



March 13, 2008

Ms. Cynthia Pierson
California Department of Water Resources
P.O. Box 942836
Sacramento, CA 94236-0001
email: comments-on-2007drr@water.ca.gov

Re: Comments on the Draft State Water Project Delivery Reliability Report 2007 and OCAP Consultation

Dear Ms. Pierson:

We are writing on behalf of the Natural Resources Defense Council and its over 120,000 members and activists in California. We appreciate the opportunity to comment on the draft State Water Project Delivery Reliability Report 2007 (“Reliability Report” or “Report”) and look forward to working cooperatively with the Department of Water Resources (“DWR”) to address many of the issues raised by the Reliability Report, including improving conditions in the Delta to protect the ecosystem and water supply reliability for 25 million Californians. We also request that these comments and attachments be considered in the ongoing consultation regarding the Operating Criteria and Plan (“OCAP”) for future joint operations of the State Water Project (“SWP”) and Central Valley Project (“CVP”).

We identify below some recommended changes to the final Report. Primary among these is the need for more discussion and analysis of demand management as a tool to improve reliability. Because reliability is a function of both water supply and water demand, reductions in demand can effectively improve reliability, as well as reduce the stresses on the Delta ecosystem caused by excessive water diversions. Governor Schwarzenegger recently released a new water plan, which includes a 20 percent reduction in per capita water use statewide by 2020. *See* Letter from Governor Schwarzenegger to Senators Perata, Steinberg, and Machado (February 28, 2008), appended as Attachment 1. This reduction in demand far exceeds the five percent reduction in average SWP Table A supplies that the Report projects for 2027. Report at 30. In fact, aggressive demand reduction measures could allow for far more significant reductions in SWP (and CVP) deliveries without adversely impacting reliability. We urge DWR to revise its modeling and analysis to address demand-side management for the final Report and in the ongoing OCAP consultations.

I. THE REPORT SHOULD INCLUDE A DISCUSSION OF DEMAND MANAGEMENT

The draft Reliability Report recognizes that the concept of “reliability” measures “a system’s ability to match water supplies with *demand*.” Report at 6 (emphasis added). The Report asserts that reliability in the context of the SWP depends on three general factors: “the availability of water at the source, the ability to convey water from the source to the desired point of delivery, *and the magnitude of demand for the water.*” *Id.* (emphasis added). Despite this recognition of the importance of water demand in the reliability equation, the draft Report omits any discussion of demand management, or the ability of SWP contractors to improve reliability by reducing their own demand, both overall and at different times of the year. Instead, the draft Report bases its analysis of reliability on demand values from previous years, which values are derived from historical data and information received from the SWP contractors. *Id.* at 9. This omission should be corrected in the final Report.

As explained in DWR’s most recent State Water Plan update, and in the attached NRDC analysis and water district testimony, SWP contractors have considerable untapped capacity to improve the efficiency of their water use, to reduce their demand through improved groundwater management, and to reduce their demand through water recycling, stormwater capture, and other methods. Realizing this untapped capacity would reduce SWP contractor demand, reduce the need for diversions from the Delta, and improve SWP delivery reliability. *See NRDC, Effective Solutions to Meet California’s Water Supply Reliability Needs* (February 25, 2008), appended as Attachment 2; Testimony of Jeffrey Kightlinger, General Manager, Metropolitan Water District of Southern California before the House Committee on Natural Resources, Subcommittee on Water and Power (January 29, 2008), appended as Attachment 3; Testimony of Richard W. Atwater, General Manager, Inland Empire Utilities Agency before the House Committee on Natural Resources, Subcommittee on Water and Power (January 29, 2008), appended as Attachment 4. The Report should be modified to include an analysis of the impact of these demand reduction measures on SWP reliability, as well as the impact of the Governor’s call for a 20 percent reduction in per capita water use by 2020.

II. THERE IS NO EVIDENCE THAT NEW CONVEYANCE NORTH OF THE DELTA PROVIDES ECOSYSTEM BENEFITS

The draft Reliability Report picks up a refrain from the Bay Delta Conservation Plan (“BDCP”) process that “a new North of Delta diversion(s) from the Sacramento River, which would divert water for export around the Delta, offers the greatest potential for meeting ecosystem restoration objectives.” Report at 12. We are not aware of any specific proposal for a new North of Delta diversion(s), addressing such issues as proposed size, operational rules, total proposed diversions, governance and assurance mechanisms and mitigation plan. Nor are we aware of any analysis of the potential impacts of such a proposal. *See Letter from NRDC to the Resources Agency Re: Comments on BDCP Points of Agreement* (December 21, 2007), appended as

Attachment 5. In fact, there are myriad ways in which a new North of Delta diversion could cause greater harm to the Delta ecosystem than the management of the existing SWP and CVP conveyance facilities, including by increasing the amount of exports (either overall or seasonally), reducing downstream water quality, increasing migrating fish mortality (especially salmonids), increasing the relative concentration of toxic contaminants, increasing adverse Delta food web impacts, increasing the threat and growth of invasive species, reducing Delta agricultural productivity and more. If DWR has analyzed these potential impacts, we urge the agency to make that information publicly available. Otherwise, the statement that a theoretical North of Delta diversion(s) “offers the greatest potential for meeting ecosystem restoration objectives” (which objectives also remain undefined in the Report and the BDCP process) lacks any foundation and is premature.

III. THE ENVIRONMENTAL WATER ACCOUNT BENEFITS CONTRACTORS, NOT THE ENVIRONMENT

The draft Report incorrectly states that “decline in the abundance of juvenile delta smelt led to a voluntary modification in 2007 in SWP and CVP operations to reduce the reversed flows in Middle and Old Rivers – a modification made possible through the Environmental Water Account.” Report at 15. In fact, the Environmental Water Account (“EWA”) did not make this action “possible.” Rather, DWR, the Bureau of Reclamation and the fisheries agencies are compelled to modify pumping operations when those operations adversely impact the survival, recovery and critical habitat of fish protected under the Endangered Species Act, such as the delta smelt. Indeed, a federal judge recently held, at DWR’s urging, that “regardless of whether [EWA and similar ‘environmental water’] programs are fully funded and/or remain functional mechanisms to provide water to the Delta, ‘the burden ... falls on the Projects, not the smelt.’” *NRDC v. Kempthorne*, case no. 05-CV-01207, Order on Summary Judgment, at 61 (May 25, 2007). If the fisheries agencies require the Projects to reduce pumping to protect listed fish, DWR and the Bureau must do so, whether or not EWA assets are available.

The history of the EWA demonstrates that, rather than aiding ecosystem recovery, the EWA has primarily functioned as an impediment to fish protection and recovery, by acting as an artificial constraint on the amount of water available for ecosystem needs. *See* Letter from NRDC to the Bureau of Reclamation Re: Comments on the Draft Supplemental EIS/EIR for Extending the Environmental Water Account and OCAP Consultations (December 10, 2007), appended as Attachment 6. The studies in the draft Report correctly assume that no EWA will be in place in the future. The text of the Report should be modified to correct the misconception that this outcome is bad for fish or constrains DWR’s and the Bureau’s ability and obligation to make sufficient water available for ecosystem protection.

IV. THE REPORT SHOULD CONFORM ITS SEA LEVEL RISE ASSUMPTIONS TO THE RECOMMENDATIONS OF THE CALFED INDEPENDENT SCIENCE BOARD

The draft Report estimates the effects of climate change on SWP delivery reliability by analyzing four different climate change scenarios developed in DWR's 2006 report entitled "Progress on Incorporating Climate Change into Management of California's Water Resources." Report at 18. However, the estimates of the impacts of climate change on California, and sea level rise in particular, have changed considerably since those four scenarios were developed. In particular, as the Report notes, the CALFED Independent Science Board has recommended that for planning purposes incorporating sea level rise, DWR should use the full range of variability of 50-140 cm (20-55 inches). Report at 22; *see also* Memorandum from Jeffrey Mount to Michael Healey re: Sea Level Rise and Delta Planning (Sep. 6, 2007), appended as Attachment 7. This range is considerably higher than DWR previously assumed in its 2006 report (a one-foot sea level rise), and will likely have considerably more significant water supply and ecosystem impacts. It is likely that other estimates of the impacts of climate change need to be updated as well, including projections of reduced Sierra snowpack and increased evaporation rates in watersheds and surface storage reservoirs. *See, e.g.,* NRDC, *In Hot Water, Water Management Strategies to Weather the Effects of Global Warming* (July, 2007), <http://www.nrdc.org/globalWarming/hotwater/hotwater.pdf>. The analysis should be redone incorporating the most recent sea level rise and other climate change analysis.

V. ARTICLE 21 WATER SHOULD BE OFFERED TO FISHERIES AGENCIES BEFORE BEING PROVIDED AS SURPLUS WATER TO CONTRACTORS

The Report assumes that DWR will continue to provide considerable amounts of Article 21 water to contractors in the future. It is within DWR's discretion whether or not to make Article 21 water available in any given year for delivery to SWP contractors. As we have urged DWR in the past, we request again that DWR implement a policy of foregoing Article 21 declarations and deliveries if state and federal fisheries agencies recommend that the water remain instream or available for ecosystem protection purposes. This small step to improve the Delta's ailing ecosystem would improve reliability for all water users by reducing the need for unplanned, emergency pumping restrictions to protect an ecosystem poised on the brink of collapse.

VI. REDUCED EXPORTS MEANS GREATER UPSTREAM RESERVOIR STORAGE

We note that one effect of reducing pumping from the historically high levels of recent years is that higher amounts of storage will be available in upstream reservoirs at the end of the year. Report at 30. Increased upstream reservoir storage should allow for improved coldwater management for salmon and steelhead below the dams. We urge DWR and the fisheries agencies to utilize the increase in carryover storage to increase

the protections for imperiled salmonids from the lessened protections in the most recent OCAP salmonid biological opinion, including the reduced Shasta carryover storage requirement and the more restrictive downstream temperature control point.

VII. REDUCED EXPORTS MEANS REDUCED YEILD FROM POTENTIAL SOUTH OF DELTA STORAGE

The current levels of Delta diversions, which are lower than those in the past, will also reduce the potential yield of proposed South of Delta storage facilities. This effect is due to the fact that there will be fewer times in the future when existing South of Delta storage is full. These reduced levels of diversion are likely to remain in place for the foreseeable future. The report should discuss the relationship between lower levels of diversions and proposed expansions in storage South of the Delta that would be dependant on Delta pumping as a water source.

Thank you again for the opportunity to comment. Please contact us with any questions.

Sincerely,



Katherine S. Poole
Senior Attorney



Barry Nelson
Senior Policy Analyst

Enc.

Cc: Cay Goude, USFWS
Maria Rea, NMFS

ATTACHMENT 1



Office of the Governor

ARNOLD SCHWARZENEGGER
THE PEOPLE'S GOVERNOR

PRESS RELEASE

02/29/2008 GAAS:112:08 FOR IMMEDIATE RELEASE

Governor Schwarzenegger Outlines Comprehensive Actions Needed to Fix Ailing Delta

Governor Schwarzenegger sent the following letter to Senators Perata, Steinberg, and Machado in response to their unfounded concerns that his administration is "unilaterally" beginning work on a so-called "peripheral canal." Consistent with the extensive work done by his administration over the last two years to gain consensus on a bipartisan legislative solution for a comprehensive plan to upgrade California's water infrastructure, Governor Schwarzenegger detailed his agenda in the following letter:

February 28, 2008

The Honorable Don Perata The Honorable Darrell Steinberg
President pro Tempore California State Senate
California State Senate State Capitol
State Capitol Room 4035
Room 205 Sacramento, California 95814
Sacramento, California 95814

The Honorable Mike Machado
California State Senate
State Capitol
Room 5066
Sacramento, California 95814

Dear Don, Mike and Darrell,

My administration has been working on solutions for addressing California's water supply and the environmental crisis in the Sacramento-San Joaquin Delta for more than two years. As you all have acknowledged during our negotiations on a comprehensive water infrastructure package over the last year, the heart of California's vital water supply system is in jeopardy of collapse without both immediate action and long term solutions to restore the ecosystem and protect water supplies.

