Some Dam-Hydro News

7-01-06 VOLUME 1, NUMBER 1

Hydro

Wildlife officials concerned about proposed Broken Bow power plant

BROKEN BOW, Okla. State wildlife officials are expressing concerns about plans for a power plant on the Lower Mountain Fork River in southeastern Oklahoma.

The city of Broken Bow wants to build a hydroelectric power plant on the river and says it can earn up to a (m) million dollars a year by selling electricity the plant would generate.
But the state Department of Wildlife Conservation says it's worried about how the plant would affect the river's flow which would affect trout fishing, canoeing and aquatic life in the river.

The department is insisting on a 100-thousand dollar study before construction begins to predict what effect a power plant would have on the river. City officials want to conduct the study while construction is under way.

Press Release Source: Consumers Energy

Consumers Energy Marks 100 Years of Service at Rogers Hydroelectric Dam and 75 Years of Service at Hardy Dam

Friday June 30, 6:00 am ET

CROTON, Mich., June 30 /PRNewswire/ -- Consumers Energy celebrates today a combined 175 years of service to customers by two landmark Muskegon River hydroelectric generating facilities.

"The Rogers Dam has been a reliable generator of renewable electricity for Consumers Energy customers for 100 years and the Hardy Dam isn't far behind at 75 years. The Rogers and Hardy Dams continue to provide customers renewable power today, just as they did for most of the 20th century," said Robert A. Fenech, Consumers Energy's senior vice president of nuclear, fossil and hydro operations.

Consumers Energy was a pioneer in the development of hydroelectric power early in the 20th century and also was a leader in the long-distance transmission of high-voltage electricity from the dams to cities such as Grand Rapids.

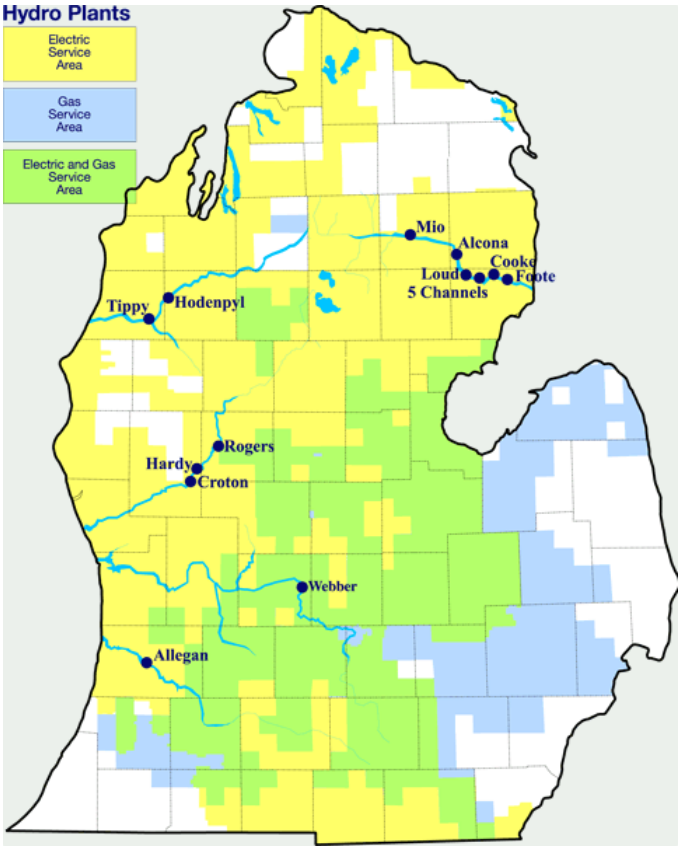
Located just south of Big Rapids in Mecosta County's Mecosta Township, Rogers Dam was completed in 1906, destroyed by fire in 1921 and rebuilt in 1922. The rebuilt dam's generators in 1922 put out 7,200 volts, stepped up by transformers to 72,000 volts, the highest voltage in use anywhere in the world at that time.

Today the electricity generated at Rogers Dam is transmitted at 46,000 volts. Rogers Dam can generate up to 6,750 kilowatts of electricity, enough to serve a community of 3,700 people.

The Hardy Dam began operation in 1931. It received the American Society of Civil Engineers' Historic Civil Engineering Landmark award in 1992 and was listed in the National Register of Historic Places on December 1, 1997. It can generate up to 30,000 kilowatts of electricity, enough to serve a community of 16,600 people. Hardy Dam is located in Newaygo County's Big

Prairie Township.

Consumers Energy's 13 hydroelectric dams have the capacity to generate 132 megawatts of electricity at facilities on the Au Sable, Manistee, Muskegon, Grand and Kalamazoo rivers. Reservoirs created by the dams provide recreational opportunities; nearly 30,000 acres of Consumers Energy land adjacent to the dams are open to the public.



Consumers Energy, the principal subsidiary of CMS Energy, provides natural gas and electricity to nearly 6.5 million of Michigan's 10 million residents in all 68 Lower Peninsula counties.

For more information about Consumers Energy, visit our Website at http://www.consumersenergy.com

Dam Removal

Town Brook Dam Removal and Fish Ladder
Plymouth, Massachusetts

Highlight: Town Brook

GOAL: **Restore anadromous fish runs for alewife, blueback herring, and rainbow smelt**

Town Brook is a 1.5-mile stream that runs from the Billington Sea, a 269- acre freshwater pond, to Plymouth Harbor in Plymouth, Massachusetts. Historically, the river provided important anadromous fish runs for alewives (*Alosa pseudoharengus*), blueback herring (*Alosa aestivalis*), and rainbow smelt (*Osmerus mordax*). Herring were an important food for the native Americans and are also believed to have sustained the early European settlers. According to legend, Squanto showed the Pilgrims how to plant herring as fertilizer with corn seeds, likely using fish from Town Brook.

Today, blueback herring and alewives are still an important component to sport and commercial fisheries in New England. However, due to a variety of factors including overfishing, habitat degradation, and urban development, anadromous fish populations severely declined. Beginning with the Billington Street dam in the 1790's, six dams were constructed on Town Brook, contributing to declines in fish populations. While each dam has been outfitted with fish ladders, two were in such disrepair that fish were still unable to migrate upstream unaided. Town Brook currently supports an annual run of approximately 7,000 herring, which is far below the stream's estimated capacity. In efforts to save the dwindling anadromous fish run, the Massachusetts Division of Marine Fisheries had for the past 15 years been capturing and trucking fish around the dams, releasing them at their spawning grounds upstream. With assistance from the NOAA Community-based Restoration Program, the Town of Plymouth took the lead to restore fish passage on Town Brook through replacement of a fish ladder at the Newfield Street Dam and through a dam removal and stream restoration project at the Billington Street Dam. At Newfield Street, the lower 30 feet of the notched fishway had deteriorated and was replaced with an aluminum Alaskan Steeppass Fishway in 2001. The Billington Street dam was constructed in the 1790's on Town Brook as a foundation for the Holms and Packard Anchor Forge mill. The mill burned down in the 1960's leaving the 70-foot long and 110-foot wide earthen dam behind. The brook was formerly carried through a 4 by 67-foot metal culvert under the dam and emptied into a nonfunctional fish ladder. Lead and asbestos were found at the site and the contaminated soils had to be removed prior to deconstructing the dam. Both the dam and the non-functioning fish ladder were removed in 2002 as part of a training exercise by the 368th Engineering Battalion (Heavy) of the US Army Reserves. The stream was then regraded and cobbles were added to mimic the downstream and upstream habitat and to recreate riffles and pools. Native riparian and wetland vegetation was planted along the restored stream in the spring of 2003. Restoring fish passage at Town Brook will allow alewives and blueback herring to reach historic spawning grounds and restore habitat for resident fish and birds. Removing the Billington Street Dam was the first dam removal in

Massachusetts for anadromous fish passage and provides a precedent for future dam removals for fish passage in the state. Throughout the project, community support was important in promoting stewardship and involvement. Students from the Plymouth Community Intermediate School News Team were actively involved in video-documentation of the project's progress and an intermediate school student monitored the brook before and after the dam removal as part of a science fair project. High school and college students also helped to remove debris from the stream. And, local Boy Scouts maintain a covered footbridge near the Billington Street Dam. The Town Brook corridor was highlighted during a Biodiversity fair in 2001, where visitors were informed about the importance of the river to the survival of the Pilgrims. The Town of Plymouth maintains a nature trail named the Pilgrim Trail along Town Brook and hopes to create an educational walkway along the stream. The total cost for the project was approximately $550,000. This project is part of a larger effort to restore anadromous fish runs on Town Brook and create a green-way with an integrated nature trail stretching from Billington Sea to Plymouth harbor. Additional anadromous fish run restoration projects are currently being considered at Jenny Grist Mill and Brewster Gardens.

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Environment

Judge: Leave old dams alone

Union-Democrat, June 28, 2006

By MIKE MORRIS

A federal court judge has ruled that 18 small dams in the Emigrant Wilderness are not to be rebuilt, repaired or maintained by the Stanislaus National Forest.

Instead, U.S. District Court Judge Anthony Ishii said the dams must remain until they decay naturally, which forest officials say could take a century or more.

"We are still undecided on whether we are going to appeal or not," Stanislaus National Forest spokesman Jerry Snyder said yesterday

Y-Meadow Lake Dame is one of 18 dams in the Emigrant Wilderness affected by a federal court judge's ruling.

U.S. Department of Justice attorneys representing the Forest Service will make the final decision on whether to appeal the decision.

Ishii's ruling, released earlier this month, is the latest chapter in a nearly two-decade-old debate over how the forest should manage the check dams.

During the past 17 years, forest leaders have come up with a variety of plans on how to manage the dams, ranging from removing them all to repairing and operating some of them.

In late 2003, Stanislaus National Forest Supervisor Tom Quinn signed the Emigrant Wilderness Dams Record of Decision, under which the Forest Service would maintain 11 of the 18 dams.

Quinn said he wants this month's ruling to be appealed.

"I hope my original decision will eventually prevail," he said.

Wilderness Watch, a national conservation group based in Montana, filed a lawsuit challenging Quinn's decision, which lead to Ishii's ruling.

Steve Brougher, the group's Central Sierra Chapter representative, was the wilderness supervisor on the forest's Summit Ranger District and managed the Emigrant from 1985 to 1997.

Brougher, a Tuolumne-area resident, said this morning that it is a "shame" for the Forest Service to spend time and effort trying to justify the dams, which he calls, "something contradictory to the purpose of wilderness."

John Buckley, executive director of the Central Sierra Environmental Resource Center, agrees with the judge that the dams should be left alone. The Twain Harte-based center appealed Quinn's decision that the Forest Service should manage some of the dams.

"This is all an emotional, controversial issue that has come to a head," he said. "But to me, all sides are winners."

Buckley said those who support the dams will have them around for many decades to come while those who are against them will know that they will eventually disintegrate.

Matt Bloom, owner of Kennedy Meadows Resort and Pack Station, said the dams keep water flowing in area streams throughout the year. They also do a "tremendous amount of good for fish and wildlife," he said.

Kennedy Meadows, which provides access to the Emigrant Wilderness, was listed as a "defendant intervener" in the lawsuit.

"I think it was a terrible decision and we're definitely going to appeal it," Bloom said yesterday. "It's one judge's decision and his arguments don't even make sense a lot of the time, which makes it easier to appeal."

Bloom said the dams also have historical value, as seven of them are eligible for the National Register of Historic Places.

The 18 check dams are in the South Fork of the Stanislaus River, Clavey River and Cherry Creek watersheds. They include Y-Meadow Lake Dam, High Emigrant Lake Dam and Whitesides Meadow Lake Dam.

The 113,088-acre Emigrant Wilderness is bordered by Yosemite National Park to the south, the Toiyabe National Forest to the east and Highway 108 to the north. It is entirely within Tuolumne County.

The wilderness contains more than 100 named lakes and more than 500 tiny, unnamed lakes — one of the highest ratios of lakes per wilderness acreage in the Sierra.

The late Fred Leighton, helped by crews of volunteers who lugged tools and sacks of mortar deep into the wilderness, built the rock dams between 1920 and 1951. The idea was too keep trout streams flowing, meadows green and high-country lakes from drying up.

For decades nobody quarreled with the dams of their goals. But with the 1975 addition of the Emigrant to the national wilderness system, all that changed.

Suddenly the Emigrant was subject to the congressional definition of wilderness: an area untrammeled by man, retaining its primeval character and influence without permanent improvements.

Since the mid-1980s, the dams have been under a bureaucratic and political microscope. They have over the years been the subject of three Stanislaus National Forest decisions, two reversals on appeal, two congressional bills, Tuolumne County Board of Supervisors resolutions, a petition campaign and numerous public hearings and meetings.

(Note: This next one sounds like two people who will get a divorce).

Steel, Sierra Club tout alliance

DaytonDailyNews, June 30, 2006

SPRINGFIELD — Representatives from United Steelworkers and the Sierra Club stopped Monday in Springfield to talk about how jobs and the environment can be protected simultaneously.

The national groups have created the Blue-Green Alliance to help create environmental and economic stability, between which there is a "mythical gap," said Carla Henthorn, a steelworkers representative and co-chair of the alliance in Ohio.

Larry Fahn, past president of the Sierra Club, compared the possible effect of the group's efforts to America's success at putting a man on the moon.

"We could do the same things if we, as Americans, put our ingenuity to work," he said.

Anders Dynge, general manager for local manufacturer James Leffel & Co., said he supports the alliance's goals. The company, which makes hydropower machinery, is an example of manufacturing maintaining jobs and still benefiting the environment, he said.

Some Dam-Hydro News

7/02/06 VOLUME 1, NUMBER 1

Dams

Three Suspect Dams Found On Big Island

Inspections Came After Kaloko Reservoir Collapse

KITV, Honolulu, July 1, 2006

HONOLULU -- Emergency visual dam inspections carried out by the U.S. Army Corps of Engineers found three Big Island reservoirs that need to be refurbished or destroyed.
Major Gen.Robert Lee, the state's adjutant general, said the owners of Hawi No. 5, Lalakea and E-13 reservoirs need to decide whether they are going to make the investment needed to bring them up to current standards.
If not, Lee said the owners are being advised to abandon their reservoirs and do emergency breaches to render them harmless.

Reservoirs and their dams throughout the state were ordered to be inspected after the Kaloko reservoir broke on Kauai in March, killing seven people.

Lee said the state wanted to find out if there were any dams in Hawaii that are in danger of imminent failure, like Kaloko. He said the answer is no.

