those Who Don't - Criticize” -- Robert Moses*



## Dams

(Re removal of the 4 Lower Snake River Dams, here's a tidbit from Pat March.)

The total annual solar electric generation for the USA (according to 2005 EIA data) is less than 150 GWh, which is so insignificant that it is listed in EIA data as an asterisk and a footnote ("Less than 500 billion BTU"). Therefore, the annual solar electric generation for the entire country is about 1.4 % of the Lower Snake River projects' annual generation.

(Here's a new report worth reading on the effect of hydro on CO<sub>2</sub> footprint in the Northwest Power System and info on the effect of removing the 4 Lower Snake River Dams.)

<http://www.nwcouncil.org/library/2007/2007-15.pdf>

If you want to comment on the document, go to this site for details:

<http://www.nwcouncil.org/library/2007/2007-15.htm>

(Hint: Hold down Ctrl key and click on links.)

Quote from report:

***“Effects of lower Snake dam replacement***

When the operation of the changed power system is simulated, the lost hydro energy is replaced by the additional production of 170 average megawatts from existing coal-fired units and about 810 average megawatts from new and existing natural gas units. This would increase the average annual CO<sub>2</sub> production for 2015-24 from Northwest sources by 4.6 million tons compared to the base case. By 2024, 76 MMtpy of CO<sub>2</sub> would be produced directly from Northwest sources, a 73 percent increase over the 1990 rate. Average net annual CO<sub>2</sub> production for 2015-24 across the entire WECC system would increase 5.4 million tons compared to the base case.”

## **How safe are local dams?**

### **Official says TVA dams frequently inspected**

By Dennis Sherer, MUSCLE SHOALS, TimesDaily.com, 9/30/07

John Keeton was too busy fishing at the base of Wilson Dam to worry about what might happen if the dam suddenly gave way. "I haven't even thought about it breaking," Keeton, of the Walker County town of Nauvoo, said as he fished for catfish and striped bass about 200 feet downstream from the dam. "The only thing I'm worried about is if the fish are going to bite." Dam safety was thrust to the forefront recently after U.S. Army Corps of Engineers dams in Kentucky and Tennessee were both classified as critically near failure. Wolf Creek Dam on the Cumberland River in Russell County, Ky., and Center Hill Dam on Caney Fork River near Lancaster, Tenn., are both plagued with seepage through limestone formations beneath their bases, said Bill Peoples, a spokesman for the Corps of Engineers, Nashville District. The levels of Lake Cumberland behind Wolf Creek Dam and Center Hill Lake have been lowered to reduce stress on the dams. Repairs are under way on Wolf Creek Dam and are expected to begin soon on Center Hill Dam. Peoples said both are under constant surveillance. "We have someone walking those dams 24/7 looking for sinkholes and other problems," he said.

Jerry Gibson, the Tennessee Valley Authority's senior manager of dam safety, said TVA dams are frequently inspected. "We inspect them on a limited level monthly and perform a complex inspection every five years," he said. "We also have very thorough inspections every 2 1/2 years." During the five-year inspections, divers are sent to the base of the dams to check for leaks and structural problems. In addition, engineers rappel down the face of the dams to check for problems. Electronic monitors at TVA's dams are constantly measuring for movement of the structure, the amount of pressure from the water and other indicators that can warn of potential problems. "We look for very, very small changes. Anything that could indicate a problem with a dam," Gibson said. Gibson said TVA has not stepped up its dam inspections in wake of the problems discovered at the Corps of Engineers dams. He said TVA's dam inspection program has always been intense. He said there are no problems with Wheeler, Wilson or Pickwick dams in and near the Shoals on the Tennessee River. Bear Creek Reservoir Dam in Franklin County, however, has been plagued with leaks since it was completed in 1969.

Like Wolf Creek and Center Hill dams, Bear Creek Dam was built over limestone rock, which has dissolved through the years, allowing water to escape from the reservoir near Hodges. Work is expected to get under way in October to replace the earthen dam. TVA officials have said Bear Creek Dam is not in danger of a catastrophic failure, but have positioned machines and construction material at the dam that could be used to make emergency repairs if the leaks suddenly become worse. During heavy rains, repair crews are stationed at the dam to watch for new leaks. People living downstream from the Wolf Creek and Center Hill dams, including residents of Nashville, Tenn., have been warned to be prepared to evacuate in case the leaks at those two dams intensify. "Neither dam is in imminent danger of failure, but they are in a high-risk situation," Peoples said. TVA spokesman Gil Francis said the federal utility takes dam safety seriously. "All of our dams meet federal dam safety guidelines," Francis said. "In addition to the scheduled inspections, we have veteran people working at our dams who are constantly looking for problems. They are so in tune with the dams, they can detect the slightest change. They know when something looks out of the ordinary." The dams receive a thorough inspection whenever there is a major earthquake nearby or after a flood, Gibson said. "We're always looking at our dams to make sure they are safe," Francis said.

## **Pace of dam removals accelerating across watershed**

### **The breaches are a boon for myriad fish: shad, eels and other migratory species for which the loss of habitat is cited as a main reason for their decline**

By Karl Blankenship, Alliance for the Chesapeake Bay Renewal, October 2007

In mid-August, when river advocates gathered on the banks of the Rivanna River to announce the ongoing breaching of the Woolen Mills dam, they heard something unknown for nearly two centuries. The summer drought had been broken by rain the previous night, raising the level of the river through Charlottesville; the Rivanna was flowing freely through a portion of the breach. "That was probably the first time in 177 years that you could hear the river there," said Jason Halbert, a volunteer with the Rivanna Conservation Society who had been working to remove the dam for six years. In the next few weeks, most of the rest of the dam was removed, opening the James River tributary to migratory fish, and clearing the way for kayakers and canoeists. "The eels are already loving it," Halbert said.

A rarity until a few years ago, such dam removals are becoming commonplace around the region as biologists seek to open historic spawning areas for migratory fish and help return streams to a more natural

condition. State and federal agencies, national conservation groups and grass-roots organizations such as the Rivanna group, now champion removing dams where possible over the historic emphasis on constructing fishways. They have a daunting task: In past centuries, dams were built by the thousands. First, they provided power for the Industrial Revolution, running mills and providing water to a vast network of canals. Later, they provided electricity, city water supplies, flood prevention, recreation and a host of other services. The Bay watershed alone has more than 2,500 dams, shutting most of the watershed to spawning runs of shad, herring and other migratory species that once numbered in the millions. Nonetheless, the pace of removals is quickening. This was the first year in which Pennsylvania, Maryland and Virginia each removed multiple dams.

**Some of this year's highlights include:**

**In Pennsylvania**, the McCoy-Linn Dam, an aging 14-foot, 150-foot-long structure in Centre County was removed in August. A related project will restore roughly a mile of high quality habitat at the site to help make it a recreational destination. "It is on, arguably, the best wild trout stream in the commonwealth, and there is a significant amount of habitat that is going to be opened up and created for the trout population there," said Dave Kristine, of the Pennsylvania Fish and Boat Commission. Also in Pennsylvania, the Wittlinger Dam on the Yellow Breeches Creek near Boiling Springs was removed. The dam, about 4 feet high and 90 feet long, had been damaged in several storms in recent years and become a hazard.

**In Maryland**, a 4-foot-high earthen dam was removed on the Puckum Branch of the Nanticoke River in January, opening 4.5 miles to alewife, blueback herring and perch. This fall, officials were planning to remove the Pittsburgh Plate & Glass Dam, an old pile of rubble across the Potomac River near Cumberland, MD. They were also planning to remove the Raven Rock dam, a concrete and mortar barrier to brook trout movement on Raven Rock Creek near Hagerstown. "We're definitely looking for removals rather than ladders," added Jim Thompson, fish passage coordinator with the Maryland Department of Natural Resources. "We have a bunch queued up for next year."

**In Virginia**, the Quinn Dam on the Tye River, a 6-foot-high blockage on the James tributary near Lynchburg, was also removed, opening 20 miles of habitat to migratory fish. "Local canoeists and people around the state are also pretty excited because it's a popular river to canoe, and the dam has always been a problem," said Alan Weaver, fish passage coordinator with the Virginia Department of Game and Inland Fisheries.

Reopening those rivers has been a Bay Program priority since 1988. But for years, more emphasis had been placed on building fish ladders or other passages. Giant elevators were even built at some dams on the Susquehanna River to hoist shad and other species over the obstructions. While those passages theoretically opened more than 2,100 miles of Bay tributaries to migratory fish, biologists have often been disappointed by their performance. On the Susquehanna River this year, 25,464 American shad were lifted over the Conowingo Dam-the first obstruction on the river. But only 192 made it past all four hydroelectric dams in the first 80 miles of the river to reach spawning habitat. Such problems highlight that even the best designed passages can still pose significant hurdles for fish. In contrast, Weaver said, dam removal is "basically 100 percent effective at fish passage." More than migratory fish benefit. Dams fragment, and degrade, habitat needed for local fish, such as brook trout. When the Reedsville Dam was removed on Tea Creek in Pennsylvania's Mifflin County in 2004, the biomass of brook trout doubled within a year, Kristine said. The population has since continued to expand. The move toward dam removal was dramatically punctuated in February 2004 when 650 pounds of explosives were used to begin breaching Embrey Dam on the Rappahannock River outside Fredericksburg, VA. Until the 22-foot-high, 770-foot dam was breached, there were no free-flowing rivers that linked the Bay with its mountain headwaters. The next year, the Bay Program adopted a policy promoting dam removals over passages where practicable.

Pennsylvania already had an aggressive program to remove dams-it has removed more than 70 dams in recent years, more than any other state. Since Embrey, removal activity has stepped up in Maryland and Virginia as well. None of this year's projects were as large or dramatic as Embrey, or opens hundreds of miles of habitat. The largest dam removed this year, Woolen Mills, opened 16 miles, but biologists say the bits and pieces add up. "More habitat, more fish is our philosophy and seems to be a good way to look at it," Weaver said. The state stocked several million shad larvae above the dam in recent years in the hope that after they migrate to the ocean, they will return to their native river and spawn when they mature at age 4 or 5. Loss of access to habitat is one of the reasons cited for the declines of shad, eels and other migratory species. But removals serve other purposes. Because of their age, the driving force behind many dam removals are deteriorating conditions and their potential hazard to public safety. Some people wanted to preserve the Woolen Mills dam because it was a historic structure, built in 1830 to power a mill and also serve as part of a series of dams, locks and canals that allowed boats to travel up the river. The Woolen Mills company manufactured wool uniforms until it closed in 1964, although it had switched to electric power around 1900. But a swimmer was killed in 2003 when he was swept over the top.

Ultimately, no one wanted to absorb the liability for the structure. "That wasn't practical at all," Halbert said. "The cost to repair the dam would have been tremendous, and that would not have removed the hazard." As part of the agreement to remove the dam, about one-quarter of the 300-foot-long dam was left standing. Portions of the adjacent canal system are also being preserved. A kiosk will be built to interpret the historical significance of the site. Halbert said the dam removal exposed a scenic "rock garden" that had long been hidden by the structure. He said the removal-coupled with planned improvements at parks along the river and the potential for a canoe livery in the area-should increase public appreciation for the Rivanna. "It's the kind of thing where I hope the community comes down to the river more now that the dam is gone," he said.



## **Hydro**

### **Hydropower could come of age again**

**CURT WOODWARD; The Associated Press, Tacoma News Tribune, September 4<sup>th</sup>**

It's been likened to a giant bellows or a massive fire hose, sending huge amounts of water roiling and churning between Puget Sound's southern and northern basins with every change of the tides. Some entrepreneurs, however, see the mile-wide channel of the Tacoma Narrows as more than a natural wonder. It's also the next frontier of green energy. "It's awe-inspiring," said Burt Hamner, chief executive of Puget Sound Tidal Power. "There is so much power out there that it boggles the mind." Hamner's firm is part of an emerging industry that hopes to turn the Pacific Northwest's wind-swept coasts and powerful tidal currents into a bountiful source of electric power. Their pursuit is one of the big changes on the horizon for the Northwest's hydropower industry, which faces both peril and promise from the projected effects of climate change. On one hand, dam operators who helped build the region's economy face a big worry: that climate change will disrupt runoff cycles, increasing tension between utilities, farmers and fish when the water supply is short. But proponents of both old and new hydropower technologies see the chance to claim a bigger slice of the nation's energy plans, as policy-makers look for sources of power free of greenhouse gases. "I think we're probably going to need to do everything when it comes to climate," said Dan Adamson, a Washington, D.C., attorney who served on the Federal Energy Regulatory Commission during the Clinton administration.

#### **HUGE RESOURCE**

Hydropower is by far the largest renewable source of electricity in the U.S., dwarfing wind, solar and other green technologies. Even so, there's still plenty of room to grow. The Electric Power Research Institute, an industry group, has estimated the U.S. could increase its hydropower capacity by 23,000 megawatts in the next two decades. A good portion of that capacity could be wrested from traditional hydropower systems. For instance, the National Hydropower Association says only 2 percent of the nation's dams generate electricity. Dam operators like Tim Culbertson, general manager of the Grant County Public Utility District, say their task is wrangling more incentives from government, which has tended to favor wind development in recent years. At the same time, Culbertson and others are looking over their shoulders at the ways climate change could alter the timing of the natural water cycle. In a warmer climate, dam operators might need to spill more water for farmers or fish during a dry summer, cutting into electric generation. A 2005 report from the Northwest Power and Conservation Council showed that by 2020, the Columbia River hydropower system could lose as much as \$230 million per year due to climate change.

#### **NEXT-GENERATION HYDROPOWER**

Meanwhile, on the west side of the Cascade Range, utilities are lining up for a chance to launch the next generation of hydropower systems. There are about 10 projects in various stages of federal permitting – including the Tacoma Power project on the Narrows – that aim to capture energy from the movement of water around Puget Sound. Entrepreneurs and utilities also are focusing on technology that could generate power from ocean waves. In Oregon, a British Columbia-based company called Finavera Renewables is about to test one such system based on a floating buoy. The technology is still in the experimental stage, but environmentalists such as People for Puget Sound's Kathy Fletcher worry that large arrays of electric turbines could harm threatened killer whales, salmon and other species. "For a lot of reasons, including protection of Puget Sound, we need to develop clean energy," Fletcher said. "But it would just be unfortunate if we do that at the expense of Puget Sound." Developers say those concerns aren't falling on

deaf ears. Hamner, who is working with Tacoma Power to study the Narrows project, says new hydro technologies will only get off the ground in the Northwest if environmental worries are satisfied. "The bottom line is, the power's out there. But it's got to be developed in an environmentally sustainable fashion," he said.

September 26, 2007

## **Connecticut Hydro Power Conference**

**Hydropower in Connecticut and the Northeast, January 11, 2008**

This is the official Conference Announcement.

The starting time and registration procedures are not determined yet.

This conference will examine the role of hydropower in the push for renewable energy sources as well as the implications of the incentives the state and the federal governments are considering for hydro development. There will be a particular emphasis on small, new hydro and the recent proposals under consideration in Connecticut and Vermont. Elements of the discussion will include: \* The historical context, parallels with the hydro rush of the 1970s and 1980s \* Impact of new, small hydro on the ecology of rivers \* Alternatives such as increased efficiency, new technologies \* What constitutes green hydro, design vs. size For more info: Rivers Alliance of Connecticut, 7 West Street. POB 1797, Litchfield, CT 06759, Tel: 860-361-9349.

## **Hydroelectric Power**

**U.S. Census Bureau, September 27, 2007**

*Profile America* — Thursday, September 27th. An idea from the very early days of using electricity in America set the stage for a major source of today's energy. **This week in 1882, the world's first hydroelectric power plant began operating on the Fox River in Appleton, Wisconsin.** The plant, later named the Appleton Edison Light Company, was initiated by Appleton paper manufacturer H.F. Rogers, who had been inspired by Thomas Edison's plans for an electricity-producing station in New York. With financial backing from three Appleton men, one a personal friend of Edison's, Rogers began building the Appleton plant at his riverside paper mill during the summer of 1882.

Unlike Edison's New York plant which used steam power to drive its generators, the Appleton plant used the energy of the Fox River. The operation's water wheel, generators, and copper wiring took only a few months to install and test. When the plant opened, just twenty-six days after Edison's, it produced enough electricity to light Rogers' home, the plant itself, and a nearby building. Soon, hydroelectric power plants were spurring industrial growth in many parts of the country. Now, water-generated electricity is most important in the West. Nationally, most power is generated in coal-fired plants, followed by those using natural gas, petroleum and nuclear power. You can find these and more facts about America from the U.S. Census Bureau on the Web at [www.census.gov](http://www.census.gov).

## **The First Home to Use Hydroelectricity**

<http://www.focol.org/hearthstone/index.html>

(Hint: Hold down Ctrl key and click on links.)

## **NHA shows support at FERC conference for expedited licensing proposal for ocean, tidal, instream projects**

**WASHINGTON DC (Oct. 1, 2007)** – The National Hydropower Association will join dozens of waterpower developers, utility companies, government agencies and other interested groups Tuesday in Portland, Oregon, to discuss the [Federal Energy Regulatory Commission's proposed licensing process for hydrokinetic energy pilot projects](#). The FERC proposal, announced in July, is designed to **complete the licensing of ocean, tidal, wave and instream hydrokinetic projects in as few as six months.** Among other things, the process allows for these emerging technology generators to produce power while still testing. FERC is hosting the workshop to answer questions and receive feedback related to the proposal. NHA has more than 30 member companies that compose its Ocean, Tidal, and New Technologies Council – a group that is actively pursuing potential development of waterpower resources. Representatives from many of those companies will be attending, along with NHA Executive Director Linda Church Ciocci, who is one of several panelists. "There's no doubt that through development of hydrokinetic energy—whether from oceans, tides, waves or rivers— we can produce a great amount of clean, climate-friendly, renewable

energy,” said Church Ciocci. “There is more than energy to be harnessed; there is also the spirit of innovation. FERC is proposing a regulatory process that encourages the development of these evolving technologies in a real-world environment and that is precisely what the industry needs to thrive.”