I created the bipartisan Delta Vision Blue Ribbon Task Force by administrative action in 2006. The Task Force has issued its Vision and will develop a Strategic Plan to implement the Vision by the end of this year. In its recommendations, the Task Force identified a series of near-term actions that should be taken to protect the estuary, including studying the options for improving water transfer in the Delta. Far from acting unilaterally, my administration has been transparent in working with stakeholders and legislators on identifying both administrative and legislative actions that will be necessary to address the recommendations of the Task Force. As part of that effort, I will continue to negotiate in good faith with legislators on a comprehensive water infrastructure package.

To clarify the administrative actions we are considering as part of a comprehensive solution in the Delta, let me outline some of the key elements under development:

1. **A plan to achieve a 20 percent reduction in per capita water use statewide by 2020.** Conservation is one of the key ways to provide water for Californians and protect and improve the Delta ecosystem. A number of efforts are already underway to expand conservation programs, but I plan to direct state agencies to develop this more aggressive plan and implement it to the extent permitted by current law. I would welcome legislation to incorporate this goal into statute.
2. **Protection of floodplain in the Delta.** The Department of Water Resources (DWR) and other appropriate state agencies will expedite the evaluation and protection of critical floodplains. This action protects people and property, the existing water export system and the Delta ecosystem.
 - **Policy guidance on Delta land use.** The Blue Ribbon Task Force made it clear that changing land use patterns may limit our ability to address critical issues with the existing water export system and the Delta ecosystem. Accordingly, I will ask the Delta Protection Commission to update their Land Use and Resource Management Plan and direct the Governor's Office of Planning & Research and the State Architect to develop model Delta land use guidelines for distribution to local governments.
 - **Levee protection and standards.** DWR is actively involved in efforts to improve our flood protection and levee systems and, as part of this effort, should establish recommended standards for Delta levees.
3. **Multi-agency Delta disaster planning.** DWR, in coordination with the Office of Emergency Services, and other appropriate state agencies will develop and implement an emergency response plan and conduct a multi-agency disaster planning exercise in the Delta.
 - **Contract for emergency response equipment and services.** I will authorize DWR to continue its efforts to obtain equipment and services including barge services, sheet piling and other flood fighting materials to respond to disasters in the Delta. In addition to my previous orders, we must expedite the placement of materials and supplies in and near the Delta, to improve our emergency response capabilities.
4. **Expedite interim Delta actions.** The Resources Agency, DWR, Department of Fish and Game and the State Water Resources Control Board have already begun efforts to help protect and restore Delta habitat and help water users cope with supply interruptions.

I will direct the Resources Agency to expedite the completion of the Bay Delta Conservation Plan (BDCP), including the environmental review and permitting activities. Ongoing Delta actions, in conjunction with these efforts, will provide a foundation to help conserve at-risk species and improve water supply reliability.

5. **Water quality.** While additional storage and improved conveyance can allow greater control

of water flows that improve drinking water quality, more must be done. I will direct the State Water Resources Control Board to develop and implement a comprehensive program in the Delta to protect water quality.

6. **Improvements to Delta water conveyance.** DWR and other appropriate state agencies will soon begin the public process to study the alternatives available for improving the Delta water conveyance system. As part of this study, DWR must coordinate with BDCP efforts to recover at-risk species. DWR must also incorporate the issues of water supply reliability; seismic and flood durability; ecosystem health and resilience; water quality; and projected schedule, cost and funding in their options review, as suggested by the Task Force.

The Task Force recommended that we study a "dual conveyance facility" as a starting point. However I believe we must look at a full range of options for improving conveyance in the Delta.

Accordingly, I intend to direct DWR to proceed with the NEPA/CEQA analysis on at least four alternatives for Delta conveyance. They shall consider the following:

- The possibility of no new Delta conveyance facility;
 - The possibility of a dual conveyance facility, as suggested by the Task Force;
 - The possibility of an isolated facility;
 - The possibility of substantial improvements and protections of the existing water export system, most often referred to as 'armoring the Delta' or a "through-Delta" solution.
7. **Water storage.** DWR will complete the feasibility studies for the CALFED storage projects including Temperance Flat, Sites Reservoir, and the Los Vaqueros expansion. Each of these projects, depending on how they are built and operated, can provide substantial public benefits. Unlike in the past, when local entities built storage facilities for their own benefit and with little state investment, the current deteriorating condition of the Delta and the statewide water system demand public investment in exchange for the public benefit the entire state will realize.

In addition, I will direct DWR to expedite funding for groundwater storage projects throughout the state that will improve water supply reliability.

Please know that I will continue to work with the Legislature and all stakeholders to develop a comprehensive solution to the crisis in the Delta, and I will act on administrative measures in a transparent manner at the appropriate time.

California's history is filled with innovators and problem solvers. In 2006, with Democrats and Republicans working together for a common cause, we added to that legacy by building up our infrastructure. We showed leadership, not for the benefit of our own ambitions, but for the future of the state. That's something that Californians weren't used to, and they responded forcefully, approving all of the bonds. It's time for us to put the state first and add another chapter to the history books. It's time to secure a safe, clean and reliable water supply for the next generation of Californians. We have a great opportunity, and the people are counting on us. Let's not let it pass.

Sincerely,

Arnold Schwarzenegger

ATTACHMENT 2



EFFECTIVE SOLUTIONS TO MEET CALIFORNIA'S WATER SUPPLY RELIABILITY NEEDS

The Bay-Delta Estuary is facing a crisis. Numerous species are listed as threatened or endangered, or proposed for listing. The Delta smelt is on the verge of extinction. The status quo is not sustainable for any of the Delta's users, including farmers, commercial and sport fishermen, Delta residents and the 23 million Californians who rely on the Delta for a portion of their water supply. Investments to improve water supply reliability must also improve conditions in the Delta. By directing state funds to alternative water supplies, Delta flood protection and restoring a healthy ecosystem, the State will help improve water supply reliability, meet the needs of a growing population and protect imperiled fish species.

There is a broad consensus regarding the most effective tools to meet California's future water supply needs. The 2005 California Water Plan update contains extensive, detailed estimates of the water supply potential of a range of proven water supply tools. The bar chart below presents many of those totals, ranging from low to high yield estimates. We believe that the more ambitious estimates are realistic, and that aggressive targets and ambitious programs are required to assure Californians a reliable water future. DWR estimates that the three tools with the greatest potential – urban water conservation, wastewater recycling and improved groundwater management – could, together, produce more than six million acre-feet of new water. This represents approximately as much water as the CVP and SWP have diverted from the Delta in recent years, and more than enough to reduce Delta diversions and meet future growth needs.

NRDC believes that total Delta diversions must be reduced from the unsustainable record levels in recent years. We are working with other members of the environmental community to develop a science-based target for that reduction, which we will provide to the Task Force in the near future. Urban water use efficiency and other tools discussed below can provide the State with near-term and cost-effective supplies to offset any impacts from a reduction in Delta supplies.

Proven “Cornerstone” Water Supply Reliability Tools

Urban Water Use Efficiency: Currently, urban areas use over eight million acre-feet of water during a typical year. One-third or more of this water is used to irrigate urban landscapes. Urban water use efficiency could yield up to **3,500,000 acre-feet** of water per year according to the Pacific Institute's most recent projections. (This estimate is close to DWR's estimate of 3.1 million acre-foot high estimate of the potential of urban conservation at \$230-522 per acre-foot.) Significant reductions in water use can be achieved through design, installation and maintenance of water efficient landscapes, along with indoor conservation measures in the commercial, industrial and residential sectors. These savings can be realized by investing in current, off-the-shelf technologies, reducing lost and unaccounted for water through system water audits, and increasing implementation of conservation pricing. New water efficient technologies will undoubtedly continue to emerge and contribute additional savings in the future.

Recycled Water: Recycling urban wastewater (also known as reclamation or re-use) is an important strategy to increase water supply. Recycled water is most frequently used for agricultural or landscape irrigation or groundwater recharge. DWR estimates water recycling can generate up to **1,500,000 acre-feet a year** by 2030 at average cost of \$600 per acre-foot.

Improved Groundwater Management: The Department of Water Resources estimates that improved groundwater management, such as the conjunctive use of surface and underground storage, has the potential to provide between 500,000 and 2 million acre-feet at costs ranging from \$10-600. The average cost in a recent round of applications received by DWR for conjunctive use projects was \$110 per acre-foot. The appropriate target for conjunctive use will be determined in part by decisions on water management in the Delta, which will influence potential yield from groundwater storage. Such investments are likely to yield greater benefits south of the Delta, where projects may be less constrained by Delta operations and provide greater independence from the Delta. This effort could also be coordinated with floodplain and habitat restoration efforts in the Central Valley.

Additional Effective Strategies

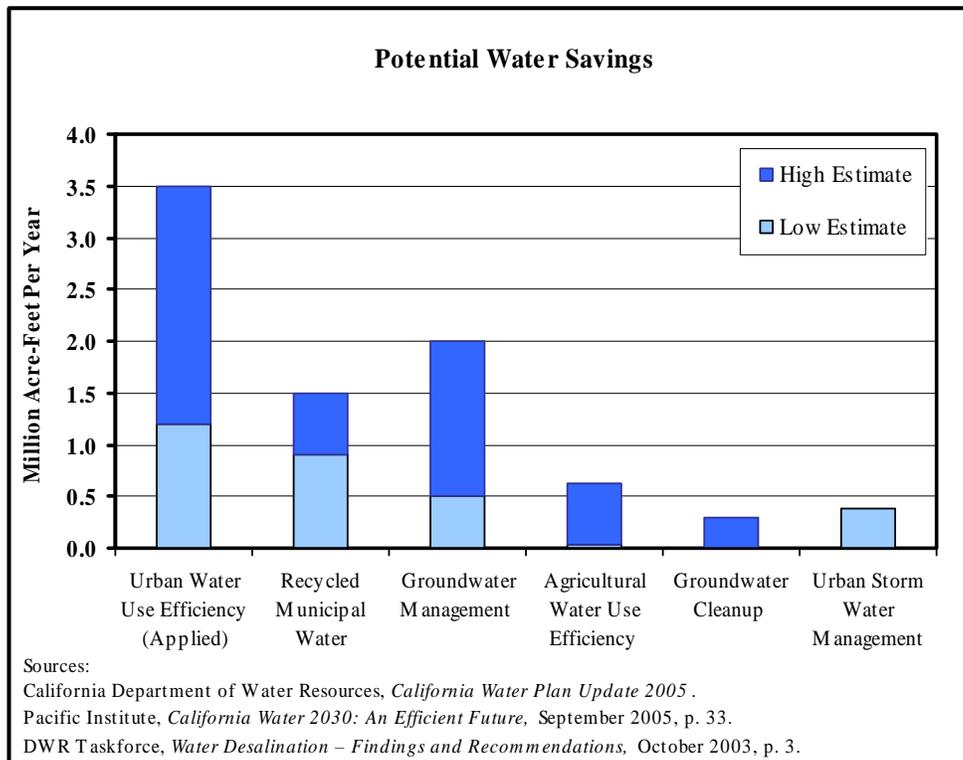
In addition to the key tools discussed above, a number of additional water management tools can generate significant additional supplies.

Agricultural Water Use Efficiency: Eighty percent of California's annual water use goes to agriculture. Although in some areas considerable strides have been made in water use efficiency, farming methods are not as water-efficient as they can be. The California Bay-Delta Authority's Year Four report estimates up to **620,000 acre-feet** of water can be saved through agricultural water use efficiency, which includes installing micro-irrigation technology or other water management improvements, at a cost of \$242 per acre-foot. We believe that these estimates understate the true potential of this tool.

Additionally, agricultural water is often highly subsidized. Pricing reform that sends clear, meaningful signals to agricultural water users can be very effective in encouraging increased water use efficiency.