Water

End of rainy season leaves local lakes, dams full

Santa Maria Time, July 1, 2006, By Luis Gomez/Staff writer

California's rainfall season closed Friday with above-normal inches of rain in some areas and a greener but hotter outlook for the summer.

Santa Maria led Central Coast communities with the highest above-normal inches of rain, 17.3 inches, or 24 percent above normal, during the year-long season, said AccuWeather.com Meteorologist Ken Clark. Rainfall seasons in California go from July to June.

Santa Barbara area closed at 18.4 inches of rain, just 8 percent above normal; the Vandenberg Village/Lompoc area at 14.4 inches, or 91 percent above normal; and San Luis Obispo at 24 percent, or 98 percent above normal, said Clark.

Because weather is so unpredictable, Clark said, “All you need is one thundershower to get one-quarter of an inch of rain.”

If you get one thundershower in July, it's going to be wetter than normal, he said. The hottest day in June and July last year reached 83 degrees, but this year there is a chance of having a hotter day than that, he added.

However, showers during the summer may not make much of a difference for reservoirs and lakes that depend on rain for recreation areas, especially during this summer, which is expected to be mostly dry and warmer than usual, according to the National Weather Service.

Several lakes and camp recreation areas are reported full coming into this Fourth of July weekend, according to park officials.

Water levels at the Salinas Reservoir, or Santa Margarita Lake, are almost at full capacity, according to the San Luis Obispo County Utilities department late June readings.

Current storage use is at 23,393.4 acre feet, just 449.5 acre feet shy of its limit.

Levels at the Bradbury Dam, which feeds Cachuma Lake, are at about 752.2 feet in depth with a limit capacity of 753 feet, said Tony Bulna, chief of operations at the dam.

“What that means is people camp for the Fourth of July can enjoy the whole lake,” Bulna said.

Lake Cachuma ranger-in-training Cassie Joyner said the park looks greener and water levels in the lake are at the fullest she's seen in the past two seasons.

“We're loving it,” she said.

Lopez Lake is at a 90 percent capacity, which is a good level for this time of year, said Dean Benedix, Utilities Division Manager for the San Luis Obispo County Public Works Department.

“I believe we're quite a bit higher than last year,” said Benedix.

San Antonio and Nacimiento Lakes have been at full capacity since mid-May, said Richard Riddle supervising ranger of the south shore San Antonio Lake.

Because dam levels at San Antonio are also at full capacity, Riddle said the lake should have plenty of water for vacationers through the rest of the summer. The Nacimiento Dam was at 92 percent capacity as of Friday, according to the Monterey County Water Resources Agency.

Environment

It’s amazing what a few facts will do to some popular notions about energy independence.

The False Hope of Biofuels

For Energy and Environmental Reasons, Ethanol Will Never Replace Gasoline

By James Jordan and James Powell

Washington Post, Sunday, July 2, 2006

Biofuels such as ethanol made from corn, sugar cane, switchgrass and other crops are being touted as a "green" solution for a large part of America's transportation problem. Auto manufacturers, Midwest corn farmers and politicians are excited about ethanol. Initially, we, too, were excited about biofuels: no net carbon dioxide emissions, reduction of oil imports. Who wouldn't be enthusiastic?

But as we've looked at biofuels more closely, we've concluded that they're not a practical long-term solution to our need for transport fuels. Even if all of the 300 million acres (500,000 square miles) of currently harvested U.S. cropland produced ethanol, it wouldn't supply all of the gasoline and diesel fuel we now burn for transport, and it would supply only about half of the needs for the year 2025. And the effects on land and agriculture would be devastating.

It's difficult to understand how advocates of biofuels can believe they are a real solution to kicking our oil addiction. Agriculture Department studies of ethanol production from corn -- the present U.S. process for ethanol fuel -- find that an acre of corn yields about 139 bushels. At an average of about 2.5 gallons per bushel, the acre then will yield about 350 gallons of ethanol. But the fuel value of ethanol is only about two-thirds that of gasoline -- 1.5 gallons of ethanol in the tank equals 1 gallon of gasoline in terms of energy output.

Moreover, it takes a lot of input energy to produce ethanol: for fertilizer, harvesting, transport, corn processing, etc. After subtracting this input, the net positive energy available is less than half of the figure cited above. Some researchers even claim that the net energy of ethanol is actually negative when all inputs are included -- it takes more energy to make ethanol than one gets out of it.

But allowing a net positive energy output of 30,000 British thermal units (Btu) per gallon, it would still take four gallons of ethanol from corn to equal one gallon of gasoline. The United States has 73 million acres of corn cropland. At 350 gallons per acre, the entire U.S. corn crop would make 25.5 billion gallons, equivalent to about 6.3 billion gallons of gasoline. The United States consumes 170 billion gallons of gasoline and diesel fuel annually. Thus the entire U.S. corn crop would supply only 3.7 percent of our auto and truck transport demands. Using the entire 300 million acres of U.S. cropland for corn-based ethanol production would meet about 15 percent of the demand.

It is argued that rather than using corn to make ethanol, we can use agricultural wastes. But the amounts are still a drop in the bucket. Using the crop residues (called corn stover) from corn production could provide about 10 billion gallons per year of ethanol, according to a recent study by the U.S. Energy Information Administration. The net energy available would be greater than with ethanol from corn -- about 60,000 Btu per gallon, equivalent to a half-gallon of gasoline. Still, all of the U.S. corn wastes would produce only the equivalent of 5 billion gallons of gasoline. Another factor to be considered: Not plowing wastes back into the land hurts soil fertility.

Similar limitations and problems apply to growing any crop for biofuels, whether switchgrass, hybrid willow, hybrid poplar or whatever. Optimistically, assuming that switchgrass or some other crop could produce 1,000 gallons of ethanol per acre, over twice as much as we can get from corn plus stover, and that its net energy was 60,000 Btu per gallon, ethanol from 300 million acres of switchgrass still could not supply our present gasoline and diesel consumption, which is projected to double by 2025. The ethanol would meet less than half of our needs by that date.

Perhaps more important: The agricultural effects of such a large-scale program would be devastating.

Recently, there has been lots of excitement and media coverage about how Brazil produces ethanol for its automobile fuel and talk that America should follow its lead. But Brazil consumes only 10 billion gallons of gasoline and diesel fuel annually, compared with America's 170 billion. There are almost 4 million miles of paved roads in America -- Brazil has 60,000. And Brazil is the leading producer of sugar cane -- more than 300 million tons annually -- so it has lots of agricultural waste to make ethanol.

Finally, considering projected population growth in the United States and the world, the humanitarian policy would be to maintain cropland for growing food -- not fuel. Every day more than 16,000 children die from hunger-related causes -- one child every five seconds. The situation will only get worse. It would be morally wrong to divert cropland needed for human food supply to powering automobiles. It would also deplete soil fertility and the long-term capability to maintain food production. We would destroy the farmland that our grandchildren and their grandchildren will need to live.

The writers are research professors in Maglev Research Center at Polytechnic University of New York.

Note on net energy related to Ethanol from the post's Car care column (probably most people would agree that ethanol is a negative when it comes to energy efficiency – why would you not include the manufacture of the equipment needed to harvest corn?):

CLICK & CLACK : Examining Ethanol

Sunday, July 2, 2006

Q *Dear Tom and Ray:*

I've always wondered about ethanol. Seems too good to be true -- you just plant some corn, harvest it, and in no time, you have fuel for your car. So I Googled ethanol on the Web. There are tons of Web sites extolling the benefits of corn-based ethanol as a fuel. Then I found one, http://www.healthandenergy.com, that made the opposite case. The report on this site says that 131,000 BTUs are needed to make one gallon of ethanol, but each gallon of ethanol produces only 77,000 BTUs. That means we're losing 54,000 BTUs for every gallon we produce. Just wondered if you have an opinion. -- Charlie

A *TOM:* Yes. But, as usual, it's not an informed one.

RAY: From what we can tell, the basic issue is this: When you calculate how much energy it takes to produce a gallon of ethanol, you have to make certain decisions. Everybody agrees that you need to include the energy needed to plant the corn, water it, harvest it and convert the starch to alcohol. But, for instance, do you include the energy needed to manufacture the tractors that plow the fields? Scientists disagree about that.

TOM: They also disagree about the other side of the equation. The guy whose study you refer to, David Pimentel of Cornell University is well regarded and has been studying this issue for years. He adds up his calculation of the amount of energy needed to grow the corn, subtracts the amount of energy you get from a gallon of ethanol, and gets a negative number.

(Note: I read the results of a study done some years back that concluded that the net energy from a nuclear plant is also negative. In addition, if you include the energy input to mine, drill, transport, refine etc, for fossil fuels, the overall efficiency of a fossil fueled plant is in the neighborhood of 25 %. So, the question rages on, why aren't we using the net energy approach to decide what's built to supply our energy demands? That would tell us renewables like hydro, wind, and solar are the way to go, especially hydro with its 90+ % efficiency. It also makes one wonder just what is best for the environment?????)

Some Dam-Hydro News

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Dams

Reservoir Release Merits Debated

WFMZ.com, 2006-07-03

Some victims of last weeks floods say it wasn't just Mother Nature that caused damage to their homes. Many Delaware riverfront homeowners are blaming nearby reservoirs for bringing water levels to an unnecessary high. WFMZ's Eve Tannery joins us now with more.

Jaciel....as you know there are several reservoirs that empty out into the Delaware River.
We're still waiting for figures to come in from New York, but we do know that P-P-L's Lake Wallenpaupack hydroelectric station had to release water for about 3 days.
Now...officials say without these reservoirs things could have been much worse, but some residents don't buy it.

RUSSO: :49
I think enough's enough. Maybe after the third time, you would have thought 2 times was enough, maybe we'll get someone's attention.

TANNERY:
Riverfront homeowners along the Delaware River, say this is a sight they're getting tired of seeing.
And they say it's not just the rain that's to blame.
They believe nearby reservoirs are flooding them.

JIM DAVIS: 6:54
They're releasing when it's detrimental to their gain.

TANNERY:
But officials at nearby reservoirs say, without their storage capabilities, things could have been much worse. P-P-L's Lake Wallenpaupack's hydroelectric station was able to store 10 billion gallons of water before they had to open their spill gates Wednesday morning.
Residents say it's one too many reservoirs releasing way too much water.

JEFF: 1:34
It's very devastating. We're being held at somebody's mercy...there's nothing we can do about it because there's no regulation.

P-P-L officials say they waited as long as they could, and when they could no longer store any more water in their Lake Wallenpaupak facility, they had to release it.
The company does work hand in hand with local emergency management agencies about when to release.

But, they don't have to coordinate with reservoirs in New York.
Officials say that's up to the Delaware River Basin Commission to oversee.

More than ever, city needs positive message

Sunday, July 02, 2006
Keep Heritage Day traditions
The last question on anyone's mind -- after watching the usually placid Delaware River muckify everything

within its reach in the past week -- is whether the city of Easton should push ahead with Heritage Day this coming Sunday, the city's homage to the reading of the Declaration in Independence in Easton 230 years ago.

True.
The show that must go on in Easton -- and in Portland and Harmony and Phillipsburg and Riegelsville and all the towns besieged by floodwaters -- is the backbreaking effort to make homes and stores habitable again, and to secure state and federal funding for the work.

It helps that President Bush declared eight counties federal disaster areas, and that the governors of New Jersey and Pennsylvania toured this region to see the devastation for themselves.

Disbelief played a major role in this flood. At first, few could comprehend that a few days of steady rain centered in New York state could create the type of flood associated with a tropical storm or spring thaw. For many people, this was just an inconvenience, forcing detours to avoid bridge and road closures. For those in the flood plain, it was a nerve-shattering repeat of September 2004 and April 2005.

Most people were better prepared for a third inundation in 20 months, having learned how to mobilize, sandbag, and move possessions above the water's reach, but nothing could stop the swells from going where water is going to go.

So to President Bush, Govs. Ed Rendell and Jon Corzine and other government officials in a position to help, here's a breakdown of priorities: Towns need emergency aid to pay for the 24-hour days workers have been putting in, plus equipment and hauling, plus everything else. And bless those workers and volunteers who've come to their neighbor's assistance. Those who have a reason to rebuild will need help with federal insurance claims.

(A new evaluation of the Delaware River, which is becoming perhaps the most dangerous, expensive floodplain in the Northeast. Ever since the Tocks Island Dam was de-authorized, the Delaware has been on its own in terms of flood control. No dams, no flood walls (unlike towns on the Susquehanna), and not much of a flood management plan for upstream reservoirs (Lake Wallenpaupack and three impoundments owned by New York City.)

It's time to rethink this equation. The Tocks Island data is still there and could be reviewed. But the greater need is seeing what could be done on a local level to hold off the Delaware, where it makes engineering sense, to shield immovable neighborhoods. The other side of the coin is redrafting flood maps and helping people move out of floodplains, and preventing others from building in those areas.

(Global warming. It's a leap to suggest that three floods in 20 months is a direct result of increased burning of greenhouse gases, but it is a greater folly to think that we're not in a pattern of meteorological uncertainty, which could be causing rivers to flood with increasing regularity as well as whipping up category 5 hurricanes. Given the human toll and the dollar outlay -- much of it passed on to taxpayers and pushing cities such as Easton closer to the brink -- this must be treated as an internal threat to homeland security and given high priority by the Federal Emergency Management Agency.

(Nurturing the healing power of communities. It's not just a matter of calling Washington for money. Local people helping local people is the bond that ultimately holds this nation together. Next Sunday Easton will celebrate a bare-bones version of Heritage Day with an interdenominational faith service, the re-reading of the Declaration of Independence at the Bachmann Publick House at noon, and possibly fireworks at dusk.

The fireworks need no advertising to draw a crowd, but the reading of the Declaration -- a renewal of our vows of self-sufficiency -- has added meaning this year. Today, as in 1776, we need to proclaim that we are more

than a collection of people who live in the same general vicinity. Heritage Day helps to define a community and its resilience in the face of adversity. That message is as tangible as ever, and it would help to see more of our neighbors express their loyalties to each other, as well as to the nation's birth, with a well-timed "huzzah!" at the re-reading at Second and Northampton streets.

Lynch to Romney: Pay N.H. $3.2 million for dams -- or else

By Kathy McCormack, Associated Press Writer | July 5, 2006

Boston Globe

CONCORD, N.H. --Gov. John Lynch said Wednesday his state is prepared to take legal action against Massachusetts if the Bay State doesn't pay more than $3.2 million owed to New Hampshire for flood-control dams.

