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August 20, 2008

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**Comments in response to August 19, 2008 Other Stressors Workgroup  
Draft Summary of Coarse Level Evaluation Results: Toxics,  
Conservation Measure 1: Wastewater Treatment Modifications, Bay  
Delta Conservation Plan and Conservation Measure 2: Methylmercury  
Load Reductions**

Dear Mr. McCamman and Mr. Walthall:

The Sacramento Regional County Sanitation District (SRCSD) provides the following comments on the August 19, 2008, Other Stressors Workgroup Draft Summary of Coarse Level Evaluation Results: Toxics, Conservation Measure 1: Wastewater Treatment Modifications (Conservation Measure 1) and Conservation Measure 2: Methylmercury Load Reductions (Conservation Measure 2). SRCSD is concerned that the approaches and outcomes listed in these conservation measures could potentially be carried through the Environmental Impact Report/Environmental Impact Statement (EIR/EIS) process, which will be prepared to evaluate the environmental impacts of a proposed Bay Delta Conservation Plan (BDCP). The BDCP and the associated environmental evaluation are of keen interest to SRCSD.

SRCSD provides wastewater collection and treatment services to 1.3 million residents of the greater Sacramento area. SRCSD designed and operates its treatment system in accordance with its National Pollutant Discharge Elimination System (NPDES) permit, issued by the State of California, providing protection of beneficial uses of the Sacramento River and Sacramento-San Joaquin Delta.

SRCSD is very concerned with the pelagic organism decline (POD) in the Delta and supports the goal of the BDCP to address the decline and improve the long-term ecological productivity and sustainability of the Delta. The District understands the co-equal goals of the Blue Ribbon Task Force between Delta ecosystem and reliable water supply. We believe that any changes to the operation or structure of the Delta must be carefully evaluated to ensure that the goals of attaining a healthy ecosystem and providing a reliable water supply are actually equal and result in the ecosystem that is desired.

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However, SRCSD continues to be troubled by the continued lack of stakeholder involvement in the BDCP, Delta Vision and Interagency Ecological Program efforts that are underway. The BDCP process has been lacking in representation by Central Valley stakeholders, and specifically wastewater interests. It is astonishing that an effort such as BDCP, which is developing proposals that will directly affect wastewater treatment agencies, has effectively shut out these interests from the planning and policy making process. The BDCP EIR/EIS evaluation and ongoing process should address the input of Central Valley stakeholders and other stakeholders not represented on the BDCP steering committee or other work groups of the ongoing collaboration between state and federal agencies and water agencies. To encourage more stakeholder involvement in this process, we are submitting the following general comments and have attached specific comments on Conservation Measure 1 and Conservation Measure 2, for consideration by the Other Stressors Workgroup, as well as the BDCP Steering Committee.

#### General Comments

1. The approaches recommended in these conservation measures do not take into consideration existing regulatory authority of other State agencies, and ignores established legal authority in the Clean Water Act that establishes water quality objectives and beneficial uses to determine permitted activities. Participation by the State Water Resources Control Board and Central Valley Regional Water Quality Control Board is greatly appreciated. It appears that their understanding of wastewater discharges and processes is demonstrated in part in Conservation Measure 1's "Main points during evaluation" discussion of the great uncertainty over ammonia's effects to the Delta ecosystem. However, after attending the Other Stressors Work Group on August 19, 2008, it appears as if the Workgroup may be removing or re-writing the references to the uncertainties related to the state of the science on the ammonia and endocrine disruptors issues that were pointed out in the "Main Points Evaluation" Section. It is imperative that this scientific uncertainty be included in the discussion so that public policy decisions do not move forward based on unproven and inaccurate scientific speculation.
2. The "great benefit" to the Delta ecosystem from these two conservation measures, as identified in the outcomes and additional positive outcomes, is unproven speculation, and inaccurate. SRCSD continues to call for sound science as the basis of decisions, not only for Delta protection, but in making public policy choices that affect the local community, as well as the State. Specific comments on the outcomes are provided as an attachment to this letter. As stakeholders, and technical experts in wastewater, we hope the workgroup will review and consider our comments.
3. The approaches recommended as conservation measures should avoid unintended and inequitable impacts on third parties. For example, the approaches selected in the conservation measures should either avoid or mitigate changes in water or wastewater treatment for residents of the Central Valley or the Delta that would not otherwise occur in the absence of the projects considered in the BDCP. Any mitigation measures recommended through this workgroup process will have to consider evaluating the environmental costs and benefits, and beneficiaries of water diversions from the Delta should be accountable for funding any necessary mitigation.