FERC Commissioner Philip Moeller will lead the conference. “This new generation of hydrokinetic technologies will bring hydropower to the forefront of the renewable energy debate,” Moeller said. “It is generating a lot of enthusiasm throughout the country, particularly in coastal states like my home state of Washington.” A recently released report by the Electric Power Research Institute estimates hydropower can add at least another 23,000 megawatts by the year 2025, with a total growth potential of nearly 90,000 megawatts. That 2025 estimated potential includes 13,000 megawatts from ocean, wave and instream hydrokinetic technologies.

**October 3, 2007**

## **Blaze Kills 5 Workers in Colorado**

**By DAN FROSCH**

DENVER, Oct. 2 — Five workers at a hydroelectric plant outside Georgetown, Colo., were killed on Tuesday when a chemical fire trapped them in a water tunnel where they were working, officials said.

Rescue workers in the mountain town had been in contact with the trapped workers earlier on Tuesday afternoon, and they were initially thought to be alive and uninjured. But afterward contact was lost, and rescue teams from the nearby Henderson Mine discovered the bodies.

“It’s the worst thing that’s ever happened here,” said Kathleen Gaubatz, the director of emergency management for Clear Creek County. “We’ve never had anything happen like this before. This is incredibly disappointing.” Ms. Gaubatz said the workers were at the bottom of a 3,000-foot-long tunnel that carries water to the hydroelectric plant from a reservoir. They were coating the four-foot-wide tunnel with epoxy sealant when the fire broke out, she said. Four other workers were able to escape the fire, Ms. Gaubatz said. One of them was flown by helicopter to a local hospital, but she did not know the nature of the injuries. The nine workers were employees of a contractor used by Xcel Energy, the plant’s owner. The procedure has been carried out every year since 1967, she said. Ms. Gaubatz said she was not aware of any previous problems at the plant, which is about two miles southwest of Georgetown and about 60 miles west of Denver. She said the bodies would be removed from the tunnel Tuesday night and examined by a coroner to determine the cause of death.

Xcel issued a statement Tuesday night saying the workers were about 1,500 to 2,000 feet below ground applying the sealant to the walls of the tunnel, or penstock, to prevent corrosion. The four workers who escaped the fire were below it, the company said. Initially, according to statements released by Xcel, the five workers who were killed were thought to be a safe distance from the fire and waiting for it to be extinguished. There was communication with the five workers just after the fire broke out, and there were no reported injuries at that time, according to one statement. Forty minutes after the fire started, fresh air was piped in to the workers, and oxygen bottles were lowered to them, the earlier statement said. “We want to express our deepest sympathies to the families, friends and co-workers of those who died,” Tim Taylor, president and chief executive of Public Service Company of Colorado, a division of Xcel Energy, said in the statement. “Certainly we’ll be working closely with the authorities to investigate what happened.”

## **Cabin Creek Station**



**Location:** Outside Georgetown, Colorado

**Plant Description:** Cabin Creek is a hydroelectric pumped storage power plant.

**Power Production Capabilities:** 324 megawatts (MW): Unit 1 – 162 MW and Unit 2 – 162 MW.

**Fuel Source:** Water supplied from two reservoirs totaling 1,977 acre feet.

**Plant History:** Cabin Creek construction began in June 1964 and was completed in April 1967.



## Water

### **Drought drives cut in water being released at dams**

by rsims September 26, 2007, The Birmingham News

Alabama Power Co. by Nov. 5 plans to release less than half the amount of water it normally releases for the Alabama River from dams on the Coosa and Tallapoosa Rivers, a company executive said today. Charles Stover, reservoir management supervisor for the utility, said the water flows the company releases into the Alabama River, if reductions go as planned, would be the lowest in many decades. Alabama Power normally maintains a minimum water flow of 4,640 cubic feet per second from dams on the Coosa and Tallapoosa rivers, which merge near Wetumpka to form the Alabama River. The utility reduced the flow to 4,176 cubic feet per second, a 10 percent cut, in July. Alabama Power now plans, from Oct. 8 through Oct. 29, to reduce the flow each week by about 464 cubic feet per second, and then to maintain a water flow of 2,000 cubic feet per second starting Nov. 5. Stover said the utility might not cut back releases by that much if rainfall picks up. A reduction from the normal minimum flow of 4,640 cubic feet per second to 2,000 cubic feet per second would mean a reduction in water releases for the Alabama River of about 71 million gallons per hour. Stover said the planned weekly reductions in water releases, triggered by the ongoing drought, would slow the decline in lake levels at Lake Martin, Logan Martin Lake and the company's other storage reservoirs on the Coosa and Tallapoosa rivers.

Also Wednesday, the U.S. Army Corps of Engineers announced that starting Oct. 3, it would reduce water releases by at least 200 cubic feet per second from Allatoona Lake north of Atlanta. Water from the lake flows into Alabama in the Coosa River. Corps officials said that if current drought conditions continue, Allatoona Lake could be drained by February if they didn't reduce water releases from the lake.

### **Puget Energy declines cities' offer to buy Lake Tapps**

September 27, 2007, THE ASSOCIATED PRESS, The Seattle Post-Intelligencer  
BONNEY LAKE, Wash. -- The city of Auburn says Puget Sound Energy has turned down an offer to buy Lake Tapps. Auburn, Bonney Lake and Sumner wanted to buy the lake as a water supply. At a meeting yesterday mayors were told Puget Sound Energy is still negotiating an exclusive agreement with the Cascade Water Alliance, a King County water utility. Puget is selling the reservoir after shutting down a White River hydropower operation.

### **How water restrictions are decided**

#### **AS DROUGHT CONTINUES**

#### **Duke Energy manages the reservoirs; governments help put plan in place**

BRUCE HENDERSON, The Charlotte Observer, Sep. 30, 2007

Bummed by Charlotte-Mecklenburg's ban of lawn watering? Wondering who and what decides local water restrictions? At their heart is Duke Energy, which manages the Catawba River reservoirs under a federal hydroelectric license that expires in 2008. In negotiating terms of a new license, Duke created a drought-response plan that's getting its first test.

#### **How it works**

The plan is designed to stretch water supplies during a dry spell. Twenty-four local governments, including Charlotte-Mecklenburg Utilities, belong to an advisory group that puts the plan into action. Each enacts its own water restrictions based on shared conservation goals. Duke monitors three conditions: lake levels for how much water is in its reservoirs; stream flows that feed the lakes; and the U.S. Drought Monitor.

#### **As the drought drags on**

The plan sets trigger points to respond to conditions. At Stage 1, declared July 30, Duke reduced the amount of water released from its dams and closed some boat ramps as lake levels fell. Local water agencies asked customers to reduce water demand 3 percent to 5 percent. At Stage 2, in effect Aug. 27, Duke further cut water releases, shutting down most of its hydro plants. Local governments set mandatory restrictions with a conservation goal of 5 percent to 10 percent.

#### **More cuts to come?**

Stage 3 awaits, probably later in October if no rain falls. Duke would further lower lake levels, especially at Lakes James and Norman, which hold most of the system's water. Lake James could fall to as much as 15 feet below full pond in October. The winter months could take it still lower. Municipal water users could face more restrictions to meet a Stage 3 conservation goal of 10 percent to 20 percent. The watering ban last week by Charlotte-Mecklenburg Utilities and several other cities is as harsh as it's likely to get for homeowners. Charlotte-Mecklenburg says it would turn to cuts among large industrial and commercial customers. Stage 4 would further clamp down, with a goal of cutting water use 20 percent to 30 percent.

#### **If rain doesn't come**

The Catawba won't run out of water. But lake levels could drop to the point that intakes for power plants, municipalities and industries can't pump water. The region's conservation efforts are trying to prevent that. At Lake Norman, for instance, the critical intake-covering level is 10 feet below full pond. The lake is now 6.5 feet below full. Since a lot of water depth is under the intake, the lake could be left with billions of gallons -- all out of reach.



## **Environment**

(This is a scary prediction.)

### **Rising Seas Likely to Flood U.S. History**

By SETH BORENSTEIN, AP Science Writer, WIRED.com, 9/24/07

Ultimately, rising seas will likely swamp the first American settlement in Jamestown, Va., as well as the Florida launch pad that sent the first American into orbit, many climate scientists are predicting. In about a century, some of the places that make America what it is may be slowly erased. Global warming - through a combination of melting glaciers, disappearing ice sheets and warmer waters expanding - is expected to cause oceans to rise by one meter, or about 39 inches. It will happen regardless of any future actions to curb greenhouse gases, several leading scientists say. And it will reshape the nation. Rising waters will lap at the foundations of old money Wall Street and the new money towers of Silicon Valley. They will swamp the locations of big city airports and major interstate highways. Storm surges worsened by sea level rise will flood the waterfront getaways of rich

politicians - the Bushes' Kennebunkport and John Edwards' place on the Outer Banks. And gone will be many of the beaches in Texas and Florida favored by budget-conscious students on Spring Break. That's the troubling outlook projected by coastal maps reviewed by The Associated Press. The maps, created by scientists at the University of Arizona, are based on data from the U.S. Geological Survey.

Few of the more than two dozen climate experts interviewed disagree with the one-meter projection. Some believe it could happen in 50 years, others say 100, and still others say 150. Sea level rise is "the thing that I'm most concerned about as a scientist," says Benjamin Santer, a climate physicist at the Lawrence Livermore National Laboratory in California. "We're going to get a meter and there's nothing we can do about it," said University of Victoria climatologist Andrew Weaver, a lead author of the February report from the Intergovernmental Panel on Climate

## Sea level rise could reshape the nation

Global warming – through a combination of melting glaciers, disappearing ice sheets and warmer waters expanding – could cause oceans to rise by one meter, or about 39 inches.

**Area affected by a 1-meter sea rise**



SOURCE: University of Arizona

AP

Change in Paris. "It's going to happen no matter what - the question is when." Sea level rise "has consequences about where people

live and what they care about," said Donald Boesch, a University of Maryland scientist

who has studied the issue. "We're going to be into this big national debate about what we protect and at what cost."

This week, beginning with a meeting at the United Nations on Monday, world leaders will convene to talk about fighting global warming. At week's end, leaders will gather in Washington with President Bush. Experts say that protecting America's coastlines would run well into the billions and not all spots could be saved. And it's not just a rising ocean that is the problem. With it comes an even greater danger of storm surge, from hurricanes, winter storms and regular coastal storms, Boesch said. Sea level rise means higher and more frequent flooding from these extreme events, he said. **All told, one meter of sea level rise in just the lower 48 states would put about 25,000 square miles under water,** according to Jonathan Overpeck, director of the Institute for the Study of Planet Earth at the University of Arizona. That's an area the size of West Virginia. The amount of lost land is even greater when Hawaii and Alaska are included, Overpeck said. The Environmental Protection Agency's calculation projects a land loss of about 22,000 square miles. The EPA, which studied only the Eastern and Gulf coasts, found that Louisiana, Florida, North Carolina, Texas and South Carolina would lose the most land. But even inland areas like Pennsylvania and the District of Columbia also have slivers of at-risk land, according to the EPA. This past summer's flooding of subways in New York could become far more regular, even an everyday occurrence, with the projected sea rise, other scientists said. And New Orleans' Katrina experience and the daily loss of Louisiana wetlands - which serve as a barrier that weakens hurricanes - are previews of what's to come there. Florida faces a serious public health risk from rising salt water tainting drinking water wells, said Joel Scheraga, the EPA's director of global change research. And the farm-rich San Joaquin Delta in California faces serious salt water flooding problems, other experts said. "Sea level rise is going to have more general impact to the population and the infrastructure than almost anything else that I can think of," said S. Jeffress Williams, a U.S. Geological Survey coastal geologist in Woods Hole, Mass. Even John Christy at the University of Alabama in Huntsville, a scientist often quoted by global warming skeptics, said he figures the seas will rise at least 16 inches by the end of the century. But he tells people to prepare for a rise of about three feet just in case. Williams says it's "not unreasonable at all" to expect that much in 100 years. "We've had a third of a meter in the last century." The change will be a gradual process, one that is so slow it will be easy to ignore for a while. "It's like sticking your finger in a pot of water on a burner and you turn the heat on, Williams said. "You kind of get used to it."

On the Net:

The U.S. Environmental Protection Agency on sea level: <http://tinyurl.com/2df72n>

The U.S. Geological Survey on sea level rise and global warming:

<http://woodshole.er.usgs.gov/project-pages/cvi/>

University of Arizona's interactive maps on sea level rise: <http://tinyurl.com/ca73h>

Architecture 2030 study on one-meter sea level rise and cities:

<http://www.architecture2030.org/current-situation/coastal-impact.html>

### Editorial | Three Gorges Dam

Sep. 30, 2007, The Philadelphia Enquirer

### China's ecological nightmare

It's one of the biggest projects ever undertaken by human beings. And one of the dumbest. What China does about Three Gorges Dam - and its potentially catastrophic effects - will be a drama the rest of the world should watch, especially the United States. Three Gorges Dam is a colossal haunch of concrete thrown across the river Yangtze, which supplies about 35 percent of China's freshwater resources. The dam was finished last year. It is creating a reservoir that, when complete, will stretch more than 400 miles and submerge more than 244 square miles of land. It will also be an ecological disaster.

For one thing, it is flooding a region long sacred to the Chinese (comprising Qutang, Wuxia and Xiling Gorges), soul of its greatest art and poetry. For another, the Yangtze, a dump for about 14 billion tons of waste each year, is one messed-up river. A report in April said about one tenth of its 3,900-plus miles were critically polluted, many of them irreversibly; the new reservoir is already contaminated with sewage, pesticides and other filth. Even the head Three Gorges builder is now warning of disaster. Wang Xiaofeng told a conference last week of erosion, foolish development, pollution and landslides (which in turn increase pollution). "We cannot win passing economic prosperity at the cost of the environment," he was quoted as saying. This country needs to watch what China does next. Why? Because while ours and other Western nations (so far) have kept our ecological crises somewhat at arm's length, China's pollution crisis is right here, right now. China is home to some of the most polluted places in the world, including two of the 10 worst, according to a recent report by the Blacksmith Institute, a New York-based agency devoted to solving pollution problems in the developing world. China needs hydroelectric power, which is why its leaders, starting with Sun Yat-sen in 1919, have long dreamed of such a monster dam. And its people cry for ever more water: Two-thirds of its cities have less than they need. The crushing problem is that so much of the country's water is foul. Aquifers for 90 percent of China's cities are polluted. China's "tainted food" problem (implicated in killer pet food exported to the United States) is actually a tainted water problem, with rice, wheat and other crops concentrating poisons from the environment. And from the coal town of Linfen, where about three million people choke on coal dust daily, to Tianying, where 140,000 people may be affected by lead-based poisoning, signs of social unrest are beginning to arise, joining constant protests from the country's fuming cities. These protests are not driven by vague feel-good sentiments about "the ecology" but are revolts against the outrage of living in a dirty world.

China's leaders may realize they can't ignore the situation any longer. Zhou Shengxian, head of China's equivalent of our Environmental Protection Agency, reported 51,000 ecological protests in 2005 alone, including a march by 30,000 to 40,000 villagers who swarmed over 13 chemical plants in Zhejiang Province. The environment is now a security issue. Wang called for steps now to head off worse problems. The massive question, more massive than any dam, is: What are they going to do? Yes, this is still a totalitarian state, yet law enforcement is often lax and corruption endemic and culturally in-woven. By definition, China's environmental and population crises are bigger than anyone else's. So now what? U.S. leaders long have said this country can't sign global-warming accords because it couldn't meet the targets, which would hurt business too much. China is way beyond such talk. Everyone hopes we never get where China is - but if we are ever to learn how to fix what's broken (if, at this stage, it can be fixed at all), we need to keep our eyes on China.

## **The Great Lakes Are Disappearing**

By Martin Mittelstaedt, The Toronto Globe and Mail, September 24, 2007

The Great Lakes... aren't as great as they used to be. Government forecasters are projecting that Lake Superior, the largest of the five, will fall to its lowest level for September since modern recordkeeping began... The amount flowing out of the lake at its outlet, the St. Mary's River, has plunged too, and would have to rise by a staggering 50 per cent to reach the average of the past century. Levels on Lakes Michigan and Huron are also sagging, Ontario is down, as is Erie - although the latter, the smallest by volume, has been the least affected. What's going on? While there is no scientific certainty about what's ailing the Great Lakes - which together [contain about one-fifth of all the fresh water on the planet and] form the world's largest interconnected body of fresh water - some fear global warming is at work... Water levels on the Great Lakes go through seasonal fluctuations driven by the flow and ebb of the spring snowmelt. They also experience lengthy... alternating cycles of high and low readings that occur for unknown reasons and can cause levels to vary by a metre or even more over the years... But [this current down cycle] seems much more extreme than usual, lasting for nearly a decade - prompting questions about global warming. Computer model projections generally show that the lakes will shrink as climate changes cause air temperatures around them to rise. Not only will the lakes themselves become warmer, leading them to lose more water to evaporation, but the land is likely to become drier, reducing the supply of groundwater to streams that feed the lakes." Mittelstaedt points out that while a drop of a meter of water might seem insignificant, about 99

percent of the lake water is non-renewable, a remnant of the last ice age, and only about one percent is replenished each year through precipitation.