"For several years, Massachusetts has not paid its full share," Lynch wrote to in a letter sent Wednesday to Massachusetts Gov. Mitt Romney.

The letter said both states entered into a compact nearly 50 years ago in which Massachusetts pays New Hampshire annually for hosting the flood-control project. The agreement, approved by Congress, came about 20 years after the Merrimack River overflowed its banks and swept away roads, bridges and buildings from central New Hampshire to the Massachusetts coast.

The Army Corps of Engineers built five dams and several reservoirs, seizing thousands of acres of property in more than a dozen New Hampshire towns. The project was finished in 1963.

According to the compact, Massachusetts agreed to reimburse New Hampshire 70 percent of property taxes lost because of the acquisition and ownership of the dams and reservoirs comprising the Merrimack River Valley Flood Control Project, the letter said.

"As calculated by the New Hampshire Department of Revenue Administration, New Hampshire's lost tax revenues have exceeded $500,000 each year since 1998," the letter said.

Lynch said Massachusetts made no payment at all in 1994, partial payments from 1995 to 2002, and no payments since then.

Lynch spokeswoman Pamela Walsh said there have been discussions and letters sent over the years, but none like the letter Wednesday threatening legal action.

"They just haven't acted," she said of Massachusetts.

"This dispute predates Gov. Romney's term in office by more than a decade," Romney spokesman Eric Fehrnstrom said in a statement. "We have received Gov. Lynch's letter and we are reviewing it."

Lynch said under the compact, if there's a dispute over the amount to be paid, each state is required to designate an arbitrator. New Hampshire did this in 1997, and despite requests for Massachusetts to do the same, prior Massachusetts governors have not appointed an arbitrator, the letter said.

If Massachusetts doesn't commit to the payments or designate an arbitrator, "I intend to direct the attorney general of New Hampshire to commence legal proceedings to enforce the compact," Lynch wrote.
New Hampshire state officials have made up the difference to the towns from the state's general fund.

Hydro

PG&E California Helms 3 hydropower unit back

Reuters, Jul. 5, 2006

NEW YORK, July 5 (Reuters) - PG&E Corp.'s (PCG.N: Quote, Profile, Research) 404-megawatt Unit 3 at the Helms Pumped Storage hydropower station in California returned to service by Tuesday afternoon, the California Independent System Operator said in a report.

The unit shut by the afternoon of June 30 for unplanned reasons.

The 1,212 MW Helms station, which entered service in 1984, is located near Fresno in Fresno County. There are three 404 MW Units number 1 through 3 at the station.

With the return of Unit 3 all of the units were available for service.

One MW powers about 800 homes.

PG&E's regulated Pacific Gas and Electric Co. subsidiary owns and operates the station.

PG&E owns and operates more than 6,000 MW of generating capacity, markets energy commodities, and transmits and distributes electricity (5 million) and natural gas (4.1 million) to customers in California.

Some Dam-Hydro News

7/09/06 VOLUME 1, NUMBER 1

Dams

(An interesting way to dodge the liability issue)

Winthrop accord on dams OK'd

By GLEN BOLDUC
Staff Writer, Blethen Maine Newspapers Inc.

WINTHROP -- Councilors unanimously approved town ownership of two Maranacook Lake dams Wednesday, followed by applause from the audience in attendance.

"It certainly seems to be time, maybe overtime, that we take positive action," said Council Chairman James Norris.

The special, 11/2-hour meeting at the Winthrop Town Office was held after councilors tabled a decision two weeks ago.

At that time, councilors were concerned with liability and ownership responsibility issues involved with the Mill Stream dam, which is located under the former Carleton Woolen Mill along Main Street.

According to Town Attorney Lee Bragg, the town is free of any accident or other legal claims against it under Maine law.

One dam, known as the Maranacook Outlet dam, will be shared with the town of Readfield, which approved an agreement last month.

"It's been our passion for the last 11 months, three weeks and four days," said Jim Schmidt, a Readfield resident and president of the Maranacook Lake Association.

A draft of the agreement will be worked out between the towns soon.

The two dams are currently owned by the Winthrop Commerce Center, which had been seeking to give up responsibility of the dams for nearly two years because of liability issues and the cost of maintenance.

Last week, members of the center said they would pay $5,000 of the repair costs to the two dams.

Current estimates for repairs to both dams could run as high as $17,000. But, according to Wendy Dennis of the Cobbossee Watershed District, that number could go up after an additional study to the Mill Stream dam is completed.

An engineering study completed in the spring found needed repairs to the grated bridge and center gate of the Mill Stream dam, as well as eroded piers under the former Carleton Mill. The outlet dam would need to be monitored for erosion, and lowered about 15 inches to the level it was at before repairs were made in 1996.

As passed, the town would take control of the portion of the Mill Stream dam that is upstream and outside of the mill. The Winthrop Commerce Center would still own the portion of the dam under the building, including the eroding piers.

Past studies have indicated that the piers are not necessary to the building's stability, Dennis said, but as part of the agreement the center will sign off on holding the town responsible for any damages, and has made promises to keep up maintenance.

"But it could work both ways," said Louis Carrier, one of six owners of the center.

The decision came just in time. According to Dennis of the Cobbossee Watershed District, pressure was mounting to make a decision before a Maine Department of Environmental Protection grant became unavailable in the fall.

The grant, which covers up to $10,000 or 75 percent of repair costs, is provided through the Kennebec County Soil and Water Conservation District. But as the issue dragged on, members of the conservation district were getting ready to put the money toward other ways to help fight erosion along Maranacook Lake.

Wicomico County Dams Get Closer Look

WorldNow and WBOC TV, 07/06/2006

SALISBURY- After seeing the flood damage in Seaford, officials elsewhere on Delmarva are taking a closer look at their waterways.

Wicomico County officials say the Coulborn Mill Dam near Salisbury is their top priority. This comes after the Maryland Department of Environment (MDE) found that dam to be unsafe. The concern is that the pipes are old and corroded.

The Coulborn Mill Dam **(There's something wrong in this photo?)**

According to the MDE, Coulborn Mill Dam is structurally sound. What the MDE concerned about is whether it can handle water from a 100-year storm. "We met last week and we are very hopeful that very soon we should be getting a permit from them to reconstruct that dam," said P. Rai Sharma, director of the Wicomico County Department of Public Works and Roads.

Sharma said the county will put in a new spillway and pipes. He hopes to begin work in August and be finished in four months. The price tag is about $500,000. The project will mean detours for area residents.

"If they can address it now and get the issue over, then everybody will get along fine," said Jim Revelle, who has lived next door to the dam for 14 years.

"So far since we've been here, the waters have never gotten very high and all the properties have been built up higher," Revelle noted.

Sharma said anytime there is rain in the forecast, his department's first concern are the county dams.

"We have people on watch, keeping the dam, seeing if the water level rises," Sharma said.

After that project is complete, the county will then look at plans to improve Rewastico and Barren Creek dams.

Hydro (Another benefit of hydro!?)

(Excerpts from Washington Post article below)

Tech Firms Go Mining for Megawatts

Companies Rush To Exploit Region's Cheap Electricity

By Blaine Harden

Washington Post Staff Writer
Sunday, July 9, 2006

QUINCY, Wash. -- Microsoft is pouring concrete in a bean field on the west end of town. Yahoo is digging up a field of alfalfa out on the east end. Google, which declines to comment, is said to be sniffing around for its own field of dreams here in the semi-desert outback of eastern Washington.

This small farm town, population 5,300, has become the Klondike of the wildly competitive Internet era. The gold in Quincy is electricity, which technology heavyweights need to operate ever-larger data centers as they fight for world domination.

Their data centers -- air-conditioned warehouses filled with thousands upon thousands of computer servers that talk to Internet users around the globe -- are extraordinary power hogs. Microsoft says electricity consumption at its data centers doubled over the past four years and will triple over the next five.

There is cheap electricity here and lots of it. That is because the Columbia, the premier hydroelectric river in North America, flows nearby. Three publicly owned, local utilities own five large dams on the river, and they produce much more electricity than the sparse local population can use. With power prices soaring, the three utilities have become the hydroelectric emirates of the Pacific Northwest.

Until now, they have been obligated under 50-year-old contracts to sell about two-thirds of their power -- without profit -- to major utilities serving millions of people in Seattle, Tacoma and Portland. The arrangement helped keep monthly electric bills in the Northwest far below the national average.

Those old contracts, though, are expiring -- a development that will help push up residential electricity rates across the region. And the mid-Columbia utilities are scurrying to sell their newly unleashed power to the corporate giants of the Internet -- if they are willing to plant "server farms" in two-stop-light towns such as Quincy.

They do seem uncommonly eager.

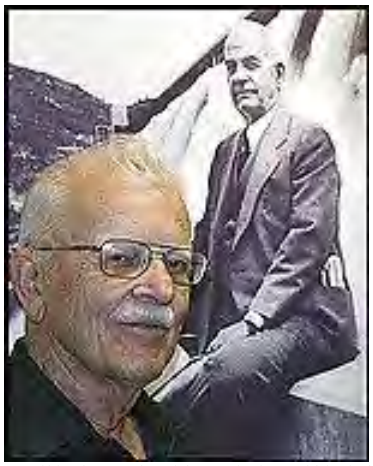
Out in the bean field, Microsoft is rushing to complete what it says will be the largest data center it has ever built. It is scheduled to go online in February. Downstream in The Dalles, Ore., Google is building a data center that will go online within the next year and is reported by local officials to be scouring the region looking for other sites. Upstream in Wenatchee, Wash., Yahoo is expected to go online with another data center in the fall and is in negotiations for still others.

Cheap Juice by the River

Town	Players	Power cost per kilowatt-hour
Wenatchee	Yahoo	1.8 cents
Quincy	Microsoft, Yahoo	2.8 cents
The Dalles	Google	3.4 cents
National average for industrial power		5.8 cents

"They are salivating," said Rufus Woods, publisher of the Wenatchee World, the dominant newspaper in this part of the state.

It was his grandfather, also named Rufus Woods, who was the principal booster and relentless propagandist behind federal construction of Grand Coulee Dam, completed in 1942 as the world's largest dam. It is still the largest hydroelectric plant in North America.



Wilfred Woods with a painting of his father, Rufus, who pushed for the Grand Coulee Dam

Grand Coulee, by creating a 151-mile-long reservoir behind the dam, ironed out the violent flow of the Columbia, ending early-summer floods and making it easier for local utilities downstream to build much less expensive dams that could milk significant amounts of power from the river.

The first Rufus Woods boasted noisily in the pages of his newspaper that electricity from the dams would lure major industry to Wenatchee and the Columbia Basin. But the federal government broke his heart by stringing wires across the Northwest and setting up rules requiring dams to sell most electricity at a postage stamp rate, meaning that power had to cost the same in Wenatchee as it did hundreds of miles away in Seattle, Tacoma or Portland.

Although farming in the Columbia Basin boomed, thanks to irrigation water diverted by Grand Coulee, major industry, for the most part, ignored Wenatchee and towns such as Quincy for most of the past seven decades.

Companies could get plenty of cheap power in Seattle and Portland without having to build in the boondocks -- until now.

"Everything is finally coming together for us," said Curt Morris, a commissioner of the Port of Quincy. "By taking that calculated risk to build those dams years ago, we have an asset that is going to start performing for us."

He said that data-center investment by Microsoft and Yahoo would more than double the $300 million tax base in Quincy. The price of vacant lots in Quincy has jumped fourfold since word of Yahoo and Microsoft leaked early this year.

At the Wenatchee World, though, there are doubts about how many jobs will come with the server farms that are going to suck up the region's electricity. Yahoo has told planners it will have between 8 and 25 employees in Wenatchee, while Microsoft and Yahoo together have said they will employ about 150 in Quincy.

"The numbers of employees are so small," said Wilfred Woods, 86, chairman of the board at the newspaper and son of the late Rufus Woods. "We are not backing the coming of the data centers like we backed Grand Coulee."

Managers at the two utilities say they are worried about how much cheap power should be allocated to companies such as Microsoft and Yahoo -- and how many jobs are likely to come of it.

"It is a real concern of the commissioners," said Tim Culbertson, general manager at Grant County PUD, referring to the five elected local officials who make policy for the utility. "They don't necessarily like the low jobs and high megawatts situation that goes with the data centers. But the utility has an obligation to serve. It has no ability to require jobs."

For millions of electricity consumers in the Northwest, the unfolding power machinations in the mid-Columbia region are likely to create upward pressure on monthly electricity bills. As high-tech companies use more low-cost electricity in places such as Quincy, less will find its way to homes around the region.

"When I have to replace it in the marketplace, that power will be more costly," said Eric Markell, senior vice president for energy resources at Puget Sound Energy, the largest utility in Washington.

Markell said that while there are many other forces putting upward pressure on power costs, the loss of cheap power from the mid-Columbia dams "will be a factor in rising electricity bills."

7/10/2006

Some Dam – Hydro News

Quote of the Day:

I never drink water because of the disgusting things that fish do in it. -- *W.C. Fields*

Dams

Unsafe dams pose threat

BY HEATHER KEELS STAFF WRITER, Citizens Voice, 7/9/06

All told, the region's dams withstood the recent flooding with little more damage than some spillway erosion and washed away rock, officials said.
However, a little more rain and the situation could have been much worse.

The 11-county region of Northeastern Pennsylvania has 16 dams classified as "unsafe structures," based on three conditions that, together, create a recipe for disaster, said Dennis Dickey, chief of the Department of Environmental Safety's dam safety division.

These dams:

Are not up to code to withstand the maximum rainfall possible in the area without overtopping.

Are in danger of breaking if they overtop.

Are considered "high-hazard," meaning their size and location create a high potential for property damage or loss of life if they break.

Due to Homeland Security concerns, the DEP cannot release the locations of the unsafe dams, Dickey said, but he added county emergency management agencies know which ones they are.

"The information is available to the right people, but we don't broadcast it," said DEP spokesman Tom Rathbun.

To Lackawanna River Corridor Association Director Bernie McGurl, the decision to classify the

locations of unsafe dams is understandable.

“I think the state has to be cautious,” said McGurl, who has not been told which dams pose a threat. “But if I was living downstream

threat

from a dam that was on that list, I’d darn well want to know about it.”

What is more important, Rathbun said, is for all residents who live near dams — safe or unsafe — to know the emergency action plan for their area, and to ensure there are competent people in local emergency management positions.

DEP is making progress on all the unsafe dams, Dickey said. Some are under construction to widen spillways or reinforce eroding earth with concrete, while others are beyond repair and must be breached. Some of the projects are stalled in the planning phases due to lack of funding.

