

APRIL 2005



PRESIDENT'S MESSAGE

Nancy I. Day

Although the absence of news coverage might indicate otherwise, California still finds itself digging out of the so-called “energy crises.” The Governor is working with utilities and the involved State agencies to put in place aggressive demand management and supply programs intended to avoid blackouts this summer. We can all help by shifting non-essential electric use to off-peak periods. Reducing peak demand saves money for all Californians.

Tight Electric Supplies for Summer 2005

Customers served by Southern California Edison and San Diego Gas & Electric will be watching the thermometer this summer – hoping for “normal” weather conditions. If we have a “hot” summer, and customers do not take extraordinary actions to reduce peak demand, we risk electric supply shortages. Here’s the Energy Commission’s most recent market assessment.

“The *Summer 2005 Electricity Supply and Demand Outlook* provides the California Energy Commission (Energy Commission) staff’s current assessment of electricity resource adequacy in California. The analysis was prepared in close coordination and consultation with the California Public Utilities Commission (CPUC) and the California Independent System Operator (CA ISO).

The assessment is divided regionally into Northern and Southern California because there currently are significant transmission constraints that limit the transfer of electricity from north to south. Although a primary transmission bottleneck that existed between Northern and Southern California (Path 15 between Los Banos in Merced County and Midway Substation in Kern County) has been improved, particularly for moving power from the south to the north, the system is now constrained further south on the transmission segment known as Path 26 (SP26). This constraint affects the CA ISO’s ability to deliver surplus electricity from Northern California or the Pacific Northwest to the tight Southern California market. *(continued on page 2)*

APRIL 17-23 IS VOLUNTEER WEEK

For Your opportunity to volunteer
on the ground floor in the creation of the proposed
DWP Mulholland-Scattergood Learning Center and
Museum and for the Celebration of the 150th
anniversary of the birthday of William Mulholland,
see page 7.

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PRESIDENT'S MESSAGE

Continued from page 1)

Energy Commission staff expects supplies will be adequate statewide to meet growing electricity demand and the required seven percent operating reserves under average (1-in-2 or a 50 percent probability) temperature conditions. This is due to the addition of new generation facilities over the last six years, transmission improvements, increased energy efficiency, and voluntary conservation. In the event of average or very hot summer demand levels (1-in-10 or a 10 percent probability), Northern California (north of Path 26, or NP26) electricity resources exceed the seven percent reserve guideline recommended by the Western Electricity Coordination Council (WECC). This includes the Pacific Gas and Electric service area and participating municipal utilities in Northern California served by the CA ISO. Demand in Northern California typically reaches its summer peak during July.

In Southern California (SP26) there should be sufficient electricity reserves under normal weather conditions (1-in-2 or 50 percent probability). Peak electricity demand in Southern California usually occurs in September. Energy Commission staff is concerned, however, that SP26 will not have sufficient resources to meet electricity demands and maintain a seven percent reserve during very hot weather (1-in-10 or 10 percent probability) this summer, if additional actions are not taken. Nearly 1,800 megawatts (MW) of demand reductions or additional resources are needed to maintain a seven percent operating reserve under this scenario. This concern is focused on those portions of Southern California served by the CA ISO including the Southern California Edison (SCE), San Diego Gas and Electric (SDG&E) and CA ISO participating municipal utilities in Southern California. Areas served by the independent municipal utilities, including **Los Angeles Department of Water and Power (LADWP)**, Burbank Water and Power, Glendale Water and Power and Imperial Irrigation District, **appear to have adequate resources. The LADWP, in particular, should be able to make surplus power available to the rest of the region.**”

Drought in the Northwest Will Affect California's Summer Power Supplies

On March 10, Washington Governor Christine Gregoire declared a statewide drought emergency. Gregoire noted that Washington's snowpack for the year is just 26% of normal and many of the state's rivers and creeks are at or near record-low levels for this time of year. Experts are predicting that this could be the Northwest's worst drought since 1977. The drought will reduce available summer hydropower supplies for California, making energy efficiency, conservation and load management all the more critical for preventing power shortages here this summer.



by Vince Foley

Membership

OFFICERS - 2005 -

Elected at the March 9 Board Meeting

President ~ Nancy I. Day
First Vice President ~ LeVal Lund
Second Vice President ~ Carlos Solorza
Secretary ~ Dorothy M. Fuller
Treasurer / Membership ~ Vincent J. Foley
President Emeritus ~ Robert V. Phillips

DIRECTORS Elected at the February 12 Annual Membership Meeting for the three-year term 2005-2008:

Wally Baker	Kenneth W. Downey
Steven P. Erie	Vincent J. Foley
Joseph L. Hegenbart	Alice Lipscomb
Carlos Solorza	

BOARD OF DIRECTORS

Robert Agopian	Wally Baker
Nancy I. Day	Richard Dickinson
Kenneth W. Downey	Stephen P. Erie
Edward C. Farrell	Vincent J. Foley
Gregory Freeman	Dorothy M. Fuller
Edward G. Gladbach	Joseph L. Hegenbart
Abraham Hoffman	Alice Lipscomb
LeVal Lund	Michael T. Moore
Catherine Mulholland	David J. Oliphant
Carlos Sorloza	Daniel W. Waters
James F. Wickser	William G. Williams

RECENT BOARD GUESTS (not pictured)

Thanks in large part to our guests, we are able to keep abreast of water and electric issues, and learn of discussions, proposed legislation and other matters affecting these utilities.