## **AmerenUE steps closer to final Shoreline Management Plan**

### **Utility expects to present document to the public sometime in late November**

By Joyce L. Miller/Lake Sun Leader, September 29, 2007

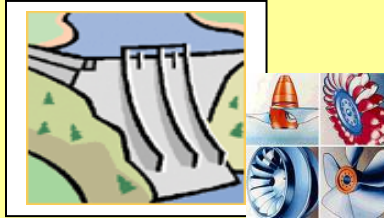
[\(Excerpts\)](#)

LAKE OF THE OZARKS ' AmerenUE is one step closer to completing the Shoreline Management Plan required by the Federal Energy Regulatory Commission. AmerenUE officials announced this week that if all goes as planned, the SMP will be ready to go to the public in late November. The SMP will be a comprehensive document that will serve as the guide for future growth and development as well as management of the resources along the lake's shoreline. According to AmerenUE spokesman Mike Cleary, the SMP is nearing completion. Once that happens, the plan will be presented to the public in a series of four meetings. One meeting will be held in each of the four counties surrounding Lake of the Ozarks. The plan will also be scrutinized by FERC. AmerenUE is required to have the SMP as part of its federal license issued by FERC for operation of the Osage Hydroelectric Project and Bagnell Dam. Of primary importance to AmerenUE and FERC are future protection and management of the lake. Among the topics that will be addressed in the SMP are environmental issues, aesthetics and recreational uses. Cleary said AmerenUE's shoreline management representatives plan to meet with the shoreline management team one last time and give members of the committee a chance to go over the proposal and provide any last-minute suggestions. AmerenUE has already met with the various resource agencies that have been involved in development of the SMP.

'We want to make certain that we do this right and get as much input as possible,' Cleary said. 'We want to make sure there aren't any last-minute issues we need to address.' The SMP is part of the re-licensing process AmerenUE just completed for operation of the Osage Hydroelectric Project, which includes Bagnell Dam, Lake of the Ozarks and the surrounding shoreline. Because of the complexity of the license requirements, Cleary said, the SMP could not be completed and adopted until AmerenUE's new license was in place last March. In the license, FERC requires the SMP be submitted to them within one year. The re-licensing process has drawn interest, but it is the shoreline management plan that most landowners around the lake have been waiting to see. The first shoreline management plan was pulled after drawing considerable opposition to some of the proposed restrictions. AmerenUE, the Missouri Department of Conservation, Missouri Department of Natural Resources, U.S. Fish and Wildlife Service and the National Park Service have been working on the new SMP along with the SMP committee.

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<sup>1</sup>This compilation of articles and other information is provided at no cost for those interested in hydropower, dams, and water resources issues and development and should not be used for any commercial or other purpose.



# Some Dam – Hydro News and Other Stuff

and

CORSO COURT

10/12/2007

Quote of Note: *“The more you read and observe about this Politics thing, you got to admit that each party is worse than the other. The one that’s out always looks the best.” - - Will Rogers*

## Other Stuff:

(An interesting blog on electric rates with a bent toward wind power. Click on the link “this chart” for cost of electricity by state.)

## **A Comparative Look At Electric Prices**

October 6th, 2007, Delaware WordPress.com

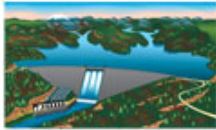
A lot can be said of our Federal Government. Like it or not, it does accumulate and catalog lot of useful information. Of particular relevance is [this chart](#) which compares the average price each state pays for electricity. Looking directly at the evidence puts a lot of pipe dream pre-cognitions in their proper place. The first is [deregulation](#). How does deregulation affect the price of electricity. Or as republicans are prone to say, “let the market place determine the rates..... If you click on the [above link](#) you find a map of states regulated and not regulated. Cross referencing deregulation with the price of electricity, shows us some interesting facets. Notice the prices in Indiana and West Virginia, both of which are regulated, versus their neighboring states around them. Indiana pays 8.25 while Illinois (11.05), Michigan (10.76), Ohio (10.36), and Wisconsin (11.07) all pay more. The chart show our neighbor Maryland (13.60) deregulated June 2007, paid 10.56 last year. Across the Mason-Dixon line they are howling like we did last year. Granted there are some anomalies, Virginia (9.28) is deregulated, whereas North Carolina (9.22) is still regulated. Perhaps because the same utility supplies both states; this inconsistency may explain the discrepancy with the other states. The states [producing the most power from wind](#). Texas (12.74), California (14.59), Iowa (9.95). Minnesota (9.72) and Washington (7.34) show a fairly wide range in average state costs. Most of the differences can be shown to be due to other factors. Those states receiving most of their power from natural gas: Connecticut (19.43), Massachusetts (16.49), New Jersey (15.87), Maine (15.10), New Hampshire (14.96). This helps explain the high spikes for Texas and California, which are the first and second largest users of natural gas for electrical generation. Gas is not cheap. Coal is still the cheapest. Those states burning most of the coal are Texas (12.74), Ohio (10.36), Pennsylvania (11.69), and regulated Indiana (8.25). Those states along the Columbia River, benefiting from the Columbia Power Associations massive hydro-electric dams, have good rates: Washington (7.34), Oregon (8.33), and Idaho (6.96). This model is most likely the best comparison to the windfarm, since both were combined private and government investments, both have free fuel, and both spread out the investment costs over a long period of time. **So what can we derive from this data? We can see off hand that natural gas is bad. We can derive that deregulation is bad. We can derive that if the cost of coal goes up with carbon tax associated with it, coal will go the way of natural gas, which is be bad. We see through many years of long term investment in hydroelectric power, over a period of time, is good.** From that, we can deduce that wind power, will run in the same vein, a cost effective way to meet our demanding energy needs. For those of you who actually read Blue Water’s letter on September 12th of last month, you

too saw that they were willing to hand over electricity at 10.596, guaranteed for the next 25 years! After all was said and done, at June's 2007 price of 13.73 that residential Delawarean paid for their electricity, Delmarva would have cleared 3.13 cents off every kilowatt hour, which amounts to a profit markup of 29.52%.....Wow, I wish all my investments performed at rates like that!! AND THEY WANT MORE?? What's wrong with "those people"?

(Last sentence omitted because of profanity.)

(A primer on energy storage, including hydro pumped storage.)

<http://terraverde.wordpress.com/2007/10/07/the-renewable-electron-economy-part-vii-stationary-energy-storage%E2%80%A6key-to-the-renewable-grid/> (Hint: Hold down Ctrl key and click on link.)



## Dams

### **Douglas County Board approves dam study**

October 2, 2007, BY JUDITH NYGREN, Omaha WORLD-HERALD

Despite the possibility that it could end up financing an argument for building the very dams it opposes, the Douglas County Board voted Tuesday to spend \$30,000 on a real estate study. Board member Clare Duda led the effort to fund the study by University of Nebraska at Omaha researchers. The University of Nebraska Water Center also is providing \$10,000 for the study. Duda argued that no matter the findings, the research will be helpful. If the study concludes that dams are a bad investment, the county will be in a stronger position to argue for alternative methods of cleaning up waterways and controlling floodwaters, he said. If the study finds that dams are a good idea but developers need to pay more for waterfront land, the public needs to know that, he said.

The study also will analyze the flood damage estimates that the Papio-Missouri River Natural Resources District is using to justify its proposal to build up to 29 dams in the Omaha metropolitan area. Duda said he thinks the district is overestimating the property damage, but he wants to take more than his hunch to the public. The NRD has proposed spending up to \$380 million to build up to 29 dams in the metro area. Kyle Hutchings was the lone County Board member to vote against spending the money. He argued that the study would be of little value in persuading the district to drop its dam plans. The NRD decided earlier this year not to support the UNO study after a few of its board members raised concerns that the findings could undermine its plans to build the dams. Last week, UNO professor Steven Shultz took his study proposal to Douglas County. Among the things the study will look at: the impact that dams and, alternatively, low-impact development, could have on the local real estate market and the value of land with waterfront views alongside homes with no view.

### **Dam Worries Prompt Funding & Action**

LAKE BISTINEAU, BOSSIER PARISH - October 5, by Jeff Ferrell, KSLA-TV

The state of Louisiana calls them "high impact" or "high hazard" dams. In fact, the seven parishes of Northwest Louisiana are home to 18 of them. But it appears the word hazard may be giving the impression that many of them could fail. And that's not the case. But, we did find one in trouble. Where the placid waters of Lake Bistineau meet the dam, it serves as the line separating Bossier and Bienville Parishes. But, there is a problem developing at the dam called 'head cutting.' "A long term problem with the outflow cutting a deeper trench running up closer to the dam," explained John Sanders. He is the District Four Administrator for the Louisiana Department of Transportation, headquartered in Bossier City. Low water levels on the south side of the dam reveal the rocky bottom of Loggy Bayou. Such dry conditions are ideal for 'head cutting' if we were to get lots of rainfall, eventually carving the bottom of the bayou next to the dam. "The water pressure is so high over here that it's going to push up through the weakened layer," said Don Maddox, while writing a diagram on a large dry eraser board inside their headquarters. Maddox is the Assistant District Four Administrator of Engineering at LDOTD.

He warned that if this long-term erosion is left unchecked within two years dam failure could become a big

concern. A long-term plan would include a new dam farther south. As for the short-term plan, Maddox continued his drawing, this time making big circles a thousand feet south of the Lake Bistineau Dam and saying, "so, what you do is, you go ahead and put heavy stone right here." Work on the \$900-thousand temporary fix for the dam is expected to get underway in the summer of next year. The long term plan, \$2 million worth, is expected to get underway in five years. Louisiana state lawmakers already approved funding for the first project. And, funding for the long term project is on the fast track according to Maddox and Sanders. As for the other 17 'high impact' dams in Northwest Louisiana, KSLA News 12 is told they're all in good shape. Maddox concluded, "it is not that these dams are in danger of failing, it's just that there's some maintenance issues with them." And when it comes to dams, an ounce of prevention really is a pound of cure. In the past 30-years, the government reports 135 deaths and more than \$2.6 billion in property damage from dam failures nationally. None happened in Louisiana.

(This is interesting. Is this another benefit of dams?)

### **Texas set to open new canyon to public**

By MICHELLE ROBERTS, Associated Press, Fri Oct 5



Geologic time has a different meaning when it comes to Canyon Lake Gorge. You could say it dates to around the end of the Enron era. A torrent of water from an overflowing lake sliced open the earth in 2002, exposing rock formations, fossils and even dinosaur footprints in just three days. Since then, the canyon has been accessible only to researchers to protect it from vandals, but on Saturday it opens to its first public tour. "It exposed these rocks so quickly and it dug so deeply, there wasn't a blade of grass or a layer of algae," said Bill Ward, a retired geology professor from the University of New Orleans who started cataloging the gorge almost immediately after the flood. The mile-and-a-half-long gorge, up to 80 feet deep, was dug out from what had been a nondescript valley covered in mesquite and oak trees. It sits behind a spillway built as a safety valve for Canyon Lake, a popular recreation spot in the Texas Hill Country between San Antonio and Austin.

The reservoir was built in the 1960s to prevent flash flooding along the Guadalupe River and to assure the water supply for central Texas. The spillway had never been overrun until July 4, 2002, when 70,000 cubic feet of water gushed downhill toward the Guadalupe River for three days, scraping off vegetation and topsoil and leaving only limestone walls. "Underneath us, it looks solid, but obviously it's not," said Tommie Streeter Rhoad of the Guadalupe Blanco River Authority, as she looked out over a cream-colored limestone crevasse. The sudden exposure of such canyons is rare but not unprecedented. Flooding in Iowa in 1993 opened a limestone gorge behind a spillway at Corvalville Lake north of Iowa City, but that chasm, Devonian Fossil Gorge, is narrower and shallower than Canyon Lake Gorge. Neither compares to the world's most famous canyon. It took water around 5 million to 6 million years to carve the Grand Canyon, which plunges 6,000 feet at its deepest point and stretches 15 miles at its widest. The more modest Canyon Lake Gorge still displays a fault line and rock formations carved by water that seeped down and bubbled up for millions of years before the flooding. Some of the canyon's rocks are punched with holes like Swiss cheese, and the fossils of worms and other ancient wildlife are everywhere. The rocks, typical of the limestone buried throughout central Texas, date back "111 million years, plus or minus a few hundred thousand years," Ward said. Six three-toed dinosaur footprints offer evidence of a two-legged carnivore strolling along the water. The footprints were temporarily covered with sand to protect them as workers reinforced the spillway, but they'll be uncovered again eventually, Rhoad said.

The Guadalupe Blanco River Authority, which has a lease from the Army Corps of Engineers to manage the 64-acre Canyon Lake Gorge site, will begin offering limited public tours of the canyon Saturday, continuing year-round on the first Saturday of the month. Early demand for the 3-hour tours is so high they are booked for at least six months. Rhoad said the authority hopes to train more docents so dates can be added. Visitors will not be allowed to hike the canyon on their own because the brittle limestone is still breaking from the canyon walls. Construction on a rim trail to overlook the canyon begins this winter. Officials hope to eventually build lookout points and an educational center.

(Looks like the cross section is a little lean! Interestingly, the breach was not too wide vs. the height.)

## Broken Down Dam continues to attract curious visitors

### Questions surround 1909 breakdown

By Tom Hintgen (Contact) | The Daily Journal, October 8, 2007



Interest in Broken Down Dam east of Fergus Falls has passed from one generation to the next. First-time visitors have two main questions on their minds. First, what does Broken Down Dam look like? Second, what's the story behind Broken Down Dam? On Sept. 24, 1909, about a year after the city-owned structure was built as part of a hydroelectric station along the Otter Tail River, employee Ben Snyder was awakened at 4:20 a.m. and noticed the lights fading. Looking out the door he saw water splashing up on the platform, and knew that something was seriously wrong. Grabbing his clothes, he warned N.P. Johnson, who was on duty. Just as they left the powerhouse the floor trembled and the two men

ran up the railway embankment. In what seemed like a split second, the 10-ton structure sank from sight. Snyder and Johnson then headed toward Fergus Falls to warn the city of the impending danger. They reached the Ed Burau farm where Burau hitched up his team of horses, and the three of them headed for town. Enroute to Fergus Falls, they met the city electrical superintendent, J.W. Peterson, who was driving to City Dam to learn why the lights had gone out and why he could not reach the power station by telephone. They spread the word and, fortunately, there was no loss of life in Fergus Falls. However, the rushing waters washed out four other dams downstream in Fergus Falls.

The water poured down a narrow gorge between large hills until it reached the Kirk Dam, located near Oak Grove Cemetery. This dam had previously furnished power for the city water works system. Water poured into basements on the south side of Lincoln Avenue. A block downstream the Red River Mill Dam went out and Red River Milling Company suffered a \$10,000 loss, a substantial amount of money 98 years ago. The Woolen Mill Dam was destroyed with a loss of \$5,000. The Dayton Hollow Dam, five miles south of Fergus Falls, withstood the flood. Otter Tail Power Company owned the dam and its president, Vernon Wright, reached Dayton Hollow at 6:15 a.m. with F.G. Barrows. They were able to open the flood gates. None of the demolished dams, with the exception of Central Dam near South Cascade, was rebuilt.

Otter Tail Power Company, which eventually served the city of Fergus Falls with electricity, later on operated five waterpower stations along the Otter Tail River. Over the years, the city dam became known as Broken Down Dam. It became a favorite picnic spot for many years and later on kids hiked along the river to the site. To get there by vehicle, head east of Fergus Falls along Mt. Faith Avenue until you get to Broken Down Dam Road. Head north a short distance until you come to the Broken Down sign. You can walk to the site along hiking trails — with the easier route starting to the right of the sign.



## Hydro

### Memo Outlines State Response to Hydroelectric Plant Emergency

Wednesday, 03 Oct 2007, My Fox Colorado  
DENVER --

The text of a memo from Kerry Kimble of the state Division of Emergency Management and obtained by The Associated Press outlines the state's response to Tuesday's deadly accident at an Xcel Energy hydroelectric

plant and shows state officials quickly determined it was a federal investigation because of the worker deaths involved:

1. Department of Public Health & Environment (Emergency Preparedness and Response Division) was alerted, who in turn notified the Hazardous Materials & Waste Management Division as well as the Environmental Protection Agency. They were available to provide technical assistance if needed.
2. Public Utilities Commission, even though the power plant had been shut down and no power disruption occurred, the Commission continued to monitor the situation for any cascading effects.
3. Division of Mine Safety had personnel at the site providing technical assistance and were in contact with a backup mine rescue team.
4. Division of Fire Safety, who maintains the State Resource Mobilization Plan, was on standby to access any needed response equipment and personnel.
5. Division of mental Health is working with county professionals to assist the families, other community members, and responders with their needs. This is being accomplished through the newly created Colorado Crisis Education & Response Network.
6. Division of Emergency Management monitored the situation and provides liaison services between the County and multiple State and Federal agencies.
7. The Colorado Information & Analysis Center did provide initial notification to the Department of Homeland Security National Operations Center.
8. Federal Emergency Management Agency Region VIII maintained active contact with the Department of Emergency Management and monitored the situation. There were some discussions regarding the activation of the Urban Search & Rescue Team, if needed. No formal request was submitted.
9. The federal Occupational Safety and Health Administration was contacted when the first reports of fatalities started to come. The county, on behalf of Xcel Energy, was requesting an incident investigation team.

(The Cabin Creek Project is under an FERC license. However, this is NOT a dam safety matter. Historically, the FERC has established precedent for incidents that are classified as industrial accidents and defers to the experts in this area – OSHA.)

### **Federal investigators probe fire that left 5 dead at Colorado hydroelectric plant**

By P. Solomon Banda, ASSOCIATED PRESS, October 4, 2007, San Diego Union-Tribune

GEORGETOWN, Colo. – Federal investigators focused Thursday on working conditions and safety procedures inside the hydroelectric plant tunnel where five workers died after a fire erupted on the equipment they were using. Autopsies were pending, but authorities believe smoke and fumes from Tuesday's fire killed the workers as they sat trapped deep underground. Communication from the crew ended about an hour after the fire broke out. The bodies, found scattered along a 200-foot length of the 12-foot-wide pipe, didn't have burn marks, indicating that the men probably died from the smoke and fumes from the chemical fire, Under-sheriff Stu Nay said. OSHA was looking at what kind of protection and safety training the maintenance crew had; safety procedures for the type of work being performed inside the tunnel; and documentation that safety procedures were being followed, agency spokesman Rich Kulczewski said. The OSHA probe was expected to take months and involve federal, state and local agencies, said the agency's Denver area director, Herb Gibson. "We want a thorough investigation that will ensure this type of incident will never occur in the future when people are working in confined spaces," Gibson said.

