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Phil Isenberg, Chair
Delta Vision Blue Ribbon Task Force
Members of the Delta Vision Blue Ribbon Task Force:

Please find attached our comments on aspects of the Delta Vision fourth staff draft Strategic Plan devoted to water quality issues, as presented in Strategy 3.5. As with our comments on the third staff draft, we find that this staff draft has not adequately or reliably discussed Delta water quality issues and fails to provide reliable guidance on approaches for controlling Delta water quality problems.

Our ability to comment on the September 19, 2008 meeting of the Task Force has been hampered since the archived webcast of this meeting has not been posted on the Internet.

Please contact me if there are questions on these comments, or if we can be of assistance in developing the Strategic Plan for implementation of the Delta Vision to adequately address water quality management issues. It is important that the issues raised in our comments be addressed in the finalization of the Delta Vision Strategic Plan in order for it to provide useful and reliable guidance for the enhancement and protection of Delta water quality.

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**Comments on
“Delta Vision Strategic Plan
Fourth Staff Draft
Volume 2: Strategy Descriptions”**

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Overall Comments

In early September of this year we provided detailed comments on significant technical deficiencies in water quality components (Strategies 5 and 8) of the third staff draft of the proposed Delta Vision Strategic Plan for implementation of the Delta Vision (Lee and Jones-Lee, 2008a). As we discussed, many of the recommendations for action presented in the third staff draft did not adequately consider the current state of knowledge on water quality issues in general, or on Delta water quality issues in particular. Further, many of the approaches recommended for controlling pollutants that are impairing water quality in the Delta did not reflect an understanding of the potential effectiveness of, or problems/limitations inherent in, the recommended approach.

We find that the revised discussion in the fourth staff draft corrects some of the technical errors present in the third staff draft. However, several of the inappropriate approaches recommended in the third staff draft were not properly addressed and appear again in the fourth staff draft. Like the third staff draft, the fourth staff draft contains several recommendations for action that reflect a lack of understanding of water quality issues associated with certain practices.

In our comments on the third staff draft, we provided citations to reports that provide additional discussion and information on issues we discussed. Many of the references cited in those comments are also applicable to our comments on the fourth staff draft and will not necessarily be repeated herein. However, citations to specific issues can be provided again upon request.

Specific Comments

Strategy 3.5 “Achieve sufficient water improvements to meet drinking water, agriculture and ecosystem long term goals” (page 26) sets forth the Delta Vision staff’s guidance for managing water quality in the Delta. There are several aspects of that discussion that warrant comment.

The second sentence under strategy 3.5 (page 26) states,
“Contaminants such as agricultural pesticides and nutrient loads, municipal wastewater discharges, and other constituents such as methyl mercury can contribute to toxic conditions for fish and the organisms they feed upon, and their cumulative effects must be reduced.”

Agricultural runoff and discharges of surface tailwaters and subsurface drainwaters are major sources of nutrients, organic carbon, salts, pathogens, and several other pollutants of importance

in impairing Delta water quality. The constituent pollutants should be mentioned in a discussion of these issues, rather than listing “municipal wastewater,” for example, as a “pollutant.”

As discussed in our reports available on our website [www.gfredlee.com], the use of pesticides on urban residential, public, and commercial properties is also a significant source of pesticides for Delta waters that needs attention. Further, since runoff from urban areas can contribute significant amounts of nutrients and pesticides to Delta waters, urban stormwater runoff should also be mentioned as a source of pollutants in the quoted sentence.

Contrary to the claim made in the passage quoted above, methyl mercury does not “*contribute to toxic conditions for fish and the organisms they feed upon...*” The water quality concern about methyl mercury is not toxicity. Methyl mercury is of concern because it bioaccumulates in fish and certain other forms of aquatic life to levels that cause the fish to present a health hazard to those people and fish-eating birds that consume them.

The statement was made on page 26:

“The main pollutant contributors are old mining operations (mercury and other heavy metals), agriculture (pesticides, herbicides, nutrients, and leached constituents such as selenium), urban and stormwater discharges (pathogens); wastewater treatment plant discharges (ammonia, pathogens), unknown sources (toxicity), or a combination of causes (dissolved oxygen).