Victoria Cross, *DWP Reclaimed Water Coordinator*

Ron Deaton, *DWP General Manager*

John R. Dennis, *DWP Generation Projects Director*

Randy S. Howard, P.E., *DWP Director of Commercial Services*

Jeffrey Kightlinger, *MWD General Counsel*

Anh Thu Pham, *DWP Graphics Manager; Public Affairs,
Displays & Exhibits*

Melinda A. Ro, *DWP Manager of Regulatory Affairs,
Water Quality & Operations*

Hans Sonderling, *WP&A Member; DWP Retired - Power System*

Paul Verburg,

A FEW OF OUR BOARD GUESTS



Norma Aguirre,
W&PA Member;



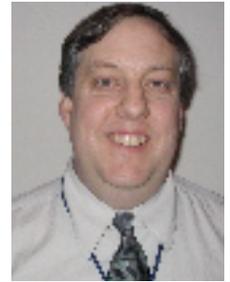
Reginald H. Brewer,
DWP VIDEO ENGINEER,
VIDEO Production Unit,
Integrated Skulptort



Paul D. Engstrand,
Horton, Knox, Carter & Foote,
Attorneys at Law, San Diego;



Thomas Erb,
DWP Director
Water Resources



Rob Freeman



Jane T. Gee,
DWP ; Regulatory Affairs



Duane Georgeson
Water Resources Consultant;
DWP Retired Assistant
General Manager



Ophelia Gonzalez,
Mother of Norma Aguirre;



Dorothy Green,
Former DWP Commissioner;



Robert D. Hoffman,
Energy Dynamix Corporation,
Redondo Beach;



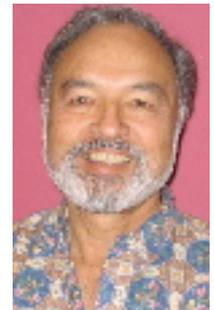
Dan Kott,
Retired DWP
Hydro Generation;



Gary Libecap,
National Fellow,
Hoover Institution,
Stanford



Thomas J. McCarthy, P.E.
DWP Assistant
Director Power
Distribution



Bernard V. Palk,
History Student,
DWP Retired Engineer



Dominic Rubacalva,
President L.A. Board of
Water & Power Commissioners



Bernie G. Stillons,
MWD of So. Calif.
Public Affairs Representative,
External affairs;



Walter S. Zeisl,
APR
DWP Manager of
Environmental
Communications
and Educational
Services,
Corporate
Communications

“Chinatown” Transaction Costs in Water Rights Exchanges. The Owens Valley Transfer to Los Angeles



Gary D. Libecap,
Hoover Institution
University of Arizona,
Tucson; National Bureau of
Economic Research

Ed. note: Following is the outline of a presentation made at the March Board Meeting. For more in-depth details, contact W&PA Inc. at 320 Cambridge Dr., Arcadia, CA 91007.

Outline of the Presentation

- Summary of water transfer issues.
- The legacy and Overview of the Owens Valley transfer.
- Sources of conflict.
- Bi-lateral monopoly.
- Land market for water.
- Conclusion and Implications for Contemporary Water Transfers.
- Valuation.
- Third-party effects.
- Assessment of the Impact.

Water Transfer Issues

- ◊ Part of a larger project on water markets and water reallocation.
- ◊ Misallocation of water between agricultural uses (60-80%) and urban and environmental uses.
- ◊ Sharp price differences.
- ◊ Costs.
- ◊ Owens Valley figures prominently. Theft.
- ◊ What happened in Owens Valley?
- ◊ Both sides sought to maximize their gains from trade. Board wanted to pay the agricultural value of the water and farmers wanted to receive the value in Los Angeles. Uncertainty about both.
- ◊ Farmers attempted to sell as a unit. Incomplete cartel.
- ◊ Will show that farmers were better off by selling land and water rights than if they had remained in agriculture.
- ◊ Revision of the popular view. Farmer's pools earned more per acre, but not sufficiently more to receive water prices close to what the Board might have been willing to pay.
- ◊ Most of the gains of trade went to Los Angeles. Origin of the “theft” issue. Lesson for contemporary transfer negotiations.

Owens Valley's Negative Legacy

- ◊ “I said, ‘What was the fight over?’ and Mr. Tripp said ‘Same old thing-water.’”
- ◊ “Do you have any idea what this land would be worth with a steady water supply—About 30 million more than they paid for it.” J.J. Gittes (Jack Nicholson) referring to land in the San Fernando Valley, in the movie, *Chinatown*, 1974.

- ◊ “...farmers remain suspicious of the ‘Owens valley syndrome’...The ‘theft’ of its water...in the early 20th century has become the most notorious water grab by any city anywhere...the whole experience has poisoned subsequent attempts to persuade farmers to trade their water to thirsty cities.” *The Economist*, July 19, 2003, 15.