Investigators were interviewing personnel from Xcel Energy, which operates the plant; RPI Coating Inc. of Santa Fe Springs, Calif., which was hired to apply an epoxy and paint coating to the inside of the tunnel; and KTA-Tator Inc., a Pittsburgh-based consulting and engineering firm whose work at the plant wasn't immediately clear. Bruce Rutherford, KTA-Tator coatings business operations manager, declined to comment and referred calls to Xcel. The utility said it could provide no immediate information. The RPI Coating workers were identified as Donald Dejaynes, 43; Dupree Holt, 37; James St. Peters, 52; Gary Foster, 48; and Anthony Aguirre, 18; all of California. Family members have traveled to Georgetown, and they refused comment Thursday. The bodies were taken to the Jefferson County coroner's office in Golden, 30 miles east of Georgetown.

Nay said blaze started when the workers added a solvent to a hopper used to warm up the mixture of paint and epoxy they were spraying. The hopper's heating element inadvertently turned on, igniting the vapors. The five workers scrambled past a bulkhead used to keep their work area dry and radioed to their co-workers that they were OK, except for minor injuries, but fire blocked their downhill escape route. The 55-degree incline of the tunnel above them kept them trapped more than 1,500 feet below ground. Then the radio went dead. Officials lowered breathing masks and air tanks to the men, but the smoke might have

kept them from seeing the masks and tanks. Emergency crews reached the workers six hours later, about a half-mile from the tunnel's bottom exit. Authorities have defended their rescue efforts, saying smoke, the complexities of the 4,000-foot tunnel's design and uncertainties about the dangers kept them from successfully entering the tunnel for more than 3½ hours after the blaze broke out. One crew went in about 1½ hours after the fire broke out but had to turn back because of the smoke, Nay said. Four RPI Coating workers escaped from the tunnel, which delivers water from a reservoir to turbines that generate electricity at the plant 30 miles west of Denver. Xcel Energy is coordinating its own investigation into the fire with OSHA, company spokeswoman Ethnie Groves said. It wasn't known how long plant operations might be affected. Maintenance had been scheduled to last until mid-November.

(The story gets uglier as the facts unfold.)

## **Contractor in Fatal Fire Had Been Fined**

NY Times, By DAN FROSCH, October 5, 2007

DENVER, Oct. 4 — The five workers who were killed by a fire at a hydroelectric plant near Georgetown, Colo., on Tuesday most likely died of smoke inhalation, officials say. State and federal investigators have traced the fire at the plant to a heated device being used to mix an epoxy-based sealant inside a steep underground water tunnel where the men were working. On Thursday, investigators continued to pore over evidence at the plant, a process that could take months, said Herb Gibson, the Denver area director for the federal [Occupational Safety and Health Administration](#). The agency released records late on Thursday showing that RPI Coating, a California-based contractor at the plant, had been fined 90 times since 1988 while operating under another name, Robison Prezioso Inc. The fines totaled \$135,569, the agency said, and 27 of the violations were considered serious. Rescue teams on Wednesday removed the workers' bodies from the 4,000-foot tunnel where the men had been trapped. The plant is operated by Xcel Energy and is hidden high in the mountains overlooking Georgetown, a rustic town about 45 miles west of Denver. Late Wednesday, officials released the names of those killed, all of them Californians and employees of RPI, which had been hired by Xcel to do routine anticorrosion maintenance on the tunnel. The victims were Anthony Aguirre, 18; Donald Dejaynes, 43; Gary Foster, 48; Dupree Holt, 37; and James St. Peters, 52.

Among the many issues likely to be raised during the investigation will be RPI's troubled track record. "They have a history of citations with both state and federal OSHA," Mr. Gibson said. One occurrence, in 2002, involved a scaffolding collapse on the San Francisco-Oakland Bay Bridge that killed one RPI employee. The company has also been fined hundreds of thousands of dollars in California and Hawaii for violating hazardous waste rules. Kate McGuire, a spokeswoman for the California Department of Industrial Relations, said it appeared that RPI's record had improved in California. Ms. McGuire said it had not had an accident in California in nearly four years. A spokesman for the company did not respond to repeated requests for comment. Tom Henley, a spokesman for Xcel, would not say whether his company would review its relationship with RPI or the methods it uses to vet subcontractors. "The issue here is not safety at the Xcel Energy plant," Mr. Henley said. "The company we hired was licensed and professional and an experienced company. They were the experts, and that's why they were hired." But some people questioned Xcel's decision to contract with RPI, given its past problems. John Mendeloff, the director of the center for health and safety in the workplace at the RAND Corporation, said Xcel should have more carefully considered the company's extensive violations before hiring it. "I certainly think it would be a responsible kind of stewardship to do," Mr. Mendeloff said. "Many companies often ask about OSHA inspections and citations, injury rates and fatalities. It doesn't seem like this company paid much attention to that." Mr. Mendeloff said that in recent years, companies and regulators had become increasingly concerned about the safety operations of subcontractors, who are typically hired — as in this case — for specialized work. "They are bringing these people onto their work site," Mr. Mendeloff said. "Even if they're not legally liable, they have some responsibility. What happens affects their own employees, too."

The trapped men were initially thought to be alive and uninjured, having climbed higher into the 12-foot-wide tunnel after the fire broke out below them. But radio contact with them was lost later in the day, and a rescue team from the nearby Henderson Mine entered the tunnel, battling heavy smoke as they moved up the shaft. The rescuers discovered the bodies a few hours later about 1,100 feet from where the men were when the fire broke out. Four workers who escaped the fire from a bottom entrance to the tunnel were treated at a Denver hospital and released. Another worker, who was injured after entering the tunnel once the fire started, was also treated at the hospital and released. Gov. Bill Ritter Jr. of [Colorado](#) traveled to the plant Thursday and met with family members of the dead workers, who had gathered in Georgetown. "There is a great deal of sadness and a great deal of loss, both in terms of the type of loss and the number of victims," he said. "This was a horrific way to die." Mr. Ritter said he wanted to wait until state and federal authorities had concluded their investigations before determining whether new public policy was needed to address the accident.



## **Water**

### **Happy new water year!**

SACRAMENTO

October 2, 2007, Central Valley Business Times

- **Experts hoping for a wetter year than 2006-2007**
- **Just-ended water year one of the driest in memory**

It's a sort of New Year's for California – the start of a new water year – and water managers are hoping for a wetter one than the 2006-2007 water year that ended Sept. 30. Statewide rain and snowfall during the just-concluded water year totaled less than two-thirds of average, according to the state Department of Water Resources. The San Joaquin River region was drier, finishing up as its eighth driest, based on preliminary information. For the Sacramento River basin the past 2006-2007 water year finished as the 18th driest in the 102 year record of stream flow measurements. Precipitation in Sacramento River Basin the source of much of California's water supply, was about 62 percent of normal during water year 2007 compared with 150 percent of average the previous year. In the San Joaquin Basin, precipitation ended at 60 percent of average compared to 145 percent of average during water year 2006. As a result, water supply conditions have been designated as dry in the Sacramento Valley, and critical in the San Joaquin Valley. The northern Sierra snowpack was measured at 40 percent of normal on April 1, 2007, which was the lowest since 1988. Early melting reduced the snowpack to only 25 percent of average by May 1.

Department of Water Resources hydrologists and meteorologists measure precipitation (the combination of rain and snow) and runoff in the Northern Sierra and other key watersheds and produce runoff forecasts. The northern Sierra and southern Cascades are of particular importance because that's where most of the state's water supply accumulates. Measurements are taken in the watersheds of the major rivers, including the Sacramento, Feather, Yuba and American. Snow surveys are conducted throughout the Sierra range and other mountains to measure snow depth and water content. The data that is gathered is evaluated to forecast water supply for the spring and summer, the heaviest months of water use by farms and homes. Snowmelt, which normally continues through June, had virtually ended by June 1 this year. Overall precipitation for the state ended at 60 percent to 65 percent of average. The dry year may impact water deliveries further but as of now, State Water Project Contractors are scheduled to receive 60 percent of requested deliveries. National Weather Service long-range forecasts indicate a somewhat above average chance of wetter than normal precipitation in Northern California through the coming fall and winter months, but show a good chance that dry conditions will persist in Southern California. As of August 2007, statewide water storage was at 20.4 million acre feet (MAF), which is about 84% of average for that date. Last year, storage was at 29.2 MAF at the end of August. Lake Oroville, the State Water Project's principal storage reservoir, on Oct. 1 had 1,568,221 million acre-feet in storage, or 70 percent of average for the date. Lake Oroville, 70 miles north of Sacramento, has a capacity of 3.5 million acre-feet. Lake Shasta, principal storage reservoir for the federal Central Valley Project, had 1,879,144 acre-feet of water in storage as of Monday, or 67 percent of average for the date. Lake Shasta, north of Redding, has a capacity of 4.5 million acre-feet. An acre-foot is 325,851 gallons, or enough water to cover one acre to a depth of one foot.

### **Dams at heart of water issue**

***Lawmakers are split on whether the state needs to build more of them***

By JAKE HENSHAW, The Salinas Californian, October 4, 2007

SACRAMENTO - After three weeks of closed-door meetings, California lawmakers will start to go public today about their special session debate over water issues - including groundwater contamination in the Salinas Valley. The Assembly Special Committee on Water is expected to conduct a hearing today regarding a multi-billion-dollar water bond, which includes funding for new dams. Other bills propose ways to spend hundreds of millions of dollars of previously approved bond money. They include funding that would address groundwater contamination in the Salinas and San Joaquin valleys. At the urging of Gov. Arnold

Schwarzenegger and Senate leader Don Perata, D-Oakland, the legislators are working toward an Oct. 16 deadline to get a bond on the February presidential ballot. But it was far from clear Wednesday whether the governor and lawmakers can meet this deadline. The primary flashpoint in the debate is the dams. Proponents argue dams are necessary to ensure an adequate water supply for a growing population, provide more flood protection, control flows for environmental needs such as salmon runs and to capture more runoff as global warming reduces snowfall and increase rainfall. Opponents said the best dams already have been built, any new ones would take too long to build to deal with current problems and they may end up in the wrong places as the effects of global warming begins to take effect.

Assembly Republicans said they won't support any package of water legislation that doesn't also include new surface storage. Assemblyman John Laird, D-Santa Cruz, a member of the special Assembly water committee, added that a key issue is dam financing, since the governor wants the state to pay up to half of the dams' cost. "I keep saying the dams aren't the issue. It's who pays for them," Laird said. As far as the Sierra Club is concerned, the facts are in - and the state shouldn't be building any more dams. "Dams have caused a lot of damage to river systems," said Jim Metropulos of the Sierra Club. It takes a two-thirds vote in the Assembly and Senate to approve bonds for the ballot, which means some Republican votes are necessary. "I think this was always a hard thing to do in a matter of days," Laird said. "We have three elections next year, so we still have a chance to get somewhere for the June or November ballots." If a bond measure including dams does get to a ballot, Metropulos said, "we would oppose it."

### **ACWA issues press release for dams; Sierra Club tells why they oppose more dams**

Posted on October 5th, 2007 by Aqua Blog Maven  
From the ACWA website:

The Association of California Water Agencies (ACWA) today urged lawmakers to approve a comprehensive water bond package to improve water conveyance in the Sacramento-San Joaquin River Delta, expand statewide water storage capacity and invest in conservation and other strategies. The package is currently contained in legislation introduced by Sen. Dave Cogdill (R-Modesto) and Senate Republican Leader Dick Ackerman (R-Irvine). ACWA Executive Director Timothy Quinn joined proponents of a comprehensive package at a Capitol news conference and called on legislators to move forward with a bipartisan bill that will meet the needs of the environment and the economy. "There has never been a more urgent time to invest in our water future," Quinn said. "Our water system is in crisis, and that crisis will not end when it rains. The ecological and economic consequences of inaction are staggering, and they will only worsen until something is done."

To read the full text of the ACWA's press release, [click here](#). (Hint: Hold down Ctrl key and click on link.)

From the California Progress Report, an article written by Sierra Club president Jim Metropulos about why dams are not the answer:

The Governor's Water Bond Proposal focuses on expensive water projects for big farms and to accommodate big growth in the Central Valley. Sierra Club California urges the Governor to focus state money on programs for water conservation, water recycling, and the cleanup of underground water basins. We also believe that the state must have a completed long-term strategy for protecting the Sacramento-San Joaquin Delta before making major investments there or for new dams upstream of the Delta. New dams are not needed. Water conservation and recycling can easily meet our future water needs at a fraction of the cost. The 2005 California Water Plan by the Department of Water Resources states that four million acre feet of water could be saved by additional water efficiency and recycling programs. New dams and large reservoirs are wasteful. California's major reservoirs lose 500,000 acre-feet of water in a year from evaporation (about the same amount of water produced by the Governor's new dams). Dams are not a solution to global warming. Experts agree that our existing comprehensive system of dams can be operated to adjust for global warming. Large reservoirs created by new dams will produce greenhouse gases that contribute to global warming. Why should the taxpayers pay for these dams? Not one water agency in California has offered to pay even a small share of the multi-billion dollar cost to build these dams.

To read the full text of this article posted on the California Progress Report, [click here](#). (Hint: Hold down Ctrl key and click on link.)

## Senate rejects dam plans

(Excerpts)

Visalia Times-Delta, Oct.9, 2007

SACRAMENTO — A Senate committee Monday approved a \$6.8 billion water bond but rejected a larger one to build new dams, including one at Temperance Flat on the San Joaquin River. The votes by the Senate Natural Resources and Water Committee may have been the first step toward a showdown at the polls next year between dueling water bond initiatives. "I see it possibly as a very healthy thing to have two initiatives out there [on the ballot] to have the debate we need to have to educate the state as to the benefits of reservoirs," said Sen. Dave Cogdill, R-Modesto, the chief legislative advocate for new dams. But first, Senate Democratic leaders and administration officials promised to try in the next day or two to find a compromise that will attract enough Democratic and Republican votes for the Legislature to put a bond on the ballot. Sen. Darrell Steinberg, D-Sacramento, who chaired the hearing Monday, proposed delaying a vote on Cogdill's bill and working on a compromise, but Cogdill insisted on a vote. "I can't say it wasn't expected," Cogdill said later of the vote to defeat his bill. "There wasn't anything new here today." -----.

## Corps objects to restricting flow from dams

**Alabama Power plans to cut back by half**

October 05, 2007, DAVID WHITE, The Birmingham News

MONTGOMERY - The Army Corps of Engineers plans to object to Alabama Power Co.'s plan to cut by more than half the amount of water it releases from its dams on the Coosa and Tallapoosa rivers, a Corps spokesman said Thursday. "We believe there is a flow agreement between us and Alabama Power, a minimum flow agreement ... and we will discuss with Alabama Power what we believe is a breach of that flow agreement," said Pat Robbins, a spokesman for the Corps in Mobile. He said the Corps would send a letter to Alabama Power. Robbins also said he didn't know what the Corps might do, if anything, to stop the planned flow reductions. "We'll just have to determine where it goes from there based on their response." Alabama Power spokesman Michael Sznajderman said company officials don't believe they need the Corps' approval to carry out the plan. "Our plan is to move forward with these flow reductions."

Alabama Power normally maintains a minimum water flow of 4,640 cubic feet per second from its dams on the Coosa and Tallapoosa rivers, which merge near Wetumpka to form the Alabama River. The Corps approved Alabama Power's decision in July to reduce that combined flow by 10 percent, to 4,176 cfs. But starting Monday, Alabama Power plans a much greater cut: It plans from Monday through Oct. 29 to reduce the combined flow each week by about another 464 cfs, and then to maintain a water flow of 2,000 cfs starting Nov. 5. The reductions are intended to slow the drop in lake levels seen during the ongoing drought at Lake Martin, Logan Martin Lake and Alabama Power's other storage reservoirs on the Coosa and Tallapoosa rivers. A reduction from 4,640 to 2,000 cfs would mean a reduction in water releases for the Alabama River of about 1.7 billion gallons a day. "We're protecting the integrity of these lakes," Sznajderman said. A Corps spokeswoman said the agency just wants to make sure enough water is released to ensure navigation on the Alabama River.

## Ala. Power Begins Reduction In Water Releases From Dams

Oct 09, 2007, NBC13.com, by Associated Press

MONTGOMERY, Ala. (AP) - Alabama Power has begun reducing the amount of water it releases from dams in Alabama. The utility said the phased reduction started Sunday at dams on the Coosa and Tallapoosa rivers. By early next month, Alabama Power said it plans to release less than half the amount of water it normally releases this time of year. The cuts are designed to slow the drop in water levels on Alabama lakes which are near record low levels.



## Environment

(This will make some a little sick!)

### Craig down, fish up?

October 3, 2007, Idaho Mountain Express and Guide

Groups that have relentlessly but futilely fought U.S. Sen. Larry Craig's stubborn protection of dams over the survival of salmon have been cautiously buoyed by the possibility that Craig might soon be gone from the U.S. Senate. However, they are already celebrating Craig's removal from key committees by colleagues, which has reduced his influence and power over legislation that affects salmon and dams. They are delighted with moves by Senate Majority Leader Harry Reid of Nevada and Sen. Maria Cantwell of Washington, both Democrats, to advance the cause of salmon during Craig's fall from Senate grace. Reid has asked the Federal Energy Regulatory Commission to ensure passage upriver for migrating salmon before relicensing three Hells Canyon dams, and Cantwell has asked the Senate Interior Committee to delete Sen. Craig's attempt in an appropriation bill to overturn a federal court's protective order for salmon. Just how zealously and jealously Sen. Craig regards dams versus salmon to be virtually his domain and his alone was revealed in a statement from Craig's office accusing Reid and Cantwell of meddling in Idaho affairs. Salmon survival is everyone's business, not only the egocentric Sen. Craig's and his hydroelectric industry patrons'. Indeed, Craig is callous in his disregard for the plight of salmon, whose continuing existence is a major element in Idaho's outdoor recreation industry and a reassurance that business-over-nature interests haven't killed another species—yet. Sen. Craig's fishy behavior in the Minneapolis airport restroom may yet have a happy ending if the senator's downfall gives a boost up to the mighty salmon.

(If the numbers had been low this would have been front page news in the Washington Post, but it wound up on page 20.)

