

WATER: CALIFORNIA'S NEW GOLD—BAY AREA LEAGUE DAY, JANUARY 31

Speakers at the League's January 31 Bay Area League Day (Water: California's New Gold) presented varying points of view on solving our state's water problems—problems which include the state-wide drought, agriculture's use of water, water storage and conveyance issues—all impacting the Delta (where the Sacramento and the San Joaquin Rivers meet).

In considering water issues here in California, it is worth remembering that we live in what author Marc Reisner called “a semidesert with a desert heart.” (Cadillac Desert, Penguin Books, 1986) To give a flavor of the Bay Area League Day conference, the following notes are attributed to speakers, in the order of speakers' appearance at the conference.

BACKGROUND:

- California is in a 3-year drought.
- The Governor issued a statewide drought declaration in June 2008.
- Agriculture uses a significant portion of the waters of the state of California. (Secretary Kawamura said 41%; others said 80 %.)
- Water exports from the Delta have been limited by court order because of the exports' severe environmental impacts.
- The Delta's infrastructure is threatened by habitat and species' loss, and levees in danger of failing either from earthquakes or potential inundation, and subsidence.
- State (State Water Project, “SWP”) and Federal (Central Valley Project, “CVP”) project contracts call for water to be exported from the Delta, delivering up to 7.5 million acre-feet per year from two huge pumping stations in the southern Delta to the rest of California. Export figures varied by speaker, and method of measurement:
 - o Wolk: Two-thirds of California's population gets at least some of its drinking water from the Delta; the Bay Area gets 30% of its water from the Delta.
 - o Swanson: In the recent drought years, only 17 to 20% of the State's water has come from the Delta (and 13 to 17% from the Delta for urban and ag use)
 - o Kelly: Water for two-thirds of California comes from the Delta.

Senator Lois Wolk (state senator and Delta resident, former chair Parks and Wildlife) (**Keynote Address: State of the Delta and Water Resources**) described the Delta as the heart and soul of California. She said two-thirds of Californians get water from it; it serves as habitat for 250 species. Senator Wolk said that we must reduce water use, conserve and recycle water, not build without a reliable water supply, reduce reliance on Delta water, and do above- and below-ground groundwater banking. Aquifers and water storage are good with conjunctive use (storage during wet periods for use during dry times). Ms. Wolk advocated regional self-reliance. Climate change, she added, affects everything.

- Delta governance: Ms. Wolk suggested replacing the inefficient multiple agencies that now govern the delta (with the result that no one is really in charge), with more centralized structure and a long-term plan. The plan might take one to two years, she said. Governance could come from two boards or commissions: a strengthened Delta Protection Commission and a separate body (perhaps the State Water Resources Control Board, or other) that would represent state-wide interests and oversee funds. The new governing system would need secure funding and the ability to guarantee export levels.
- Peripheral canal: Although approving the Delta Vision's Blue Ribbon task force co-equal goals—water supply and the environment—the senator disapproved of the Governor's claim that the peripheral canal could go forward with or without

legislative or voter approval. Building a canal now, without adequate investigation and public oversight would not address climate change, urban runoff, habitat insufficiency for healthy fish, invasive species, she said.

Christina Swanson (Executive Director and scientist, Bay Institute) (**Delta habitat: Can a healthy Delta habitat be restored?**) noted the important habitat value of the endangered Delta.

- The Delta's 700,000 acres contain the indigenous delta smelt (state and federally listed as an endangered species), and anadromous salmon, steelhead and sturgeon. Its islands support bird migration. Delta elevation was dropping precipitously from 1965 to 2005 due to water withdrawals and diversions.
- Invasive species (such as the overbite clam, present since the mid-1980s and currently so numerous that 10,000 can be found per square meter of mud sample) have had a huge negative impact on native species. Toxicity (chemical, etc.) in the North Delta affects fish and zooplankton.
- Restore healthy habitat? Possible by restoring processes, removing stressors (pollution, competition/predation from invasive species). Excess water exported from the system means increased pumping, which sometimes reverses the river flows; these reverse flows kill fish.
- Peripheral canal? It is premature to take a position; insufficient study to date; credible scientific analysis with opportunity for peer review is needed. Also, a canal would only address one part of the problem; other issues remain.
- Existing state and federal water projects are over-allocated (more water has been promised and contracted-for than can be delivered). We cannot continue to take as much water as in the past and meet other goals. The supply is finite, and varies from year to year. We need to plan on the basis of new limitations.

Panel: Crop choices: Can California be more water-wise in growing crops?