Overview of the Transfer

- ◊ 1905-1934 LADWP purchased land and water rights from over 869 farmers and 825 town lot owners. By 1935 city owns 95% of the property.
- ◊ Land market for a bundled good—land and water rights. LA needed all the water in the valley.
- ◊ Focus on 1923-1935.
- ◊ Negotiations acrimonious, periodic violence with dynamiting the aqueduct.
- ◊ Owens Valley—120 miles by 2-6 miles; marginal agriculture relative to other Great Basin counties. 900 farms, 5 towns, 7,031 people, 1920.
- ◊ Heterogeneous farms with regard to inherent productivity and water.
- ◊ Bi-lateral monopoly. Los Angeles. Farmer cartel.
- ◊ 82 ditch farms formed three sellers’ pools.
- ◊ Other ditch properties purchased to keep them out of pools.

Sources of Dispute

- Transaction costs: negotiation and measurement.
- Measurement of land and water attributes.
- Value as input to agriculture or its value in Los Angeles
- Appraisal Committee of experts.
- Conflict over appropriate comparison properties. Valuation of water.
- Fixed pricing rule—4.1 times appraisal values

Transaction Costs Issues

- Third-party effects. Concern about impact on town lot values.
- Magnitude is difficult to gauge.
- Becomes a negotiating factor between pools and LA Water Board. Owens Valley Reparations Committee demands.
- 1925 state law for compensation for damage from water export area.
- Negotiations over sale take from 1930-34.

Analytical Framework

- ◊ Land market.
- ◊ Water market.
- ◊ Farmers whose land is below mean productivity with least water/acre will receive lowest prices per acre. No conflict.
- ◊ *Farmers whose land is above mean productivity with the most water/acre will receive the highest prices per acre of land.*

Gary D. Libecap Presentation Transaction Costs in Water Rights Exchanges.

- ◇ Conflict will be over valuation and the gains from reallocation of water.
- ◇ Farmers who collude and hold out will earn more per acre of land.

Assessment of the Water Transfer

- 1900-1930 Land values in Owens Valley rose (Inyo County) by 11 times.
- In Lassen County the increase is 2 times.
- Total value of agricultural land and buildings rises by 600% over the same period in Inyo and Los Angeles Counties and 172 % in Lassen.
- Similar values for State Equalization Board data.
- Counterfactual of expanding agricultural acreage in Inyo County at the same rate as in Lassen County with the same increase in land values, by 1930 Inyo County farmers earn \$9,000,000 less than the actual.
- Farmers do well in the land market.

Assessment of the Water Transfer

- ◇ Do less well in the water market. Distribution of the gains from trade.
- ◇ Water theft--in part from the inability of Owens Valley farmers with the most water to translate that extra water correspondingly into higher per acre land values. Received higher per acre prices, but not sufficient to compensate for greater water endowments. Cartel too weak.
- ◇ Imbalance in the gains from trade. 40+X in Los Angeles compared to Owens Valley.

Conclusion and Implications for Contemporary Water Transfers

- The framework provides an explanation for why the negotiations were so contentious.
- Owens Valley does not deserve to be an example of what is wrong with water transfers.
- It was a beneficial exchange, and the "theft" conflict was over the gains from trade.
- When gains from trade very large, distributional issues loom more importantly.
- Given the allocative gains from water transfers, compensation to address distributional concerns may be critical in smooth transactions.

Perhaps...

- Perhaps it would have been smoother if the difference in values had been smaller and the farmers had been able to capture more of the surplus.
- "Forget it, Jake. It's Chinatown."

Ta-daaaa.....

☺

Association of California Water Agencies Annual Conference



By Ed "Jerry" Gladbach

ACWA (Association of California Water Agencies) held its annual Washington, D.C. Conference February 15-17, 2005. The high point of the Conference was hearing from our **Senator Diane Feinstein** who is a true friend of California Water. She pointed out that the CALFED bill was passed last year, and now she is working hard to get the money for it. Proposed funding is \$78 million for direct projects and \$203 million for related projects.

Both amounts are up significantly from last year's proposals. She considered water storage as a key issue, as well as levee protection. There is almost \$15 million for recycling.

The Senator referred to a recent report regarding Global Warming and California Water that gave various scenarios. With the best scenario wherein greenhouse gases are reduced the temperature will rise enough to reduce the Sierra snowpack by 52% by 2100. Under "business as usual," scenario, the effect would diminish the snowpack by 90% by 2100. If just a third of the snow pack is lost, it would mean losing over 4 million acre-feet of water, unless we have more storage to capture the earlier and faster runoff.

Judge Craig Manson, Assistant Secretary for U.S. Fish & Wildlife in the Department of the Interior, said the Endangered Species Act needs to be reformed. After all, who has a 1973 car that is still functioning well, unless it has had major overhaul?

Members of congress, namely **Jim Costa, Bill Thomas, John Doolittle, Grace Napolitano, Dennis Cardoza, Ellen Tauscher** and **Hilda Solis** described their efforts on behalf of California water.

ACWA also had six issue groups, each consisting of 4-6 members with expertise on the subject. These groups visited selected members and staff of congress and Senate to get their points across. The group subjects were

Water Supply;	CALFED Funding;
Federal Projects;	Salmon
Water Environment	Endangered Species.