## **Numbers Are Mixed As Salmon Return**

### **Chinook Increase, But Sockeye Decline**

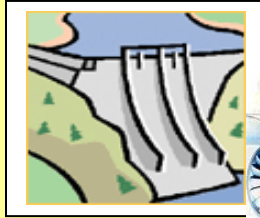
*By Meghan Peters, Seattle Times, October 7, 2007, Washington Post*

SEATTLE -- A record number of threatened chinook salmon are passing through the Hiram M. Chittenden Locks in Ballard, Wash., this year, bound for East King County rivers. **The return of nearly 32,000 far surpasses the previous record of about 19,000 set in 2001. Counts began in 1995.** "It's an exceptional survival for the hatchery fish released from Issaquah," Steve Foley, a fishery biologist at the Washington Department of Fish and Wildlife, said Friday. **"It's also an exceptional survival for those who got out of the Cedar [River] that are naturally produced."** **Sockeye salmon, however, have reached a low of about 60,000.** Biologists had estimated that about 125,000 would enter the Locks this season. The numbers come from the Muckleshoot Tribe, which conducts the counts. **Sockeyes are returning to Canadian rivers in similarly low numbers.** Coho salmon are just short of average at about 16,000.

**Foley said marine conditions, especially water temperatures, affect the numbers most.** Because chinook and sockeye migrate out to the ocean at different times, the bulk of the chinook returning this year probably reached the ocean in 2004, while most of the sockeye probably entered saltwater in 2005. In Bellevue, Wash., various efforts have been made to improve the number of chinook coming to Lake Washington. Kit Paulsen, Bellevue's stream scientist, cited ocean conditions as a substantial factor and noted the work of volunteer salmon watchers. As part of the salmon-recovery plan, monitors watch for fish for 15 minutes twice a week and can help identify problems, Paulsen said. "We know our area, and we want to keep these fish," she added. "It's really exciting to see salmon in the middle of an urban center."

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<sup>i</sup>This compilation of articles and other information is provided at no cost for those interested in hydropower, dams, and water resources issues and development and should not be used for any commercial or other purpose.



# Some Dam – Hydro News and Other Stuff

10/19/2007

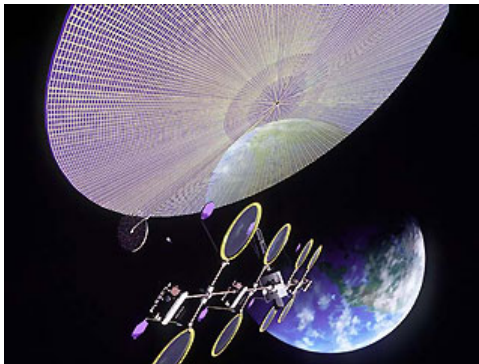
CORSO COURT

Quote of Note: *“Only passions, great passions, can elevate the soul to great things.” - - Denis Diderot (1713 - 1784)*

## Other Stuff:

### **PENTAGON REPORT: LET'S PUT SOLAR POWER COLLECTORS IN ORBIT**

October 12, 2007, By Brian Berger, FoxNews.com



**WASHINGTON — A Pentagon-chartered report urges the United States to take the lead in developing space platforms capable of capturing sunlight and beaming electrical power to Earth.** Space-based solar power, according to the report, has the potential to help the United States stave off [climate change](#) and avoid future conflicts over oil by harnessing the Sun's power to provide an essentially inexhaustible supply of clean energy. The report, "Space-Based Solar Power as an Opportunity for Strategic Security," was undertaken by the [Pentagon's](#) National Security Space Office this spring as a collaborative effort that relied heavily on Internet discussions by more than 170 scientific, legal, and business experts around the world.

If you want to read an in-depth discussion, here's a paper on the subject:

[http://www.spacefuture.com/archive/a\\_fresh\\_look\\_at\\_space\\_solar\\_power\\_new\\_architectures\\_concepts\\_and\\_technologies.shtml](http://www.spacefuture.com/archive/a_fresh_look_at_space_solar_power_new_architectures_concepts_and_technologies.shtml) (Hint: Hold down Ctrl key and click on link.)

(This is from Pat March. Would you want to buy power from these people? Hydro is NOT a renewable, but methane gas is renewable? And, get a load of what they define as: **“Electricity 101”!** Have you studied your power line lately?)

**POWER NOTES** NES  
 We are the utility of choice for service excellence and value. The Power of Greater Nashville.  
 Nashville Electric Service, 1214 Church Street, Nashville, TN 37246  
 www.nespower.com 615-736-6900

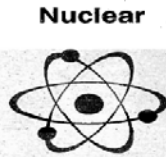
## **Electricity 101**

6 a.m. - Turn on the coffee pot, take a hot shower, run the hairdryer. Every morning you rely on electricity to get out the door. You've studied the power lines that run from your house to the utility pole at the edge of your yard. You've even noticed the substation you pass every day not far from your house. But, where

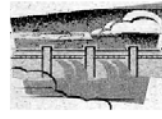
does all that power come from? Nashville Electric Service purchases power from the Tennessee Valley Authority. TVA uses four basic methods to produce energy - coal, nuclear, hydroelectric, and renewable resources like the sun, wind and methane gas.



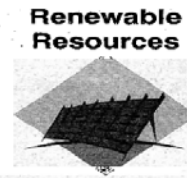
Coal



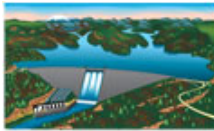
Nuclear



Hydro



Renewable Resources



## Dams

(Excerpts. Full article at:

[http://blog.mlive.com/flintjournal/newsnow/2007/10/two\\_flint\\_dams\\_in\\_need\\_of\\_repa.html](http://blog.mlive.com/flintjournal/newsnow/2007/10/two_flint_dams_in_need_of_repa.html)

(Hint: Hold down Ctrl key and click on link.)

### **Two Flint dams in need of repairs – yesterday**

By Elizabeth Shaw | The Flint Journal October 13, 2007

FLINT, MI -- Someday, a brand new kind of Hamilton Dam could cross the Flint River, one that lets spawning walleye journey upstream and kayakers shoot down man-made rapids through the University of Michigan-Flint campus. ----- But if "someday" doesn't happen soon, engineers have a different vision: of the crumbling, 87-year-old structure failing, sending torrents of contaminated floodwaters through downtown Flint, draining the city's emergency water supply and threatening businesses, homes and lives.

**Hamilton is among thousands of dangerously aging dams across the country living on borrowed time -- waiting years for long-stalled federal funding to repair or replace them before they fail.**

In Michigan, it is among the top five. That's why for more than a year, the Hamilton Dam Committee -- a group of wildlife biologists, environmentalists, engineers and city, state and university officials -- has been working hard to make sure the right "someday" happens. ----- Any solution has to:

- Keep the water high enough upstream for the city's emergency backup water plant to pump.
- Maintain enough flow downstream to run the city's wastewater treatment plant on Linden Road.
- Prevent long-buried industrial contaminants from washing downstream.

The city hasn't given up on the option of rebuilding a traditional dam on the existing base, which would save millions if the base is structurally sound, said city Utilities Director Bob Miskow. Others say a nontraditional dam might actually end up cheaper through lower construction costs and grants available for environmental and recreational improvements. "The question is, when will the money get here? -----

Will the Hamilton Dam hold until that happens? Back in 1989, when concrete borings revealed critical deterioration at every key point, engineers first warned the dam could fail. The city scraped together enough money for a Band-Aid fix, but little has happened since. And when it comes to dams, Flint has other fish to fry, too. The city's Thread Lake Dam, built in the 1880s on Thread Creek southeast of downtown Flint, is in such poor shape that the state Department of Environmental Quality could order the water drawn down if it's not repaired or replaced, said DEQ inspector Paul Wessel. Repairs likely would cost more than \$1 million. Removing the dam would be cheaper, but doing so would expose contaminated sediments from historic industrial pollution and leave nearby residents with acres of mudflats. Still, there's far more focus today on the much larger Hamilton Dam, an eyesore with its concrete cracked and broken and its rusted metal skeleton exposed like urban road kill. **Three of its six gates no longer work. Engineers fear opening a fourth "instead of lifting the gate could pull the whole dam down,"** said Carlyon. In 2005, the DEQ ordered that if steps aren't taken by 2008, the Flint River must be lowered to avoid a catastrophic dam failure. Loss of life isn't as big a worry as it once was -- most homes in the floodplain were removed in the 1970s. But the dam holds back long-buried pollutants from a turn-of-the-century coal plant. "If the dam were to fail, whatever is in that contaminated sediment would go downstream," said Paul Wessel of the DEQ. The Catch-22 if the dam isn't fixed: Lowering the river would expose those same sediments -- plus render the water plant inoperable. On Oct. 5, Flint Mayor Don Williamson publicly committed the city -- which owns the dam -- to the project. But it's all empty words without funding. -----

----- The Holloway Reservoir dam -- built in 1953-54 -- is one of 10 out of 16 Genesee County dams rated by the state Department of Environmental Quality as either a "high" or "significant" hazard to life, property or the environment if they were to fail. Most are in fair to good condition despite their age, needing only minor repairs and general maintenance.

Here's a look at some of the latest DEQ status report for the county's top 10 dams:

**Atlas Dam**

Location: Atlas Mill Pond, Atlas Township. Built: 1835. Owner: Genesee County Road Commission. Condition: Good. Details: Overgrown trees and brush on embankment. Additional spillway capacity recommended to increase flood safety margin. Major improvements to road, guardrail and spillway were done about seven years ago and tree and brush removal is being done this year, said Genesee County Road Commission engineering director Fred Peivandi.

**Argentine Dam**

Location: North Ore Creek, Argentine Township. Built: Mid-1800s. Owner: Argentine Township. Condition: Fair. Details: Downstream sluice gates partly functional. Erosion next to left overflow spillway wall. Overgrown trees and brush on downstream embankment. Deteriorated fish ladder wall. Slope of left embankment needs to be flattened. The county Road Commission is responsible for maintaining the dam. Tree and brush clearing and some erosion control work is being done this fall, said Peivandi.

**Fenton Dam**

Location: Fenton Mill Pond, Fenton. Built: 1834. Owner: City of Fenton. Condition: Fair. Details: In 2006, the city spent \$225,000 to replace broken sluice gates and do other repairs first recommended by the DEQ in 1997. The dam's condition should be upgraded in the next DEQ report. "We'd applied for help through the U.S. Army Corps of Engineers for years but they kept turning us down," said city DPW Director Les Bland.

**Goodrich Dam**

Location: Goodrich Millpond, Goodrich. Built: 1913. Owner: Village of Goodrich. Condition: Fair. Details: In September, the village spent \$20,000 to repair leaking gates, patch concrete and fill a large void under the structure. The dam's condition should be upgraded in the next DEQ report. "It's a priority for us. The millpond is the focal point of the entire area," said village administrator Jakki Sidge. "If it failed, there's not that many homes upriver, but the school bus garage and the Reid Elementary playground would be affected. We're staying on top of it so that doesn't happen."

**Hamilton Dam**

Location: Flint River on the University of Michigan-Flint campus, Flint. Built: 1920. Owner: City of Flint. Condition: Poor. Details: Concrete severely deteriorated throughout. At least three of six gates are inoperable, with serious concerns about a fourth. Trees and debris blocking gates and fish ladder. The DEQ has ordered the river be lowered if steps aren't taken by 2008. The Hamilton Dam Committee is working on solutions with the city, with hopes to apply for federal funding as soon as it becomes available.

**Holloway Dam**

Location: Holloway Reservoir, Richfield Township. Built: 1953-54. Owner: City of Flint. Condition: Good. Details: No substantial problems, according to DEQ inspector Paul Wessel.

**Kearsley Dam**

Location: Kearsley Reservoir. Built: 1928-29. Owner: City of Flint. Condition: Good. Details: Significant repairs were done in 1999 with no serious current concerns.

**Linden Mill Dam**

Location: Linden Mill Pond, Linden. Built: Mid-1800s, rebuilt in 1967. Owner: Genesee County Drain Commission. Condition: Good. Details: Routine maintenance each year includes re-seeding grassy areas around the dam walls to prevent erosion.

**Mott Dam - (Stepping Stone Falls)**

Location: Mott Lake in Genesee Recreation Area, Genesee Township. Built: 1971. Owner: Genesee County Parks.

Condition: Good. Details: Eroded west embankment. Overgrown trees, brush and cattails on west bank. Fire-damaged portions of the west spillway abutment wall. Deteriorated concrete on the upper spillway. The issues are mainly cosmetic and most are being addressed this fall, said parks facilities director Ron Walker.

**Thread Lake Dam**

Location: Thread Lake, Flint. Built: 1880s. Owner: City of Flint. Condition: Poor. Details: Inoperable gate. Significant deterioration of wing walls and central pier. Insufficient spillway capacity. The dam is in poor enough shape that the DEQ could order the water drawn down if it's not repaired or replaced, Wessel said. Repair costs would likely be more than \$1 million. Removal would be

cheaper but would expose contaminated sediments from historic industrial pollution and leave residents with acres of mudflats.

(The FERC tried to remind itself on a day-to-day basis that – “Today’s maintenance problems are tomorrow’s dam safety problems.” This article says the same re levees.)

**Guest columnists**

## **Flood-control improvements protect all county residents**

**By Kathy Lambert and Larry Phillips, Special to The Times, Seattle Times, 10/16/07**

King County has an aging system of 500 hardened embankments and levees, most of which are more than 40 years old. Many were built by farmers with the dirt they had on hand to protect their fields. Today, these very same aging levees protect critical businesses and public infrastructure that support our livelihoods and collective prosperity. If we learned anything from Hurricane Katrina in New Orleans, it's that lives are lost and economies ruined when flood-control levees are ignored and collapse. It's far less expensive to fund flood prevention than to rebuild communities after a catastrophe. Flooding during November 2006 marked the eighth federally declared county flood disaster since 1990 and alone caused an estimated \$33 million in damage to the levees and other facilities that comprise King County's first and best line of defense against catastrophic flooding. While recent floods have eroded many of those levees to the danger point, others are simply old and at the end of their useful lives. Serious flooding in King County will likely affect your life, wherever you live, whether it's in Duvall, on Queen Anne Hill in Seattle, in the Green River Valley or in Bellevue. You may not live in a floodplain, but tens of thousands of your King County neighbors do. And tens of thousands more work in floodplains, own businesses in floodplains and commute through floodplains every day. In fact, more than one fifth of King County's daily economic output comes from employees who commute into or out of a 100-year floodplain. Major transportation corridors, manufacturing and distribution centers and other important features of our economy are all located within areas that are susceptible to flooding. Many of our region's employers have major operations in the floodplains.

The benefits of protecting our county's floodplains extend far beyond the geographical boundaries of those specific areas, just as the negative impacts of flooding extend far beyond the high-water mark. According to a recent analysis by ECONorthwest, Inc., the Pacific Northwest's largest economic-consulting firm, a one-day shutdown of economic activity within King County's floodplains would cost the region a minimum of \$46 million in economic output. This figure isn't surprising, given that the cities in the vicinity of the Green River alone comprise the largest single industrial area in the state of Washington. Communities within King County may differ in their individual needs. But, strengthening our county's flood-prevention infrastructure is an important step all King County residents should take together. Fortunately, King County floodplain managers have developed a reasonable and systematic approach to minimizing the potential damage of flooding to our communities and our economy. The King County Council has been working carefully with the executive branch, flood-protection experts and the community at large to improve safety in King County's floodplains. In January, the council unanimously adopted the executive's proposed Flood Hazard Management Plan, which detailed numerous projects and strategies to reduce the threat and severity of flooding throughout King County. Development of the flood plan began in 2003 and included an extensive outreach process. Key to the plan's success was creation of a countywide flood-control-zone district, which we accomplished earlier this year. A 15-person district advisory committee recently completed work on recommendations to implement the flood-plan strategies. We are all very concerned about tax burdens, but as we learned from Hurricane Katrina, making this reasonable commitment to repairing the levees and implementing other recommendations identified in the Flood Hazard Management Plan ensures that we are doing all that can be done to protect our homes, businesses, roads and our economy. If we fail to take the necessary preventive steps today, then we may be forced to react to an avoidable — and hugely expensive — catastrophe tomorrow.



## **Hydro**

### **Coroner says smoke killed workers in pipe**

By Rocky Mountain News, October 11, 2007

Five men inside a hydroelectric plant near Georgetown died of suffocation and smoke inhalation, the Clear Creek County coroner said today. The men were part of a nine-member crew spraying an epoxy-paint mixture on the walls of a 4,050-foot underground pipeline at the Cabin Creek hydroelectric plant Oct. 2, when a deadly fire broke out. Coroner Don Allan said in a short news release that he had completed his post-mortem examination of the five, whose remains have been released to family members for burial. The victims were Donnie DeJaynes, 43; Dupree Holt, 37; James St. Peters, 52; Gary Foster, 48; and Anthony Aguirre, 18. All were employees of RPI Coating of Santa Fe Springs, Calif. Four other men who were inside the pipeline at the time of the fire were able to escape. The workers were doing routine maintenance while the plant was shut down. Another worker was stationed above ground.

(Proposals to develop the Cannelton site have been around for about 50 years. Will it finally happen? The highlighted sentence is a brain twister. What the heck is this guy talking about?)

### **Utility plans hydroelectric project at dam**

By VINCE LUECKE, Editor, The Perry County News

#### ***Construction expected to begin in spring 2008***

CANNELTON - An Ohio utility could break ground as soon as spring on a new hydroelectric plant proposed for the Cannelton Locks and Dam. The project is expected to create more than 100 construction jobs and eventually generate enough energy to power thousands of homes. American Municipal Power recently secured licenses for hydroelectric projects from Tennessee-based W.V. Hydro, which first proposed a hydroelectric plant for the dam two decades ago. Construction contracts for the power-generating facility will be awarded in coming months with construction expected to start in the spring, said Kent Carson, Director of Communication for AMP. Based in Columbus, Ohio, the utility serves 121 member communities in Ohio, Pennsylvania, Michigan, Virginia and West Virginia. It operates a coal-fired generating station near Marietta, Ohio, and operates the Belleville, West Virginia, hydroelectric plant, in operation since 1999. The local generating station will be located on the Hancock County side of the river, with power modules located on eight of the dam's gate bays. Water passing through the dam will be directed into turbines, generating electricity. The new plant is expected to generate up to 84 megawatts of electricity, enough to power more than 80,000 homes, Carson said. AMP's Belleville plant, in comparison, generates 42 megawatts of energy.