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SRCSO believes providing you comments at this early stage in the development of the BDCP EIR/EIS is beneficial to the BDCP process to prevent inaccurate information and foregone conclusions from moving forward in the process that will not withstand scientific and technical scrutiny. We look forward to continued and increased involvement in development of a BDCP that will lead to the recovery of the Delta ecosystem.

Please include SRCSD on the notice list to receive all notices concerning the BDCP including, but not limited to, notice of any workshops, meetings or hearings on the BDCP or EIR/EIS, and any CEQA Notice of Determination for the project. Please send notices to Terrie Mitchell, Sacramento Regional County Sanitation District (SRCSD), 10545 Armstrong Ave. Suite 101, Mather, CA, 95655, and if notices will be distributed by email, also to [mitchellt@sacsewer.com](mailto:mitchellt@sacsewer.com).

Sincerely,



Wendell Kido  
District Manager

**Attachment:** Specific Comments on August 19, 2008 Other Stressors Workgroup Draft Summary of Coarse Level Evaluation Results: Toxics, Conservation Measure 1: Wastewater Treatment Modifications, Bay Delta Conservation Plan and Conservation Measure 2: Methylmercury load reductions

cc: Senators Darrell Steinberg and Joseph Simitian  
BDCP Steering Committee Members  
BDCP Management Team  
Mike Chrisman, Secretary, Resources Agency  
Linda Adams, Secretary, Cal-EPA  
Lester Snow, Director, Department of Water Resources  
Delta Vision Blue Ribbon Task Force Members  
State Water Resources Control Board Members  
Central Valley Regional Water Quality Control Board Members  
Debbie Webster, Executive Officer, Central Valley Clean Water Agencies  
Mary Snyder, District Engineer, SRCSD  
Terrie Mitchell, Legislative and Regulatory Affairs Manager, SRCSD

## ATTACHMENT

### Sacramento Regional County Sanitation District (SRCSD) Specific Comments on August 19, 2008 Other Stressors Workgroup Draft Summary of Coarse Level Evaluation Results: Toxics, Conservation Measure 1: Wastewater Treatment Modifications, Bay Delta Conservation Plan and Conservation Measure 2: Methylmercury Load Reductions

The BDCP Conservation Measure language is indented and in italics, and SRCSD's comments are bulleted either before or after the indentations.

#### Coarse-level DRERIP Analysis of Conservation Measure for Wastewater Treatment Modifications

- Understanding the Delta Regional Ecosystem Restoration Implementation Plan (DRERIP) analysis would be helpful to comprehend how this conservation measure is ranked as "Conservation Measure No. 1." The benefits identified for the action and approaches do not have proven scientific backing, and the expected specific benefits achieved as environmental outcomes do not relate back to the action and approach other than to think "...this action was a good idea..."
- The main points identified in this coarse level evaluation do not support the outcomes, and generally do not capture the current level of scientific understanding of the effects of ammonia and endocrine disruptors on the Delta ecosystem. Bold emphasis added to the items below show the reality of the current understanding of the impact ammonia and endocrine disruptors have on the health of the Delta ecosystem (this text is taken directly from Conservation Measure #1).

*Main points identified during evaluation:*

- 1) *There is high uncertainty over the effects of ammonia on the Delta ecosystem. Currently, no data exists indicating whether the same effects seen in ocean and San Pablo, San Francisco, and Suisun Bays (the subject of recent articles by Dugdale and Wilkerson). This action should not be implemented until we find out for sure whether ammonia is even an issue to the food chain and fish populations in the Delta. Dugdale and Wilkerson are currently working on a screening level study in this area, but results are forthcoming and are being delayed because of the state budget crisis.*
- 2) *There are multiple other factors that could be disrupting the food web in the Delta that may be as important as or more important than ammonia. Therefore, the relative importance of ammonia in the bigger picture is still unknown and will not be quantified by the Dugdale study.*
- 3) *Ammonia concentrations in the Sacramento River may not be high enough to cause direct mortality of fish. This is because there is a huge dilution factor caused by higher flows on the Sacramento River (relative to the San Joaquin River). This dilution factor would be likely reduced with a new Hood*