The group reported that their efforts were extremely satisfying. ☺

BURNING WATER ISSUES



by Nancy I. Day

Climate Change to Impact Future Water Supply

by LeVal Lund

CMUA 73rd Annual Conference & Policy Maker's Seminar March 2-4, 2005

Climate change will have an impact on future water supply and hydroelectric generation was the topic of a presentation by **Dr Michael Hanemann**, *UC Berkeley, Department of Agricultural Economics*. Dr. Hanemann was a keynote speaker at the 73rd Annual Conference of the California Municipal Utilities Association (CMUA), March 3 and 4, 2005 at Coronado, CA. *Nancy Day, Jim Wickser* and *Le Val Lund* attended representing the Water and Power Associates, Inc. Historical models have shown gradual increases in temperature and emissions of green house gases and certainly there has been an increase in population. A diminished Sierra Nevada snow pack will affect California water supply.

Impact of Climate Change on Water Supplies & Hydroelectric Supplies

Dr. Michael Hanemann,

UC Berkeley Department of Agricultural Economics

Global warming will negatively impact California's water supply. One of the most significant impacts will result from the loss of snow pack and resulting spring runoff.

In California 80% of the rain occurs between October and March while 75% of our water use occurs during the summer. Without more water storage to capture the rain for use during the summer we will face shortages.

At the same time that water supply declines, temperature increases will drive up water demand.

Global warming will also influence energy prices:

- ◆ Reduced hydro power availability
- ◆ Increased energy demand for summer cooling
- ◆ Increased ground water pumping

Consequences for water managers:

- ◆ The financial and legal problems may be harder to solve than the engineering problems.
- ◆ The weak point in our existing system is institutional not physical.
- ◆ 20 to 30 years from now we will see the impacts of climate change on our water supply.

Solutions:

- ◆ Better and more water storage
- ◆ Better water and energy conservation
- ◆ More water transfer capability
- ◆ Better dispute resolution
- ◆ Be prepared to address the effects on groundwater
- ◆ Need a cap & trade system for CO₂ emissions.

ENERGY USE BY WATER UTILITIES

Matthew Trask,

California Energy Commission Consultant

The California Energy Commission identified the need to study energy demand trends in the water sector. The California Department of Water Resources identified the need to study water demand in the energy sector. The agencies have agreed to collaborate on the study to avoid duplication of effort and assure consistent study assumptions.

Current estimates of energy use in the water sector include:

- ◆ Water Supply-11,953 GWh
 - ❖ Includes all pumping for conveyance and distribution
- ◆ Treatment- 1,388 GWh
 - ❖ Includes treatment to potable standards, sewage and wastewater treatment, and disposal
- ◆ End-Use-12,482 GWh

Dr. Gary Wolff, Pacific Institute,
Author of "Energy Down The Drain"

Approximately 17% of California's total energy use is related to water:

- ◆ Sources and conveyance
- ◆ Water Treatment
- ◆ Distribution
- ◆ Customer Use
- ◆ Wastewater collection and treatment



Policy makers need to understand water and energy relationships to align policies with desired outcomes. For example:

- ◆ Cross-media cost-sharing possibilities might include broadening "Flex Your Power" program to include water wise messages
- ◆ New standards or plumbing codes to minimize waste
- ◆ New labels for consumers:
 - ❖ Water Star* at the Federal or State Level
 - ❖ Water Smart Houses in Nevada or Southern California
- ◆ Consumer education producing informed tradeoffs related to water and energy use.

* *Water Star is the water equivalent to "Energy Star" conservation rating.*

Andy Sienkewich,
Manager, Resources Implementation, MWD

MWD is a water wholesaler serving the water needs of 18 million Californian's. MWD'S diverse resource strategy is designed to minimize risk and includes the following resources:

- ◆ Colorado River
- ◆ Storage & Transfers
- ◆ Groundwater Recovery
- ◆ Seawater Desalination
- ◆ State Water Project
- ◆ Recycling
- ◆ Conservation
- ◆ Exchanges

MWD plans investments in demand management through 2025 including:

Conservation Credits \$520 Million;
Local Resources \$840 Million;
Seawater Desalination \$510 Million;
Total \$1.87 Billion

Brad Hiltcher, *MWD Washington Representative* indicated Congress will be faced with a nation at war, western drought and water quality issues. The good news is the congressional authorization of CalFED funding, the bad news is the efforts to fund the removal of the Moab, UT, uranium tailings on the Colorado River, which could impact the quality for municipal use downstream in Nevada, Arizona and California. Congress will be faced with the issue of providing a safe harbor or not against litigation for the manufacturers and distributors of perchlorate and MTBE.

Ray Corley, *CMUA Water Government Affairs Representative, Ex LADWP,* indicated it will be interesting to watch the state legislature, a full-time legislative body with term limits, working under a new governor. He said Congress authorizing \$88 million in funding for the CalFED program in the Bay Delta was a good shot in the arm for the program. This was about 10 times what had been authorized in the two previous years. The task for the California legislature is to authorize the matching funds. Legislative bills have been submitted requiring better measurement of water use, including that used by agriculture and requiring special (water) districts to monitor the use of public funds by their Board members and staff.