Unlike hydroelectric stations located at large, dammed-up reservoirs, the local project will harness energy from water naturally passing through the upper and lower levels of the dam, Carson said. Similar hydroelectric projects are planned by AMP on the Ohio River near Paducah, Ky., and Marietta. The utility is operating under licenses issued by the Federal Energy Regulatory Commission. Engineering work has been under way for some time and AMP has sought bids on the first phases of construction, including two cofferdams 1,200 feet and 1,800 feet in length. Additional work will include construction of a reinforced-concrete powerhouse containing three 28-megawatt generating units and a 1,000-foot-long transmission line. No project timeline has been announced, Carson said. The project's total cost also hasn't been disclosed. However, construction will create more than 100 jobs. Once operational, the hydroelectric plant is expected to employ six people.

W.V. Hydro proposed a hydroelectric plant at the Cannelton dam in the mid-1980s. Federal legislation adopted several years ago promoting alternative forms of power, and offering tax credits to companies pursuing cleaner forms of energy, fueled hopes that the projects would move forward. However, plans for the three plants, including the one proposed for the Cannelton Locks and Dam, never materialized. AMP is no stranger to alternative energy. The utility recently began operating Ohio's first commercial wind farm in the northern part of the state.

#### ***Another voice / Power distribution***

### **Industry already meeting proposed criteria**

The Buffalo News Opinion, 10/13/07, By James Scerra, 10/12/07

It is curious that the recent Buffalo News series on hydropower failed to mention a very important fact, while suggesting that Western New York would somehow benefit if current area industrial hydropower allocations were allowed to lapse. The fact is that the current hydropower industrial customers provide 40,000 real jobs today — not possible future jobs — that support real working families. The region's first priority should be to retain these manufacturing jobs so that 40,000 employees continue to pay taxes, buy goods and services, and contribute to the Buffalo Niagara regional economy. These manufacturers have annual payrolls that total \$2.1 billion. Add employment by their contractors, suppliers and customers, and these jobs add up to more than 172,000 jobs, and an additional \$8.1 billion of payroll income. These businesses are the backbone of the regional economy. Many of these manufacturers have been in the region for more 50 years;

some over 100 years. It is low cost hydropower that attracted them to the region and it has been this power that has kept them here. Without it, many would not be able to operate in Western New York. These are energy-intensive, capital-intensive companies that buy locally, sell globally and pay good family-sustaining wages and benefits.

The series also highlighted the development of new criteria for the allocation of hydropower, as recommended by a Commission on Economic Development Power Programs, which was convened in 2006. The recommended criteria are not to be limited to the number of jobs at a company, but rather should include consideration of the quality of the jobs and the capital investments made by a company in its operations. The commission's recommended changes to the current criteria recognize the economic importance of good-paying jobs and capital investment. New criteria along the lines of those recommended by the commission should be adopted and implemented. While several of the current hydropower companies have been here 50 to 100 years, their respective operations are among the most technically sophisticated in the world. It's a mistake to think that because the industrial recipients of hydropower are often mature and basic manufacturers that they are not changing with the times. They are utilizing "high tech" equipment and processes in order to remain efficient and competitive. The region, and its economic development officials, should focus on securing the base by retaining the businesses that currently purchase hydropower and invest back into their facilities. The region's leaders should be urging Gov. Eliot Spitzer to direct the Power Authority to extend the current low cost industrial hydropower contracts. Many of these businesses can only continue to invest in their Western New York facilities if they know that the low cost hydropower will continue to be available. *James Scerra is vice chairman of Power for Economic Prosperity, an alliance of industrial companies in the region.*

(And, then there is this.)

### **Expansion, Low-Cost Power Add Jobs in New York**

Area Development Online News Desk (09/28/07)

Two upstate New York businesses have received approval from Governor Eliot Spitzer to receive low-cost hydropower, resulting in at least 58 new jobs. According to an announcement from the governor's office, Unifrax, a manufacturer of high-performance insulation products in Tonawanda, New York, will invest \$20 million to meet increased need for its products. The allocation of 3,500 kilowatts of low-cost hydropower is part of this expansion. In addition, Devil's Hole Distilling Company, a startup that will operate a premium alcoholic beverage facility in Lewiston, New York, will receive 400 kilowatts. Niagara Power Project, the largest of the New York Power Authority's 18 generating facilities and the largest single electricity source in New York State, will provide the power. "In our efforts to fuel economic expansion in Western New York, we know that low-cost hydropower will help drive job creation," says Spitzer. "In Western New York, we must take full advantage of the unique opportunities for economic expansion that the area's proximity to Niagara Falls offers businesses."

(The anti-hydro forces are hard at work to ensure that hydropower is not part of any renewable energy portfolio in any state. This is an example of their efforts. The State of Washington has forgotten its roots.)

### **Renewable Portfolio Standards for Washington State**

Hydro Reform Coalition, By: Rich Bowers Thursday October 11, 2007

The public has until November 16, 2007 to submit either written or electronic comments on Washington State's rulemaking on its Renewable Portfolio Standards (RPS). The purpose of the rulemaking is to implement Chapter 19.285 RCW of the Energy Independence Act. This act codifies the November 2006 passage of voter initiative 937 (I-937). I-937 requires large utilities to obtain 15% of their electricity from new renewable resources such as solar and wind (and Tidal, Ocean and Wave energy) by 2020, and to undertake cost-effective energy conservation.

For information on submitting comments, go to the link <http://www.cted.wa.gov/site/1001/default.aspx> (Hint: Hold down Ctrl key and click on link.)

for the Washington State. Department of Community, Trade and Economic Development.

Two public meetings will be held on this issue:

- November 9th, 10:00 a.m. to 2:00 p.m. Department of Community Trade and Economic Development, 906 Columbia St., Olympia, WA.
- November 14th, 1:30 p.m. to 3:30 p.m. Meeting room, Spokane International Airport 9000 W., Airport Dr., Spokane, WA

The Hydropower Reform Coalition has been following this issue and supported the original initiative that says that any hydropower included as part of a renewable portfolio standard should drive improved performance at existing dams -- either by rewarding low-impact hydropower or by rewarding increased power generation with no additional impacts. As currently written, Washington State's RPS is one of the strongest in the nation. The draft rules identify eligible renewable resources as "electricity from a generation facility powered by a renewable resource other than fresh water that commences after March 31, 1999." Hydropower can only be included as renewable energy if the electricity produced is a result of efficiency improvements, and where the additional electricity generated is not a result of new water diversions or impoundments. This includes irrigation pipes and canals and refers only to existing dams. It would not include new dams.



## Water

### **Dropping water levels could hurt barge traffic, Corps warns**

by [rsims](#) October 10, 2007, The Birmingham News

MONTGOMERY - Barge traffic probably won't be possible on the Alabama River below the Claiborne Dam in Monroe County if Alabama Power Co. completes its plan to cut water flows into the river, an official with the U.S. Army Corps of Engineers said today. Alabama Power, in a bid to slow the drop in water levels during the drought at Lake Martin and other storage reservoirs, plans to cut combined water flows from its dams on the Coosa and Tallapoosa rivers to about 2,000 cubic feet per second by the week of Nov. 5. That would be a reduction of about 2,640 cfs, or 57 percent, from the normal minimum combined flow from the dams of 4,640 cfs. Such a reduction would cut water releases from the Coosa and Tallapoosa rivers by about 1.7 billion gallons per day. The two rivers merge near Wetumpka to form the Alabama River. James Hathorn, a hydraulic engineer with the Corps in Mobile, estimated that the water level at a gauge below the Claiborne Dam would drop by 2.3 feet if the combined flow does drop to about 2,000 cfs starting in early November. Such a drop would put the water level in the river channel there at about 4.1 feet, said Pat Robbins, a spokesman with the Corps in Mobile. "Barge traffic cannot move at 4.1 feet," Robbins said.

(The "it's our lake syndrome".)

### **Residents hot over Duke's use of lake during drought**

Oct. 11, 2007, By JOEY HOLLEMAN, TheState.com

While Duke Power asked residents along Lake Wateree to conserve water to keep lake levels up during the current drought, the power company used that precious resource to generate extra power to cover a shortfall. The power production during the recent hot spell contributed to the lake level dropping 1.7 feet in two weeks. "This creates an enormous trust issue," said Donna Lisenby, the Catawba riverkeeper, who advocates for the river and its lakes. "It makes you wonder whether this utility is truly doing its part to conserve water." Duke officials blame the October heat wave, which hit when the company's coal-fired power plants were offline for maintenance.

While there were other options, such as buying power from other sources, Duke opted to use its hydropower production capabilities at Lake Wateree. "We evaluate all those options and try to make the decision that's in the best interest of our customers," said Duke spokeswoman Marilyn Lineberger. The power company has used its hydropower capacity sparingly since the drought began in spring, thereby keeping the levels as high as possible, she said. With temperatures returning to normal, Duke doesn't expect to use Lake Wateree for hydropower. All the counties along the Catawba-Wateree system in South Carolina are in the third stage of a four-stage drought classification system. In North Carolina, all counties around the system are at the highest stage of drought. Residents along Lake Wateree said they feel fortunate the power company has kept levels high in the last lake in a string of 11 on the Catawba-Wateree system. Still, the quick drop in the past two weeks frustrates them, especially since it came after Duke banned lakeside homeowners from pumping water out of the lake to water their lawns.

"This would seem to not be in keeping with the ... aim of all water users up and down the Catawba system," said Gary Faulkenberry of the Lake Wateree Association. "Everybody had been trying to work very cooperative on this. I'm perplexed by their decision." Fortunately, Faulkenberry pulled his boat out of the water before he left on vacation Sept. 29. Some homeowners who were away for a few days returned to find their boats stuck in mud, he said. In late September, the volume of water flowing in the Wateree River just below the dam ranged from 1,500 to 2,500 cubic feet per second most days. During hydropower production, volume peaked above 4,000 cubic feet per second seven times from Sept. 28 through Wednesday. At a meeting of the Catawba-Wateree Drought Management Advisory Group on Oct. 2, Duke Officials reported the releases from Lake Wateree were around 807 cubic feet per second. Especially in North Carolina, where municipalities are threatening to fine people \$500 for watering yards, the news of the hydropower production is likely to raise ire, Lisenby said. "People are going to think they've been conserving in order to save water for Duke to use to make a profit," Lisenby said.

## **Governor OKs flood legislation**

### **Bills strengthen levees, require more planning**

By Mike Taugher, 10/11/2007, InsideBayArea.com

Construction around the Delta and in other flood plains will be curtailed and flood safety will be beefed up substantially under a historic package of bills signed Wednesday by Gov. Arnold Schwarzenegger. Taken together, the legislation will strengthen levee construction standards, require more prudent planning by cities and counties and overhaul the state's top flood-protection agency. "This is the largest single advance in flood management in California in more than 40 years," said Jeffrey Mount, a geologist and flood expert at the University of California, Davis. "Over the long-term these bills will have significant impacts on the patterns of development and the way we manage floods and flood plains." Wednesday's signing ceremony in the flood-prone Natomas neighborhood in Sacramento capped a three-year effort by several lawmakers to reform policies that allowed builders to develop in flood plains with relative ease. It also marked the completion of Schwarzenegger's reversal of his early pro-development stance. The governor said last year he wanted a more comprehensive approach to flood management, but he was also influenced by a court decision that increased the state's financial liability for flood damages, a 2004 Delta flood and Hurricane Katrina. "We made this the right combination for growth and safety in California," Schwarzenegger said. Specifically, the bills require the following:

- Overhaul of the state Reclamation Board, which will be renamed the Central Valley Flood Protection Board. Members will have to meet specific professional qualifications and be subject to state Senate confirmation. The board will be made independent of the Department of Water Resources, which now assigns staff to the board.

- Augmentation of federal standards that discourage construction in 100-year flood plains with a new requirement that local governments eventually meet a 200-year level of flood protection, meaning that the probability of a flood would be less than 0.5percent in any given year. The legislation requires state officials to come up with preliminary maps next year and a new flood protection plan by 2012.

- A ban on development inside the 200-year flood plain once the plan is in effect.

- Cities and counties' financial liability for flood damage to developments they approve unreasonably. State lawmakers say it was unfair for the state to be exclusively liable for flood damage when cities and counties were increasing the state's liability by approving construction of more houses in flood plains.

"The whole thrust of these bills is to stop putting more people in harm's way," said Assemblywoman Lois Wolk, D-Davis, chairwoman of the Water, Parks and Wildlife Committee and author of two of the five bills signed. After working out some compromises, the bills were generally supported by developers, environmentalists and local governments. In a concession to developers, the bills' strictest standards will go into effect gradually. "With regard to actually stopping developers from building in harm's way, it will be many years before these bills do that," said Ron Stork, a policy advocate for the environmental group Friends of the River. "It was a modest effort." Still, developments that critics saw as the most egregious are not likely to be repeated, said Wolk. For example, one of the most contentious issues before the Reclamation Board when Schwarzenegger fired its members last year was the River Islands development in Lathrop, an 11,000-unit project on a Delta island that flooded in 1997. The new members appointed by the governor promptly backed off and issued partial approvals to River Islands. The firings, which came shortly after Katrina but appeared to be planned before that, made the governor appear insensitive to flood protection issues and became a minor public relations disaster. Under the new laws, Wolk said the Reclamation Board would be unlikely to approve the project. But even if the board did, other pieces of the legislation would make such a project less viable. "It would be much more difficult," Wolk said.

For example, one of the concerns about River Islands is that its new super-levees will protect the new houses from swells in the Delta but increase pressure on other, weaker berms and heighten Stockton's flood

risk, Wolk said. One piece of legislation signed Wednesday would require Lathrop to analyze how the new project might affect flooding elsewhere, Wolk said. Schwarzenegger vetoed a bill to reform the Reclamation Board last year, saying he wanted a more comprehensive package of flood reform bills. Also adding to the pressure on lawmakers to pass flood reform was a 2003 federal court decision that makes the state financially liable for future flood damages, a 2004 flood in the Delta and Hurricane Katrina in 2005.

## EPIC DROUGHT TIGHTENS GRIP ON SOUTHEAST AS NEW RATIONS WEIGHED

October 16, 2007, [Associated Press](#)

**BUFORD, Ga. — If there's a ground zero for the epic drought that's tightening its grip on the South, it's once-mighty Lake Lanier, the Atlanta water source that's now a relative puddle surrounded by acres of dusty red clay.**

Tall measuring sticks once covered by a dozen feet of water stand bone dry. "No Diving" signs rise from rocks 25 feet from the water. Crowds of boaters have been replaced by men with metal detectors searching the arid lake bed for lost treasure. "This lake is a survivor," Jeff "Buddha" Powell told a worried customer at his bait shop along the barren banks. "If you panic, you don't help Mother Nature," he added. "It's going to rain when it rains." But little rain is in the forecast, and without it climatologists say the water source for more than 3 million people could run dry in just 90 days. That dire prediction has some towns considering more drastic measures than mere lawn-watering bans, including mandatory rationing that would penalize homeowners and businesses if they don't reduce water usage. "We're way beyond limiting outdoor water use. We're talking about indoor water use," said Jeff Knight, an environmental engineer for the college town of Athens, 60 miles northeast of Atlanta, which is preparing a last-ditch rationing program as its reservoir dries up. "There has to be limits to where government intrudes on someone's life, but we have to impose a penalty on some people," he added. "The problem is how much and who. That gets political. But it's going to hurt everyone. We're all going to share the pain." About 26 percent of the Southeast is covered by an "exceptional" drought — [the National Weather Service's](#) worst drought category. The affected area extends like a dark cloud over most of Tennessee, Alabama and the northern half of Georgia, as well as parts of North and South Carolina, Kentucky and Virginia. The only spots in the region not suffering from abnormally dry conditions are parts of southern and eastern Florida and southeast Georgia. Government forecasters say the drought started in parts of Georgia and Alabama in early 2006 and spread quickly. Sweltering temperatures and a drier-than-normal [hurricane season](#) contributed to the parched landscape. Now residents are starting to feel the pinch.

Restaurants are being asked to serve water only at a customer's request, and Gov. [Sonny Perdue](#) has called on Georgians to take shorter showers. The state could also impose more limits within the next two weeks, possibly restricting water for commercial and industrial users. In North Carolina, Gov. Mike Easley stopped short of imposing statewide water rationing but asked people to stop watering lawns and washing cars. "A bit of mud on the car or patches of brown on the lawn must be a badge of honor," Easley said Monday. "It means you are doing the right thing for your community and our state." As conditions worsen, the [Army Corps of Engineers](#) has become a favorite target of lawmakers in Georgia, Florida and Alabama, where the drought has intensified a decades-old feud involving how the Corps manages water rights. "I particularly am disappointed that the Corps has allowed so much water to drain out of our reservoirs, out of our lakes, as they have," said Georgia Lt. Gov. Casey Cagle, a Republican. "It's not that we haven't had enough water. It's more a function of allowing so much of it to go downstream." On Friday, Perdue threatened to take legal action if the Corps continued to let more water out of a north Georgia water basin than it collects. And the president of the Metro Atlanta [Chamber of Commerce](#) said on Monday that businesses could also line up behind a legal challenge. "We have an ongoing water crisis in metro Atlanta. And it is the biggest and most imminent economic threat to our region," said Sam Williams, the chamber's president.