Groundwater Clean-up:

Removing salts, including nitrates, from groundwater can be a cost-effective means of producing clean water supplies, recharging stressed and contaminated aquifers, and increasing groundwater storage capacity without the need to build expensive surface storage projects. DWR estimates brackish groundwater desalination costs \$250-500 per acre-foot, with a potential of yielding up to **290,000 acre-feet per year**.



Urban Storm Water Management: Urban water agencies, particularly in Southern California, are increasingly recognizing the potential to provide multiple benefits by capturing, treating (where necessary), storing and using urban storm water. Use of low impact development techniques (LID) results in the diversion and capture of storm water and dry-weather runoff before it flows into surface waters. This water can then be used on- or off-site as an alternative water source for irrigation of parklands, sporting fields, cluster housing groups, or for fire-fighting. Such projects can provide water supply and flood management benefits, while reducing coastal pollution from urban runoff.

Nationally, research has repeatedly shown that LID has the potential to deliver vast quantities of useable water through recharge and infiltration, and that it is the most effective and cost-efficient means of managing storm water and abating water pollution. Further, LID uses common sense and simple technology – strategically placed beds of native plants, rain barrels, “green roofs,” porous surfaces for parking lots and roads, and other tools – to retain rainfall on site or help rainfall soak into the ground, rather than polluting the nearest water body.

The Los Angeles Integrated Regional Water Management Plan indicates that proposed urban storm water management projects can generate **100,000 acre-feet** from urban storm water capture, and that the maximum potential is at least twice that amount. NRDC’s preliminary estimate of the water savings from implementation of LID practices suggests that if LID were used in just 50% of all residential and commercial properties in Los Angeles, Riverside, and San Diego Counties, **377,000 acre-feet** annually could be infiltrated or otherwise reused. By offsetting energy-intensive imported water in like amounts, and after accounting for average energy requirements associated with pumping groundwater in these areas, LID could result in the reduction of up to 45,000 metric tons of CO₂ annually in Los Angeles County and an additional 55,000 metric tons of CO₂ in San Diego and Riverside Counties combined.

Transfers and Land Retirement. These tools must be carefully designed in order to avoid impacts to third parties. However, significant land retirement on the west side of the San Joaquin Valley is very likely and can generate significant water savings. For example, the Westlands Water District has advocated a land retirement program of up to 200,000 acres. Farming this land has historically required as much as 700,000 acre-feet of water.

Benefits of Alternative Water Management Strategies

A Healthier Bay-Delta and Other Ecosystems: Investments in surface storage could harm the Bay-Delta ecosystem by reducing flows to the Delta or increasing diversions from the Delta. In contrast, alternative water management tools would decrease our reliance on the Delta.

Energy Savings and Reduced Greenhouse Gas Emissions: Almost 20% of California’s electricity use, and over 30% of its non-power plant natural gas use, is associated with the use of water. Water use efficiency and recycling can generate substantial energy savings and reductions in greenhouse gas emissions, and help the State meet AB 32 implementation targets.

Water Quality Benefits: Investing in water efficiency and groundwater cleanup will improve water quality by reducing urban runoff from lawns and gardens. In addition, investments in these tools will also help stretch limited state and federal funds available for water and wastewater treatment facility expansions and upgrades, by delaying or reducing the size of water system expansions. These investments will also improve drinking water quality, particularly for poorer communities in the Central Valley that rely on groundwater.

Reducing the Economic Risk from Delta Levee Failures: A massive levee failure in the Delta could jeopardize a critical water supply for 23 million Californians. Investments in alternative water management tools will reduce reliance on Delta diversions, thereby decreasing the risk to California’s economy from potential Delta levee failures.

Strategies to Achieve Maximum Water Savings

This memo focuses on potential targets for a range of water management tools. The bullets below briefly outline key strategies that can maximize the water savings from these tools. We will present more details regarding these and other strategies in the future.

A Clear Conclusion Regarding Delta Diversion Totals: The single most effective thing the Delta Vision Task Force could do to encourage the development of alternative water supplies would be to make a clear, forceful recommendation regarding the need to reduce Delta diversions by a specified amount. Reducing Delta diversions will be a significant change from the trend over the last four decades. The likelihood that we will succeed in this transition will be greatly increased if the state has a clear goal to guide planning efforts and investments.

Learning from California's Energy Efficiency Success: California has emerged as a global leader in energy efficiency. We believe that the policy tools, such as a loading order and public benefits charges that have made this progress possible in the energy arena, can produce similar progress in encouraging water use efficiency. (See NRDC's white paper entitled: *Transforming Water Use: A California Water Efficiency Agenda for the 21st Century*.)

AB 32 Implementation: Reducing Delta diversions and investing in alternatives, such as water conservation, has the potential to significantly reduce energy use and greenhouse gas emissions. By integrating water planning with energy and climate change efforts, the state can take advantage of the synergies among these issues, including potential additional funding sources for less energy intensive alternatives to Delta diversions.

Integrated Regional Water Management: In recent years, IRWM has emerged as a key strategy to design water management solutions tailored to local needs, by considering local conditions, a full range of water management tools and a broad spectrum of potential benefits.

Credible Economics and Financing: Delta Vision should recommend that state and federal agencies carefully analyze the cost of alternative water supply strategies. Individual water agencies do this as a matter of course. However, state and federal agencies often fail to incorporate adequately basic economic analysis. For example, public funds dedicated to improving water supply reliability should be focused on the most cost-effective environmentally sound tools. The Delta Vision Task Force should develop recommendations to reduce water subsidies (e.g. by reforming renewed CVP contracts) and move toward real "beneficiary pays" financing.

ATTACHMENT 3

Testimony

Provided By

Jeffrey Kightlinger, General Manager
Metropolitan Water District of Southern California

On

The Immediate Federal and State Role in
Addressing Uncertain Water Deliveries for California
and Impacts on California Communities

Before the

Committee on Natural Resources
Subcommittee on Water and Power
United States House of Representatives

January 29, 2008

House Subcommittee on Water and Power
"The Immediate Federal and State Role in Addressing Uncertain Water Deliveries
for California and Impacts on California Communities"

Oral Testimony by Jeffrey Kightlinger, General Manager
Metropolitan Water District of Southern California

Thank you Chairwoman Napolitano. I am pleased to give you and the subcommittee a brief survey of the impacts being felt throughout Southern California from the evolving water situation and Metropolitan's response. We face a new reality and new roles for Metropolitan and the state and federal governments to bringing more certainty to our water future.

At the moment we are roughly on track for an average rainfall year in both Southern California and Northern California. Traditionally this was good news. Traditionally this would mean that Metropolitan would likely receive enough water from the Sacramento-San Joaquin Delta to meet local demands and make modest additions to our storage reserves.

But not this year. Because of ongoing environmental problems in the Delta, there are court-ordered curtailments in water deliveries that started late last year and are expected to last into June. At the moment, the State Water Project has committed to delivering 25 percent of water supplies to its contractors throughout California. This percentage may increase, but Metropolitan is making preparations for a significant cutback in supplies. Metropolitan is responding by seeking to purchase additional supplies on the open market and funding a \$6 million dollar water use efficiency outreach campaign to encourage conservation throughout our service area. In addition, Metropolitan's board of directors has approved over \$30 million to aggressively implement water conservation and recycled hook-ups for public agencies and the commercial and industrial sectors. Our tracking polls suggest that nearly half of the 18 million people in our service area have gotten the message and are taking steps to lower water use. This is helpful. Along with our efforts to creatively manage our resources, Metropolitan also invested in efforts to increase our storage capacity. In fact, today we have 10 times the amount of water in storage than we did during the last drought in the late 1980s and early 1990s. This includes a \$2 billion capital investment in the building of Diamond Valley Lake, which alone nearly doubled the region's surface water storage capacity. Those reserves provide a cushion and give us some time. But, with the new restrictions in the Delta, we are now living on that borrowed time. That realization, and the uncertainties in the Delta, are beginning to create water supply impacts throughout the region.

Metropolitan, working with its member agencies, is developing a plan to equitably allocate our available State Water Project supplies from the Delta, the Colorado River Aqueduct and water stored in reserves. The primary objective of the plan is to minimize the impact on the overall regional economy. We are also striving to strike a balance recognizing needs from MWD, accounting for local supply and rewarding local districts that lower demands and increase supplies. A sterling example is Orange County. Last week it celebrated the opening of one of the largest water recycling facilities in the world. This facility will turn wastewater that used to drain into the Pacific Ocean into a reliable

high-quality drinking water supply that will help replenish the local groundwater basin. Metropolitan provided incentive funds to help make this project a reality. This is precisely the kind of strategic regional partnership that Metropolitan is working to replicate throughout our service area.

In the coming weeks and months, Metropolitan will review existing and new programs to lower demand and increase local supplies. We will be doing this despite rapidly rising costs from the State Water Project and other investments, which will likely require double-digit rate increases into the future. We continue to identify and implement new ways to lower demand and increase local supplies because we have seen the dramatic results of past efforts. And we are re-evaluating and updating our long-term water strategy, our Integrated Resources Plan, to determine if our conservation and local water supply targets should be even more ambitious.

To ensure our long-term plans are taking into account the impacts of climate change, Metropolitan has entered into a partnership with the RAND Corporation to develop appropriate planning models and protocols that would take into account long-term impacts on water supplies. The state has taken a leadership role with its energy policy, which is focused on landmark efforts to reduce greenhouse gases and working to ensure a better linkage between water and energy. Conserving water helps reduce the need to transport and treat water, which are energy-consuming activities. Metropolitan is evaluating its carbon footprint in tandem with our water supply and planning efforts. While there is much still to be done when it comes to water conservation, it is important to recognize how far Southern California has come. As an example, in the past 15 years Metropolitan has invested more than \$200 million in water-conserving devices. These conservation investments, combined with plumbing code reforms, reduce our potential demands by about a million acre-feet per year. Had we not been this successful in lowering demand and simply expected the State Water Project to solve the region's problems, our demand on the Delta would be about 50 percent larger now. Given the multiple changing conditions due to climate change, endangered species rulings and other impacts in the Delta, Metropolitan has embarked upon a comprehensive update of its long-term Integrated Resources Plan. A renewed focus on the development of local resource projects will help decrease our dependency on the Delta. But we do need a more reliable supply from the Delta than the current system is providing. And we embrace the notion that restoring the health of this ecosystem is an essential ingredient to creating a more reliable water system.

How can the federal government help? We urge the federal agencies to remain active and engaged participants in the Delta. We need a new biological opinion from the U.S. Fish and Wildlife Service that will guide the operations of the State Water Project and the Central Valley Project. Metropolitan is actively seeking operational strategies that can help reduce conflicts between pumping operations and fish migration patterns. We also need the active participation of the federal wildlife agencies in coming up with a new Bay Delta Conservation Plan, which is exploring new and better ways to separate the movement of water supplies from the natural flows in the estuary. Yes, that may mean some form of a canal as one piece of a much larger solution. We need the feasibility studies and better science to understand new ways of moving water supplies. The deliberations ahead should be based on new facts and not old fears. Metropolitan has made a commitment to seek reliability from Delta supplies, and to find the water for new

growth from within our service area, a historic difference between the emerging Delta discussion and debates of the past. Metropolitan urges the federal government – our elected officials, federal agencies and staff – to support our local resource projects including recycling and other conservation programs.

As for assistance from the state, while we recognize the challenging fiscal situation, there are ways that the state can help. Metropolitan seeks to sponsor or support state legislation that would create a standard approach for regional water boards to authorize water recycling projects that seek to store supplies in groundwater basins. There are hundreds of millions of dollars from bonds that voters have already approved that are available to address parts of the Delta problem and to help regions become more self-sufficient.

Metropolitan remains a constructive and realistic participant to bring about dramatic and historic change in the Delta. We are very pleased to have the interest and involvement of both the state and federal governments to solve our problems and a collective recognition that the Delta as we know and manage it today is a broken ecosystem that needs fixing.

Thank you Chairwoman for today's hearing and I would be happy to respond to any questions.