Enlarging a spillway can cost millions, while breaching a dam requires elaborate research by consultants, Rathbun said. That means time and money.

Dickey said the term “unsafe structure” sounds ominous, but it should inspire concern for making necessary changes, not panic.

“It doesn’t mean the structure’s going to fail tomorrow,” he said. “It reflects that it doesn’t meet current standards.”

Still, Lori Spragens, executive director of the Association of State Dam Safety Officials, said the unsafe dams are not something to be taken lightly.

“I would say everyone should be concerned, especially people living around those structures,” Spragens said. “Dam failures happen a lot — at least once a year (nationwide).”

Current state regulations for dams were created in 1979 in the aftermath of a flood that shattered everyone’s conception of what was possible in Pennsylvania.

The Great Flood of 1977 dumped about a foot of rain on Johnstown in 10 hours, overwhelming the area’s dams and causing six to breach, dumping more than 100 million gallons of water on the city and killing 76 people, Rathbun said.

After that, the National Weather Service raised its probable maximum precipitation estimates, the government created a national dam inspection program and Pennsylvania updated its Dam Safety and Encroachments Act with new regulations for how much water a dam’s spillway must be able to accommodate.

Today, all spillways must be able to accommodate between 4.5 and 35 inches of rainfall in an hour, depending on the dam’s hazard classification. A 4.5 inch-per-hour flood is expected once a century, while a 35 inch-per-hour flood is expected once every 500 years, Rathbun said.

According to Dave Nicosia, a warning coordination meteorologist for the National Weather Service, isolated areas in Pennsylvania saw 2 to 3 inches of rain per hour during the recent flooding.

Nicosia said it is “exceedingly rare” to get the kind of rainfall that would overwhelm a major dam, but for Rathbun, who lived near Johnstown during the great flood and witnessed its fury firsthand, the possibility is not so remote.

“New precipitation records are set all the time, and it’s just a matter of time before it’s your town,” Rathbun said.

Since the changes in regulation, the DEP has been working to bring all of the state’s 3,161 dams — and particularly the state’s 767 high-hazard dams — up to code. Owners of high-hazard dams are required to have them inspected annually, while others must be inspected every five years.

“Dams have a lifetime just like us,” Dickey said. “They age and problems keep up. We keep picking them off one by one, but it’s a never-ending process.”

Between 300 and 400 high-hazard dams have been upgraded since 1979, but many others remain in violation because of limitations in funding, limitations in staff available to do the work, and reluctance on the part of some private dam owners who don’t see the urgency and don’t want to have their lakes or ponds emptied, Dickey said.

DEP officials are hoping the recent flooding will serve as a wake-up call to resistant dam owners.

“They have to realize even a small-size, low-hazard structure has a certain liability that comes with it,” Dickey said.

Money is still the largest obstacle. There is no state or federal funding available for repair of private dams, a process that can cost millions, Rathbun said.

The DEP works with dam owners to come up with an economical design, and recent developments in concrete technology have made many repairs possible, but others are still in limbo.

Seven of the unsafe dams in Northeastern Pennsylvania remain that way because funding is needed to begin researching a plan for repair. Three others have approved plans, but are awaiting funding for construction.

In serious cases, there are ways around the funding obstacle, Rathbun said, adding the DEP can draw down the water level in a lake or pond to reduce the danger or even breach a dam and bill the owner later.

Another dam safety initiative in recent years was Gov. Ed Rendell’s April 2004 high-hazard dam initiative, which requires all high-hazard dams to have an emergency action plan. DEP sent violation notices to 276 dam owners without plans, and since then, 47 plans have been approved and 12 dams have been removed from the high-hazard list through breaching or reclassification.

Still, plans for the majority of these high-hazard dams are still in the development and approval process, and 64 dam owners have not responded to the notices, Rathbun said. The majority of them are probably recreational lakes in the Pocono region, he guessed.

While some dams in the state remain unsafe, in violation of codes or without emergency action plans, Dickey said Pennsylvania residents should be glad the state has vigilant programs to keep progress moving and prioritize dam safety work in the state.

“We feel we came through this very well,” Dickey said of the recent flooding. “Our high-hazard dams really performed very well, and I think that’s a testament to where our staff time has been spent. I think without this progress this would have been a totally different story.”

Hydro

You have to wonder in view of the article below, why we aren't developing more hydro? Here's some tables developed to show the cost of hydro at different costs of construction versus oil fired generation, and the tables assume $60 oil, which is now $75. Hydro is cheaper at any capital cost? Puzzling ain't it!

Levelized per kWh Cost based on Coal $31/ton; Oil $60/bbl

	Coal	Gas/Oil	Hydro
Capital Cost ($/KW) (Note 1)	1235	600	1450
Levelized Capital Cost/KWh (Note 2)	161	78	188.5
Plant Factor (Note 3)	0.71	0.29	0.4
Fixed Cost/kWh (Note 4)	0.026	0.031	0.054
O&M Cost/kWh (Note 5)	0.005	0.005	0.005
Fuel Cost per kWh (Note 6)	0.016	0.105	0
Total Levelized Cost/kWh ($)	0.047	0.141	0.059

	Hydro Costs - $1000 thru $3000/kW				
	Hydro1	Hydro1.5	Hydro2	Hydro2.5	Hydro3
Capital Cost ($/KW) (Note 1)	1000	1500	2000	2500	3000
Levelized Capital Cost/KWh (Note 2)	130	195	260	325	390
Plant Factor (Note 3)	0.4	0.4	0.4	0.4	0.4
Fixed Cost/kWh (Note 4)	0.037	0.056	0.074	0.093	0.111
O&M Cost/kWh (Note 5)	0.005	0.005	0.005	0.005	0.005
Fuel Cost per kWh (Note 6)	0	0	0	0	0
Total Levelized Cost/kWh ($)	0.042	0.061	0.079	0.098	0.116

$70 oil: Get used to it

With little spare capacity and strong demand, markets are more vulnerable than ever.

By Steve Hargreaves, CNNMoney.com staff writer
July 11 2006

NEW YORK (CNNMoney.com) -- Oil prices may fall if progress is made in talks with Iran over its nuclear program, but things like surging auto sales in China and record gasoline demand in the United States mean that oil prices near record highs are probably here to stay.

Oil hit a fresh trading high of $75.78 Friday, pushed up by strong U.S. demand over the holiday weekend and ongoing tensions with Iran.

Prices could fall later this week as talks, which many expect to be constructive, continue with Iran over it's disputed nuclear program. But few think they'll fall too far.

"If there's a breakthrough, we could head back to around $70," said Nauman Barakat, an energy trader at the investment bank Macquarie. "But fundamentally, it's difficult to make a bearish case."

That's because Barakat keeps getting information like this: Despite national average gas prices of nearly $3 a gallon, near the inflation-adjusted high of $3.18 a gallon from the early 1980s, Americans used more gas in June than in any other month, according to preliminary data from the Energy Information Administration, the statistical arm of the Energy Department.

It is true that high prices are eating into demand *growth* for gasoline, with the latest EIA numbers showing the growth rate slowing to 0.5 to 1 percent per year from 1.5 to 2 percent a year. But the fact remains that demand is not dropping.

"Price is causing some substitutions, but in my opinion it's not enough, " said Peter Tertzakian, chief energy economist for ARC Financial and author of the book "A Thousand Barrels a Second."

Enough, that is, to significantly bring down prices, although those high prices have so far shown little ability to cut into economic growth as the economy is more efficient than it used to be.

And it's not just the United States that's eating up world supply.

Although the country uses about 20 million barrels of oil a day, more than three times the 6 million barrels used in China, the No. 2 consumer, demand is growing much more quickly in China.

Chinese consumption is growing at about 500,000 barrels a day each year versus growth of about 200,000 in the United States, according to Tertzakian.

By 2030, EIA estimates China will use 15 million barrels a day.

That's no doubt helped by China's new-found love for the automobile. Just Monday a news report said car sales in the country surged nearly 50 percent in the first half of 2006.

But there's more. Growing demand in other developing countries, notably India, the lack of big new oilfield discoveries, and the soaring cost of getting oil out of the ground are a recipe for sustained high prices.

Tertzakian said most people just won't make the necessary sacrifices to significantly cut energy use. For any meaningful conservation to take place he said prices would have to rise to somewhere around $130 a barrel, although an economic slowdown would probably happen before prices reached that high, which would itself reduce demand.

Instead, he said, barring a drop in prices from a recession, people will simply deal with paying more, hobbling along until a new energy source or sources begin to replace oil, a transition process that he said was just starting and could last for decades.

In the meantime, any hint of political instability or supply disruption will move oil prices in a market hypersensitive to any piece of news.

Why are markets so sensitive? The world's easy to get light crude oil has been mostly gotten, so big oil-producing nations can't easily boost production when local supplies are disrupted.

Worldwide spare production capacity dropped from 5.5 million barrels a day just a few years ago to around 1 million in 2006, said Doug MacIntyre, a senior oil market analyst with EIA.

"That's not enough to cover a full disruption from Iran or Nigeria or Iraq or even the hurricanes," said MacIntyre. "So the market is going to become a lot more volatile on a day-to-day basis."

(This is a very bad article from a technical standpoint, but a great little hydro project in any event)

Tending hydroelectric plant at Paterson's majestic Great Falls

July 10, 2006

By TIM NORRIS, HERALD NEWS

Bulked up by nearly three days of rain on this June afternoon, the Great Falls of the Passaic thunder at Clyde Redrick's ears from only a few hundred yards away.

He doesn't hear them. He doesn't hear the question, either: "How do those turbines work?" On the floor of the power house at Great Falls Generating Station, the roar of the turbines drowns it out. Since his ears also are stoppered with orange foam earplugs, mandated for safety, even shouting is useless.

The Great Falls, though, are not. When Redrick (in quieter offices above) extols their value, he is not talking just about their majesty or their power to attract tourists, who don't have to pay their way, regardless.

He is talking about their power to generate power. Lots of it. With the Passaic River surging from recent rains, a portion of the river shunted through the turbines for Algonquin Power Systems kicks out as many as 10,950 kilowatts per second, enough to power nearly 11,000 homes. A transformer stores up a million watts at a time and dispatches them six times a day. That wattage translates through a relay to high-voltage lines outbound to a generating station of Public Service Electric & Gas Co. (PSE&G), then to households and businesses and institutions, and to profits: Redrick mentions nearly a million and a half dollars last year.

These days business is brisk, and Redrick and his boss, William DiPillo (known to all as "Billy") have been scrambling. "Usually this time of year we're just idling one machine, or we're shut down," Redrick says. "Because of all the water, we're maxed out."

It is not the 77-foot tumble of the several falls over their precipice of basalt nearby that drives the enterprise. It is two little whorls dimpling the headrace, a smooth and deep side-pool corralled against the building by an 8-foot floating box beam. Those whorls mark the powerful thrash of turbines below, on the power house floor.

The turbines are "gravity-fed." From the headrace, river water tumbles through grates and massive open "head gates" into a fore-bay 22 feet deep, through steel chutes or "penstocks" 55 feet long, and down into each turbine, at 750 cubic feet per second. The water whirls among blades, generating power, then spews back out spillways into the tailrace and rejoins the river below. (A third turbine is under repair, trimming output at that moment to 5,502 kilowatts per second). "No pollution," Redrick says. "Water comes out of the river, goes back into the river."

DiPillo normally leads tours, with gusto. Today, with DiPillo off-site (he also works at another hydroelectric dam and has two young sons at home), Redrick graciously steps in. Turbines, he is saying, are marvels of engineering, adaptations of millwheels that transmute the power of water against tilted and rotating blades through a transformer to electricity. They work something like an automotive engine, and the workers watch the temperature, monitor and replace worn bearings and other parts, and feed in lubricating oil when needed. The steeper the five turbine-blades tilt, the more they resist the water flow, the faster the turbine turns, the greater the friction, the mightier the power.

The operation sounds smooth and easy, but the whole complex at Great Falls shakes and shimmies with mechanical effort. Workers keep a close eye on the gauges that measure vibration. In the staff's off-hours, so does ADT Security Services, Inc. Turbines might shut down. "If the vibrations get above a certain level, they call us," Redrick says.

Any big electrical storm could short-circuit service, so the tower's copper-clad turret brandishes a lightning rod. Massive logs can snag the intakes. In winter, once, jangled from slumber by an intake blockage at 3 a.m., Redrick found that the river had overrun the deck above the fore-bay and built an ice coat 8 feet thick.

On another day later in the month, DiPillo will point to a white plastic strip tied about a foot up a chain link fence at the very top of the operation, and he'll say, "That's where the hundred-year flood topped off. 1902." With hurricanes predicted to reach the region this summer, he wonders aloud if the city is ready for the deluge. For now, at least, he can assure visitors that the hydroelectric plant can weather it.

The usual summer build-up, meanwhile, involves flotsam. Every day, garbage the workers pull from intake grates fills a 20-cubic-yard container, hauled out four times a week. Today's flotsam-du-jour is garbage cans. "Wind tosses 'em in the river," he says. "I must've pulled out 20 garbage cans today." Those are better than cars; several sedans have lodged in the works over the years, to be lifted out by a bucket-loader.

By the following week, DiPillo will be standing above a bare chasm, its waterfall cut off, peering across exposed stone and hillocks of trash, glass, metal and old tires, even a marooned boogie board. With help from local students and volunteers, he and Redrick will haul the refuse back up the hill.

On most days, the river and the plant run in rhythm. Like clockwork, for instance, the daily river level drops, rises, drops again, rises. "At 5 o'clock to six in the morning, the water is high," Redrick says. "Then people start waking up; you see the water drop. Sinks. Showers. Toilets. Then the river comes up again. Then people come home, 4 p.m. to, like, eight, and you see the water go SSSShhhhhhh." He holds his hands out, palm down, and lowers them.

Redrick would love to say more, but just at that moment, in the courtyard outside the power house and tower, his two guests have wandered into danger. "No, no, step back!" he says, and the warning echoes. Pieces of the cornice, he says, might shake loose and plummet to the lawns and walkway beneath.

While Alexander Hamilton's Society for the Establishment of Useful Manufactures (S.U.M.) built a water wheel there amid raceways, in 1792, these ivy-clad buildings abutting the falls date from 1914, when Thomas Edison supervised the first hydroelectric installation. The complex features an eight-story tower enclosing 129 stairs wrapped around an elevator, tying the river-level on Spruce Street and Wayne Avenue through the power house to the waterfall outwash and grounds below. It also features century-old brick-and-mortar, some in need of rehab.