**Scientists have little reason to hope the drought will ease anytime soon.** The Southeast Climate Consortium warns that a La Nina weather system is forming, which could bring drier and warmer weather for Florida and most parts of Alabama and Georgia. "When we need to recharge our water system, this is what we don't want," said state climatologist David Stooksbury, who predicted that it will take months of above-average rainfall to recoup the losses. In Atlanta, officials are nervously watching the dropping level of Lake Lanier, the sprawling north Georgia reservoir that provides water for 1 in 3 Georgia residents. The latest measurements have become a fixture on nightly television newscasts in Atlanta, where the drought is often the top story. There is a silver lining of sorts in the middle of the drought: Guides say the lake's fishing is as

good as ever, if not better. "Less water, less places to hide, I guess," said Chuck Biggers, a guide who has roamed the lake's waters for four years.



## **Environment**

(It's all in how look at the numbers. The population of China is 1,321,851,888 (as of July 2007). Is it a good idea for 0.4 % of the population to move to benefit 99.6 % of the population if they are compensated financially? If you're part of the 0.4 %, it's not a good deal. If you're part of the 99.6 %, it's a good deal.)

### **Officials Say Four Million More People Near Three Gorges Dam May Have to Move**

By Voice of America News, 12 October 2007

China's state media report the environmental impact of the Three Gorges Dam project may force four million more people to relocate from the area. Friday's reports say residents near the dam will be encouraged to move to the outskirts of the nearby city of Chongqing in southwestern China. Nearly 1.5 million people have already been displaced to make way for the world's biggest hydroelectric project. The reports quote Chongqing's Vice Mayor Yu Yuanmu as saying the reservoir area near the dam has a vulnerable environment that is threatened by overpopulation. Last month, Chinese media reports said the project had created potentially catastrophic environmental problems, including flooding and land erosion. Environmentalists, who have long condemned the project, say the dam's reservoir will likely become heavily polluted with industrial waste.

(This is about fish, not boats.)

### **Boating access will decline with water level at Lake Billy Chinook**

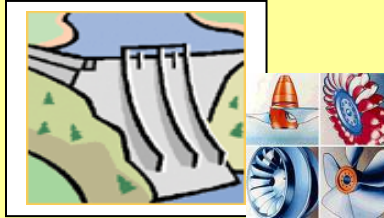
Statesman Journal, Salem, OR, October 11, 2007

Boating access will be restricted at The Cove Palisades State Park on Lake Billy Chinook as the lake is drawn down to allow for the construction of a fish-enhancement project. It's part of an effort to restore salmon and steelhead runs above Pelton and Round Butte dams. The dropping lake level has led to the closing of the park's Lower Deschutes landing and is likely to affect access to its Crooked River landing on weekdays. The Upper Deschutes landing at the park will remain open as long as lake levels allow. The park is 15 miles southwest of Madras near Culver. Officials with Portland General Electric, in cooperation with those from the Confederated Tribes of Warm Springs, agreed to lower the reservoir by seven feet this winter to provide access to build a fish-passage structure at Round Butte Dam.

The utility and the tribes are co-owners of the Pelton Round Butte Hydroelectric Project, and Portland General Electric operates the dams. The reservoirs behind both dams border the Warm Springs Reservation. It's a massive project that will feature a 270-foot-high underwater tower with a fish-collection system on top that will draw in surface water, redirecting water currents and fish downstream toward the dam. Fish then will be screened at the intake and trucked downstream from the dams for release. The tower also will blend water from different depths to improve water temperatures and other conditions for fish downriver. State park construction crews will take advantage of the lower reservoir levels to repair and improve the boating facilities at the landings. And two self-adjusting boarding floats will be installed at the Crooked River landing.

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<sup>i</sup>This compilation of articles and other information is provided at no cost for those interested in hydropower, dams, and water resources issues and development and should not be used for any commercial or other purpose.



# Some Dam – Hydro News and Other Stuff

10/26/2007

CORSO COURT

**Quote of Note:** *“Management is doing things right; leadership is doing the right things.” - - Peter Drucker*

## Other Stuff:

(It's hard not to be cynical. It's that time of year to remind ourselves what politics is about sometimes.)



(A nice story.)

## **A mill's heart and soul**

OCT. 16, 2007, BY Jeri Rowe, News-Record

OAK RIDGE, TN - The water wheel is ready. It stands 24 feet with a bright fire-engine-red paint job you can see easily see through the trees along N.C. 68. No more rusty buckets. No more rusty bolts. No more worry about it toppling like a sickly tree. For the first time in two years, the water wheel is fixed. By month's end — maybe sooner — water will be pumped from Beaver Creek and tumble over the wheel, turning it four revolutions a minute.



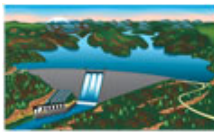
That's turtle slow. But that's OK. The water wheel at the Old Mill of Guilford is done. And that's what matters. It completes the Old Mill. But it also completes the last wish of Charlie and Heidi Parnell, the husband-and-wife team who ran the mill for a quarter century before they died five months apart — to the day — earlier this year.

Catch up with Laura Goodman, one of the mill's volunteers, and between her frenetic pace of filling orders and filling bags, she'll tell you about Charlie's last days in the hospital. He wrote on a

page from a magazine: "I love you, Heidi." Then, he asked Goodman to fetch him a pen and a piece of paper. She did, and with notepad in hand, Charlie turned into his old engineer-educated self. He started sketching the water wheel, folding the paper and saying repeatedly, "This is how to make the buckets" and "This is the cheapest, easiest way to do it." For two years, Charlie had focused on repairing the water wheel. The stone base that held the wheel's shaft was leaning and needed to be leveled. So, Charlie had the wheel stopped for repairs. But two years ago, Charlie suffered a seizure, and the wheel's welder suffered a severe case of shingles. Everything stopped. The water wheel remained motionless, and started to rust even more, reminding many who knew Charlie about the declining health of the mill's tireless entrepreneur. When Charlie died March 25 of a brain tumor, Heidi took up his mantle. She wanted to repair the water wheel. But it didn't happen. As it did for her husband, health got in the way. In early July, she was giving firm handshakes and walking up her driveway to make lunch for the mill's unannounced visitors and its revolving door of regular volunteers. A few weeks later, she could barely make it up her driveway — let alone make lunch or give anyone a firm grip. She died Aug. 25 of lung cancer. Charlie was 88; Heidi, 78. The mill's longtime heart and soul. Gone.

Ask any local historian, and they'll tell you the water wheel is the mill's steel signature. It's a visual reminder to a timeless operation that started before the Revolutionary War. But talk to any member of what's known as the "Mill Family," friends of the Parnell's who span generations, states, even oceans. To them, that rusting water wheel was a constant reminder of a dream dashed, a wish unfulfilled. That all changed one sunny afternoon a few weeks ago. With the help of two dozen volunteers, a company from Franklin installed a repaired water wheel — with 96 new buckets. The next weekend, volunteers painted the shaft and spokes to match the buckets — a bright fire engine red. "When will you get the wheel going?" people now ask Annie Laura Perdue, the mill's lone employee. "When God gives us enough rain," she responds. But she knows it'll happen. The new plastic pipe has been installed. The pump is ready. And some day, the big steel pipe will be repaired — or replaced — and pull water from the pond across N.C. 68. Until then, the water will come from nearby Beaver Creek, spewed into a wooden contraption called a sluice box and sent cascading over the wheel before it's sent back into the creek. Then, the process starts all over again.

Now, the Old Mill will still use electricity. This is the 21st century, you know. But Perdue will tell you quickly it's the symbolism of it all. Just seeing that water running over that big, fat wheel. It's for Charlie and Heidi. Their spirit will never leave Beaver Creek.



## **Dams**

**(If you want to view a whole lot of dam photos and info on the dams, take a look at this web site.)**

**<http://www.waymarking.com/cat/details.aspx?f=1&guid=bde15fc9-bd90-4dc1-8c46-9b0b48ba10f5>**  
**(Hint: Hold down the Ctrl key and click on the above link.)**

## **Residents to air concerns about dam removal**

By COLIN HICKEY, Kennebec Journal Morning Sentinel. 10/17/2007

WINSLOW -- Town planners want to know the fears and concerns people in the community have over next year's planned partial removal of Fort Halifax Dam. To get that feedback, the Planning Board has scheduled a public hearing at 7:15 p.m. Nov. 15 in the Winslow Junior High School auditorium. "I believe this would be a kind of conditional use permit process," planner W. Elery Keene said, "and that process does require that we hold a public hearing." But beyond the requirement, Keene said, the board is eager to get public feedback on an event seldom encountered by communities. Keene said those who come to the meeting need to understand that the Planning Board has limited authority regarding a dam removal. He worries, though, that some may not have that understanding. "I think people are going to be disappointed," he said "that the Planning Board and the town in regulatory matters at least don't have more control over what might or might not happen here."

What appears likely to happen at this point is that dam owner FPL Energy will remove a portion of the hydroelectric facility on the Sebasticook River. That action is expected to greatly reduce the 5.2-mile

impoundment created by the dam, making significant changes to the landscape surrounding the waterway. FPL Energy plans to begin the removal process next summer. Keene said the entire Planning Board will attend the public hearing with chairman Michael Parker serving as moderator. FPL Energy already has obtained clearance from federal and state regulatory authorities to begin dam removal and no more legal challenges appear to remain. Essex Hydro Associates, a Boston-based hydroelectric dam operator, showed interest in taking over the dam. But state and federal groups with a say in the matter have so far opposed such a takeover. Instead, they see breaching the dam as the quickest and most promising means of meeting a mandated goal of fish passage for sea-run species.

## **PGE breaches Marmot Dam on the Sandy River**

The Oregonian, **October 19, 2007**

For the first time in a century, the Sandy River is flowing free after a temporary earthen dam built behind the Marmot Dam was breached early Friday evening. The Marmot was removed in July, but the temporary dam continued to hold up the river. The dam removal -- the largest ever in Oregon -- is the result of PGE's decision about 10 years ago to decommission the hydroelectric project that includes Marmot, the Little Sandy Dam and man-made Roslyn Lake reservoir. The move will promote better habitat for threatened wild fish. Although the project generated enough power for about 12,000 homes, rules to protect migratory fish were becoming more strict and meeting them would be costly, and analyses showed those costs exceeded the value of the project's power. After the lake drains, sometime in 2008, it will be returned to its century-old natural contour, planted with native plants and maintained. Next summer, PGE will remove the dam on the Little Sandy.

(Some people are of the view that new dams are not being built. Actually, there have been a number of dams built in recent years. This article is about a proposal to build a flood control project.)

## **Flood plan recommends new dams**

SUSAN SILVERS, Connecticut Post, 10/22/07

TRUMBULL, CT — **The good news is that engineers think feasible steps can be taken to control flooding in some neighborhoods. The bad news is that the state may not allow the town to carry out the engineers' recommendations.** After several months of study, engineers said replacing a dam that once existed in the Pequonnock River Valley might help, but they also noted the state often frowns on such structures. First Selectman Raymond G. Baldwin Jr. said Monday that the engineers have also recommended some retention dams in Great Oak Park to alleviate flooding in the Lake Avenue and Canoe Brook areas. Residents will get a chance to hear the engineers' findings first-hand when consultants from Millone and MacBroom Inc., of Cheshire, and the town's engineer, Stephen Savarese, present the report on Saturday. The session will take place at 10 a.m. in Town Hall. "At least we start the education process and see where we're going to go," Baldwin said.

According to the consultants' report, average rainfall in Connecticut has grown about 5 inches annually, from 46 inches about half a century ago. In the meantime, Baldwin said, the town has developed substantially, exacerbating flooding problems. With heavy rainfall in the past year causing several families to flee their houses repeatedly, the Town Council decided last spring that it needed professional advice. It authorized \$30,000 for the flood study to see what might be done. Baldwin said the town would apply to get the dam permits. But he said the state Department of Environmental Protection is reluctant to grant any such request that could potentially affect wild or plant life. "We're limited to what we can do because the state DEP controls our watercourses — so does the Army Corps of Engineers," he said. In addition to more retention areas, the report suggests diverting more water from the Pequonnock River into Mill Brook for the Easton Reservoir, a matter that will have to be worked out with Aquarion. Baldwin said the town is taking several steps recommended by the study, including lowering Pinebrook Lake before substantial rains to allow for more retention, and requiring mitigation for any building expansion that disturbs wetlands. In particularly egregious situations, he said, the Federal Emergency Management Agency buys out residents whose homes are chronically flooded, and that program may be applicable to some residents in Trumbull.



## Hydro

(With oil over \$80 per barrel and nudging toward \$90 per barrel, this is a bargain. Oil at \$100 per barrel is not far in the future and we have no energy plan. You can't drill. You can't build nuclear, coal, or hydro. We flap in the air with a few windmills. You can conserve, but that won't do the job. Congressman John Dingell wants a gasoline tax of 50 cents a gallon, but won't make Detroit increase gasoline mileage. We are suffering from every obstacle imaginable. A crisis is near and the economy will implode. At \$80 per barrel, the cost to produce a kWh would be over \$.20/kWh. In this era, we won't use oil to generate power but as oil goes so goes the price of natural gas and coal. The price of natural gas is up to \$7.46/ MMBTU which would mean a cost of about \$.113 per kWh. It has to make one wonder why more renewables, including hydro, are not being built. For instance, with hydro installed costs at \$2000/kW and \$3000/kW the cost to produce hydropower would be about \$.079 and \$.116 per kWh, respectfully. The reason for the lack of hydro development is environmental opposition and the tortuous/costly licensing process. Thanks, Mr. Dingell for that too!)

### **Council enters power project**

**The city's involvement eventually will reduce electricity costs.**

October 16, 2007, The Vindicator, Vindy.com

NEWTON FALLS, OH — City representatives are looking to control the price they pay for power. On Monday, council approved an ordinance to enter part of an \$833 million hydroelectric project on the Ohio River. The ordinance places the city into an agreement with American Municipal Power of Ohio to take part in a Hydromatrix Project. Earlier this month, council member Eric Thompson said he couldn't pass the agreement on its second reading without seeing how the project would affect the city. Specifically, he asked city Manager Jack Haney if the project would cause an increase in electricity bills. Haney said the project would "minimally affect" the cost of electricity in the city in the next four years but would lower costs in the long run. Representatives from AMP-Ohio at the meeting said that by locking into the project, the cost of electricity would be approximately 60 percent more in 2032 based on expected market cost increases. Haney said it will lower costs in the long run because the cost of the power coming from the project won't increase like other power sources that use other fuels to operate. AMP-Ohio officials said locking into the hydroelectric project would also save the city money because it eliminates potential uncertainty in the energy market.

The agreement would bring an additional 1,300 kilowatt hours of power, with the city having the ability to use or sell the power, which could bring additional revenue. The HydroMatrix Project includes the construction of three hydroelectric plants in West Virginia, Indiana and Kentucky, generating a total of 191,000 kilowatt hours. A kilowatt hour measures the amount of energy that is used. Newton Falls signed up to be involved in the project in May 2006 as part of the project's developmental phase. The planned structures use much smaller turbines than traditional hydroelectric plants but use more of them, along with current dams, to generate electricity. Because they use current dam structures, HydroMatrix projects don't involve heavy civil engineering, cost approximately 60 percent of conventional construction on hydroelectric structures, have less environmental impacts, and cost about one cent per kilowatt hour cheaper than other methods, according to Phil Meier, AMP-Ohio's chief information officer. Meier said the starting price point offered with the project will be between \$.042 and \$.053 per kilowatt hour delivered. He noted that the price is lower than the current market cost. Haney said the new facilities should last "50 to 75 years, at least." AMP-Ohio expects the project to be finished in 2012. Newton Falls is part of approximately 60 other communities who are taking part in the project. AMP-Ohio is expected to bring a more precise cost estimate to the city in March 2008.

(The Valdez of hydro.)

### **Andover company fined for oil spill at hydro plant**

By Crystal Bozek , October 19, 2007, Eagle-Tribune

ANDOVER, NH - Boott Hydropower Inc. will pay a \$125,000 penalty to settle allegations it failed to report an oil spill, according to the office of state Attorney General Martha Coakley. Boott Hydropower's headquarters are on Bullfinch Drive in Andover. According to a complaint filed in Suffolk Superior Court, a turbine at the company's Lowell hydroelectric plant malfunctioned and leaked hydraulic oil into a canal that flows into the Merrimack River in June 2005. The turbine is underwater. The Andover-based company failed to notify the state Department of Environmental Protection of the oil spill within two hours of it happening. A citizen had alerted the Lowell Fire Department to an oil sheen in that area, and the department notified DEP. In addition to the payment, Boott has agreed to develop and implement an environmental management plan for its Lowell plant.

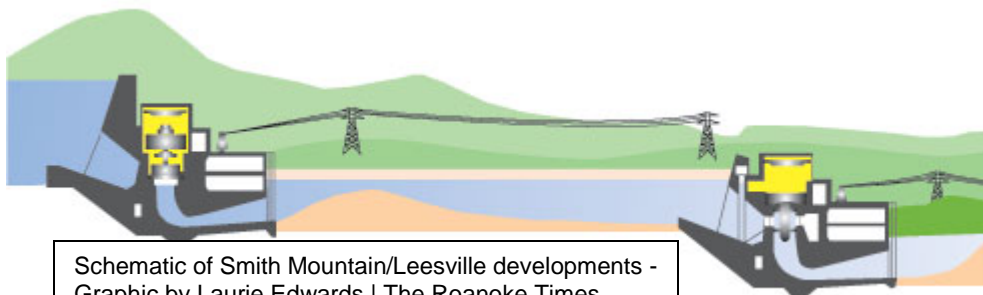
(Shouldn't more owners point out who pays the bills? It's as if some owners feel that stating such a fact is a detriment. It took six years to build this entire project and it's already taken five years for a relicensing process that when finished will take about six years. Is there something wrong with this picture?)