Marcie Edwards, General Manager, Anaheim Public Utilities, Ex LADWP, was elected President of CMUA. ☞

Mulholland/Scattergood DWP Learning Center & Museum



David J. Oliphant,
Committee Chair

The Associates History Committee continues to work toward the creation of the MSLC&M. We are assisting the DWP in acquiring, identifying, cataloguing and storing artifacts and materials. Concurrently, we are assisting the Department in preparing a celebration of the **150th anniversary of the birth of William Mulholland in September 2005.** (More on this in the next issue.)

If you have any artifacts, documents, photographs, etc. that you are willing to donate to these projects, please **contact Dave Oliphant at 818. 363-9601 or Angela Tatum at the Department, 213. 367-8906.**

April 17-23 is Volunteer Week "Inspire By Example"

National Volunteer Week began in 1974 when President Richard Nixon signed an executive order establishing the week as an annual celebration of volunteering. Since then, every U.S. President has signed a proclamation promoting National Volunteer Week. Additionally, governors, mayors and other elected officials make public statements and sign proclamations in support of National Volunteer Week.

Sponsored by the *Points of Light Foundation*, National Volunteer Week is about thanking one of America's most valuable assets - our volunteers - and calling the public's attention to all that they do to improve our communities.

The 2005 theme is "**Inspire By Example**" because it truly reflects the power volunteers have to inspire the people they help, as well as, to inspire others to serve!

We need volunteers to help identify, catalogue, tag, and store artifacts, photographs, and documents. We also need YOU to donate items of historical interest or value. *By appointment*, you can deliver your donation to us at the Crenshaw Office, 4030 Crenshaw Blvd., L.A. (*free parking*)

Contact: Angela Tatum, DWP Records Management Coordinator, Tel: 213. 367-8906. ☞

WEBSITE

The Water and Power Associates, Inc. website is up-and-running at www.waterandpower.org. Check it out!

If you would like to receive your Newsletters *only* on line, send your e-mail address to: vinmar@altrionet.com

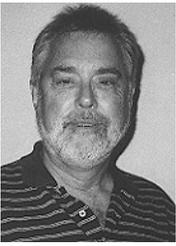
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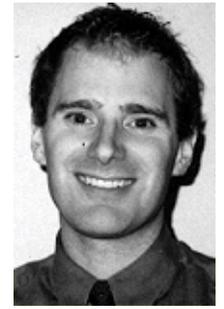
Michael T. Moore, Web Master

REPORT ON WATER EDUCATION FOUNDATION, WATER LAW & POLICY BRIEFING San Diego, California, July 15-16, 2004

Part II continued from January 2005 Edition



Steven P. Erie



Gregory Freeman

The Water and Power Associates, Inc. was represented at the Conference by Board Members, Steven Erie and Gregory Freeman. Their report is presented in 2 parts. The first section was printed in the January 2005 edition of this newsletter.

Panel 2

(Continued from January 2005 issue, page 14)

Tulare Lake v. United States:

An Analysis of the Endangered Species Act Takings Compensation Case

Greg Thomas (Attorney, Natural Heritage Institute): There are two different logics regarding *per se* takings: physically occupying private property versus regulatory capacity to achieve public purposes. Was this a physical occupancy or a regulated/limited use of a private property right. What is the water right created under California jurisprudence? There is a lengthy and attenuated chain of title: from people of California; tied into private property interests pre-1914 only by permit; from state regulatory agency to state water contractors; and finally to irrigators. The state water contracts were highly contingent. Essentially these were take or pay contracts. With such an attenuated title, the ultimate user right is like a leasehold, where the exercise of regulatory authority is appropriate. Therefore, there was the need for a balancing test in this case. The regulatory takings test is a multifaceted test (see 1978 Penn Central station case). The *per se* test applies only to physical takings. And, in this case, there was a *de minimus* effect regarding the farming economy.

Further, this was a temporary measure. There only was a three year redirection in state water project deliveries, and farmers made up the shortfall with groundwater drafting.

Panel 3

What Does “Appropriate Measurement” of Urban and Agricultural Water Mean?

Mary Ann Dickinson (panel moderator; Executive Director, California Urban Water Conservation Council): Appropriate measurement is an important outcome for the CALFED process. The issue is complicated by surface versus groundwater measurement regarding agriculture. For urban users in the Central Valley, the cost of accurate measurement (meter installation) is estimated at \$42.7 million. The big question is whether the expense of better measurement is likely to produce a worthwhile benefit. We need to make a business case demonstrating that the data will be both useful and used.

Steve Macaulay (Executive Director, California Urban Water Agencies): Successful CALFED implementation is not going to happen without leadership regarding the 10/11 implementing principles. Appropriate measurement is being driven by the year

200 Record of Decision (ROD). This is a key part of CALFED's future, and involves both economic and equity issues. One overarching driver is cost effectiveness (economic value), which varies for different end users. The cost is substantively less for agriculture than for urban users. The costs of measurement are different in the two areas. In agriculture, the price of water is tied to measurement. In urban areas, it involves the costs of meter installation. In market transfers, urban users demand of agriculture sellers that they have more accurate measurements. In urban areas, there also is the issue of appropriate water pricing. The Kehoe bill (Chris Kehoe, a San Diego state senator) proposes volumetric measurement billing, by use and not by a flat fee.