*Diversion and may have to be dealt with as mitigation of the Peripheral Canal.*

- 4) *The ability of a constructed wetland to reduce water temperature*
- 5) *There is general consensus that endocrine disruptors are affecting fish, but it is not well understood in the Delta.*
- 6) *Overall, the group thought that this action was a good idea, although highly uncertain that ammonia/ammonium is the "smoking gun" that some think it is. Regardless, the other benefits of this action would still provide great benefits to the Delta ecosystem.*

- Studies performed by SRCSD using sophisticated, validated mathematical models indicate that ammonia mortality is not occurring as a result of the SRCSD's discharge. This result has been confirmed on a preliminary basis by special studies performed in 2008 looking specifically at Delta smelt toxicity.
- The ability of constructed wetlands to seasonally reduce water temperature downstream from the District's discharge would not be expected to produce a significant benefit, since the detailed evaluation of the thermal impacts of SRCSD's discharge performed to date using sophisticated modeling tools indicates that the SRCSD's discharge is not currently producing an adverse impact.
- There is no definitive information linking SRCSD's discharge to significant adverse impacts on fish. Therefore, this statement and statements regarding the benefits of wetlands in this area are speculative and uncertain based on available information.
- The disregard for any connection between the action and approaches listed in this conservation measure and the other benefits, which need to be specifically defined, that could be achieved are detailed in the comments below.

*Action: Reduce loads of ammonia and endocrine disruptors entering the Delta from the Sacramento Wastewater Treatment Plant (WWTP) by ~50-60%.*

- What is the scientific rationale for requiring these reductions? What are the targeted compounds and concentrations? What are the removal efficiencies, and the expected effluent quality? Even USEPA recognizes a variety of studies is needed to get a better idea of the level and type of pharmaceuticals in the environment. The National Academy of Sciences (NAS) has been commissioned to give USEPA advice on how to proceed in determining the risk posed by low levels of pharmaceuticals in both fish tissue and water. Suzanne Rudzinski, deputy director of the USEPA Office of Science & Technology in the Office of Water said there are "critical information gaps that need to be filled," particularly relating to the risk, exposure and hazard of pharmaceuticals in the environment. What studies exist to support the action of reducing ammonia loads and endocrine disruptors by 50-60% will improve the

health of an ecosystem? There is little or no monitoring for endocrine disruptors and there are no targets for risk reduction.

*Approach:*

1) *Construct a wetland through which secondary treated water will flow before being released back into the Sacramento River.*

- *Current estimates based on a demonstration project conducted in the 1990s indicate that 3000 acres of constructed wetland would be needed to cover the 158 mgd released from the Sacramento WWTP. No sampling was conducted to determine the effectiveness of the removal of endocrine disruptors. However, other constructed wetland projects indicate that the effectiveness ranges from 50%-60% reduction. Average annual temperatures were reduced by 3 degrees C, reducing thermal impacts to fish and reducing ionization of ammonia to ammonium. Temperature reductions were greater during colder months.*
- *In an initial literature search, constructed wetlands can be 30%-40% effective at removing endocrine disruptors and 50%-60% effective at removing ammonia. The values for endocrine disruptors are specific to individual chemicals.*

2) *Create nitrifying biotowers and tertiary treatment facilities similar to those at the Stockton WWTP before water returns to the river.*

- *Current data indicate that these methods are up to 90% efficient in removing ammonia and 30%-85% efficient in removing endocrine disruptors.*

➤ The constructed wetland approach shows a lack of understanding of the SRCSD treatment plant and processes, and a lack of consideration of concept feasibility. It is infeasible to construct a 3000 acre wetland in a highly urbanized area, regardless of the level of wastewater treatment. Even though SRCSD owns 3,550 acres at its treatment plant site, 900 acres are used for the treatment plant processes (sedimentation tanks, digesters, chlorination, dechlorination, biosolids facilities, and recycled water facility) and 2650 acres are managed as open space, and is known as the "Bufferlands". The Bufferlands provides over 2000 acres of open space for riparian and habitat restoration, which includes a managed wetland fed by Laguna and Morrison Creeks, that helps supply the Pacific flyway with a necessary food source and sanctuary. SRCSD has voluntarily provided funding for conserving and restoring this land for over 25 years, and believes it has an environmental stewardship responsibility to continue restoring habitat for the local

community and environment. For more information on the Bufferlands please visit our website at <http://www.srcsd.com/buffer.html>.