### Hydroelectric powerhouse

**"People have to realize they're living on a power plant." -- Frank Simms | Hydro support manager, hydro operations, American Electric Power**

By Laurie Edwards, The Roanoke Times, October 19, 2007

In 1960, the Federal Power Commission granted American Electric Power a 50-year license to build and operate Smith Mountain and Leesville dams. After six years of work, Smith Mountain and Leesville lakes were formed and AEP began generating electricity for commercial use. With the application expiring in three years, AEP officials are busy with paperwork to file for a new license. "We've been working on it almost five years," said John Shepelwich, a spokesman for Appalachian Power, a unit of AEP. Shepelwich said the Federal Energy Regulatory Commission approached AEP to serve as one of



Schematic of Smith Mountain/Leesville developments - Graphic by Laurie Edwards | The Roanoke Times

seven guinea pigs for a new relicensing process. Frank Simms, hydro support manager for AEP, said the Integrated Licensing Process was formed to address weaknesses in current licensing processes. "I've been doing relicensing for about 20 years," he said. "I think it's the best process. It keeps you on a schedule. There may be a few weaknesses, but overall, we're very pleased with it." One of the aspects of the new licensing process that most intrigues Shepelwich and Simms is its transparency.

AEP created a Web site ([smithmtn.com](http://smithmtn.com)) to allow lake residents to track the process. Correspondence related to the license, study plans and public meeting transcripts are available online in their entirety. "Every



meeting that we have is publicized," said Simms. "We have no meetings that the public is not able to attend." He added that AEP has surpassed FERC recommendations — FERC requires two public meetings; AEP has already held four. "We want their [the public's] input," said Simms. "We want them to know what we're doing." Currently, AEP is finalizing recommendations for the license application based on 15 studies on how the lake should be managed, including water withdrawal, navigational markers and erosion. The studies were selected by AEP and lake stakeholders — federal and state agencies, local governments, non-governmental

organizations, citizens groups and individuals. They worked in groups and held public meetings to establish the key issues, said Simms. AEP then sent a proposal of studies to FERC, who issued a final list of studies based on recommendations from all sectors. "I couldn't say one study is more important than another," said Simms. "Each has its own significance. We don't treat any as being more important. The studies, in addition to all other materials presented, will be used by FERC to accept or reject AEP's relicensing application, which has a filing deadline of March, 31, 2008. Allan Creamer, a fisheries biologist for FERC who has been following the relicensing process, said AEP has so far met all the licensing deadlines. "From my standpoint, personally, I have been pleased with the process," said Creamer. "I have been pleased with how open AEP has been, the dialogue that has gone on between AEP and the stakeholders ... I think they've made a lot of strides."

Simms said he's fairly confident that AEP will be relicensed by FERC in 2009. "We want people to know we care about the lake and we take our responsibility very seriously," he said. Shepelwich said the lake is very important to AEP employees, many of whom can point out friends, relatives and former employees in 1960s photos of the dams under construction. At the core, Shepelwich and Simms said AEP is part of the lake community. While Smith Mountain Lake is a recreational hot spot in the region, it's also a powerhouse of electricity. "Those two dams out there were constructed by AEP for power generation," said Simms. "People have to realize they're living on a power plant."

(It looks like another Company had no stomach for a court case on the streambed fees.)

### **Avista Corp. agrees to pay \$4 million in stream bed land dispute**

Great Falls Tribune, October 24, 2007, MT

The state reached a settlement with Avista Corp., one of two remaining power-generation companies named in a lawsuit seeking payment for the use of state lands. Spokane-based Avista operates two major hydroelectric dams on the Clark Fork River in western Montana. "This is a very fair agreement for the state's school trust," Attorney General Mike McGrath said. "Both sides worked very hard to get to this point." Under the terms of the agreement: Avista agrees to pay rent to the state each year beginning with calendar year 2007, and continuing through 2016; the initial amount of the rent is \$4 million per year; and the rent will be modified each year, with the base amount of \$4 million adjusted upward by the Consumer Price Index annual average for the calendar year for which payment is due. Representatives of the Attorney General's Office and Avista signed the settlement Friday. The Avista agreement was sealed until today to allow the company time to comply with disclosure obligations required by the Securities and Exchange Commission. The agreement also provides for Avista's rent to be adjusted if PPL, either through litigation or settlement, receives a determination that the valuation of PPL's land is more favorable to it than the valuation in the Avista settlement. Similarly, if the state enacts a statute, rule or policy that's more favorable to Avista, the Avista rent will be adjusted. The trial involving the remaining power-generation company, PPL Montana, began Monday in First District Court in Helena. The state reached a settlement with a third power-generation company, Pacificorp, in June. "Our position is that other users of state trust lands are required to reimburse the people of Montana," McGrath said. "The same standard should apply to the hydroelectric power companies." The terms of the Avista settlement must be approved by the district court and the state Land Board before the agreement is final. Avista is a regulated utility, serving electricity customers in Idaho and Washington.

(There's hope sometimes!)

### **Waterville dam rebuild in progress**

*By Morning Sentinel, September 07, 2007*

WATERVILLE, ME — The Union Gas hydroelectric dam on Messalonskee Stream could be generating electricity again by year's end after being off line for more than six years. "We are about 50 percent complete," on a project to rebuild the dam, dam owner Synergics, Inc. President Wayne L. Rogers said. "We think by the end of November we will be back and finished." Rogers said he expects his company, which is based in Annapolis, Md., will invest about \$1.7 million in the project, which will generate 1.6 megawatts, or enough energy to power about 1,000 homes.

### **Dam rehabilitation legislation proposed in US Senate**

Mid-Hudson News Network, October 23, 2007

Washington – US Senator Charles Schumer Tuesday said he has co-sponsored a measure that would establish a program with FEMA to fund rehabilitation and repairs to publicly-owned dams. Schumer brought the issue of deteriorating dams in the Hudson Valley to light last summer. "Dam failures can be devastating and even deadly, especially in regions like the Hudson Valley where major flash floods are all too routine,"

he said. "With Hudson Valley's aging dams deteriorating and crumbling, this legislation will provide local communities with the resources they need to make vital repairs to them before a major breach occurs." The proposed legislation would require FEMA to establish a program to provide grants to states for use in rehabilitating publicly-owned dams that fail to meet minimum safety standards and pose an unacceptable risk to the public. Schumer pointed to Whaley Lake Dam in Dutchess County as one example of a failing and aged dam in the region that needs repairs.



## Water

### **Meeting will cover water**

By Rob Pavey, October 17, 2007, The Augusta Chronicle

Thurmond Lake's falling water levels and strategies to minimize the impact of a worsening drought are topics the Army Corps of Engineers will discuss during a public meeting in Augusta on Nov. 13. The corps' Savannah District commander, Col. Edward Kertis, also will discuss long-range projections for Thurmond, Russell and Hartwell reservoirs upstream from Augusta and answer questions from the public on issues such as hydropower production, water conservation and water safety. The meeting will be held at Julian Smith Casino, 2200 Broad St., from 4 to 8 p.m. and will include information booths and experts from the National Weather Service and other government agencies. A "drop-in" format will allow visitors to come and go as their schedule permits. A second public meeting will be held Nov. 14 from 4 to 8 p.m. at the Hilton Garden Inn in Anderson, S.C. The corps, which manages the three lakes and their hydropower and recreation facilities, has already entered the second of three levels of a federally approved drought contingency plan designed to conserve water by slowing the release of flows through Thurmond Dam into the Savannah River.

Thurmond had fallen to 319.5 feet above sea level as of Tuesday, or more than 10 feet below full pool. Projections indicate that it will continue to fall about a foot every 14 days unless adequate rainfall materializes. When the water level falls to 316, a third level of the drought plan will be activated. It calls for further reductions in hydropower production and a lower volume of water to be released into the Savannah River, which feeds Augusta. That level will likely be reached around mid-December, said Jason Ward, the corps' water control manager. "Unfortunately, we expect the reservoirs to continue their decline," he said, noting that stream flows in some parts of the Savannah River basin are at all-time record lows. Thurmond's inflows, for example, are just 26 percent of normal, while inflows at the Lake Hartwell area, where the drought situation is more severe than in Augusta, are just 1 percent of normal.

### **Drought-stricken Georgia says it will sue over water**

October 19, 2007, CNN.com

**ATLANTA, Georgia (CNN)** -- The state of Georgia, stricken by months of drought, confirmed Friday that it will sue the Army Corps of Engineers. Georgia Gov. Sonny Perdue had said Wednesday the state would seek an injunction forcing the Corps to stem the flow of water from Lake Lanier, Atlanta's primary water source. The Corps administers the lake, which supplies most of the water to Georgia's capital and feeds the Chattahoochee River, which winds through three states. **Rainfall in the area is about 15 inches below normal for the year.** Atlanta Mayor Shirley Franklin said, "This is dire, severe, extreme drought." In the city of Atlanta and surrounding counties, outdoor watering is banned except for a few commercial uses. The state is looking into which businesses would be forced to cut back water use if the **drought** worsens. The Army Corps of Engineers says there is about a three-month supply of water left in Lake Lanier, which is 15 feet below its capacity. **The corps -- under an agreement reached in the 1980s with U.S. Fish and Wildlife Service, the state and downstream users -- releases 5,000 feet of water per second from the dam between the man-made lake and the river. The figure was based on a Florida hydroelectric power plant's needs, as well as concern for endangered species in the river, including mussels and sturgeon. But officials from the U.S. Fish and Wildlife officials told CNN that no one knows exactly what flow is needed to keep the mussels or the sturgeon alive. Perdue calls the current water flow policy a "nonsensical action."**

"We shouldn't have to fight this out in court," Franklin said Thursday. "We don't want to hurt [the cities and businesses] downstream but we'd like to see some middle ground and hope people would join with us." But even if an agreement is reached soon, the mayor said her city, which has doubled in population since 1980, needs to do a better job of conserving water. Franklin also admitted that the Atlanta area did little to add to storage facilities during years of recent explosive growth, but says the city has now purchased a stone quarry to be developed into a new reservoir. Atlanta is spending \$4 billion to fix the city's water infrastructure. According to Franklin, 14 percent of the city's pipes, many of which date back to the 1890s, leak. Though the mayor says the percentage of leaky pipes has dropped each of the last six years. But the remaining repairs will take four to five years and won't address the current crisis. Atlanta may soon have to resort to drastic action like some other Southeastern towns have already taken. In Siler City, North Carolina, residents and businesses have been ordered to cut water use by 50 percent or face penalties. Many restaurants and schools are serving meals on paper plates so they don't have to wash dishes. Two poultry plants have cut production by one day a week to curtail water use and are also trucking water in for other uses. The town of Orme, Tennessee, also trucks in water, three times a week -- for everybody. "We are high and dry," Mayor Tony Ream said. Meanwhile, Franklin has enacted her own personal measures. "I've cut the time in the shower," she said. "I don't wait for the water to get hot. I kinda shiver for a few minutes. I put a bucket in it and I use that collected water to water the two flowers I would like to save."

(The water wars of the Southeast. The irony is that without the dams, there would be no water to fight over.)

### Georgia governor, corps differ over extent of water emergency

October 20, 2007, CNN.com

**LAKE LANIER, Georgia (CNN)** -- Georgia Gov. Sonny Perdue declared a water supply emergency in north Georgia on Saturday as its water resources dwindled to a dangerously low level after months of drought. But an Army Corps of Engineers official denied there is a water crisis. Perdue, who signed an executive order Saturday, asked for President Bush's help in easing regulations that require the state to send water downstream to Alabama and Florida. He also asked the president to declare 85 counties as federal disaster areas. Perdue blasted what he called the "silly rules" governing the water supplies, noting that even if the state got replenishing rains, it could not by law conserve those, but must release 3.2 billion gallons a day downstream. "The actions of the Corps of Engineers and Fish and Wildlife Service are not only irresponsible, I believe they're downright dangerous and Georgia cannot stand for this negligence," Perdue said.



The **Army Corps of Engineers**, however, presented a different assessment. If there were nine months without rain, water supplies still would be adequate, said Maj. Daren Payne, the Army Corps' deputy commander for the Mobile, Alabama, District. The corps sent a letter to Perdue assessing the situation and pointing out that they are "not going to run out [of water] any time soon," Payne said. The corps -- under an agreement reached in the 1980s with U.S. Fish and Wildlife Service, the state and downstream users -- releases 5,000 feet of water per second from the dam between Lake Lanier and the Chattahoochee River. The figure was based on a Florida hydroelectric power plant's needs, as well as concern for **endangered** species in the river, including **mussels and sturgeon**. On Friday, Georgia filed a

motion seeking to require the Army Corps of Engineers to restrict water flows from the lake and other north Georgia reservoirs. The corps said it needs 120 days to review its water policies, according to Perdue. The Bush administration has been in contact with the Georgia congressional delegation on the matter, the White House said Saturday afternoon "We have already begun drafting interim rules to ... address the endangered species requirements, and the Army Corps has started the process of revising the operations manual for the river basin," said White House spokeswoman Dana Perino.

#### Months of drought

Rainfall in north Georgia, which includes the Atlanta metropolitan area, is far below normal for this time of year. That was evident as Perdue addressed reporters on packed red clay on the shore of Lake Lanier -- the main water source for the Atlanta area's 5 million residents. Normally, he'd be standing in water, but levels

have dropped to historically low levels. The [drought](#) is hurting businesses and scaring away tourists. Efforts are under way to try to reduce the flow from Lake Lanier by looking into requirements for endangered species and demands downstream for power plants and industries, Payne said. **A new biological review of endangered species needs will end in November and will be examined by officials from the U.S. Fish and Wildlife Service to see if water requirements can be reduced, he added.** "The corps is not opposed to reducing the flow, if it can do it legally," Payne said. CNN's call to the Fish and Wildlife Service has not been returned. Georgia, Alabama and Florida have been wrangling over how to allocate water from the Chattahoochee watershed for years as metro Atlanta's population has doubled since 1980. **"No one is sacrificing, no one is sharing the pain like the people in north Georgia are,"** Perdue said, noting there are no water restrictions in Florida or southern Alabama.

[Georgia](#) has imposed a mandatory ban on outdoor water use by homeowners in the region, but Lt. Gov. Casey Cagle warned this is a situation "we cannot conserve our way out of." Meanwhile, individual counties are monitoring illegal water use. In Douglas County, violators will have their water supply turned off and may have to pay up to \$1,000 to get it turned back on. Cobb County, just north of Atlanta, is doling out fines of up to \$500 for repeat offenders.

[\(The Alabama point of view.\)](#)

## **Alabama Attacks Drought Operations By Corps Of Engineers**

10/23/2007, newsdesk

October 18, 2007 -- (MONTGOMERY)— The State of Alabama on Tuesday updated its complaint in the long-running federal court dispute with the Corps of Engineers over water releases from federal reservoirs in the Alabama-Coosa-Tallapoosa River Basin. As part of the update, Alabama added new claims attacking the Corps' illegal operation of Lake Allatoona in north Georgia during the ongoing drought. "Alabama is simply unwilling to allow the Corps to continue its illegal and inequitable operation of these federal resources," said Attorney General Troy King. "The Corps has a longstanding pattern of favoring Georgia over Alabama in its operations at Lake Allatoona, and the Corps' actions have only gotten worse during the unprecedented drought we are experiencing." "Alabama will not stand by and let the insatiable water demands of Atlanta trump the vital downstream interests in our state," said King. "I will continue to work closely with Governor Riley, the Alabama congressional delegation, and affected stakeholders to ensure that Alabama's interests are protected."

Alabama attacked several actions by the Corps in the amended complaint:

- Alabama challenges the Corps' decision earlier this month to cutback releases from Lake Allatoona that flow into Alabama, arguing that the Corps is ignoring the purposes for which Congress authorized that reservoir to be built with federal tax dollars, namely hydropower generation, flood control and downstream navigation. The Corps' decision to decrease releases restricts hydropower generation and impairs downstream navigation.
- While cutting back the flows into Alabama, the Corps at the same time is permitting an Atlanta-area water supply provider to exceed its authorized withdrawals from the lake by millions of gallons per day. Alabama seeks a court order stopping this illegal use of water.
- Alabama argues that the Corps has ignored congressional intent by refusing to make releases from Lake Allatoona to support navigation in the Alabama River. This failure by the Corps to make those releases has caused the levels of reservoirs on the Coosa and Tallapoosa Rivers to drop to historic lows.
- Alabama points out that the Corps has repeatedly ignored its operating guidelines by holding water in Lake Allatoona throughout the 2007 drought that should have flowed into Alabama.

Alabama seeks to have the Court order the Corps to comply with applicable federal law in its operations at Lake Allatoona. The lawsuit was originally filed in federal court in Birmingham in 1990. The litigation recently resumed after mediation talks between Alabama, Georgia and the Corps were unsuccessful. Source: Alabama Attorney General

## **Draft Report: More Dams, Water Storage Needed**

KCRA TV, October 19, 2007

**SACRAMENTO, Calif.** -- More dams and water storage should be built and other ways should be found to protect the Delta, a report from a task force created by Gov. Arnold Schwarzenegger said. The report also said that water delivery to Southern California from the Delta should not take priority over the wildlife living in the Delta. Phil Isenberg, a former Sacramento mayor and current task force chairman, said many people thought there was an endless supply of water when there really is not. A final report is expected to come out next month.



## **Environment**

(Contraption is a good description.)

### **Giant fish weir heads upstream to Columbia dam**

THE ASSOCIATED PRESS, October 21, 2007

WALLA WALLA, Wash. -- A giant slide designed to help migrating salmon and steelhead get past one of the massive hydroelectric dams in Eastern Washington is headed upstream from Portland, Ore. The U.S. Army Corps of Engineers says the spillway weir will be installed at the Lower Monumental Lock and Dam on the Snake River, near Kahlotus. The weir is a 120-foot high, 80-foot wide, 2 million pound fish slide that will be fitted into the dam's existing spillway. It will allow juvenile salmon and steelhead to pass the dam near the water's surface as they migrate to the ocean. The contraption left Portland on Saturday, attached to two grain barges being pushed by two tugboats. Traveling at 4-5 miles per hour, it's expected to reach the Lower Monumental dam early Wednesday. The corps says similar weirs at Lower Granite and Ice Harbor dams have allowed survival rates of 96 percent to 98 percent for fish using the slides to pass the dams.

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<sup>i</sup>This compilation of articles and other information is provided at no cost for those interested in hydropower, dams, and water resources issues and development and should not be used for any commercial or other purpose.