Tom Gohring (Assistant Deputy Director, California Bay-Delta Authority): The issue is being considered by the California Bay-Delta Authority (created by the CALFED ROD). There are tough issues to be considered. Should there be meters on groundwater wells? The farmers see this as a property issue, with the right of overlying use. This is a testy political issue on agricultural transfers.

What are the groundwater meter incentives for DWR, and water buyers and sellers? CALFED was driven by the need for more efficient water use, not driven by consideration of water rights and code, such as State Water Code section 275 conferring the state board's "beneficial use" jurisdiction to consider waste and reasonable use. The creation of the California Bay-Delta Authority is the first step. The second step is legislation, which envisions "kicking and screaming" opportunities for affected parties on contentious issues such as this.

Chris Kapheim (General Manager, Alta Irrigation District): [Agricultural perspective] Measuring water is not a panacea. Just because the water is measured does not automatically translate into conserved water.

Frances Spivy-Weber (Executive Director, Policy, Mono Lake Committee): [Environmental perspective] We want to see a price signal so that people will have an incentive to conserve. We want separate meters for interior and outdoor water use. We want at a minimum to have these meters required for all new construction.

Panel 4

Bulletin 160 and the Schwarzenegger Administration

Kamyar Guivetchi (panel moderator; Manager, Statewide Water Planning, California Department of Water Resources): Bulletin 160 involves the California Water Plan Update, which involves demand management, resource augmentation, resource stewardship, and water quality enhancement. This is a plan to guide the State through 2030. The new head of DWR is Lester Snow. In recent years there has been legislative recognition (e.g., Senate Bills 610 and 221) of the need to better link water and land use planning. Integrated planning is now seen as essential, including at the federal level (HR 2828, Calvert). The State Water Plan is also regionalized. There is a plan for each major hydrologic region of California, including the South Coast. One key tension involves appropriate stakeholders: community of place or community of interest?

Grant Davis (Executive Director, The Bay Institute of San Francisco): The plan needs to include environmental concerns and shortages, to be added to agricultural and urban shortages.

Lloyd Fryer (Senior Water Resources Planner, Kern County Water Agency): What are the priorities of the new Schwarzenegger Administration? Are the storage priorities to be surface or groundwater?

Grace Chan (Manager, Resource Planning & Development Section, Water Resource Management Group, MWD of Southern California): The State Water Plan Update needs its regional reports and plans to be accurate descriptions, such as of the South Coast Region. MWD's Vision Plan Update—highlights the IRP (Integrated Resources Plan) approach of diversity and flexibility, cost effectiveness, and margin of safety. With expected shortages, margin of safety concerns are growing. Regional plans also need to address water quality issues, and consider environmental water accounts. The regional plans can serve as guidance documents for funding.

Mercury Rising: Dealing with History's Toxic Legacy

Khalil Abu-Saba (Senior Scientist, Larry Walker Associates) spoke on current efforts to clean up California's mining legacy of toxic mercury. Mercury is used in gold mining to separate the gold from crushed ore. During the California gold rush, two California mines – New Almanden and New Idna – accounted for 90 percent of all mercury produced in North America. Today, we have to deal with mercury contamination that is the legacy of these mining operations.

Abu-Saba became interested in mercury contamination during his studies of water quality and pollutants in San Francisco Bay. The waters show low but significant levels of mercury. Abu-Saba notes that it is not mercury itself we need to fear (in the context of water quality). Bacteria convert mercury into methyl mercury, which then can move into the food chain and eventually to people who consume the wildlife. Mining is not the only source of mercury in fish – coal combustion and fluorescent lights are additional sources – but our gold rush legacy means that mining is the problem here.

Abu-Saba found that cleaning up individual sources of mercury contamination would have a minimal impact on the overall levels of mercury in the Bay (and in fish). Each point source makes a small contribution to overall levels – eliminating each is costly, yet may produce a barely perceptible change in water quality. At this point, Abu-Saba decided that water quality in the Bay was the wrong metric for measuring the worth of cleaning up mercury contamination at mines. He discovered that many of the sites were environmental disasters in their own right, worthy of clean up independent of their impact on the Bay. He presented several case studies of mine site restoration. The key issues were determining who had the responsibility to pay, and what would be delivered for the money expended. Cleanup funding sources vary depending upon the mine location and ownership—funding can come from federal, state, local landowner, or mining company sources. Regional water boards also are involved in terms of writing the regulations. Abu-Saba emphasized the need for cost-effective restoration strategies. In one example, merely covering over old tailings piles was sufficient to reduce acid runoff and allowed the site to be converted (as implausible as it may seem) to a park. *(cont'd on page 10)*

Metropolitan Water District of Southern California Gets New CEO/GM

Dennis Underwood, Civil Engineer, was selected on April 1, 2005, as the **Chief Executive Officer and General Manager of the Metropolitan Water District of Southern California.** Underwood was formerly MWD Vice President for Colorado River Affairs, and prior to that he was the Commissioner of Reclamation, the head of the U. S. Bureau of Reclamation. 

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Panel 5

Finance, Finance, Finance: How Can We Pay for the CALFED Plan?