ATTACHMENT 4

COMMITTEE ON RESOURCES
Subcommittee on Water and Power

“The Immediate Federal and State Role in
Addressing Waste Deliveries for California
and the Impacts in California Communities”

January 29, 2008

Testimony by
Richard W. Atwater
General Manager
Inland Empire Utilities Agency

I. Introduction

Thank you Chairwoman Grace Napolitano and members of the Subcommittee for Water and Power for the opportunity to testify before today regarding the water problems facing California. I am the General Manager of the Inland Empire Utilities Agency. The Subcommittee has asked four important questions related to how address the critical water problems from Judge Wanger’s court decision and how we develop regional and statewide strategies with the federal government to meet the challenges of having less water available from the Delta and the related issues with developing a sustainable ecosystem. The Inland Empire Utilities Agency in partnership with many other agencies in southern California and with financial assistance from the State of California and the Bureau of Reclamation is implementing a “Drought Proofing Strategy” that is a key element of a Delta Plan. We have recognized the challenges for a long time of meeting the statewide water needs in an environmentally responsible manner have committed over \$500 million over the past seven years to implement projects that will develop new local supplies in southern California and reduce our need for Delta exports.

A. Inland Empire Utilities Agency/Chino Groundwater Basin

The Inland Empire Utilities Agency, a municipal water district under California law, was formed in 1950 by a popular vote of its residents. The service area of the Agency is entirely in San Bernardino County and has a current population of approximately 800,000. The IEUA service area is rapidly growing and will probably increase by 50 percent to 1.2 million within the next 20 years. The Chino Groundwater Basin was adjudicated in 1978 and is governed by a 9 member Watermaster Board. Overall water use is about 350,000 acre-feet annually, 70 percent of the supplies are from local sources within the Santa Ana Watershed. With the rapid growth, demand from MWD could increase from 70,000 acre-feet per year currently to 150,000 acre-feet in 2020 if we did business as usual! However IEUA, Chino

Basin Watermaster and in cooperation with many other agencies have developed a “Drought Proof Plan” that will develop over 100,000 acre-feet of new local supplies to minimize the need for additional imported water from MWD, thereby reduce our need for more Delta (SWP) water supplies.

B. History, Background and Interagency Relationships with CALFED Bay-Delta Program

The Agency has been a member agency of the Metropolitan Water District since 1950 and distributes about 70,000 acre-feet of imported water to the cities of Chino, Chino Hills, Fontana (through the Fontana Water Company), Ontario, Upland, Montclair, Rancho Cucamonga (through the Cucamonga County Water District), and the Monte Vista Water District. The Agency also provides wastewater treatment service (four regional water recycling plants that produce about 60 million gallons per day or 67,000 acre-feet per year). Excess recycled water flows downstream into the Santa Ana River where the Orange County Water District recharges that water into the Orange County groundwater basin for drinking water.

The Agency is also a member of the Santa Ana Watershed Project Authority (SAWPA) and is an active member of the Santa Ana River Watershed Group and the Chino Basin Watermaster. As a member agency of SAWPA, the Agency’s water projects are closely coordinated with the SAWPA watershed wide planning and the funding of priority projects through the Water Bond Proposition 13 and Proposition 50 grants.

Public and Private Partnerships to Improve the Santa Ana Watershed

- Santa Ana Watershed Project Authority (SAWPA) has maintained an inclusive dialogue with all interested parties and is leading the update of the Santa Ana integrated regional watershed management plan through the “One Water-One Watershed” (OWOW) process;
- All local governments within the three counties (San Bernardino, Riverside and Orange) are working cooperatively together to manage growth and plan for the water/wastewater infrastructure needed to meet the needs of this rapidly urbanizing watershed;
- Partnerships with industry including dairies, manufacturing, and developers have resulted in creative solutions to local water quality problems (e.g. the Santa Ana brine sewer to the ocean) as well as producing new sources of renewable, cost effective energy;
- Industrial customers throughout the area are planning on using recycled water to reduce costs, ensure reliability, and to be excellent environmental stewards.

The Chino groundwater basin is one of the largest in Southern California. The Chino Basin Watermaster adopted an Optimum Basin Management Plan (OBMP) to protect the water

quality of the basin and to manage the local supplies effectively to the maximum benefit of the local ratepayers. A key element is the expansion of the conjunctive use operation of the Chino Basin to expand the storage and recovery by approximately 300,000 to 500,000 acre feet.

Other key components are the Inland Empire Utilities Agency regional water recycling project to develop new local supply of 100,000 acre-feet per year and the Chino Basin desalters that would develop an additional new local supply of 40,000 acre-feet per year.

The key benefits of the Chino Basin regional “OBMP” water plan are as follows:

Benefits

- *Provide a more dependable local water supply and reduce the likelihood of water rationing during future droughts and the impacts of climate change;*
- *Economic benefits of reliable water supply to industry and provide incentives to attract new industry and jobs in the Inland Empire region;*
- *Environmental protection – reduce wastewater discharges into Santa Ana River by 50 percent through local water recycling and protect Orange County drinking water supplies through implementation of comprehensive lower Chino Dairy area manure management strategy;*
- *Reduce imported water use in the rapidly growing Inland Empire region (upper Santa Ana River Watershed) and thereby contribute in a significant manner to the statewide CALFED Bay-Delta and Colorado River solutions through more efficient use of existing local supplies;*
- *Assist in solving multiple Endangered Species Act problems within the Santa Ana Watershed, the CALFED Bay-Delta program, and the Colorado River/Salton Sea;*
- *Implement a sustainable long-term water resources management program that maintains the salt balance of the Santa Ana River watershed;*
- *Reduce the energy intensity of the region’s water supplies, helping to conserve energy and reduce greenhouse gas emissions that are contributing to climate change.*

II Chino Basin “Drought Proofing Strategy”

The IEUA Urban Water Management Plan, adopted in December 2005 and the Chino Basin Watermaster Optimum Basin Management Plan, document the overall strategy for improving the water supply reliability in the Chino Basin area.

- ✓ Water Conservation – 10% savings 35,000 AF
- ✓ Water Recycling – 100,000 AF
- ✓ Local Groundwater Storage and Conjunctive Use – 500,000 AF of new storage
- ✓ Chino Desalter 40,000 AF

- ✓ Stormwater – 25,000 acre-feet of new supplies
- ✓ Renewable Energy and Organics Recycling – Clean energy through biodigesters (using biosolids, dairy manure and food waste), solar power and wind power (goal of 15 megawatts)
- ✓ Water Quality Management – Establishment of Chino Creek Wetlands and Educational Park at IEUA and a continued partnership with Orange County Water District on Prado Wetlands implementation of the Chino Creek Integrated Watershed Plan.

A. Water Conservation- (35,000 acre-feet per year, 10 percent of overall use)

IEUA and its retail utilities are committed to implementing the Memorandum of Understanding (MOU) regarding Urban Water Conservation in California. IEUA is an active member of the California Urban Water Conservation Council (CUWCC). Currently, the Agency is expanding its conservation efforts to promote both water and *energy* conservation programs to our customers. IEUA’s goal is to reduce water demands by 10 percent (35,000 acre-feet per year) through aggressive implementation of customer conservation programs. Innovative programs initiated by IEUA include the Inland Empire Landscape Alliance, in which elected officials from cities and water agencies within IEUA’s service area are working to promote outdoor conservation including turf reduction rebates, use of California-friendly native plants and new regional model landscape ordinances that will promote water savings. Other programs include conservation rebates which are offered in partnership with the Metropolitan Water District of Southern California (ultra-low-flow toilets, weather-based irrigation controllers, synthetic turf, efficient sprinklers, water brooms X-Ray recirculation units and other water saving devices), landscape audits, and school education programs including the award-winning Garden In Every School program.

B. Water Recycling (50,000 acre-feet by 2010)

IEUA owns and operates four water recycling plants that produce high quality water that meets all state and federal requirements for non-potable landscape irrigation, industrial uses, and groundwater replenishment. Since 2000 the Agency has spent over \$60 million expanding its recycled water distribution system and currently recycles about 15,000 acre-feet annually. Recently the IEUA Board approved an accelerated implementation plan to increase annual recycled water use to approximately 50,000 acre-feet within the next 3 years by constructing “purple” recycled water pipeline system to hookup existing large customers (schools, golf courses, city parks, groundwater recharge). IEUA’s Board has approved a \$140 million budget to expedite the construction of recycled water pipeline distribution system. The accelerated implementation plan was developed through a collaborative process with local cities, water districts, Chino Basin Watermaster and other stakeholders and represents a comprehensive evaluation of the infrastructure needed to maximize recycled water use in the region. In addition, IEUA and local cities have coordinated with developers to incorporate dual “purple” piping into new urban developments to maximize recycled water use for non-potable purposes.

The energy demands to produce and deliver recycled water are less than one third of the energy required to deliver water through the State Water Project. Additional energy savings are included in the plan by building new smaller water recycling plants in the northern part of our service area to provide recycled water to communities (Upland, Fontana, and Rancho Cucamonga) without the need to pump the water to them. The Cucamonga County Water District (CCWD) proposed satellite plant authorized by HR 2919 would be the prototype water recycling plant to reduce energy use of pumping recycled water to the higher elevations along the San Gabriel Mountains.

Approximately 25% of the recycled water will be used for groundwater replenishment within the Chino Groundwater basin to augment the potable water supply. IEUA and Chino Basin Watermaster recently got court approval to expand the artificial recharge of the Chino Basin Groundwater Basin. The plan is to blend recycled water with stormwater and imported water in a coordinated fashion with flood control district to ensure that all water sources are conserved in an optimal manner (targeted goal is an additional recharge of 80,000 acre-feet per year).

C. Local Groundwater Storage and Conjunctive Use (500,000 acre-feet of new storage)

The Chino Basin Watermaster is implementing an Optimum Basin Management Plan to enhance the conjunctive use storage of the Chino Basin. Today MWD has stored over 80,000 AF in the Basin and has funded \$1.5 million in engineer feasibility studies to expand the storage to 150,000 AF. The Optimum Basin Management Program developed over the past two years by the Chino Basin Watermaster would implement a comprehensive water resources management strategy to drought proof the area and enhance the yield of the groundwater basin. The Chino Basin Watermaster has developed a conjunctive use program to store 300,000 – 500,000 acre-feet of imported water in wet years for drought year withdrawal for local, regional and statewide availability. In June, 2003 IEUA, Chino Basin Watermaster, Three Valleys MWD, Western MWD and the Metropolitan Water District executed an agreement for the initial 100,000 acre-feet of storage and recovery projects (\$27.5 million funding from MWD and Calif. DWR). In June 2007 MWD agreed to fund studies to evaluate expanding this storage program.

D. Chino Desalination Projects (40,000 acre-feet annually by 2020)

Historically, Colorado River water (relatively high salinity) and “Route 66” agricultural practices have caused areas of the Chino Basin to have high salts that make the water unfit for domestic uses. To correct this problem and to recover this poor quality water, the Chino Basin Optimum Management Plan recommends implementation of groundwater cleanup projects to pump and treat poor quality groundwater to meet drinking water standards. Additionally, the desalination projects of the lower Chino Basin area will protect and enhance the water quality of the Santa Ana River and the downstream use by Orange County. HR 813 (passed the House on October 22, 2007) would provide authorization under the Bureau of Reclamation’s Title XVI program to provide funding for the third Chino desalter and brine line improvements with the SAWPA SARI brine system

recommended in the Southern California Comprehensive Water Reclamation and Reuse Study (USBR, 2003) and the joint MWD/USBR Salinity Management Study (1999). The third phase expansion is projected to cost \$110 million and increase to approximately 40,000 AF.

E. Stormwater (25,000 acre-feet annual average of new stormwater capture percolation)

A critical issue facing the coastal plain of Southern California as the region continues to urbanize and hardscape our landscapes will be how to implement both small scale and larger scale projects for stormwater capture to allow percolation into our groundwater basins. IEUA in coordination with the Chino Basin Watermaster, the San Bernardino County Flood Control District and the Chino Basin Water Conservation District has developed an integrated recharge master plan to optimize the capture of stormwater with replenishment of imported water from MWD and our local recycled water to enhance the storage and recovery of water from the Chino Basin. During the past five years, IEUA has funded construction of over \$50 million in improvements on the Groundwater Recharge Basin.