After a 1986 revamping complete with new turbines, the Paterson Municipal Utilities Authority couldn't make money, and Synergic, a subsidiary of the turbine-maker, Siemens, couldn't profit, either. Then Algonquin Power, a Canadian firm with offices in Windsor Locks, Conn., stepped in midway in 1999, brought in DiPillo, who brought in Redrick, two "hands-on" guys, and Great Falls became one of the largest of its 48 hydroelectric operations in the U.S. and Canada, including sites in Mahwah and River Falls. Algonquin is sinking money, these days, into upgrading its Great Falls plant and also into a windmill farm in Manitoba. Given concerns about the environmental impact of dams, workers might wonder how that will affect their future.

Clyde Redrick just seems happy to be here. For a few years, "precarious" was the name of his game.

Returning in the early '80s from six years of engineering in the U.S. Army in North Carolina, he passed up college to support his two children by delivering lumber in northern New Jersey for his father, Marcus Redrick. Eventually, Clyde landed a job with a client, Garden State Paper, in Garfield.

"They start you at the bottom, training, sweeping, cleaning up the paper," he recalls. "Then one day a couple of mechanics were sick, and the supervisor asked me if I knew anything about mechanics. I said, 'Well, I know how to work on cars.'" He soon found himself working on 28 steam turbines used to process pulp.

Then the plant's owner, Media General, sold out to Enron. When that scandal-ridden corporation collapsed, it closed the plant and, in Redrick's words, "took everybody's pension, including mine. So I'm 50 years old, and I'm broke. Guys are getting divorces, killing themselves. Out of the blue, a friend of mine told me about this."

At the Great Falls Generating Station the present, at least, is fulsome: recent rains have fed the falls, engorged the river, accelerated the turbines. After Redrick and DiPillo lower gates on the 315-foot masonry dam just upriver to "shut off" the falls and bend their backs to trash removal, they will gird themselves for whatever litterers, or hurricanes, may send their way. They will welcome a modest trickle of tourists, too, brave or curious enough to knock at their door.

Meanwhile, a snag needs clearing. Dials need watching. This node of the power grid, halfway between power centers in Canada and Las Vegas, needs protecting. From the deck over the fore-bay, Redrick suddenly lifts an arm and sounds an air horn at a truck across the river below. He summons the driver to pull logs from the grate above a fish by-pass, so the river won't back up.

Every September, here, a costumed daredevil walks a tightrope across the chasm in the Great Falls Festival. To keep water and power flowing, Clyde Redrick says, he and Billy DePillo walk a kind of tightrope, too, every turbo-charged day. So far, they're keeping the plant, and themselves, in balance.

Environment

(This article is under the subject heading because the environmentalists are ahead 1-0)

No stopping river's rage, so move up or move out

Calling flood control inefficient, officials likely to recommend elevating homes or retreating.

July 9, 2006, By Spencer Soper Of The Morning Call

In the aftermath of Hurricane Diane more than 50 years ago — a storm that caused more than 400 deaths and today's equivalent of nearly $3 billion in damage — politicians and engineers reacted with bravado. The mighty Delaware River could be tamed, they said, with a massive dam that would intercept raging floodwater and prevent devastation downstream.

Nowadays, after three floods in less than two years inundated riverfront communities, the response is much more humble. It respects the power and sanctity of nature and acknowledges the limits of concrete and government.

The dam at Tocks Island at Monroe County, once envisioned as the solution to Delaware flooding, is an afterthought. Instead, there is talk of buying out flood-prone land to create riverfront parks and elevating homes so a swollen river would flow harmlessly beneath them.

The shift reflects heightened environmental awareness, soaring construction costs, dwindling government funding and a recognition that no matter what is built, flooding along the Delaware is inevitable.

Chalk one up for Mother Nature. Man is on the retreat.

"I think there has been somewhat of a shift in opinion," said U.S. Rep. Michael Fitzpatrick, R-8th District, who has been grappling with Delaware flood issues for more than 10 years as a Bucks County commissioner and now as a congressman. "Certainly, there's a recognition that water will find its own level as it comes down the Delaware. There's also a recognition that building [flood-control] structures and continuing to develop in the flood plain is not a wise solution."

In the wake of last month's flood and two recent others that have devastated the Delaware River Basin, the Army Corps of Engineers is taking a fresh look at the river and what can be done to protect communities. But any long-term solutions, including large-scale evacuations and elevations of buildings in flood-prone areas, are years away and would require lots of money from the federal, state and local governments.

The recorded history of flooding along the Delaware goes back to 1839, when a January snowmelt filled Brandywine Creek, washing away all but one bridge. Hurricane Diane in 1955 brought the worst flooding. At the confluence of the Lehigh and Delaware rivers, Easton was the hardest hit. And throughout the Lehigh Valley, flooding is the most significant natural disaster threat.

Two floods in September 2004 and April 2005 caused more than $400 million in damage along the Delaware in Pennsylvania and New Jersey, according to the Army Corps of Engineers. The cumulative toll will well exceed the half-billion-dollar mark as damage tallies from the latest flood are completed. Three days of flooding along the Schuylkill and Delaware rivers, starting June 27 after days of relentless rain, caused mass evacuations from riverfront areas and damaged thousands of homes and businesses.

The spate of flooding has prompted broad debate about the cause. Some blame increased runoff from upstream development or poor management of reservoirs upstream. Others say it could be

changed weather patterns resulting from global warming or just a blip in historic weather patterns that meteorologists don't fully understand.

More likely, experts say, the heavy, concentrated rainfall over the entire basin has been the cause of the recent floods.

Dams too costly

In another era, the threat of floods was met head on with concrete. The proposed Tocks Island Dam epitomizes the mentality of flood-control past. It would have created a 37-mile long, 12,000-acre lake near Marshalls Creek that would have changed the nature of the Delaware. The proposed dam was touted as an engineering feat that would meet the water demands of thirsty communities throughout the vast Delaware basin and protect riverfront cities and towns downstream from floods as well.

The project picked up steam in the 1960s, with the purchase of 72,000 acres of land and the removal of buildings to make room for the reservoir. But the dam was never built because of environmental opposition and was officially scrapped in 1992.

Dams and levees will still be considered as potential solutions, and U.S. Sen Arlen Specter, R-Pa., said after the flooding that the dormant Tocks Island project would be reconsidered. But dams and levees are unlikely to ever be built because of their high costs and environmental protections of the Delaware, said Ed Voigt, a spokesman for the Army Corps of Engineers.

"It's not just an arbitrary decision that we won't build dams and levees, but the economics don't justify them," he said. "A dam could be a potential solution, but from an economic standpoint it can be cost-prohibitive, and from an environmental standpoint there are more restrictions than there used to be."

Many protections

The 330-mile-long Delaware, which begins in the Catskill Mountains of New York and empties at the Delaware Bay, drains a vast 13,539-square-mile watershed in four states. It also is a critical ecosystem, supporting a wide range of wildlife from migrating shorebirds and deer to fish and horseshoe crabs.

The federal government has recognized the river's environmental and aesthetic value by designating three-fourths of it as part of the National Wild and Scenic River system, which prevents dam construction along most of the main stem.

The river's environmental and recreational value, as well as a lack of federal funding for big-ticket flood control projects, makes it unlikely that dams or dikes would be built to protect against Delaware flooding, said Kate O'Hara, a spokeswoman for the Delaware River Basin Commission, an interstate agency that manages river resources in four states.

"Flood plains perform an important natural function and need to be managed rather than filled, diked or dammed," she said. "It's probably very unlikely [flood-control structures] would be passed due to the scenic river designation and funding problems."

Taken out of the flood.

A glimpse of what could happen in Easton, Riegelsville, New Hope and other Delaware communities troubled by repeated flooding can be seen, on a much smaller scale, along Neshaminy Creek in Lower Bucks County. A flood control solution first proposed in the 1960s called for building a 55-foot-high dam in Warwick Township, and interest intensified after Tropical Storm Floyd in 1999 sent the creek spilling over its banks.

But the proposed Dark Hollow Dam was scrapped in 2001 in favor of buying and evacuating flood-prone properties and helping residents elevate their homes above floodwaters.

With $12.5 million in federal, state and local money, about 100 homes in the flood plain were either bought and razed or elevated, said Bucks County Commissioner James Cawley, who says a similar effort would work along the Delaware.

"My experience is the most effective way to make sure people don't suffer from flood damage is to take them out of the flood," Cawley said. "We can talk about how this might work and that might work, but taking people out of the flood plain and elevating them above it protects them and their property."

State Rep. Robert Freeman, D-Northampton County, said pending state legislation would provide $150 million for flood-control projects, including buying flood-prone properties and converting them to parks or wetlands that would help absorb runoff and prevent floods.

He is leery of levees or flood walls that would restrict river access, an economic and environmental asset.

"I think we have to take a creative approach to reduce flooding without destroying the scenic nature of the river," Freeman said.

Updating study

Property buyouts and structure elevations along the Delaware were considered by the Army Corps of Engineers more than 20 years ago, when the federal agency took its last comprehensive look at the river and what could be done to reduce flood damage.

At the time, the agency determined it would make sense to buy or elevate about 12,000 properties, or 2 percent of the structures in the Delaware flood plain. But the option was not pursued at the time because of a lack of local interest in sharing the cost of buying the flood-prone properties, according to the study.

But the three recent floods have renewed interest in that option and could make them more likely in the future. Government efforts are under way to better understand the Delaware, what makes it flood and what can be done to protect people and property.

The Army Corps of Engineers is updating its 1984 Delaware River study, which could result in new flood-plain designations and more current assessments of how many homes and businesses in the Delaware flood plain are in jeopardy.

The extensive flood damage in less than two years could increase the likelihood of government intervention. The federal government invests in flood protection projects deemed economically justified, meaning they cost less than the flood damage they would prevent.

It will take three to four years to update the 1984 study and complete additional studies to identify projects that would minimize Delaware flood damage, according to the Corps of Engineers. Even though the studies will consider a wide variety of options, evacuating and elevating flood-prone properties are likely recommendations, local officials said.

"The federal government is interested in reducing a pattern of repetitive losses," said Geoff Reese, assistant director of the Lehigh Valley Planning Commission. "If you've been in a flood four or five times and have received assistance, that's a red flag. They'd like to remove the structures from harm, and buyouts are something they're interested in."

7/16/2006

Some Dam – Hydro News

Quote of the Day:

"If anyone be too lazy to keep his dam in proper condition, and does not keep it so; if then the dam breaks and all the fields are flooded, then shall he in whose dam the break occurred be sold for money and the money shall replace the corn which he has caused to be ruined."
Section 53 – Code of Hammurabi (c. 1800 B.C.)

Dams

(This article could be under the subjects of Water or the Environment, but it does highlight the importance of dams to California.)

Water, mismanagement abound in California

InsideBayArea.com, July 13, 2006

THE governor of California stood atop a levee Tuesday and warned that the state is threatened by disastrous flooding, a day after his own water agency framed the potentially severe effects of global warming on water supplies.

The juxtaposition illustrated anew the two salient facts about water in California: Managing the flow of water through the state is vital to its economic, social and environmental health, and there's little agreement on how it should be managed.

All Californians should know that their water doesn't come from a faucet, but is collected, stored and distributed through monumental arrays of dams, reservoirs, canals and pipelines that supplement nature's own impressive water systems. Were it not for those man-made waterworks, California could not exist as a state of 37 million people.

It's an imperfect system, to be certain, but it has worked admirably, and as the state's population continues to grow, as the nature of the economy changes and as,

perhaps, global warming changes precipitation patterns, California must expand and refine its waterworks. To do nothing in the face of that change is to move backwards.

Gov. Arnold Schwarzenegger's self-congratulatory election-year event on the banks of the Sacramento River marked a multibillion-dollar upgrade of the 1,600-mile major river levee system that protects Sacramento and other cities from winter and spring floods — a program that is being jump-started with a half-billion-dollar emergency appropriation and would be finished if voters approve bonds in November. Trucks and other heavy machinery dumped rock to shore up the levee — one of 29 critical erosion sites identified by state officials — as Schwarzenegger hailed a "great day of celebration" and warned that "too many of our levees are weak and in danger."

The governor's warning about potential flood peril was underscored by the 338-page Department of Water Resources report on potential effects of global warming, including a rise in sea levels that could push brackish water deeper into the Sacramento-San Joaquin Delta, thus threatening to pollute its freshwater flows on which millions of Californians depend. DWR also noted that as the weather warms, California may receive more of its water in the form of rain and less in the form of snow, which could heighten winter flood dangers and reduce the natural reservoirs of mountain snowpacks.

California should prepare for that potentiality by making its levee system stronger, discouraging intense development behind levees, being tougher on flood insurance and expanding reservoir storage to capture more of the winter flows for both flood protection and water supply. But all of those steps either cost large amounts of money or create intense political controversies — especially reservoir construction, which has become a flashpoint to environmental groups.

The environmentalists seem to believe that restricting water supplies will somehow slow population growth, which flies in the face of reality. Indeed, resisting waterworks improvements sometimes creates environmental problems — the degradation of the Delta is, in part, a result of environmental opposition to building a canal to carry water around the Delta. Resisting saltwater intrusion may require storing more winter runoff to improve summer flows through the Delta.

In truth, California has lots of water, more than enough to satisfy all reasonable demands for human and natural uses, if it's managed intelligently and with users paying its full, unsubsidized costs. We do not need to radically change our lifestyles or adopt doomsday scenarios.

Even if the effects of global warming seen in the DWR report come true, stronger winter flows can be converted into better summer supplies, if we do what's needed and stop circular debates that serve other ideological agendas.

Dan Walters writes for the Sacramento Bee.

Hydro

(In the more than 86 years of its history, the FERC and its predecessor, the Federal Power Commission, studied and considered numerous proposals for tidal power. Although tidal projects have been built in other countries, the environmental opposition and the regulatory process will likely ensure that traditional tidal power using the rise and fall of the tides, dams, and reversible generating units such as the Passamaquoddy project of the 1930's {http://kennebecjournal.mainetoday.com/view/columns/2878970.shtml}, will always face a difficult if not impossible road to development. The project in the article below isn't exactly traditional tidal power. It will use kinetic energy. i.e. the energy in flowing water, or underwater currents, similar to the mentioned East River project. Similar projects have been studied in the off-shore area of the east coast using the Gulf Stream and the FERC has issued a permit for studying the technology.)