Kate Hansel, Assistant Director of Policy and Finance, California Bay-Delta Authority

Steve Johnson, Director of Strategic Initiatives for California, The Nature Conservancy

David Guy, Executive Director, Northern California Water Association

Tim Quinn, Vice President, State Water Project Issues, MWD of Southern California

Tim Quinn, Vice President, State Water Project Issues, MWD of Southern California

W. Michael Hanemann, Professor, Agricultural Economics, UC Berkeley and Member, California Bay-Delta Authority's Independent Finance Review Committee'

Moderator: **Steve Macaulay**, Executive Director, California Urban Water Agencies

Summary:

The panel engaged in a wide-ranging discussion of possible funding sources for CALFED. They started with the premise that CALFED is an important program that will affect water supply, water quality, the environment, and water cost in most of California. CALFED program elements include levees, drinking water quality, watershed management, ecosystem improvement, water storage, conveyance, science (research), oversight and coordination, water transfers, water use efficiency, and environmental water account (water for environmental purposes such as habitat protection). The pressing CALFED question is who will pay for this menu of programs?

The panel generally agreed that the status quo – financing via state bonds – was unlikely to be a viable strategy going forward. [So far 55 percent of CALFED funds have come from state bonds.] The panel members would like to avoid piecemeal and ad hoc funding for the 11 program elements, but recognize that cobbling together a funding strategy is going to be difficult.

The key funding question appears to be who will pay, and how. The public contributes through state general obligation bonds, and appropriations of state general funds and federal funds. The panel suggested that we will also have to add a “beneficiary pays” component, though how and where such a model would be applied is still subject to debate. Water user fees are probably most appropriate as a means of funding programs with diffuse benefits, notably the first four CALFED program elements described above. Panelists stressed that CALFED will need to demonstrate value if it expects the public to support user fees. “If we can produce value, people will pay; if not, they won’t.”

Steve Johnson summed up the state of CALFED funding. He observed that CALFED stakeholders too often describe the process as one that is failing – only to turn around and argue that “we need X billion for this program,” one which we have mused in public about abandoning. “What kind of message,” Johnson asked, “is this for the public?” He argued that we need to start explaining to the public what they are going to get. CALFED funding hinges on convincing the public that by paying for CALFED they will receive benefits worth paying for.

ZANJA MADRE

The historic Zanja Madre (Mother Ditch) which brought water from the LA River to the Plaza has been uncovered in the Cornfield State Park, near Chinatown. Archeologists are investigating the site for historical significance. 

Panel 6

Sea Water Desalination

Peter MacLaggan, Vice President, Poseidon Resources

&

Bernie Rhinerson, Chairman, San Diego County Water Authority

Moderator: **John Minan**, Professor, University of San Diego School of Law, and Chair of the San Diego Regional Water Quality Control Board

Summary:

Seawater desalination is getting considerable attention as an alternative supply of water. The panel discussed desalination in general, but focused primarily on Poseidon Resources' project to build and operate a desalination plant in San Diego County in Carlsbad. The Poseidon Resources effort is one of 12 desalination projects "underway" in California, and additional 20+ projects are proposed, planned, or under study.

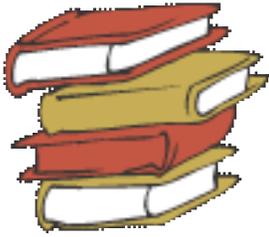
Background: Desalination is a mature technology, with more than 21,000 projects producing 3 billion gallons per day worldwide. The initial projects were overseas in places such as the Middle East (primarily for drinking water) and here in the U.S. (to produce highly purified water for industrial uses). There are two desalination processes in use. The older one is thermal desalination (which works through distillation); the newer, more efficient method is membrane desalination (which uses reverse osmosis). Desalination offers three key advantages: reliability (it is a drought-proof supply); additive (it is a new water supply); and it already treated. The key challenges are cost and environmental concerns, particularly with respect to the concentrated brine that is returned to the ocean. The cost of desalination has fallen 50 percent in the past decade, driven primarily by longer lasting and more efficient membranes. Incremental improvements are expected going forward, even at existing facilities. (Whenever a facility has to replace its old membrane, it captures the latest improvements when it installs the new membrane.)

Carlsbad Desalination Project: Poseidon Resources expects the facility to produce 50 million gallons/day, or roughly 56,000 AF per year at a cost of \$800/AF plus delivery costs of \$100-\$150/AF. The plant will cost \$270 million and is anticipated to be operational in 2008. The plant would be sited on the grounds of an existing power plant, which provides ready access to power and, by combining compatible land uses, reduces the potential for community complaints. Moreover, the location minimizes the environmental impact of the desalination operation by piggy-backing on the existing intake and discharge operations of the power plant. The power plant already uses (and then discharges) enormous volumes of seawater. The desalination plant will discharge the concentrated brine it produces intermixed with the seawater from the power plant, diluting its impact. The San Diego County Water Authority is interested in the project because it would increase the diversity of its supply, and desalination in particular would increase the reliability of its supply. SDCWA plans to eventually derive 6%-15% of its supply from desalination. Note: The project in Carlsbad is still not 100% certain, as Poseidon Resources and SDCWA appear to be arguing over contract terms. Concerns about the role of private companies and management of the public interest in the water supply also seem to be lingering in the background.