IEUA is also sponsoring innovative small scale, on-site (neighborhood development) storm water management projects to enhance percolation of rainfall to minimize runoff, reduce contamination of rainwater before it percolates into the ground and to cost effectively reduce flood control requirements while helping the cities and county meet regulatory requirements. This innovative program is being funded in partnership with the CALFED Bay-Delta Program, Metropolitan Water District of southern California, and the Southern California Concrete Association.

III. Climate Change Impacts on California Water Supplies

In the fall of 2006 IEUA collaborated with RAND on a study of the potential affects of Climate Change on the IEUA and Chino Basin area. This work has been recently completed and a Congressional briefing will held on January 31, 2008 to explain the findings of this report. Climate change will affect water supplies in California, but few water-management agencies in the state have formally included climate change in their water-management plans. RAND researchers have worked with Southern California's Inland Empire Utilities Agency to help it identify vulnerabilities related to climate change in its long-term water plans and to evaluate its most effective options for managing those risks. But in summary the RAND research project highlights the critical need to develop more local supplies in California (e.g., water recycling, local groundwater storage and stormwater replenishment programs, implement excellent water use efficiency/conservation programs) to avoid significant water shortages and economic impacts.

IV. Future Issues and Need for Federal Assistance

Southern California does have enormous water problems when you consider the following trends:

- ✓ *The current population is about 18.5 million and will likely double over the 50 years;*
- ✓ *The imported water infrastructure from MWD can optimistically only deliver 2.4 million acre-feet, assuming resolution State Water Project Delta issues and the Colorado River problems are successfully resolved;*
- ✓ *Climate change is expected to impact both amount and timing of future water supplies, increasing the likelihood of shortages during critical times;*
- ✓ *Importing water to southern California requires a large amount of electrical energy, substantially more than the alternative local supplies (recycled water, capturing stormwater, and groundwater recovery of poor quality water);*
- ✓ *The region faces significant shortages unless we develop a local supply strategy.*

The issue for the region as articulated in the MWD Integrated Water Resources Plan adopted in 2004, is to develop a balanced approach to multiple sources of supplies with a clear priority to local resources management and emphasis on less energy intensive uses of water that protect water quality and the wildlife habitats of the region.

Addressing the four questions asked in the letter inviting me to testify.? My response to these questions and suggestions are as follows:

The Committee should continue to examine the opportunities for State and Federal agency partnerships to promote water use efficiency programs recommended in the CALFED Bay-Delta Record of Decision (increase water conservation, water recycling and new local groundwater storage programs to reduce the need for Delta exports consistent with the California Water Plan.

The Committee has developed Views and Estimates in the past few years that strongly supports increased funding for the Bureau of Reclamation's Title XVI Program. For FY 2009 I recommend the Committee support an increase of \$100 million increase in the funding of Title XVI Program expenditures.

A coordinated approach to regional infrastructure planning for water supply, groundwater management, stormwater, wastewater reuse and recycling needs to be integrated on a watershed and regional scale. Regional leadership in the planning of flood control, wastewater and water facilities is an opportunity that can save billions over the next 5 decades as well as help address the serious challenge facing this nation through climate change. The federal government should be a partner in this process helping both to facilitate redirection of federal programs to support local planning and providing funding for projects that contribute to the nation's goals for water security and reduction of climate

change impacts. EPA, Army Corps, US Bureau of Reclamation, the USDA Natural Resources and Conservation Service all have significant activities within the region.

A historic example of a state/federal partnership was the leadership of this committee in 1996 in drafting the CALEED Bay-Delta legislation that provided the authorization.

I would recommend that your Committee hold additional hearings on these opportunities to develop new regional, state and federal partnerships that address comprehensively watershed divide problems

In closing, thank you for the opportunity to testify. If I can provide any additional information on the current and future water problems facing California, please don't hesitate to contact me.

ATTACHMENT 5



December 21, 2007

Ms. Karen Scarborough
Resources Agency
1416 Ninth Street
Sacramento, CA 94814

Re: Comments on BDCP Points of Agreement

Dear Ms. Scarborough:

We are writing on behalf of the Natural Resources Defense Council (“NRDC”) and its more than 120,000 members in California to express our concerns regarding the recent planning document approved by the Bay Delta Conservation Plan (“BDCP”) Steering Committee: Points of Agreement for Continuing into the Planning Process (November 16, 2007) (“Points of Agreement”). These comments are supplementary to our previous comments. Unfortunately, with the one exception noted below, this document does not address the serious concerns we raised a year ago. *See* Letter from Barry Nelson and Katherine Poole to Scott Cantrell re Proposed Planning Agreement for the Bay Delta Conservation Plan (Oct. 2, 2006) (attached). In fact, in some areas, this document appears to be moving farther away from a balanced, legally sufficient and effective program.

I. PREMATURE DECISION REGARDING CONVEYANCE ISSUES

The Points of Agreement concludes that “the most promising approach for achieving the BDCP conservation and water supply goals involves a conveyance system with new points of diversion” including “the construction and operation of a new point (or points) of diversion in the north Delta on the Sacramento River and an isolated conveyance facility around the Delta” as well as “[m]odifications to existing south Delta facilities.” *Id.* at 3. The document reaches this conclusion *before* the BDCP process has conducted the in-depth environmental review and comparison of alternatives under CEQA, NEPA, the ESA and the NCCPA that is necessary to support any scientifically-supportable and legally-defensible conservation plan. The BDCP has no basis for eliminating all other water conveyance and operations alternatives from serious consideration. This decision is premature, and should be revisited.

The Points of Agreement acknowledges that the Steering Committee has not yet begun the planning process for the development of the BDCP. Points of Agreement at 6. In fact, the BDCP has not yet defined the “preliminary biological goals and objectives to guide initial plan development.” *Id.* at 7. If the goal of the BDCP process is truly to “develop a conservation plan for the Bay Delta pursuant to the Endangered Species Act (ESA) and the Natural Community Conservation Planning Act (NCCPA)”, as the Points of Agreement asserts, then the biological goals and objectives should be driving the content of the plan, not water supply considerations. *Id.* at 1. For example, as in the

case of the Planning Agreement, this document does not commit to the recovery of listed species, and thus fails to meet the requirements of the NCCPA. That commitment should be one of the first and most fundamental commitments for a legitimate conservation plan.

Water conveyance facilities and their operations are one of the primary stressors on the Delta's ecosystem and aquatic species, and are ostensibly the focus of the BDCP. It stands to reason that the BDCP should consider the impacts of a wide array of alternative water conveyance facilities and operations on aquatic habitat, and consider alternative ways to revamp that water supply system to be compatible with fisheries conservation and recovery. The BDCP initially appeared to be pursuing this approach, identifying four "conservation strategy" options that would have allowed the agencies to analyze and compare the environmental impacts of a range of alternative water supply scenarios. Those options included:

- Option 1: use of existing facilities
- Option 2: improved through-Delta conveyance
- Option 3: dual conveyance
- Option 4: a new diversion on the Sacramento River

Points of Agreement at 5. By analyzing the benefits, costs and impacts of these alternative conveyance points, in combination with changes in operation that included various different diversion amounts, including significant reductions in total diversions, the BDCP could have garnered a great deal of useful data to inform a conservation plan.

Instead, the BDCP has prematurely narrowed its focus to Option 3, eliminating all other diversion and conveyance alternatives from consideration before fully analyzing the impacts of those alternatives. As explained in the Options Evaluation Report, this dual conveyance option will now "serve as the nucleus for the larger conservation plan and other major elements of the strategy will be formulated around it." BDCP Options Evaluations Report at ES-1 (Sept. 2007). As a result, any subsequent analysis will fail to provide decision makers with a meaningful comparison of critical policy alternatives, such as how the environmental impacts of reducing diversions from existing facilities would compare to the impacts of building a highly expensive new diversion facility on the Sacramento River.

Moreover, the BDCP's own Options Evaluation Report identified conveyance alternatives that it concluded were biologically preferable to the dual conveyance option, e.g. Option 4, but which the BDCP nevertheless rejected. While we do not endorse the analysis or conclusions of the Options Evaluation Report, it is telling that the BDCP stakeholders have already rejected an option that the federal fish agencies and their own internal analysis suggested was the biologically preferable option.

Simply put, we do not believe that it is justifiable to select a "plumbing" alternative without making any meaningful decisions regarding other key issues, such as endangered species recovery, ecosystem recovery goals, total diversions, annual operations, water quality impacts, impacts to Sacramento River fisheries, cost, financing, governance, and other issues central to the question of restoring the Delta. Some of these considerations could fundamentally affect decisions regarding conveyance strategies.

II. INCONSISTENCY WITH THE DELTA VISION BLUE RIBBON TASK FORCE VISION DOCUMENT

The imbalance in the Points of Agreement is particularly striking in comparison with the recently released Delta Vision document from the Delta Vision Blue Ribbon Task Force. The Delta Vision process was created through SB 1574 and Executive Order, representing an agreement between the legislature and the Governor. It is charged with developing a long term plan for the Delta that addresses more issues than are addressed by the BDCP process. Through the Stakeholder Coordination Group, this process also provides for the involvement of a broader range of stakeholders than the BDCP. Thus, the task force has broader support, broader involvement and a broader focus than the BDCP. Therefore, the BDCP should take care to ensure that its methodology, recommendations and timing are adapted to the Delta Vision process. Unfortunately, in the following respects, the Points of Agreement document is inconsistent with the Delta Vision document.

The Delta Vision document contradicts the conclusion of the BDCP regarding conveyance by recognizing that “not enough information is available at this point” to reach conclusions regarding conveyance. Instead, the Delta Vision document calls for an approach “recognizing the interdependence of all elements of a sustainable Delta vision and making decisions about conveyance and storage within that larger perspective.” Delta Vision at 13. Unfortunately, the BDCP document has turned the sound approach of the Delta Vision document on its head, reaching a conclusion regarding the one issue for which the Task Force has most clearly recommended a cautious, comprehensive approach, and failing to reach conclusions regarding many other issues on which strong conclusions are clearly justified. The common thread among these decisions is an excessive focus on water supply issues, at the expense of other considerations.

The Delta Vision document is also far more direct in discussing the need for reductions in diversions, as well as the need for water in California to be managed “with significantly higher efficiency.” Delta Vision at 2. This conclusion is supported by the CALFED Science Program, which recently stated that “opportunities for increasing supply to satisfy growing demand are becoming limited, and environmental problems are creating a growing need to reallocate water to the ecosystem. As California’s population grows, increasing urban water needs will have to be met mainly by improving water management instead of by developing new supplies within the Sacramento-San Joaquin system.” CALFED Science Program, State of the Science for the Bay-Delta System: Draft Summary for Policymakers and the Public at 9 (November 2007.) A reduction in diversions has also been mandated by the December 14 federal district court ruling regarding the protection of Delta smelt. The Points of Agreement should recognize this pressing need, which the Delta Vision document addresses more directly.

We recommend that the approach of the BDCP be modified to reflect the recommendations and approach of the Delta Vision Task Force.

III. LACK OF CONSIDERATION OF THE FAILURE OF THE ENVIRONMENTAL WATER ACCOUNT

The primary focus of this document appears to be to provide regulatory assurances for the CVP and SWP Delta facilities. Unfortunately, the Points of Agreement and the previous planning agreement do not clearly call for the analysis of the dramatic and fundamental failure of the previous assurances mechanism – the Environmental Water Account. We have described these failures in some detail. *See* Letter from Katherine Poole and Barry Nelson to Sammie Cervantes re the draft supplemental EIS/EIR for extending the EWA (Dec. 10, 2007) (attached). Indeed, the EWA has

contributed to the collapse of the Bay-Delta ecosystem and its fisheries. Clearly, this is a highly questionable tool for inclusion in a conservation plan for the Bay-Delta. It appears, however, based on the current proposal to extend the EWA, that state and federal agencies are attempting to extend temporarily this failed strategy until it can be made permanent by the BDCP. The BDCP can only avoid a full and fundamental evaluation of the EWA if this tool is permanently abandoned. The recovery of the Delta and listed species will require far more effective tools, including clear regulatory requirements and robust adaptive management measures that are not dependant on annual purchases and public funding, or on self-defeating increases in Delta pumping.