- The responsibility for control of contaminants should be determined in accordance with the Clean Water Act, California Water Code and Central Valley Basin Plan, as implemented by the Central Valley Regional Water Quality Control Board, SWRCB and USEPA. Conservation measures to benefit Delta water diverters or water purveyors should be funded by those beneficiaries. The cost and energy to treat water supplies taken from the Delta must be evaluated in comparison to the costs and benefits to remove contaminants through watershed management and treatment at the source. This is particularly true in the Delta, where large natural flows significantly reduce the impact of individual sources on water concentrations in the Delta ecosystem. Water supply agencies benefiting from the use of Delta supplies should fund treatment at the source consistent with a "beneficiary pays" theme.
  
- The need for advanced wastewater treatment at individual treatment facilities is based on the specific discharge conditions, dilution characteristics, and water quality-based requirements as determined under the Clean Water Act and California Water Code regulatory programs. BDCP, or their consultants, should not be overriding these programs and/or oversimplifying the analysis and mandating treatment levels, or types of treatment, at any treatment plants in California without substantial justification and site-specific analysis. SRCS D has spent years collecting data and using sophisticated modeling tools to better inform District management, the community and the regulatory agencies on its analysis of water quality impacts and level of treatment to protect beneficial uses. Neither the Delta Vision nor the BDCP should override the analysis and recommendations of master planning documents of local communities that were completed to meet the requirements of the Clean Water Act and California Water Code.

*Outcomes:*

- 1) *Increased food abundance for delta and longfin smelt, white and green sturgeon, salmonids, and splittail (covered species) by increasing the abundance of diatoms.*
  - 2) *Reduced direct mortality by ammonia of covered species.*
  - 3) *Reduced issues caused by endocrine disruptors in covered species.*
  - 4) *Reduced thermal stress to covered species near effluent.*
  - 5) *Reduced direct mortality by Microcystis aeruginosa of covered species.*
  - 6) *Reduced sublethal effects (low DO levels, sublethal toxicity) of Microcystis aeruginosa of covered species.*
- Technical support for the above outcomes should be provided to inform decision-makers and the public, and *must* be provided eventually to satisfy CEQA standards. Detailed impact analysis of the WWTP's discharge in the receiving water has shown no significant impact and

does not exceed USEPA criteria outside the mixing zone. Additionally, studies conducted by the University of California Davis, under Regional Water Board direction, show that the direct mortality of covered species by ammonia is not occurring, making this outcome incorrect. The statement that thermal stress is occurring near the outfall is also incorrect based on the District's Environmental Impact Report thermal study, a study supporting an exception to the State Water Boards Thermal Plan, submitted to the Regional Board in March 2005. The Department of Fish and Game and NOAA supported the concept that there is no significant thermal impact related to the District's discharge.

- What are the specific "issues" connected to the SRCSO discharge and endocrine disruptors? Have risk levels to human health or aquatic habitats been determined? If so, please provide the specific studies on which these statements are based. What is the basis for the statement regarding reduced "direct mortality" or "sublethal effects" caused by *Microcystis*, and what is the clear linkage between ammonia to *Microcystis*? Outcomes should have referenced materials that any reader could refer to in understanding how the outcome relates back to the approach recommended for any conservation measures.

*Additional positive outcomes:*

- 1) *Wetlands are beneficial to other non-covered species (birds, mammals, etc.).*
- 2) *Ammonia fixation could increase nitrate loads into the river, which would be good for algae, and, therefore, fish.*
- 3) *There are ancillary benefits to additional treatment, such as methylmercury and heavy metal reductions.*
- 4) *Improvement to drinking water downstream.*

- Wetlands are beneficial habitat for other than fish, and again the Bufferlands is a concrete demonstration of SRCSO's of habitat restoration and conservation in the Delta. The Delta is not nutrient limited, and the outcome could actually be seen as a problem with future nutrient criteria, if they are adopted. Increased algal production is not encouraged in drinking water supplies because of taste and odor issues surrounding treatment of drinking water supplies. Wetlands have been documented to increase methylation of mercury, not reduce it, and metals are not known to be an issue for the Delta. Increases in total organic carbon that are associated with wetlands is not a positive outcome for drinking water, and may or may not be good for the aquatic environment, depending on the quality of the organic carbon.

*Additional negative outcomes:*

- 1) *Constructed wetlands can attract wildlife that is exposed to these toxins.*
- 2) *Increased algal production is bad for drinking water.*

- What are the toxins that wildlife would be attracted to in a wetland?