Admiralty Inlet one site for tidal power turbines

7/12/2006, *By Steven J. Barry, Port Townsend & Jefferson County Leader Staff Writer*

The sea floor off Point Wilson is being eyed as the potential site for 450 turbines that would use the forceful tides there to generate electricity for what could eventually be one of the first tidal power projects in the United States.

Snohomish County PUD officials have filed a preliminary application to study the possibility of installing underwater generators powered by the tides in this section of Admiralty Inlet, shown in the shaded area on the map.

The field of generators – called Tidal In-Stream Energy Conversion (TISEC) devices – would produce the bulk of electricity for an underwater Snohomish County Public Utility District plant that officials there hope to install throughout Puget Sound.

Snohomish PUD describes in its application windmill-like devices with propeller blades 20 meters in diameter. They would be anchored to the ocean floor, and the moving action of the tides would spin the blades to produce electricity.

The project is still in an early planning phase, and Snohomish County PUD is “not committed to constructing anything at the moment,” said Jeff Kallstrom, an attorney for the organization.

Snohomish County PUD has applied to the Federal Energy Regulatory Commission (FERC) for a three-year permit to study the group of sites – which also includes Deception Pass and Agate Passage – and install some test TISEC devices.

Cutting edge technology

While the tides have been looked to for years as a potential renewable energy source, technology to harness their power is still in its infancy, according to the California-based Electric Power Research Institute (EPRI), an organization at the forefront of tidal power research.

One recent EPRI report puts current tidal power technologies “at the stage of development that wind power was at 25 years ago.”

The turbine that Snohomish PUD describes in its application is similar to a prototype developed by Verdant Power, a company installing six TISEC units for a trial run in New York’s East River.

Verdant co-founder and President Trey Taylor said it’s been a lengthy process.

“We began working with the local community to build this test pilot project, and we’ve been at it almost five years now,” Taylor said.

Taylor said the turbines spin at about 32 rpm – slow enough for fish and other marine life to swim out of the way. Still, they’re installing six “hydroacoustic transducers” that will monitor how fish negotiate each one of the turbines. Taylor anticipates very little environmental impact. But if there is an adverse impact, the turbines can be quickly removed.

“These can come out of the water faster than they actually go into the water, so if you run into some environmental issue that you hadn’t anticipated, you can just pull them out of the water,” Taylor said.

Reducing environmental impact is the aim of dam-less – or kinetic – hydropower. Taylor, also the chairman of the Research and Development Committee of the National Hydropower Association, said kinetic hydropower could be interfaced with solar and wind energy plants to produce large amounts of "green" energy.

"This could be a whole new way of looking at new energy generation," Taylor said, and ultimately produce a large amount of new energy.

He said some commercial developers have also started to think that way and are filing preliminary permits with FERC in an effort to get their hands on the best tidal energy locations.

"Many of us suspect that it's sort of a land grab, sort of like the early days of [Internet] URLs," Taylor said.

Snohomish PUD does not fall into that category, he said. For the PUD, the proximity makes it a practical location to extract renewable energy.

PUD Manager Klein said that's precisely why PUD officials looked toward Puget Sound when searching for a renewable, sustainable power source for their growing customer base in Snohomish County. Wind power, he said, would have taken them to Eastern Washington.

"These sites are in our backyard," Klein said. "We could integrate directly into our distribution system rather than having to construct miles and miles and miles of transmission through the Cascade Mountains."

The sites are also in Jefferson County's backyard. Still, County Administrator John Fischbach said he had not been made aware of the proposal, nor had Fort Worden State Park Manager Kate Burke.

Klein said the devices off Point Wilson would be completely submerged and that fish and marine mammals could easily avoid them.

He said they would have no effect on boating through the inlet.

At the high end, they speculate that the field of 450 turbines in Admiralty Inlet would produce 146.2 gigawatt hours per year – enough electricity to fully supply 10 percent of Snohomish County's more than 600,000 residents. Combined, the other turbine fields proposed for Puget Sound would fill 3 percent of Snohomish County's current power need, they said.

Klein pointed out that Snohomish County is among the fastest growing areas in the state and that by the time the turbines are up and running – he guessed about eight years from now, if everything works out – the county's power need could be much higher than it is now.

“We could grow 50,000 to 60,000 customers over the next five to seven years,” Klein said.

The devices would harness between 10 and 20 percent of the force of the tidal flow – the maximum amount currently recommended by EPRI.

EPRI researcher Bryan Polayge, a pre-doctoral candidate at the University of Washington, said that figure was derived from preliminary research by British scientists and that it could be raised.

“That question, I think, still remains to be answered,” Polayge said. “Maybe 30 or 40 percent could be extracted.”

Not commercial yet

While there is widespread interest in tidal energy and numerous private companies have emerged with prototypes in recent years, no tidal energy extractors have been developed at a commercial level, EPRI ocean energy leader Roger Bedard said.

“They are only being used for the purposes of at-sea development and testing,” Bedard said. “There are no commercial plants yet.”

Bedard mentioned Verdant’s East River project and an experimental unit that’s been operating in the United Kingdom for about three years.

While it is a cutting-edge technology, Bedard said it would never completely solve the problem of finding renewable energy.

“I don’t believe there’s any such thing as a prime energy source for the future. I don’t believe there’s a silver bullet,” he said, adding that it would take a combination of technologies. “We need to have a diversified and balanced mix.”

(Is $100 oil really that far-fetched?)

Oil blows past record

Soars above $76 a barrel as inventory decline, Mideast tensions, and pipeline attacks rattle market.

July 13 2006, CNNMOney.com

Water

Bureau of Reclamation Looks at Expanding Willard Bay

July 12th, 2006, Associated Press

WILLARD, Utah (AP) -- Bureau of Reclamation officials hailed Willard Bay's role in mitigating drought effects talked about enlarging it.

You can see where the function of the reclamation projects served their purpose during the drought," Ed Vidmar, chief of operations of the Bureau of Reclamation in Provo, said during a tour of the site on Tuesday. "Now we're recovering from the drought. The dams served the purpose our forefathers intended."

The Bureau of Reclamation built the Watkins Dam, which is really 17.4 miles of dike that creates the Willard Bay recreation area.

Willard Bay holds nearly 200,000 acre feet of water. During the drought, water from Willard Bay was pumped to farms and homes in western Weber County, freeing up water from reservoirs in the mountains for other uses.

Vidmar said a study is now under way to look at enlarging the Watkins Dam to make it a foot higher.

The Weber Basin Water Conservancy District has a potential 10,000 acre feet of excess water it needs to store in the future, and Willard Bay could accommodate that, he said.

Environment

Fish ladder provides a real lift for spawning Broad River fish

$5.5 million project opens up passage in waters dammed for nearly 100 years

By JOEY HOLLEMAN, The State.com, July 15, 2006

jholleman@thestate.com

After nearly a century of butting their heads against a wall, migratory fish now can slip around the Columbia Canal's diversion dam on the Broad River.

The new fish passage opened to aquatic creatures about a week ago. Humans held a grand opening ceremony Thursday.

"This is a great day for fishermen on the Broad River," said Gerrit Jobsis, regional representative for American Rivers, an advocacy group. "American shad have long been a recreational and economic resource around here, and it's a fine day when you can bring them back to some of their home waters."

To get a new federal license for the hydro-electric plant on the Columbia Canal in 2002, SCE&G was required to help fish navigate around the dam. In addition to the fish passage, the $5.5 million project includes a gate to allow water to flow downstream from the dam and a tube to keep fish away from the turbines at the other end of the canal, according to SCE&G.

Wildlife advocates hail the project as a possible turning point after centuries of reducing migratory fish habitat with dams and other obstructions.

"We hope this sets an important precedent," said Miles Croom, assistant regional administrator for the National Marine Fisheries Service. "We hope this helps us tell the story so other projects like this can be done."

Many of the dams in the Southeast are up for relicensing in coming years. Similar passages could open hundreds of miles of rivers in South Carolina and North Carolina to migratory fish.

The Broad River passage, sometimes referred to as a fish ladder, is more a cross between a staircase and an uphill maze. Rocks were used to create a peninsula and a small island in the river just below the dam. Water flows through a gap between the peninsula and the island, guiding fish into the passage.

The trick is to have just enough downstream flow of water for fish to be attracted to the passage, but not so much that they get exhausted maneuvering its twists and turns. Once through the passage, the fish exit into the Broad River, just above the entrance to the canal. They've got at least two miles of easy swimming before the next set of shoals.

While all fish with an urge to swim upstream will use the passage, its primary benefactors likely will be American shad, blueback herring, American eel and possibly sturgeon. Some of the fish using the passage spend part of their lives in the North Atlantic. They travel south and run up rivers to spawn.

In the late 1700s and early 1800s, capturing these fish on rivers throughout the state provided a livelihood for early residents. But mills, and the dams to provide power and water for them, cut off most of those fisheries.

Fishermen in the 24-mile stretch of the Broad River between Columbia and Peak soon should start finding fish species they haven't caught before, but the real changes might not be evident until the spawning runs begin early next year.

The fish passage is at the north end of the Riverfront Park section of the Three Rivers Greenway. For now, the public isn't allowed to venture out on the metal grates over the fish passage or peek into the window that researchers will use to count passing fish.

But the city of Columbia, which took over operation of the canal as part of the bus deal with SCE&G, is contemplating how to turn the passage into an educational tool. Eventually, signs will explain how the passage works. The city also might follow the lead of Santee Cooper, which provides tours of its fish lift at the Pinopolis Dam one month each year.

(And, here's an interesting recommendation – Save fish from extinction, eat salmon, tilapia, and catfish)

Intelligence Report

Parage Magazine, **July 16, 2006**

Beware Which Fish You Eat

We're decimating the world's fish supply, warns Bruce Knecht, a sailor and author of *Hooked: Pirates, Poaching, and the Perfect Fish*. "The populations of our most popular fish are less than 10% of what they were 50 years ago." The big reason is industrial fishing—what Knecht calls "the stripmining of fish," a lot of it illegal. Large species, from swordfish to Chilean sea bass (real name: Patagonian toothfish), are caught with lines that run for 12 miles and carry up to 15,000 hooks. In a single day, 30 tons can be caught, fired down a shoot, sawed up and thrown into a freezer. One boat can catch $3.5 million worth in three months. Much of our fish now comes from the Southern Hemisphere, and supplies there are running out too. " In less than three years, virtually the entire population of toothfish in Chile, Argentina and the islands off Africa was wiped out," Knecht notes. Instead of allowing marine populations to rebound, the industry is racing to catch the last fish.

What can you do? Only eat sustainable species, such as wild-caught Alaskan salmon or farm-raised tilapia and catfish. For links to a list of other fish that are OK to eat, and to learn more, see On The Web. http://www.montereybayaquarium.org/cr/seafoodwatch.asp.

7/21/2006

Some Dam – Hydro News

Quote of the Day:

"Don't steal –the government hates competition" - - Unknown

Dams

DRBC told dams may have helped prevent more serious flooding

Mid-Hudson News Network, July 20, 2006

Overflowing reservoirs in the Upper Delaware River Basin spilled water during the heavy rains and flooding of last month; however, the spilled water likely helped lessen the effects of the flooding, officials of the National Weather Service told Wednesday's meeting of the Delaware River Basin Commission.

Meeting in Trenton, NJ, the commission was briefed on the flooding in the Catskill/Delaware watersheds. If the dams at the Cannonsville, Pepacton, Neversink and Wallenpaupack reservoirs did not exist, the crest levels would have probably been even higher than they were, the officials said. On the upper Delaware, the crests may be one to 2.5 feet higher without the dams, they said.

There was some discussion about development in the upper Delaware region causing the major river flooding and concern that that may cause flooding. That was debunked with the officials saying massive amounts of rainfall, not development of any kind, cause major river flooding.

Developed lands increased slightly, by less than one-half percent, between 1973 and 2000, primarily in the eastern portion of the ecoregion where the proximity to the Poconos and the Catskills regions makes it possible for individuals to have second homes and still lever and work near New York City, according to a US Geological Survey report.

The report said there are still vast areas of the Poconos, northwest New Jersey and the Catskill Mountain region where the main Delaware stem is still just forest.

(Another example of where a state isn't providing the resources needed to ensure dam safety. Politicians just don't seem to have the right priorities. One inspector for 1,000 dams - Unbelievable!)

Condition of Maine dams in question

July 16, 2006, Associated Press

PORTLAND, Maine --More than 1,000 dams are spread throughout Maine, and many of them are more than a century old. But the condition of many of the structures -- which could damage property or endanger lives if breached -- is in question.

State law says dams that could present a significant hazard if breached must be inspected every four years. The condition of high-hazard dams, whose failure could cause death, must be checked every two years.

Records at the Maine Emergency Management Agency do not show how often dams have been inspected because not every inspection is followed up with a written report, according to the Maine Sunday Telegram.

Records on file do not always give an accurate picture of the condition of Maine's dams. Records on the Orono Water Works Dam, for example, say the structure is intact. The dam, which is located in the town of Bradley, is also classified as a significant-hazard dam, which means its failure could cause major economic loss.

But the dam's owner, the Orono-Veazie Water District, said the dam has been breached for decades and is not holding any water back.
Maine's only dam inspector for the last eight years has not visited the Orono Water Works Dam, MEMA spokeswoman Lynette Miller acknowledged. But Miller said she believes the agency is very close to meeting the inspection schedule laid out in the state's dam-safety law.

Dams classified as high-hazard are generally in at least fair condition, MEMA says. Officials say they have concerns about less than half of the roughly 80 state-regulated significant-hazard dams.

The lapse in inspections is nothing new. In 1996, after dams in Bridgton and Alfred were breached, the office of Gov. Angus King acknowledged that dams were not being inspected regularly.

Hydro

Hydroelectric output boosted by record rain

July 15, 2006

By Peter Hirschfeld, The Barre Times & Montpelier Argus Staff

Vermont's power utilities are making hay while the sun doesn't shine.

Record rainfall in the Green Mountains has been a boon for utility-owned hydroelectric dams along Vermont's major rivers. Swollen waterways mean increased energy production, according to officials at Green Mountain Power Corp. and Central Vermont Public Service; and while the power up tick won't lower ratepayers' bills, it will decrease Vermont's reliance on carbon dioxide-emitting fossil fuels.

James Moreau of Cambridge, a power production worker for Green Mountain Power, watches water thunder over the dam at the utility's Middlesex generating station in Moretown on Friday

In June, GMP's eight hydroelectric dams pumped out two-thirds more electricity than the 20-year average for that month. Hydro production at CVPS, which owns 20 hydroelectric dams, was up 19 percent in the month of June, compared to the 10-year average.