Secretary Kawamura (California Agriculture) and Heather Cooley (Pacific Institute)

A. G. Kawamura (Secretary of the California Dept. of Food and Agriculture, Orange County grower)

Secretary Kawamura said that 90% of California crops are specialty crops (fruit, vegetables, nuts—not grains) and that California supplies 50% of the domestic national supply of specialty crops and about 25% of dairy. Mr. Kawamura said predictable water and weather are needed by ag. California is in its third year of drought.

- Crop choice: Mr. Kawamura said that rice [a water-intensive crop] is grown in California in areas where a hard-pan clay layer makes other crops such as tree crops impracticable. Cotton formerly was grown on about 1.3 million acres, but now only covers a few hundred thousand acres. Farmers, he said, only grow crops with better dollar yield and are professional growers who do not waste water.

Heather Cooley (senior research associate with Pacific Institute, a non-profit institution that works on sustainable management of water)

Ms. Cooley cited the Pacific Institute report—More with Less: Agricultural Water Conservation and Efficiency in California, a Special Focus on the Delta—that says California farmers can grow more food and fiber with less water. The report notes four techniques that could help satisfy the legal restrictions on Delta withdrawals, reduce groundwater overdraft in the region and help restore the health of the ecosystems, while still maintaining a strong agricultural economy. The four techniques for improving the

water-use efficiency of the agricultural sector could save up to 3.5 million acre-feet or more of water per year. These four techniques are:

1. Efficient sprinkler and drip systems can give higher yields with less water, although many fields are still irrigated by flooding in California. (Drip irrigation is not used in rice growing.)
2. Smart irrigation scheduling can reduce use by having local weather-monitoring stations tell when and how much water should be applied. (This method saved the most water in modeling studies.)
3. Advanced irrigation management—deficit irrigation at certain times of the year or crop cycle— can be used for certain crops, which have drought-tolerant stages. Vineyards are particularly suited for this because decreased irrigation can increase the quality of the crop.
4. Modest crop shifting from lower-value, water-intensive field crops (cotton, rice, wheat, alfalfa) to higher-value, water-efficient crops (such as fruits, nuts, vineyards) can conserve water.

Ms. Cooley suggested mechanisms for implementing ag irrigation improvements:

- Rebates or other financial incentives by state or water utilities could induce farmers to shift to drip, etc.
- Reduced or realigned subsidies (direct and indirect) could encourage efficient use of water.
- Statewide monitoring (remote sensing could be one method) to quantify amounts of water actually used, and by whom, (in some areas, water is not metered) would provide actual data on use in order to manage properly. Satellites could be used to collect some data. Currently, she said, subsidized water, from state and federal projects, can be so cheap that it is less expensive to let water run all night than pay someone to go turn it off.
- Agencies that work with farmers could provide education opportunities; UC currently provides some.

The panel's concluding thoughts were:

Kawamura: We need education, information about such items as salt tolerance of certain crops. Desalination plants for coastal California could provide water, minerals. Energy from hydrogen or solar could power them.

Cooley: Look to conservation, efficiency, better use of groundwater, capturing storm water, desalination (but desalination is expensive—about \$1200/acre-foot compared with about \$600 acre-foot for other options). We need 21st century solutions. Look to alternatives: fields should be fallowed long-term as well as short-term where water is unavailable; consider energy use, costs, and infrastructure, farm and irrigation improvements.

Raymond B. Seed (Professor, Civil and Environmental Engineering, UC Berkeley)

Levee maintenance: What are the threats to the Delta levees?

Delta levees fail a lot, but can be kept secure from floods. (California flood dangers to the public include cold water and higher death rates from hypothermia.) However, earthquake failures are a problem. Comparing the 1100 miles of Delta levees with the 11 continuous miles of levees in Kobe, Japan (which are better built), Professor Seed said that the Kobe levees failed catastrophically when their foundation sand liquefied with a quake. The Delta could become an inland salt bay with such an earthquake (with a 1% chance of occurrence in any given year), said Mr. Seed. The past 100 or so years have been seismically quiet, said the professor; “there is a 62% probability for at least one magnitude 6.7 or greater quake from 2003 to 2032.”

Liquefaction can be stopped, but it would take \$60 billion to \$100 billion to fix the Delta levees. He suggested that we could stop using the Delta as a water source or make it repairable. Mr. Seed's suggestions included avoiding building in a flood plain. Further, he said, both private and federal levees are seismically vulnerable. We should defend what we can and let some levees go.

"The peripheral canal could be beneficial or it could be a water grab by the South", he said. He noted, the Delta Vision study recommended further studies, and a need for governance.