IV. ELIMINATION OF 8,500 AS AN INTERIM PROJECT

We are pleased that BDCP has responded to one of the recommendations in our previous letter – specifically by eliminating as an interim action the proposal to increase to 8,500 cfs the pumping limit for the SWP Delta pumps. Unfortunately however, other than this decision, the Points of Agreement document has not addressed the many fundamental concerns raised in that letter.

V. CONCLUSION

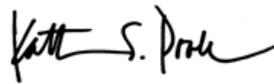
As you know, NRDC has reluctantly chosen not to participate in the BDCP process. We made this decision after raising concerns that the BDCP Planning Agreement failed to ensure that the final plan would conserve and recover affected listed species, while guaranteeing assurances to regulated entities “that neither the USFWS nor NMFS will require the commitment of additional land, water, or financial compensation or additional restrictions on the use of land, water, or other natural resources beyond the level otherwise agreed upon for Covered Species, without the consent of the affected Potential Regulated Entities.” Planning Agreement, pp. 10-11. Our concerns have not been addressed. Indeed, the recently-issued Points of Agreement heightens our previous concerns regarding this effort, which is not yet a credible “conservation plan.”

We urge you to reconsider this approach, make the BDCP consistent with the Delta Vision process and refocus it on conservation as its first priority. Thank you in advance for considering our comments.

Sincerely,



Barry Nelson
Senior Policy Analyst



Katherine Poole
Senior Attorney

Cc: Senator Dianne Feinstein
Senator Barbara Boxer
Congresswoman Grace Napolitano
Congressman George Miller
Senate President pro tem Don Perata
Senator Mike Machado
Assemblywoman Lois Wolk
Assemblyman Jared Huffman
Lester Snow, DWR
John Davis, BOR
Steve Thompson, FWS
Maria Rea, NMFS
John McCamman, DFG

ATTACHMENT 6



December 10, 2007

Ms. Sammie Cervantes
Bureau of Reclamation
2800 Cottage Way, MP-140
Sacramento, CA 95825
scervantes@mp.usbr.gov

VIA ELECTRONIC AND U.S. MAIL

Re: Comments on the Draft Supplemental EIS/EIR for Extending the Environmental Water Account and OCAP Consultations

Dear Ms. Cervantes:

We are writing on behalf of the Natural Resources Defense Council ("NRDC") and its more than 120,000 members in California with regard to the draft supplemental EIS/EIR ("DSEIS/EIR") for the Environmental Water Account ("EWA"). The DSEIS/EIR proposes to extend the existing EWA program, which is currently set to expire at the end of 2007, for another four years, through 2011. The U.S. Bureau of Reclamation and the California Department of Water Resources, the co-lead agencies for the DSEIS/EIR, propose to take this action without providing any analysis of how the EWA has functioned since its inception in 2001 or whether the EWA has succeeded in achieving its stated fish protection purposes. In fact, the EWA has *not* functioned as envisioned and, by placing artificial restraints on the amount of water ostensibly available for fish protection, has contributed to the *decline* of imperiled fish in the Delta, most of which are in worse condition today than they were in 2001. For these reasons, we urge the agencies to discontinue the failed experiment of the EWA, and to devote the taxpayer resources currently dedicated to the EWA to actions that could provide a real benefit to imperiled fish.

In previous biological opinions on the joint operations of the Central Valley Project and State Water Project (i.e., the "Operating Criteria and Plan" or "OCAP"), the agencies have considered the EWA a central feature to mitigate the harmful impacts of the projects on listed fish. The Bureau has reinitiated consultation on those OCAP biological opinions, and those consultations are ongoing. Apparently, the agencies have not yet defined the "project" for this reconsultation and it is unclear whether the agencies are contemplating including the EWA in the new project description. Because the EWA has failed to function as a fish protective measure and should not be considered an effective mitigation or conservation tool in the new biological opinions, we seek consideration of these comments in those ongoing consultations as well. Likewise, we request that this information be incorporated, by DWR and DFG, into efforts to comply with the requirements of CESA.

I. THE EWA HAS NOT FUNCTIONED AS ENVISIONED

There is no doubt that in past years the water promised for fish protection through both the Environmental Water Account and the CVPIA (b)(2) account has been significantly less than what was promised in the CALFED ROD. *Finding the Water: New Water Supply Opportunities to Revive the San Francisco Bay-Delta*, Environmental Defense, 2005 (appended as Exhibit 1). From 2001-2004, the EWA provided only 29% on average of the expected 195,000 acre-feet of operational assets. *Id.* at 12-13. Collectively, the EWA and b(2) have contributed as much as 500,000 acre-feet *less* water per year towards fish protection and restoration than anticipated in the CALFED ROD. These shortfalls have occurred while exports from the Delta have reached record high levels and the ecosystem has continued spiraling downward. Clearly, the EWA experiment has not performed as planned.

The failure of the EWA to function as envisioned is epitomized in the failure of the agencies to invoke Tier 3 this year – the intended backstop for any shortfall in EWA assets. EWA Tier 3 was supposed to ensure that if EWA was underfunded or failed to perform as anticipated (both of which have happened), sufficient water would be provided to ensure no jeopardy to listed fish. As explained in the Tier 3 Protocol, a copy of which is appended hereto as Exhibit 2:

As part of the MSCS Conservation Agreement and the FWS and NMFS biological opinions, the CALFED agencies have provided a commitment, *subject to specified conditions and legal requirements*, that for the first four years of Stage 1, there will be no reductions, beyond existing regulatory levels, in CVP or SWP Delta exports resulting from measures to protect fish under FESA and CESA. *This commitment is based on the availability of three tiers of assets:*

...

Tier 3 is based upon the commitment and ability of the CALFED Agencies to make additional water available should it be needed.

...

Tier 3 is a fail-safe device, intended to be used only when Tier 1 and Tier 2 are insufficient to avoid jeopardy to the continued existence of an endangered or threatened species.

...

The State and Federal Projects will be responsible for making preparations for the activation of Tier 3.

(Emphasis added). This language makes clear that the assurances provided under CALFED, and the ESA and CESA compliance of the EWA, were dependent upon the existence and availability of these Tier 3 assets.

Unfortunately, when the time came to call upon this Tier 3 “fail-safe”, the agencies failed to trigger it, ensuring that listed species rather than water users would suffer the consequences of the failure of the EWA to live up to its stated purpose. There can be no question that Tier 1 and Tier 2 have been and are insufficient to avoid jeopardy to the threatened delta smelt. A federal court held in May of this year that the “delta smelt is indisputably in jeopardy as to its survival and recovery.” *NRDC v. Kempthorne*, Order on Summary Judgment at 119 (May 25, 2007). This finding echoes the findings of several expert fisheries biologists, including staff of many

state and federal agencies. *See, e.g.*, DSWG Briefing Statement (May 15, 2007) (“the species has become critically imperiled and an emergency response is warranted”) (attached hereto as Exhibit 3); Statement Presented by Ryan Broddrick, Director, CDFG, to House Subcommittee on Water and Power (July 2, 2007) (“it is DFG’s position that actions must be taken to protect as many individual smelt as can be through manipulation of the water projects. Each reproducing organism is important to the survival of the species.”) (appended hereto as Exhibit 4). Despite these findings and the continued take of large numbers of delta smelt at the Project pumps this past summer, *see* delta smelt May, June and July take tables (appended hereto as Exhibit 5), the Project agencies obstinately refused to invoke Tier 3.

Inexplicably, the DSEIS/EIR makes no mention of this breakdown of the EWA’s “fail-safe”, nor does it describe or analyze the historical shortfalls of the EWA or the program’s failure to function as envisioned. These shortcomings are far more relevant to the foreseeable impacts of extending the program than any of the purely hypothetical modeled impacts contained in the DSEIS/EIR. The DSEIS/EIR must be revised to address these issues. Further, these historical realities belie the statement in DSEIS/EIR that “[i]f pumping would be likely to put at risk the continued existence of a species listed as endangered or threatened under the Endangered Species Act (ESA), the Project Agencies would curtail pumping even if purchases already totaled 600,000 acre-feet and all assets were used.” DSEIS/EIR at ES-5. This is precisely the situation that presented itself to the Project Agencies this summer, and the agencies failed to curtail pumping once EWA assets were depleted even though continued pumping threatened the continued existence of the delta smelt.

Moreover, the DSEIS/EIR seeks to utilize the ESA/CESA process for coverage of the EWA initially established in the CALFED ROD, without addressing any of these fundamental failures of the process to operate as envisioned and which were essential to the CALFED analysis. *See generally* DSEIS/EIR Appendix C.¹ For example, Tier 3 no longer exists as a viable “fail-safe device.” Yet, the CALFED assurances were explicitly “based on the availability of three tiers of assets.” Tier 3 Protocol. The DSEIS/EIR makes passing reference to this change, obliquely noting that “[b]ased on current circumstances, these three tiers are no longer an accurate way to describe EWA assets.” DSEIS/EIR at 2-4. But the document fails to acknowledge the implications of omitting this critical “fail-safe device” or to describe the replacement structure of the EWA going forward.

In short, the DSEIS/EIR fails to adequately describe the project to decisionmakers and the public or to disclose the environmental impacts associated with the policy choice of extending the EWA. The document should be revised to correct these shortcomings. We believe that an accurate description and assessment of the EWA will demonstrate that the program should not be extended.

¹ The DSEIS/EIR also fails entirely to discuss the state court decision finding that DWR lacks the necessary CESA coverage for operation of the SWP, which also likely impacts the CESA analysis in Appendix C. It is unclear, for example, how EWA assets pumped through the SWP facilities at Clifton Court forebay and Banks pumping plant have CESA take authority when the court found that the SWP lacked any take authority for its pumping operations. The DSEIS/EIR must be revised to address this issue.

II. THE EWA HAS LIMITED, RATHER THAN EXPANDED, THE AMOUNT OF WATER AVAILABLE FOR IMPERILED FISH

Since shortly after the first EWA ROD was signed in 2004, the program has been used as an excuse by the agencies to deny needed water to imperiled fish rather than to help protect and recover imperiled fish. For example, in February 2005, when delta smelt populations were at then-record low levels, fishery biologists recommended that exports be curtailed to reduce entrainment. However, because EWA supplies were scarce, project managers did not curtail exports as much or as long as was requested. *Compare* “Data Assessment Team” call notes (Feb. 1, 2005) (recommending combined exports be reduced to 1500 cfs for one week) (appended hereto as Exhibit 6, without attachments) *with* CVO smelt report (February 2005) (showing much higher combined export levels) (appended as Exhibit 7). Hundreds of delta smelt were taken at the pumps as a result. *Id.* The lawful and proper course of action would have been for the agencies to fully implement the recommended action, and then use non-EWA project water to meet fish needs later in the year if EWA supplies ran short. Instead, the program has been implemented to turn this requirement on its head, and to short fish without any consideration given to imposing uncompensated reductions on project contractors and other water users.

Unfortunately, the agencies have continued this pattern of using limited EWA assets to deny needed fish protection actions. In 2006, as the delta smelt continued its unparalleled decline in abundance, the Delta Smelt Working Group (“DSWG”) evaluated a range of protective actions that could be taken to lessen the impacts of water project operations. One action that was evaluated was to address fall (September-December) Delta salinity levels by making releases from upstream reservoirs to increase Delta outflows. The discussions and analyses of this proposed action are reported in DSWG notes for July 10 (see also the notes from August 21, and Sept 26 (appended hereto as Exhibits 8). The DSWG determined that the fall action had a high likelihood of being successfully implemented and that the scientific basis for the action was supported by statistically significant correlations.