SRCSO is also providing the following bulleted specific comments on the Other Stressors Work Group Coarse Level Evaluation Results: Toxics, Conservation Measure No. 2 Methylmercury load reductions.

*Conservation Measure 2. Methylmercury load reductions*

- In general, the approach, outcomes and main points during evaluation reflect a rudimentary understanding of the challenges to achieving methylmercury load reductions.

*Action:*

*Contribute to reducing inputs of methylmercury and loads of mercury enriched sediment entering the Delta by 50%.*

*Approach: The approach includes:*

1. *Support the Regional Water Quality Control Board's efforts to reduce the concentration of methylmercury in Delta waters by:*
  - a. *Improving the mercury and sediment trapping efficiency of the Cache Creek settling basin by 50%. Operation of the settling basin (i.e., periodic removal of mercury-laden sediment) would occur on perpetuity.*
  - b. *Creating settling basins at the downstream end of all floodplain/intertidal marsh restoration activities under the BDCP in the Delta.*
  - c. *Remediating inorganic mercury sources upstream of the Delta to reduce methylmercury by 50%, including mercury contaminated sediment "hot spots" in stream channels and mercury and gold mines*

- The approach to improve the trapping efficiency of the CCSB is not a simple task and will likely result in significant ecosystem impacts from excavation, hauling, noise, dust, and general construction disturbance.

*Outcomes: Expected outcomes of this action include:*

1. *Reduced direct mortality by consumption of mercury by splittail, delta and longfin smelt, green and white sturgeon, steelhead, and Chinook salmon.*
2. *Reduced sublethal effects (genetic, tissue/organ damage, development, reproductive, growth, and immune) of mercury on splittail, delta and longfin smelt, green and white sturgeon, and Chinook salmon.*

- There is no evidence of Delta fish dying from mercury consumption, nor any reason to believe that mortality would be expected from activity in the basin, therefore these outcomes do not make sense.

*Additional positive outcomes:*

1. *Human health benefits, which likely far outweigh ecosystem benefits*

- The vague qualifier comparing unspecified benefits has no meaning. Explicit human health and ecosystem benefits from methylmercury load reductions should be provided.

*Additional negative outcomes:*

1. *Downstream settling basins could create anoxic conditions that are good for methylation of mercury – so need to make sure there is circulation of the water column to avoid this. Also, need periodic removal of sediment to remove all mercury.*

- The additional negative outcomes fail to recognize the length of the construction disturbance during times when the basin is accessible (not flooded) and the study necessary to determine HOW to improve the trapping efficiency by 50%. The outcomes of an undetermined project cannot be discussed intelligently.

*Main points during evaluation:*

1. *The action as stated indicates that there are mercury “hot spots” upstream, but does not identify them. This needs to be done. But how far upstream of the Delta can we go under this Plan?*
2. *Evidence of the direct mortality by mercury on covered fish species is limited, particularly in the Delta. It is questionable that this is a population level effect. The trophic level at which the covered fish species are is thought to bioaccumulate mercury, particularly longer-lived fish such as sturgeon and splittail. There is evidence of bioaccumulation in the green sturgeon model, but not the white sturgeon model. There is evidence of bioaccumulation in the splittail model, but it is with low certainty.*
3. *Sublethal impacts are much more likely, especially in the concentrations we find for mercury in the Delta. There is high magnitude and high certainty for sublethal impacts of mercury on covered fish species*

- The most effective tool developed to date to identify hot spots is regional monitoring of small fish with high site fidelity. Silversides, juvenile bass, and prickly sculpin are potential candidates. As biological indicators of exposure over time, they are unparalleled for this application.
  
- There is no reason to not look upstream of the Delta for mercury sources. The constant influx of total mercury in sediment transported to the Delta via the Sacramento and San Joaquin rivers is what methylates in the Delta. If these sources are not reduced, the narrow definition of wetlands that do not methylate mercury will be the only acceptable habitat allowed to be constructed in the Delta and the resulting monoculture may not be consistent with a healthy ecosystem.

Again, the District believes providing you specific comments at this early stage in the development of the BDCP EIR/EIS are beneficial to the BDCP process to prevent inaccurate information and foregone conclusions from moving forward in the process that will not withstand scientific and technical scrutiny. We look forward to continued and increased involvement in development of a BDCP that will lead to the recovery of the Delta ecosystem