Katherine Kelly (chief Bay-Delta office, Department of Water Resources, "DWR")

Regional-conveyance of water: Who owns the waters of the state?

As Delta channels, levees and agriculture developed, Delta land dropped over 30 feet during a period of about 50 years, due to subsidence. Ms. Kelly noted that the water belongs to the people of the state. "Water rights" indicate rights to the *use* of water and prohibit agricultural waste or unreasonable use. The public trust doctrine protects a wide variety of environmental and recreational resources, and the impact of water appropriations on public resources must be considered. The public interest served by water diversion may [or may not] outweigh harm to public trust resources. Past water allocation may be reconsidered in light of impact (s) on public trust resources. The Regional Water Quality Control Board (RWQCB) considers beneficial uses for municipal and industrial uses, agricultural uses and fish and wildlife uses.

Ms. Kelly discussed historical milestones in California water, from CVP authorization by Congress in 1933 and the beginning of water exports from the Delta in 1940, to the SWP approval in 1960. More recently, a 2007 judicial opinion (Wanger) required reductions in export pumping from the Delta to protect the Delta smelt.

Proposed Delta water conveyance alternatives include a conveyance either to the west or the east of the Delta, or "dual" conveyance alignments. Ms. Kelly quoted Secretary Kawamura as saying the facility has to be built. How it will be operated will be the key, she said. There will be a draft EIR/EIS, environmental disclosure document(s), by the end of this year, for which scoping meetings will be held this month and next. The departments hope to start building the conveyance by 2012, to continue to about 2016. When asked whether a canal could really be built without the approval of the voters, Ms. Kelly responded that DWR feels it has the authority to build without such approval. Projects like this, she said, can help us—allow us—to be successful. A listener pointed out that the water allocated is about eight times the amount actually available. In response, Ms. Kelly replied that the Board will have to grapple with that; a report will issue in February with recommendations to the Board regarding what to consider in the process. Responding to the question whether something would be built if the EIR/EIS indicated otherwise, she responded that she thought something would be built; the process just had to be followed.

An issue of possible federal stimulus money was raised. Ms. Kelly responded that she didn't know of any such immediate projects. [NB, The New York Times pointed out on February 14 that the recent stimulus bill included \$50 million that can be used in the delta region, but that that amount is only a tiny fraction of the tens of billions of dollars the state estimates it will eventually need for the Delta project(s).]

Kathleen Van Velsor (Project Director for Water and Land Use Studies, Association of Bay Area Governments— "ABAG"—topic: **Bay Area regional perspectives of the Delta Vision**) noted that the most reliable water supply is from conservation, that Delta vision goals are missing, and that the greatest disagreement regards the new Delta governance structure. Furthermore, she said that Southern California and the Delta are growing at a rapid rate, that land-use planning is out of step, and that integrated water management is not in place for the entire region. In response to a

listener's comment about not seeing mandatory water use reduction in Southern California, Ms. Van Velsor responded that there have been remarkable gains, but that there is a long way to go.

[NB, an 11/11/08 letter from LWV President Janis Hirohama to the Secretary of the California Resources Agency pointed out that,

“The League of Women Voters of California is concerned about the adequacy of the scope of review of alternative options for the Delta. The BDCP, in particular, appears to have moved very quickly and with minimal transparency and minimal involvement of Delta water interests to reach the EIR/EIS stage for one particular type of alternative. The League is not persuaded that all viable alternatives have been considered in these processes.

We recognize that California cannot afford unnecessary delay in addressing urgent problems in the Sacramento-San Joaquin Delta. However, it is the League's policy to promote public understanding and participation in decision making as essential elements of responsible and responsive management of our natural resources. The League also holds that decisions for land areas of more than local concern should be made at the lowest level of government feasible, but subject to state review, and that citizens must have meaningful participation in land use planning and regulation. Planning that moves too quickly to embrace some alternatives and reject others appears to violate the spirit of those policies. We urge that both the Delta vision and BDCP include Delta water interests as part of the decision-making for any final proposal.

Additionally, we believe the state should set limits on the amount of water to be exported through or around the Delta. Therefore, we urge that the scope of the EIR/EIS include an alternative that would establish statewide water conservation, recycling, watershed management, development of local supplies, and other non-structural strategies as the preferred solution to meeting the goals of sustainability of the Delta ecosystem and reliability of water supply.”]

Slides from the speakers' presentations are now online at:

<http://www.lwvbayarea.org/documents.html> (scroll down to Document Library and then Bay Area League Day reports).

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