Ultimately, the fall action was not taken because it was determined that “the amounts of water needed to demonstrably improve fall habitat quantity/quality [were] unavailable”. Based on analyses provided by DWR, the amount of water necessary for maintaining net Delta outflows at 7000 cfs for the September-December period would range from only 170-433 TAF. DSWG notes (Aug. 21, 2006). As a result of not taking this action, Delta outflows steadily declined, falling below 6000 cfs in October, and salinity levels shifted upstream of 80 km, the critical threshold identified by the DSWG for delta smelt habitat quality and subsequent abundance. Delta smelt abundance plummeted to a new record low the following year, indicating that the fisheries agencies were not sufficiently addressing adverse habitat conditions in the Delta and other stressors to ensure the delta smelt’s survival and recovery.

Perceived unavailability of water assets was also the reason behind the DSWG rejecting a protective action in winter 2006 intended to set net flows in Old and Middle Rivers to zero cfs to better protect pre-spawning adults. Low San Joaquin River inflows and negative flows on Old and Middle Rivers, concurrent with high export rates, are likely creating hydrodynamic conditions that draw greater numbers of fish to the pumps and correspond to significantly higher

salvage rates. Protection of these biologically valuable spawning adult fish is essential for recovery and sustainability of this at-risk species. Despite the expected benefit of taking this action, it was rejected because “DWR staff have derived estimates of the water costs of the potential actions in the Resources Agency POD Action Matrix and found that the proposed winter action could consume all available environmental water, leaving no assets for spring actions for larvae or juveniles.” DSWG notes (Dec. 11, 2006) (appended as Exhibit 9); *see also* DSWG notes (Oct. 10, 2006) (“The Working Group notes that some of the weaknesses of the DFG plan included the potential to exhaust all EWA and B2 assets in winter, leaving nothing in reserve for spring actions”) (appended as Exhibit 10).

More recently, NMFS’ biologists testified against taking actions to protect delta smelt based on a similar misperception that the total amount of water available to protect imperiled salmonids was limited to a pot of “environmental water” defined by EWA and b(2) assets, and that water used to protect smelt would necessarily deplete the amount of water available to protect salmon. *See* Declaration of Bruce Oppenheim in *NRDC v. Kempthorne* ((June 15, 2007) (appended as Exhibit 11). For example, Mr. Oppenheim explained that “the use of environmental water after VAMP on the San Joaquin River may have consequences later in the year on the Sacramento River.” *Id.* at 3. This statement is only true if there is a limited pot of “environmental water” available to meet all fisheries needs – a position that is contrary to numerous requirements of state and federal law.

All of these decisions are based on the incorrect assumption that the amount of water available to protect listed fish species is limited to the assets of the EWA, CVPIA b(2), and other sources of water “dedicated” to the environment. The Bureau has perpetuated this fallacy, asserting that it must meet the needs of CVP contractors before meeting the needs of listed fish species. *See* Declaration of Ronald Milligan in *NRDC v. Kempthorne* (June 21, 2007) (“Reclamation operates New Melones to meet ... project needs of the East Side Division CVP contractors” which leaves “no additional water available for out of basin releases from New Melones Reservoir” even if needed to prevent jeopardy to listed delta smelt) (appended as Exhibit 12); *see also see also* Transcript of Hearing re Interim Remedies Day 7, *NRDC v. Kempthorne*, Testimony of Ronald Milligan at 1553-54 (Aug. 31, 2007) (explaining that the WOMT rejected some recommendations of the DSWG because of concerns regarding “the ability for the EWA to function in a manner that it could, in essence, pay back the projects for curtailments without impacting operations in the long term sense or allocations to contractors”) (appended as Exhibit 13). Similarly, DWR has asserted that it has no additional water available for fish protection, while simultaneously making hundreds of thousands of acre-feet of surplus “Article 21” and “turnback pool” water available to water users and contractors.

This presumed EWA limitation on the amount of water available to protect fish is simply not correct. Numerous courts have made it abundantly clear that the Bureau and DWR must provide sufficient water to protect and recover listed fish species, whether it exceeds the amount of the water the agencies may have earmarked for that purpose or not. *See, e.g., NRDC v. Kempthorne*, Order on Summary Judgment at 61 (May 25, 2007) (“The EWA is simply a means by which the SWP and CVP can obtain water by purchasing it from willing sellers. ...If money is unavailable to fund the EWA, Defendants are nonetheless required to prevent smelt take from exceeding permissible take limits. ... [I]f all else fails, [additional] assets may be brought to bear, which

include ‘additional purchased or operational assets, funding to secure additional assets if needed, or project water if funding or assets are unavailable.’”) (emphasis in original).

The agencies have turned the EWA on its head and, instead of using it to supplement the resources needed *and required* for fish protection, have used it as an excuse to short the environment and avoid committing those mandatory resources. Unless the agencies make very clear that limited EWA assets cannot be used as a reason not to take an action that would help protect or restore imperiled fish, it should be discontinued.

III. THE ANALYSIS FAILS TO DEMONSTRATE THAT THE EWA HELPS PROTECT AT-RISK FISH SPECIES AND CONTRIBUTE TO THEIR RECOVERY

In addition to the problems discussed above, the DSEIS/EIR fails to provide adequate support for its conclusion that extending the EWA would benefit fish protection and restoration.

First, the document recognizes in several places that a pumping “window” during which EWA assets may be pumped out of the Delta without increasing adverse impacts to listed fish no longer exists. The document explains that “[t]he EWA protects fish at the pumps by reducing pumping when it would help at-risk fish species, then transferring EWA assets across the Delta at other times to repay CVP and SWP users for water lost during pump reductions.” DSEIS/EIR at 2-15. The DSEIS/EIR asserts that EWA assets should be used to reduce export pumping to protect fish from the months of December through July. DSEIS/EIR at 2-10 to 2-11. This proposal allows exports to increase to allow delivery of EWA water during the months of August through November. But several imperiled species are vulnerable to take at the pumps during this late summer/fall period. *See id.* at 2-13, 4-15. Moreover, the document notes that the alarming and continuing decline in four pelagic organisms in the Delta have corresponded to a period of “increased exports during June through December.” DSEIS/EIR at 4-11. In addition, recent studies have indicated that decreased Delta inflows in late fall and winter may result in reductions in fall habitat quality and eastward movement of X2, which may result in adverse impacts to fish. DSEIS/EIR at 4-13. Thus, it is unclear when a safe pumping window exists for EWA to increase Delta exports. Instead, it is likely that an extended EWA would simply help sustain the current record high levels of exports pumped out of the Delta – export levels that have corresponded to many of the declining fish populations in the Delta. *See, e.g., id.* at B-3 to B-4 (Banks pumping would increase in July, August, and September to convey EWA assets).

Second, the DSEIS/EIR assumes with no support that “[w]hile the fish actions in ... revised biological opinions [that are currently being developed for project operations] are unknown, they would likely be less than with the EWA program.” DSEIS/EIR at ES-4. This statement reflects a fundamental misunderstanding of the nature of ESA and CESA requirements, which *mandate* that project operations cause no jeopardy to the existence *or recovery* of listed species, cause no adverse modification of critical habitat for survival *or recovery* of listed species, and that the impacts of project take be minimized and fully mitigated. In addition, Section 7 also imposes an affirmative obligation on federal agencies to “utilize their authorities in furtherance of the purposes of this chapter by carrying out programs for the conservation of endangered species and threatened species listed” under the Act. 16 U.S.C. § 1536(a)(1). A program of “conservation” is one that brings the species to the point of recovery and delisting. *Id.* § 1532(3). In short, the

project agencies are obligated to protect, recover and conserve listed species, whether or not the EWA is in place.

Third, the DSEIS/EIR explicitly bases its analysis of fish actions on the invalidated, reinitiated, and discredited OCAP biological opinions, claiming that it “would be speculative to assume that the fish actions in the BO will be the same as those described by Judge Wanger because the BO will be based on a comprehensive review of all available information and science.” DSEIS/EIR at 1-6. In reality, Judge Wanger’s decision is based on a more comprehensive and current review of the science regarding the delta smelt than the invalidated BO, which failed even to acknowledge the precipitous decline of the delta smelt in recent years. In addition, the OCAP BO on listed salmonids has been discredited by more than three independent science reviews, including a CALFED review panel, which concluded that the BO was not based on the best available science. The DSEIS/EIR’s reliance on the fish actions encompassed in these discredited BOs for the basis of its analysis lacks a reasonable basis.

Fourth, the Bureau has reinitiated consultation with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service on the OCAP. That consultation is ongoing. Until the Bureau meets the requirements of ESA §7 and, among other things, obtains a valid biological opinion at the conclusion of consultation, the ESA § 7(d) prohibition on making any irreversible and irretrievable commitment of resources applies to the Bureau’s actions. Regional Director Kirk Rodgers has correctly recognized that reauthorization of the EWA during the pendency of the OCAP consultations would be a violation of §7(d), and has (twice) sworn to a federal court that such authorization would not occur before completion of the new BOs. *See* Declaration of Kirk Rodgers (Oct. 18, 2006), Declaration of Kirk Rodgers (July 9, 2007) (appended hereto as Exhibit 14). Reauthorization of the EWA as proposed in the DSEIS/EIR runs afoul of the 7(d) prohibition and contradicts Mr. Rodgers sworn statements in the pending OCAP lawsuits.

Finally, the DSEIS/EIR concludes that continuation of the EWA “would have a less than significant impact on X2 location during June through December.” DSEIS/EIR at ES-9. However, as the document recognizes, emerging science indicates that moving X2 westward of its recent historic location in the fall could have a significant beneficial impact on listed species and their habitat. By reducing outflow in the fall, EWA could have a significantly detrimental impact on the ability of agencies to meet this new threshold.

IV. THE ANALYSIS FAILS TO EVALUATE THE EWA’S FAILURE TO ASSIST IN ECOSYSTEM RESTORATION BEYOND ESA/CESA COMPLIANCE

To date, as discussed above, the EWA has primarily, even exclusively, been operated to limit protective ESA/CESA actions. However, the failure of the EWA extends even farther. The EWA was intended to “provide water for the protection and recovery of fish.” CALFED Programmatic ROD at 54. Note that these benefits are not restricted to listed species. The ROD also states that the EWA will “acquire water for ecosystem and species recovery needs.” CALFED ROD NCCP Determination at 21. Thus, the EWA was intended as a tool to provide restoration benefits beyond the requirements of ESA/CESA for listed species. These benefits were an important part of the Ecosystem Restoration Program and were the justification for

public funding for the EWA. The document does not analyze the failure of the EWA to provide these anticipated benefits.

Indeed, far from facilitating improved ecosystem health, by limiting ESA/CESA actions and by increasing diversions during the August to November period, the EWA has damaged ecosystem health. This failure is indicated by the fact that non-listed species, such as threadfin shad, are showing the same decline affecting listed species such as the delta smelt and that the Pelagic Organism Decline process has identified “water project operations” as a potential cause of the decline of Delta fishes. *See* Interagency Ecological Program 2006-2007 Work Plan to Evaluate the Decline of Pelagic Species in the Upper San Francisco Estuary (January 12, 2007) at 4 (appended hereto as Exhibit 15). The document does include one, inadequate mention of these impacts, by concluding that “(t)he entrainment indices for threadfin shad and American shad would be increase.” DEIS/EIR at 4-36. Clearly, the EWA has undermined, rather than facilitated, the CALFED ecosystem restoration goal.

The document must be revised to fully and adequately evaluate the failure of the EWA to contribute to fisheries and ecosystem restoration beyond the requirements of ESA/CESA.