That cheap, renewable energy will come in handy as the utilities brace for a days-long heat wave. Maxed-out air conditioners in commercial and residential buildings were responsible for an approximately 20 percent hike on the GMP load Friday, according to Dotty Schnure, the utility's spokeswoman.

"We're not necessarily at peak, but there's certainly high use," Schnure said. GMP's all-time peak – 362 megawatts – occurred last July. Friday's peak hit 340 megawatts, lower than last year's record but higher than the July average of 260 to 280 megawatts.

Hydroelectric dams are among the cheapest sources of energy for utilities like GMP and CVPS. Schnure says it costs GMP about 3.5 cents to generate one kilowatt hour of electricity on the dams; that is three or four times cheaper than what the utility pays for energy on the New England spot market.

But increased hydroelectric production won't necessarily mean cheaper power for GMP's 90,000 customers, the bulk of which live in Chittenden, Washington and Addison counties. A 28-year-old federal law requires utilities to purchase a portion of their power from independent power producers and gives favorable rates to those producers in order to encourage environmentally friendly power production. Many of Vermont's independent power producers generate power using hydro dams. Since the rainfall has also boosted their production, utilities like GMP and CVPS are statutorily obliged to buy it. With utilities paying 14 cents per kilowatt hour this year for power from independent producers, it's a net-zero equation for ratepayers.

"When we produce through hydro it's very inexpensive, but the contracts we're required to enter under federal law with the independent power producers are very expensive relatively," said CVPS spokesman Steve Costello. CVPS serves 151,000 customers across the state. "The net impact is pretty much a wash as far as the impact on the company."

Still, Costello says, there are public benefits, namely a reduction in carbon dioxide emissions from

fossil fuels.

GMP produced 16,971 megawatt hours of electricity at its eight dams in June, about 7,000 megawatt-hours higher than the 20-year average. Mike Burnett, executive director of The Climate Project, an Oregon nonprofit that develops "greenhouse gas mitigation projects," says fossil fuel energy produce 897 pounds of carbon dioxide per megawatt hour. The 7,000 megawatt hours of extra hydro power at GMP in June, then, amounts to 3,140 tons of carbon dioxide that won't be emitted in fossil fuels – roughly the equivalent of taking 523 cars off Vermont roads for a year, according to Burnett.

"One big positive benefit from nice hydro production is that typically there'll be less fossil fuel production in New England when hydro production goes up," Costello said. "Typically, we'd rather get hydro than natural gas or oil because of the environmental benefits."

Schnure says increased in-state hydroelectric production also reduces GMP's reliance on the New England spot market, where prices can range from 9 cents to 13 cents per kilowatt hour and higher. As the July heat wave unfolds, Vermont's hydro facilities show no signs of slowing down. GMP has produced 8,393 megawatt hours of power in July so far, already higher than production for the whole of July last year.

"It is putting more renewable power on the system," Schnure said. "When we have hydro generation, it saves fossil fuels from being used."

(A letter to the editor of the Bangor Daily News, 7/17/2006)

Penobscot hydropower

The proposed removal of hydropower dams on the Penobscot River to restore fish raises serious questions. Do we really want to remove more renewable energy? We only have to look at the removal of the Edwards Dam in Augusta to illustrate the point.

Since natural gas was used to produce the electricity lost, 8,400 tons a year of greenhouse gas emissions resulted. Six 400-foot wind-power towers will be needed to replace the renewable energy lost when this one dam was removed.

The proposed Penobscot hydro-power dam removal is a continuation of the short-term thinking of some environmental groups and state agencies that have devalued hydropower and erroneously assumed that natural gas should be the source for electricity generation. But natural gas costs have escalated significantly and greenhouse gas reductions are critical.

If Maine is really going to reduce the use of fossil fuels and the resulting greenhouse gases as well as lower electricity costs to consumers, the utilization of all renewable sources, including hydropower, will be needed. We should be increasing the output from existing dams not eliminating clean renewable energy. It is particularly ironic that the hydropower removal advocates ignore the impacts on greenhouse gases and global

warming.

Not only are Maine ratepayers paying for the flawed policies that resulted in increased dependency on fossil fuels, they will soon be paying millions of dollars in subsidies to existing electricity generators. And Maine ratepayers may be paying a surcharge for the greenhouse gases emitted from the fossil fuel plants that the dam removal advocates promoted in the 1990s.

And now, taxpayers are asked to contribute their tax dollars to subsidize the removal of renewable hydropower on the Penobscot.

We need to stop the short-term thinking and restore the fish without negatively impacting our environment and energy security.

Rep. Kenneth Fletcher
R-House District 54
Winslow and
southwestern Benton

Water

(Now, here's a bad idea that keeps getting resurrected)
Awe-inspiring price tag to drain Hetch Hetchy
Phillip Matier, Andrew Ross
SF Chronicle, July 19, 2006

JOHN BLANCHARD / *The Chronicle*

It would cost anywhere from $3 billion to $10 billion to fulfill one of California environmentalists' fondest dreams -- draining Hetch Hetchy Reservoir and restoring a valley in Yosemite National Park that John Muir called "one of nature's rarest and most precious mountain temples."

That is the conclusion of a report worked up by the state Department of Water Resources, analyzing what it would take to bring back Hetch Hetchy Valley and find alternative sources of water and power for San Francisco, which operates the valley's O'Shaughnessy Dam. The cost estimate is more in line with what critics of the idea expected, and as much as 10 times the figure floated by environmentalists.

"Clearly, it's not cheap," said Assemblyman Joe Canciamilla, D-Pittsburg, one of a handful of officials who have been briefed on the findings. The report has not been made public.

"But we knew it was going to be expensive, no matter what the option," said Canciamilla, who is nevertheless still intrigued by the possibility of restoring Hetch Hetchy.

The idea was first raised back in the 1980s by then-Energy Secretary Donald Hodel, but it really gained traction two years ago when the nonprofit group Environmental Defense issued a report called "Paradise Regained." It put the cost of draining Hetch Hetchy, coming up with other sources of water for 2.4 million Bay Area customers and replacing the electricity that Hetch Hetchy generates for San Francisco at anywhere from $500 million to $1.5 billion.

Canciamilla and other state and local officials who have been informed of the state report, which Gov. Arnold Schwarzenegger ordered up at environmentalists' urging, said its $3 billion estimate wouldn't even cover the cost of knocking down O'Shaughnessy Dam -- that would be enough only to punch a hole through it to drain the basin. The $10 billion figure would pay for full restoration of a valley drowned by the Tuolumne River after Congress authorized the dam's construction in 1913.

Those who have been briefed say the report also raises doubts about whether the state even has the power to unplug Hetch Hetchy, because the water system was established by federal legislation.

Critics of the big drain -- including Hetch Hetchy's overseers at the usually green-friendly San Francisco Public Utilities Commission -- were quick to use the findings to douse the restoration idea.

"What we know about the report confirms our worst fears as it relates to the massive costs and challenges that would come from draining Hetch Hetchy," said PUC spokesman Tony Winnicker, whose agency is already spending $4.3 billion to retrofit the Hetch Hetchy system.

Winnicker predicted that the high price tag would probably kill the idea.

Assemblyman Mark Leno, D-San Francisco, never a fan of draining Hetchy Hetchy, said the new report underscored that "this is whimsical at best."

To the contrary, said Tom Graff, regional director of Environmental Defense. He said the state findings only underscore the project's feasibility, even if the costs are higher than expected.

"To me, the big news is the state put a lot of time and effort into investigating the idea in detail, and it's a step in a long journey to what we see as an inevitable restoration of a crucial element in a national park," Graff said.

Canciamilla said that what the report really concludes is that it will take yet another study -- "probably in the range of several million dollars" -- to answer in any depth just what the restoration project would cost and whether it's doable.

It's money that Canciamilla thinks would be worth spending, even given the state's current infrastructure needs.

Still, draining Hetch Hetchy, and with it much of the Bay Area's water supply, may not be an issue the governor is willing to address any time soon.

Feinstein Statement: Cost too high to drain Hetch Hetchy reservoir
Author: Feinstein office
Published on Jul 19, 2006

The California Department of Water Resources report confirms that dismantling O' Shaugnessy Dam and draining the Hetch Hetchy reservoir are unwarranted and the cost is indefensible, particularly given the tremendous infrastructure needs facing our State.

I hope this report lays to rest any further consideration at the State and Federal level of dismantling Hetch Hetchy —a truly remarkable system which provides exceptionally high-quality, reliable water to 2.4 million residents in the San Francisco Bay area.

The State now estimates it would cost $3 billion to $10 billion to drain the reservoir and offset the 360,000 acre-feet of high quality water that Hetch Hetchy provides. With the state's infrastructure in serious disrepair, this is certainly not the highest priority for California's taxpayers.

I also believe it would be a serious mistake to eliminate the 400 megawatts of power that Hetch Hetchy provides. The California Energy Commission estimates that California needs an additional 3000 megawatts of power by 2008 in order to avoid a return to energy emergencies and blackouts. At a time when energy is in short supply, it would be foolhardy to take this reliable supply of power offline.

The bottom line is that Hetch Hetchy is a critical source of water and power for the State of California. Draining the reservoir would be far too expensive and leave the State vulnerable to both drought and blackout. The O'Shaughnessy Dam should not be torn down.

Environment

(Two views of the salmon debate on the Columbia River)

Accurate data needed in salmon debate

July 14th, 2006, TriCity Herald

Trying to balance the cost of power with the needs of salmon is a struggle, and competing groups are having a tough time agreeing on solutions.

But one thing is certain -- the more accurate the information, the better the decisions will be in the end.

At the congressional hearing on the salmon and dams held recently in the Tri-Cities, some participants suggested the Bonneville Power Administration shouldn't include lost electrical production as part of the cost of saving endangered fish.

"No agency should be allowed to convert potential revenue to a loss," said Rebecca Miles, commissioner with the Columbia River Inter-Tribal Fish Commission in Portland. She said people should start looking at salmon recovery "as an investment and not as a loss."

Actually, no matter how people try to spin it, diverting water from turbines on hydroelectric dams to help speed juvenile salmon to the ocean is a direct cost that can be easily calculated.

By raising objections to including lost power revenue as part of the picture, tribes and environmentalists give the impression that they're worried people won't think salmon are worth it.

Honest differences over the best ways to save our salmon are inevitable, but facts are facts. Let's use them as a basis for decisions.

The loss of potential revenues affects the rates consumers pay for power and should be included in the cost of the salmon recovery effort.

For those of us footing the bill, there's no meaningful difference between a dollar spent on improving a fish ladder, for example, and a dollar increase in our electric bills to make up for lost revenue at the dams.

The Endangered Species Compliance and Transparency Cost Act is a proposal sponsored by U.S. Rep. Cathy McMorris and co-sponsored by Rep. Doc Hastings, both Eastern Washington Republicans and members of the House Water and Power Subcommittee.

The bill would direct power marketing groups such as the BPA to include how much it costs for them to comply with the Endangered Species Act and how much they lose from water that isn't used for power generation.

Stephen Wright, BPA administrator and chief executive officer, said a judicial order to spill more water for Columbia River salmon last summer cost Northwest ratepayers $75 million in lost hydropower revenue.

Wright also said if the water being spilled over dams to assist in fish passage was used instead to generate power, it would be enough to meet Seattle's annual electric energy needs.

Those are big effects and should be considered along with the other numbers used in the power-salmon debate.

First public comments on Columbia River plan reveal dissent

July 15, 2006, Seattle Times

By SHANNON DININNY
ASSOCIATED PRESS WRITER

YAKIMA, Wash. -- When it was signed into law earlier this year, a new management plan for the Columbia River was hailed as a way to begin resolving the long-simmering dispute over water rights and threatened fish in Washington state's vital river system.

If 120 pages of public comments are any indication, the sides still have much to settle.

Irrigators and municipalities want new water rights by July 1, 2007. Conservation groups want a thorough environmental review of any project that could result in new water rights. And one tribe reserved the right to sue to remedy any disputes arising from the plan.

"The recent state legislation was enacted by excluding the senior right holders, and as such, appears to be not so much a management plan as a loosely connected patchwork of special interest loopholes," wrote Phil Rigdon, deputy director of the Yakama Nation Department of Natural Resources.

Wading through the comments are officials with the state Department of Ecology, which is charged with implementing the plan. Phase one: Develop an environmental impact

statement that includes dozens of conflicting opinions and ideas submitted during a 30-day public comment period.

The management plan was a policy decision by the Legislature to address the health of the river and its salmon while still getting water to those who need it, said Gerry O'Keefe, Ecology's project manager. Gathering public comment is a crucial part of the process, he said.

"There's a lot of people in Eastern Washington who care very much about how this happens," he said. "There's a lot to learn here. It's a big job, and we don't have all the answers."

The new law seeks to make more water available by increasing storage in new reservoirs. It also allows the state to sign regional agreements with communities or other groups seeking new water rights in the near-term in exchange for mitigation efforts to preserve stream flows.

Several conservation groups raised concerns about plans for storage, noting that water storage often means construction of new dams. Hydroelectric dams on the Columbia River have been blamed for declining salmon runs.

"The Columbia suffers from significant environmental problems associated with existing dams and reservoirs. Wouldn't it be better to solve these problems before adding more into the mix?" wrote Beckett Stanley and John Osborne, conservation chairs for the Sierra Club's Cascades and Northern Rockies chapters.

Rachael Paschal Osborn, executive director of the Columbia Institute for Water Policy, cautioned the state against taking an inventory of water supply and demand without including neighbors that have a stake in the talks, such as Canada, Idaho, Oregon and American Indian tribes.

On the flip side, several groups representing irrigators and agricultural interests raised concerns that the environmental review could impede or stall efforts to get new water rights.

The Association of Washington Business urged the state to promptly proceed with new water storage studies so that construction can begin in the next few years.

Some programs should be implemented with or without the EIS process "so that new Columbia-Snake river system water rights are issued by July 1, 2007," wrote Darryll Olsen of the Columbia-Snake River Irrigators Association.

Is July 1, 2007, feasible? Are dams among the solutions? No one knows.

The process is intended to gather everyone's ideas about what an environmental review should entail and to ensure that no one is left out, said Derek Sandison, Central Washington regional director for the state Department of Ecology.

Some recommendations are already under way by the state, he said. They include work to better understand the connection between groundwater and surface water throughout the basin, and an assessment of demand and supply.

Some environmental and tribal groups cried foul immediately after lawmakers approved the management plan, saying the law wasn't built in a public process. The plan resulted from weeks of closed-door negotiations involving lawmakers from both parties and interest groups representing the environmental community, irrigators and farmers.