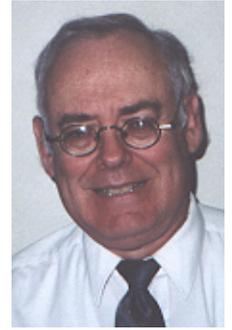
Context: Desalination is still very expensive, in this case \$900-\$950/AF of delivered water. Poseidon Resources and SDCWA are counting on subsidies from MWD to make the project cost-effective, or at least less expensive. Getting water from Carlsbad into the San Diego distribution system will require a pipeline cost \$100 million. Various groups involved in desalination are lobbying the federal government for a 10-year energy subsidy to encourage the transition to desalination use. (See www.usdesal.org.) SDCWA expects the cost of desalination to eventually be comparable to the cost of imported water. [They believe that the cost of desalination will fall, but admit that the convergence will be driven primarily by the rising cost of imported water.] Whether the project is replicable elsewhere in California remains to be seen. Cost will continue to be a concern, as will environmental issues. "Nesting" the desalination operations within the environmental footprint of an existing power station seems to be a critical (and highly prudent) move. Nonetheless, environmentalists are opposed to even this "diluted" impact, as indicated by two members of the audience who took considerable umbrage with the panelists' claims of minimal environmental impact during the question and answer session. Even if the California Coastal Commission disagrees with the environmentalist viewpoints (which is itself not a given), how many similar opportunities are available in California? ✍

CRYSTAL SPRINGS CONDUIT

The Crystal Springs Conduit, constructed in 1920-22, was exposed by a contractor building a condo at the site. Located on Riverside Drive south of Fletcher Drive, the conduit replaced the ditch which brought water from the Crystal Springs, near the Autry Museum to Downtown. It has been photographed and samples collected for the MSLC. ✍



BOOK REVIEW



BORDER OASIS: Water and the Political Ecology of the Colorado River Delta, 1940-1975, by Evan R. Ward. Tucson: University of Arizona Press, 2003. 209 pp. Maps, Illustrations, Notes, Bibliography, Index. Cloth, \$45. Order from University of Arizona Press, 355 S. Euclid, Suite 103, Tucson, AZ 85719. (800) 426-3797. www.uapress.arizona.edu.

By Abraham Hoffman

When the Colorado River Compact was created in 1922, the Republic of Mexico was conspicuously left out of the agreement even though the Colorado River flows through northwest Mexico into the Gulf of California, making it an international waterway. The Mexican Water Treaty of 1944 rectified this omission by giving Mexico 1.5 million acre-feet a year. Of course, everyone now realizes that the estimates of the river's annual flow were overly optimistic; no matter how the pie (or the river) would be sliced, the size of the pie remains the same. The Mexican Water Treaty also proved vague as to the quality of the water ceded to Mexico, so the pie analogy also works in the sense that somebody -- Mexico -- got the crumbs.

Most studies of the negotiations, conflicts, and compromises over Colorado River water have dealt mainly with the states through which the river flows -- Upper Basin v. Lower Basin states, Arizona v. California, etc. In recent years Native Americans have put in their claims for water rights and gained attention for doing so. Evan R. Ward, an assistant professor of history at the University of North Alabama, explores the hitherto neglected issue of Mexico's water rights and how U.S. bureaucrats have ignored or violated those rights. Ward focuses on the Colorado River Delta, the area from Yuma, Arizona, south to the Gulf of California. Anyone innocent of the geography of this region might assume that the mouth of a river yields an outpouring of water and fertile land; think Mississippi River Delta or the Nile Delta. But the Colorado River Delta is pretty much mud flats.

Where did all the water go? It's no secret that the states on the U.S. side of the border have used and reused it, that farmers in the Imperial and Coachella Valleys, represented by powerful irrigation districts, have made the most of their allotment. What does come down to Mexico is highly saline with a good dose of pesticides and other toxins used by the farmers in growing all those vegetables and fruit.

It is the salinity question that concerns Ward, and his study dispassionately yet persuasively argues that Mexico had been done a great wrong over the last half-century. Specifically, the Mexicali Valley area, following a brief period of prosperity after World War II, experienced a major crisis in the 1960s as salinity levels in the river rose alarmingly and threatened to destroy the valley's agricultural production. The U.S. Bureau of Reclamation held the view that Mexican farmers were not efficiently managing their water allotment. Mexican government officials and Mexicali farmers denied this assertion, accusing the Bureau of polluting the river through construction of the Wellton-Mohawk Canal, part of the Gila Project.

The crisis continued into the 1970s and remains unresolved to the present day. Other issues complicate the controversy as well, including the construction of a desalinization plant west of Yuma; the inadvertent development of a swamp oasis in the Cienega de Santa Clara that attracts birds and other wildlife; and the connections between plant, concrete canal, wildlife protection, and polluted water. There are no easy solutions to untangling the complex and varied interests that include local, state, national, and international organizations, agencies, and lobbyists.

Ward's book commands the attention of anyone interested in the Colorado River's political, economic, and environmental issues. It is strongly based on archival research in Mexico and the United States, is well written, and, though dealing with a specific topic, merits wide attention because of the ramifications that go well beyond the limits of local, state, and national governments.



We welcome **your** comments, questions and suggestions about our Newsletter.

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