V. THE ANALYSIS FAILS TO EVALUATE THE EWA’S FUTURE USEFULNESS TO FACILITATE “REAL TIME” MANAGEMENT

The EWA was also intended to provide “real time diversion management” of Delta flows and the CVP and SWP Delta pumps. CALFED ROD NCCP Determination at 29. Such real time management assumes that the EWA has enough flexibility to modify Delta flows and the management of the projects beyond the relatively fixed prescriptive requirements of ESA/CESA compliance. The document fails to analyze the extent to which the EWA will provide such flexibility to achieve additional ecosystem or protective measures. Unless the management priorities or assets of the EWA are changed dramatically (a change that this document does not anticipate) it appears unlikely that the EWA will have much, if any, flexibility to provide additional protective measures. To the contrary, to the extent that the EWA provides real time management, this flexibility is designed to increase pumping, potentially causing additional impacts to the ecosystem, and designed solely to provide additional water supplies for South of Delta CVP and SWP contractors.

VI. THE FAILURE TO ANALYZE PAST PERFORMANCE UNDERMINES A FUNDAMENTAL PURPOSE OF THE EWA -- TO FAILITATE ADAPTIVE MANAGEMENT

The CALFED ROD was designed with science-based adaptive management as a “central feature.” CALFED Programmatic ROD at 4. This document repeats this assertion that “(a)daptive management is a key component of the EWA,” and that “(a)daptive management provides a process to change fish actions or asset acquisitions.” DSEIS/EIR at page 2-24. The careful evaluation of the past performance of management tools is the defining feature of adaptive management, in order to allow improved, adaptive future management. Indeed, the ROD explicitly commits CALFED agencies to “assess the success of EWA operations.” CALFED ROD EWA Operating Principles Agreement at 4. Without such analysis, agencies

cannot “adapt” the management of the program in a manner that builds on past successes and responds to failures. The analysis of past performance of the EWA as an adaptive management tool is critical to the central purpose of this document – extending the EWA into the future. Such analysis is also important to agencies, such as the Delta Vision Task Force, the Bay-Delta Conservation Plan process, the Department of Fish and Game, NOAA Fisheries and the Fish and Wildlife Service, which may consider the merits of incorporating the EWA into future management for the Delta. Finally, such analysis is essential to the legislature and the Administration as they consider the justification for public funding for the EWA. An analysis of the past performance of the EWA will reveal that there is no justification for such continued public funding. As discussed above, the document fails to analyze past performance, a failure that cuts to the core of the purpose of the EWA as an adaptive management tool. The document must be revised to fully and accurately analyze the effectiveness of the EWA as an adaptive management tool.

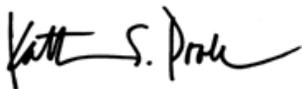
VII. THE DOCUMENT FAILS TO DESCRIBE ACCURATELY THE PROJECT PURPOSE

As discussed above, the document does not adequately analyze the EWA’s failure to engage in real time management and adaptive management, to ensure ESA/CESA compliance and to contribute to broader ecosystem restoration. The document also does not include any meaningful provisions to address these failures. The document, however, largely maintains the old, inaccurate description of the purpose of the EWA. DSEIS/EIR at page 2-3. Thus, the document fails to adequately describe the purpose of the project. At the moment, the actual purpose of the EWA appears to be to limit protective actions under ESA and CESA, and to provide additional water supplies to south of Delta water contractors. The document should be revised to include an accurate description of the project.

VIII. CONCLUSION

In light of these many shortcomings in the operation of the EWA and the analysis of the DSEIS/EIR, we urge you to reject the proposal to extend the program beyond the end of 2007. In the alternative, we urge you to withdraw this document and issue a new, adequate draft that addresses the concerns outlined above.

Sincerely,



Katherine S. Poole
Senior Attorney



Barry Nelson
Senior Policy Analyst

Cc: Cay Goude, USFWS
Maria Rea, NMFS
John McCammon, DFG
Lester Snow, DWR

ATTACHMENT 7



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September 6, 2007

TO: Michael Healey, Lead Scientist
CALFED Bay-Delta Program

FROM: Jeffrey Mount, Chair
CALFED Independent Science Board

RE: Sea Level Rise and Delta Planning

In July of this year, you asked that the Independent Science Board (ISB) examine the array of sea level rise projections available in published reports and, based on current scientific understanding, advise the Science Program about which projections are most appropriate for incorporating into on-going planning for the Delta. The ISB discussed this issue at their August, 2007 meeting and have developed recommendations detailed in this memo. It is important to note that this is not an assessment of the state of sea level rise science, but is intended to highlight the large uncertainty in sea level rise projections and recommend ways to incorporate this uncertainty into planning.

Background

Sea level plays a dominant role in the San Francisco Bay-Delta. Water surface elevations and associated fluctuations due to tides, meteorological conditions and freshwater inflows drive Bay-Delta hydrodynamics. Hydrodynamics, in turn, dictate the location and nature of physical habitat, the quantity and quality of water available for export, and the design of the flood control/water supply infrastructure. Change in sea level has the potential to substantially alter Bay-Delta conditions and to constrain future management options.

Global sea level rise is a well-documented phenomenon, both in the paleoclimatic record as well as the historical record. Tidal gage records indicate that sea level during the 20th century has risen an average of 2mm/yr (.08 in) during a period of 0.7°C warming. Recent studies suggest that since 1990, global sea level has been rising at a rate of approximately 3.5 mm/yr (.14 in/yr)¹. The cause of sea level rise stems from two processes: 1) thermal expansion of sea water as the surface layer warms, and 2) increase in mass of sea water associated with melting of land-based glaciers, snowfields and ice sheets.

Recent research supported by the California Energy Commission² (CEC) and continued under the CALFED-sponsored CaSCADE program, shows that sea level

¹ Church, J.A and N.J. White 2006 *A 20th Century Acceleration in Global Sea-Level Rise* Geophysical Research Letters, v. 33, article no. L01602

² Cayan, D. *et al.* 2006 *Projecting Future Sea Level* California Climate change Center White Paper CEC-500-2005-202-SF Accessed at <http://www.climatechange.ca.gov/research/climate/projecting.html>

rise will impact the Delta principally by increasing the frequency, duration and magnitude of water level extremes. These extreme events occur at various periodicities and are associated with high astronomical tides and Pacific climate disturbances, such as El Niño. The CEC study showed that under moderate climate warming and a sea level rise of 3 mm/year (12 in./century), extreme high water events in the Delta--those that exceed 99.99% of historical high water levels and severely impact levees--increases from exceptionally rare today to an average of around 600 hours/year by 2100. This work also showed that roughly 100 of these hours would coincide with very high runoff conditions, further amplifying the impacts of sea level rise. In sum, even under modest sea level rise and climate warming projections, extreme high water levels that are considered rare today will likely be very common by the end of this century.

Sea Level Rise Projections

Early in 2007, the Intergovernmental Panel on Climate Change (IPCC) released its latest assessment of the scientific basis for projections of future climate conditions, including global average sea level rise³. As noted in the press, in comparison with the IPCC's 2001 assessment, the latest sea level rise projections appear to have narrowed the range of potential sea level rise and lowered the magnitude of projected sea level rise. This was viewed by some outside of the IPCC as indication that: 1) uncertainty regarding sea level rise had decreased and 2) the problem of sea level rise itself appeared to be less than originally stated. However, both the methods used to derive the IPCC 2007 sea level projections, along with extensive new published research in 2007 suggest that this more optimistic view of future sea level rise may be unwarranted.

The IPCC projections are based on physical models that attempt to account for thermal expansion of the oceans and storage changes in land-based glaciers and ice fields. These models, by necessity, simplify the complex processes of ocean circulation and ice melting. The IPCC midrange projection for sea level rise this century is 20-43 cm (8-17 inches), with a full range of variability of 18-59 cm (7-23 inches). The range of variability reflects model differences and uncertainties as well as differences in greenhouse gas emission scenarios. The IPCC model effort is consensus-based, reflecting the agreement of numerous international scientists.

During the past year, there have been major advances in the science of sea level rise. Paradoxically, these advances have increased the uncertainty of projections in sea level rise, at least temporarily. These advances have also led to strong criticism of the approach that the IPCC used in establishing its projections⁴. One criticism is that the models used to project sea level rise tend to under-predict historical sea level rises, most notably failing to capture recent increases. Indeed, models that use empirical historical relationships between global temperatures and sea level rise perform better

³ IPCC 2007 *Climate Change 2007: The Physical Basis—Summary for Policymakers* Accessed at <http://www.ipcc.ch/SPM2feb07.pdf>

⁴ summary in Kerr 2007 *Science NOW* Accessed at <http://Sciencenow.sciencemag.org/cgi/content/full/2007/215/2>

than the IPCC 2007 models⁵. When applied to the range of emission scenarios used by IPCC 2007, empirical models project a mid-range rise this century of 70-100 cm (28-39 in.) with a full range of variability of 50-140 cm (20-55 in.), substantially higher than IPCC 2007 projections. However, foremost among the criticisms is the failure of the IPCC to include dynamical instability of ice sheets on Greenland and Antarctica in their projections for sea level rise.

Melting of the ice sheets of Greenland and Antarctica has the potential to raise sea level 70 m. For most of the 20th century, the ice sheets have remained relatively stable, with melting contributing a minor fraction to sea level rise. However, during the past year numerous studies have demonstrated that the mass balance (input from snowfall versus losses due to melting or detachment) of these ice sheets is shifting toward more rapid loss, most likely in response to warming of the atmosphere and oceans⁶. The recent rate of mass loss in these ice sheets exceeds current physical model predictions. As many authors have pointed out, increased rates of ice sheet flow involving meltwater lubrication of the ice sheet bed or the removal of buttressing ice shelves, may be accelerating the rate of ice loss on Antarctica and Greenland. The IPCC 2007 report explicitly chose not to incorporate the uncertainty associated with this process into their sea level projections. Recent publications that have examined this issue suggest that, under business as usual emissions scenarios, dynamical instability of ice sheets may add as much as 1 m (39.4 in) to sea level rise by 2100⁷.

Recommendations

The ability of current physical models to project sea level rise are limited. This stems in part from our poor understanding of and current inability to model the response of Greenland and Antarctic ice sheets to atmospheric and oceanic warming. Given the costs associated with levee failure in the Delta, the ISB feels it would be a mistake for the various planning processes now underway (BDGP, Delta Vision, DRMS) to base their planning on the conservative 2007 IPCC estimates of sea level rise. Although there is some disagreement about mechanisms of ice sheet disintegration, current advances in understanding coupled with new physical measurements all point toward the same conclusion: dynamical instability of ice sheets will likely contribute significantly to future sea level rise, with the potential for very rapid increases of up to a meter (39.4 in.) by 2100 from ice sheets alone. For this reason, the range of sea level projections based on greenhouse gas emission scenarios contained in the IPCC 2007 report should be viewed, at best, as minima for planning purposes.

The board recommends that planning efforts use three approaches to incorporate sea level rise uncertainty. First, given the inability of current physical models to accurately simulate historic and future sea level rise, until future model refinements

⁵ Rahmstorf, S 2007 *A Semi-Empirical Approach to Projecting Sea-Level Rise* Science v. 315, pp. 368-370.

⁶ Shepherd, A. and D. Wingham 2007 *Recent Sea-Level Contributions of the Antarctic and Greenland Ice Sheets* Science, v. 315, pp. 1529-1532.

⁷ Hansen J et al 2007 *Dangerous human-made interference with climate: a GISS modelE study* Atmospheric Chemistry and Physics, v. 7, pp.2287-2312.

are available, it is prudent to use existing empirically-based models for short to medium term planning purposes. The most recent empirical models project a mid-range rise this century of 70-100 cm (28-39 in.) with a full range of variability of 50-140 cm (20-55 in.). It is important to acknowledge that these empirical models also do not include dynamical instability of ice sheets and likely underestimate long term sea level rise. Second, we recommend adopting a concept that the scientific and engineering community has been advocating for flood management for some time. This involves developing a system that can not only withstand a design sea level rise, but also minimizes damages and loss of life for low-probability events or unforeseen circumstances that exceed design standards. Finally, the board recommends the specific incorporation of the potential for higher-than-expected sea level rise rates into long term infrastructure planning and design. In this way, options that can be efficiently adapted to the potential for significantly higher sea level rise over the next century will be favored over those that use "fixed" targets for design. After all, the current debates over uncertainty in sea level rise are less about how much rise is going to occur and more about when it is going to occur.