But the plan that lawmakers approved didn't come from nowhere, O'Keefe said. Rather, it was the result of four years of negotiations and discussion, he said.

In the meantime, state officials continue to discuss Columbia River management issues through existing channels, such as the Northwest Power Planning and Conservation Council, and is working to avoid any appearance that the program has been built in a piecemeal approach, Sandison said.

The Ecology Department also is inviting representatives of competing water interests - tribes, municipalities, environmental and agricultural groups, as well as neighboring states - to participate in a task force about the program going forward.

"It's a big basin. Connecting the dots for people is really important, and there really hasn't been a place at the state level for the Yakama Nation, for example, to talk to Columbia River irrigators," O'Keefe said. "We really need to make sure that we are plugging into the federal government, tribal governments and others to make sure that we are getting all the information to make good decisions."

7/28/2006

Some Dam – Hydro News

Quote of the Day:

"Someone who thinks of himself or herself first and never others, can't be trusted." -- RC

Dams

(Now, we have a "Real" expert telling us what we should do about dams. He answers his own question when he points out that "We only have access to 1.5 or 2 per cent of the water that exists in the world". That is the problem! We actually have access to less water and as we know, precipitation does not happen where or when you need it, so please tell us Mr. Gorbachev how we use that water efficiently as it flows to the oceans, how do we irrigate, how do we supply domestic water, how do people survive?)

Letter to the Forum of The Australian (theforum@theaustralian.com.au):

In your article of July 22, 2006 "Gorbachev warns on building dams", we see another individual commenting on a subject that he knows virtually nothing about. He mentions that we have access to less than 1.5 to 2 percent of the water on the planet. Actually, when we subtract the fresh water in glaciers and the ice caps, it is much less.

The problem is very basic, precipitation in most of the world does not happen when or where we need it. Australia knows that more than most countries. Dams serve a purpose and that is to trap water in seasons of excess precipitation so that it can be used over longer periods of time through controlled releases. In addition, dams provide needed renewable energy from hydroelectric power, flood control, and other public benefits.

Certainly, we have learned much about building dams and their effects on the environment that we need to consider, and we do need to be sensitive to people displaced by the construction of dams. The ultimate goal must be to provide for the basic needs of the greater population. Many of the same issues result when we build roads, buildings, and other infrastructure, but for some reason dams are held to a higher standard.

If it were not for dams, the amount of starvation and suffering on this planet would be beyond belief. So, Mr. Gorbachev please find a subject to discuss for which you are qualified.

Gorbachev warns on building dams

The Australian, July 22, 2006

WATER resources should be put to better use than building dams, former Soviet president Mikhail Gorbachev said.

Mr Gorbachev today warned against the building of large dams, saying similar projects in his country had come at a cost.

"I believe that you cannot make more water than exists," Mr Gorbachev told the Earth Dialogues forum in Brisbane.

"We only have access to 1.5 or 2 per cent of the water that exists in the world.

"We should think about the efficient use of water that is available, that is the very important priority."

Mr Gorbachev, who is co-charing the global environment forum, said water also needed to be captured more efficiently, while irrigators should consider using the drip irrigation technique to avoid wasting resources.

He urged the Queensland Government, which was considering building new dams to ease the water crisis, to tread carefully.

He said his own experience with dams, built mostly for hydro electric power, had been "mixed".

"The building of those hydro electric power stations and the creation of large reservoirs resulted in the flooding of 14 million hectares of arable land," Mr Gorbachev said.

"It was the best soil in Russia and it affected also people's lives ... and there were effects on the fisheries.

"So you have to bear this in mind as well."

Hydro

(The project has a long history. For more on history, go to this web site (Click on the old photos): http://www.oregongenealogy.com/baker/rockcreek/rockcreekpowerplant.htm)

Brothers hope to revive 1903 Ore. hydroelectric plant

Oregonlive.com, 7/19/2006, **The Associated Press**

BAKER CITY, Ore. (AP) — Two brothers hope to revive a century-old hydroelectric plant to preserve the history of the region while adding a little extra power to the city.

Doug Henderson, 35, and his brother Mark, 37, beat several other bidders to buy the 70-acre Rock Creek Power Plant property for about $92,000 from the Oregon Trail Electric Cooperative.

The plant was built in 1903 and began providing power in 1904. It was the "heart of the electrical grid for all of Baker and Union Counties from 1911 probably until the 1940s," Mark Henderson said.

Doug Henderson estimates it will cost almost $1.1 million to get the plant up and running as a museum and licensed as a working power plant.

"Working as a museum, we want to really keep this and certainly preserve the history that is right here in this room, and what we can, we would even like to restore some of it back," said Mark Henderson. "There is nothing else like this in the state of Oregon."

The property includes the power plant, three worker cabins, a fourth cabin farther up the hill by the plant's reservoir, and the house where Mark Henderson and his wife Tammy live.

The brothers operate the plant under the name Eastern Oregon Light and Power. They have replaced the roof on the main plant building as well as two other cabins on the property where workers stayed.

As part of the deal, the Hendersons must offer 10 days of tours annually. Tours have already taken place this past weekend as well as the Fourth of July weekend. The next scheduled tours will take place from July 28-30.

"It's a great piece of history and it comes alive when it's running," said Doug Henderson, who designs castings for Columbia Steel in Portland when he is not helping at the plant. "If it's running, that kind of guarantees that it will be preserved into the future."

One of the main investors in the construction of the plant a century ago wanted power to operate a flour mill, but there was more demand for electricity from the mines in the area. The first two mines to receive power, as a result of their proximity to the plant, were the Highland and Maxwell mines.

The mines needed power 24 hours a day, seven days a week to pump compressed air into the mine shaft, power the mill's rock crusher and shaker, as well as provide lighting.

The electrical power from the Rock Creek plant was expensive, but it was still cheaper than hiring crews to cut firewood to constantly feed steam engines.

"You could date a mine site by how close it was to the nearest tree," Mark Henderson said.

The plant was finally shut down in 1995. At the time it had been the oldest operating plant in Oregon.

River power upgrade intrigues officials

The Quincy Herald-Whig, MS, July 25, 2006

By Edward Husar, Herald-Whig Staff Writer

The Quincy City Council is considering a plan to build three hydroelectric power plants on the Mississippi River.

The council's Finance Committee agreed Monday to recommend the council seek federal permits to build hydroelectric plants at Lock and Dam 20 at Canton, Mo., Lock and Dam 21 at Quincy and Lock and Dam 22 at Saverton, Mo.

The issue will go before the full City Council next week.

The proposal has been discussed privately for several months and was only made public Monday night when the Finance Committee was asked to endorse the concept.

Secrecy was needed because local officials may be in competition with other communities to see which entity applies first for the permits, which are granted on a first-come, first-served basis.

The permits — issued by the Federal Energy Regulatory Commission — provide exclusive rights for three years to explore the feasibility of building a hydroelectric power facility at the designated locations.

In recent years, an Ohio power company has held the permits for most of the locks and dams on the upper Mississippi River. However, the company did not take any action to move forward with any hydroelectric plants, and the permits lapsed.

Quincy officials feel it would be in the city's best interests to seek permits for the three dams closest to Quincy. The application fee would total $15,000 for all three locations. If the permits are granted, the city would then spend an additional $45,000 to update a feasibility study conducted in 1983 by the U.S. Army Corps of Engineers.

The original feasibility study showed that many of the locks and dams on the upper Mississippi — including all three in this area — have favorable capabilities for producing hydropower, according to Mike Klingner, who heads the Quincy-based Klingner & Associates engineering firm.

Several factors could make this an attractive opportunity for the city. For one thing, federal legislation signed last year will require power companies by the year 2012 to buy at least 8 percent of their power from so-called "green energy" sources, which are comprised of any renewable, non-polluting energy source, such as wind energy, solar energy or hydroelectric energy.

That means power companies will be looking for new sources of energy, including any hydroelectric plants that begin operating in coming years. "The demand is definitely going to be there," Klingner said.

If Quincy were to build and operate the three hydroelectric plants — or even if it ultimately decides to take on just one such project — the city would be able to use some of the generated power to meet the electrical needs of, say, the city's wastewater treatment facility. Then it could sell the surplus electricity to a local power company, such as AmerenCIPS or Adams Electric Cooperative.

Revenue generated by the sale of electricity would be used to pay off revenue bonds that would be used to build the hydroelectric facilities. The city also would seek grants to help cover some of the construction costs.

According to Klingner, the construction cost would range from $1.5 million to $2 million for each megawatt of hydroelectric capacity. The corps study showed that capacity for the dams in this area might range from 11 to 27 megawatts.

That means, for example, that if one 15-megawatt plant were to be built, it would cost between $22.5 million to $30 million. If three plants that size were built, the total cost would be $67.5 million to $90 million.

In addition, the city would face about $300,000 in engineering costs plus $150,000 for an environmental impact assessment for each location — just to prepare a draft license application. More engineering fees would come for final plans and permits.

Great River Economic Development Foundation officials say the feasibility study would take up to a year, then the license application would take two to three years. Design and construction would take yet another three to four years.

The Federal Energy Act of 2005 established an incentive of $18 per megawatt hour for hydropower production, with a maximum of $750,000 in incentives per installation per year, according to officials with GREDF, which has been researching possible renewable energy projects that could benefit the region.

Energy production is estimated at 69,185 megawatts per hour for the Quincy location, 68,527 for Canton and 81,429 for Saverton.

Pete Pohlman, a GREDF spokesman, said conditions appear to be right for a city such as Quincy to take on such a project. "We think it's a natural for the city," he said.

Mayor John Spring also likes the idea. "It has great potential," he said.

Alderman also spoke favorable of the proposal. "It's worth going for the application," said Alderman Chuck Fitch, R-5. "We don't have enough energy in this country."

Water

On a voice vote Wednesday evening, the Senate approved S. 728, the Water Resources Development Act (WRDA) of 2006. The vote came almost six years after the last water resources bill was enacted. The bill contains an estimated $12 billion worth of environmental restoration, flood control, navigation, dam, and levee construction projects to be carried out by the U.S. Army Corps of Engineers.

The bill would reauthorize funding for the National Dam Safety Program and establish a new National Levee Safety Program within the Corps of Engineers. Both of these programs are supported by ASCE.

The Senate adopted an amendment offered by Sen. John McCain (R-AZ) and Sen. Russ Feingold (D-WI) that would require outside peer reviews of all Corps projects that are to cost more than $40 million. The amendment also would establish an outside safety review for

flood damage reduction projects.

The Senate rejected an amendment from Sen. James Inhofe (R-OK) and Bond that also would have adjusted the Corps' internal project review process. Bond criticized the McCain-Feingold measure for adding additional hassle and bureaucracy to the review process. "When you wait for the end of the line to do peer review, it doesn't make any sense," he said. "You need to review the project as you go forward."

In a letter to Senate Majority Leader Bill Frist (R-TN), ASCE stated: "The Bond-Inhofe amendment on peer review is flawed. It essentially defers to the current Corps' practice on peer review, which does not provide for meaningful outside review in every instance where it is pertinent and appropriate. While we believe that the McCain-Feingold amendment has merit, it is ultimately impractical because it contains a cumbersome, bureaucratic process for conducting the reviews."

The House approved a water resources bill in July 2005. "We have a product we can take to the House," said Sen. Kit Bond (R-MO), a cosponsor of the bill. "It's long overdue, but we have finally done it."

The bill would authorize the construction of seven 1,200-foot locks on the Upper Mississippi and Illinois rivers and includes almost $1.6 billion for restoring the Everglades. The House passed its version of WRDA 406-14 a year ago this week.

Another amendment by McCain and Feingold to require a Cabinet-level task force to establish national priorities for the construction of water resources projects was defeated, 80-19. Sen. Barbara Boxer (D-CA) said the decision to a fund water resources project belongs to Congress, not the Executive Branch, which oversees the Corps of Engineers. "The executive branch should not have the power to decide which projects move forward," she said.

Environment

U.S. Forest Service plans for SoCal forests challenged

The Mercury News, Associated Press, Jul. 21, 2006

LOS ANGELES - A handful of environmental groups and California's attorney general are challenging the U.S. Forest Service's long-term management plans for the San Bernardino, Angeles, Cleveland and Los Padres national forests.

The Forest Service had received at least 15 appeals from Attorney General Bill Lockyer and others by Thursday's deadline. Those joining the attorney general included California's Resources Agency, the city of Santa Clarita, the Agua Caliente Band of Cahuilla Indians and a lawyer who represents off-road groups.

A coalition of nine conservation groups, including the Sierra Club and National Resources Defense Council, filed a 250-page appeal aimed at overturning the plans for forest management over the next 10 to 15 years.

The conservationists said the blueprints allow for too much road expansion, motorized recreation and commercial activities. They said hydroelectric projects, cell phone towers, power lines and other developments threaten to urbanize the forest.

"There is no assurance to me that they are going to protect soil, water and wildlife," said Monica Bond from the Center for Biological Diversity. "It's almost like the (Forest Service) is saying 'Trust us, we'll do what is right,' when that is not their track record."

Max Copenhagen, deputy forest supervisor for the San Bernardino forest, said he hadn't seen the environmental appeal and couldn't respond to it.

Gov. Arnold Schwarzenegger's administration filed similar appeals earlier this month.

Forest plans often draw numerous challenges, particularly in heavily populated areas like Southern California. At least a few of the current disagreements could end up in court after Forest Service Chief Dale Bosworth rules on the appeals over the next several months.

(This sounds like another Milltown Dam situation, except this dam isn't a hydro project. It is a dam removal article, but the environmental issues sound more important.)

News

Senator supports Mike Horse dam removal

21 July 2006

Montana Senator Max Baucus has advocated the removal of the Mike Horse tailings dam, situated in the headwaters of Blackfoot river in the US state.

A report released by the Forest Service recommends that the aging structure be torn down. The dam holds back toxins from decades of mining up stream, and as well as acknowledging that the river needs an environmental clean-up, Baucus is concerned that the weakening structure could fail – as it did 31 years ago.

The Senator said that whilst he is in favour of removing the dam altogether, he would listen to any alternatives offered by the Forest Service. One such option would be to partially remove it and re-route Beartrap creek, which feeds the pool behind the dam.

He also requested that the public comment period, where members of the community can have their say on how the polluted site is dealt with, be extended beyond its current 16 August deadline.

Mike Horse dam was built in 1941 and was declared unsafe last August following a final report from the Forest Service.