The word “and” should be deleted from the item, “*urban and stormwater discharges (pathogens).*” As discussed above, it is not only pathogens that are of concern in urban stormwater runoff. Urban stormwater runoff is also a major source of organic carbon, nutrients, pesticides, and other pollutants that adversely impact Delta water quality. The issue of heavy metals in urban stormwater runoff is more convoluted. Urban stormwater runoff contains metals which, because they are in particulate/unavailable forms, are not toxic to aquatic life. However, those particulate forms will accumulate in Delta sediments where they will contribute to exceedances of the SWRCB’s recently adopted Sediment Quality Objectives (SQOs). Despite significant technical deficiencies inherent in the SQOs that preclude their being reliable for assessing the impact of sediment-associated contaminants, the exceedance of the SQOs will likely cause urban stormwater runoff managers and the public to spend large amounts of money to try to control non-toxic metals in stormwater runoff (Lee and Jones-Lee, 2008b).

Domestic wastewater treatment plants in the Delta watershed and within the Delta contribute a wide variety of pollutants that are as important as ammonia and pathogens, and in fact likely more important than either in impacting Delta water quality now that the city of Stockton is nitrifying its domestic wastewater effluent. We have conducted numerous studies on the water quality impacts of ammonia discharges from domestic wastewater treatment plants; Dr. Lee also served as a US EPA invited peer-reviewer for the ammonia water quality criteria. There is no technical justification for singling out ammonia as a major, significant pollutant in the Delta.

With regard to the impact of pathogens in domestic wastewater discharges on water quality in the Delta, the concern is not as much for domestic water supply water quality but rather more for local contact recreation water quality. The Delta Vision Strategic Plan should note the need to control the sources of pathogens that impair the use of the Delta for contact recreation.

Domestic, and some industrial and commercial wastewaters are also major sources of organic carbon, salts, nutrients, and a large number of unregulated pollutants. The greatest concern about domestic wastewater discharges and discharges from dairies and other animal husbandry facilities to the Delta tributaries and within the Delta is the large number of unregulated chemicals, including pharmaceuticals and personal care products (PPCPs), hormones, etc. (Lee and Jones-Lee, 2004).

The “*unknown sources: (toxicity)*” in the section quoted above should be changed to include “toxicity of unknown cause.” As a member of the CVRWQCB Unknown Toxicity committee, we are aware that the issue of “unknown toxicity” is both its cause(s) and its source(s).

The phrase in the quoted passage, “*or a combination of causes (dissolved oxygen)*,” needs to be changed to address the issue of concern. This language does not convey the problems related to dissolved oxygen in the Delta or causes for the low-DO conditions.

The listing of potentially significantly sources of pollutants for the Delta should include mention of wetlands (both permanent and seasonal) as a major source of methyl mercury, organic carbon, and several other pollutants.

The discussion of CVRWQCB activities in water pollution control in the tributaries to the Delta is appropriate. However the following commentary on page 27 is misleading.

“However, in spite of this enforcement history, pollution pressures have continued and, today, virtually all of the rivers, streams and drains have significant water quality problems and pose a real and continuing threat to the quality of water in the Delta. This represents a potential environmental justice concern as well, as many rural, low-income areas are impacted.”

There are few locations in the Delta watershed where surface water pollution presents major environmental justice issues. However, there are major environmental justice issues in the Delta, such as within and near Stockton and throughout the Delta, due to excessive bioaccumulation of mercury and legacy organochlorine pesticides in edible fish and other aquatic organisms that are used as food. The most significant environmental justice water quality issue in the Central Valley is the pollution of groundwater by nitrate due to failure to adequately regulate irrigated agriculture and to the land disposal of municipal and commercial wastewaters. The inappropriate use of pesticides in field application also poses environmental justice issues for workers; however that is not a water quality problem.

The second paragraph of page 27 contains the statement:

“Water conservation, pollution prevention, stormwater infiltration, water re-use, improved wastewater treatment processes, and water recycling are all required to improve the water quality in the Delta. The burden of dealing with pollutants must include treatment at the source.”

Several of these suggested actions, if implemented in the typical manner, can, in fact, contribute to water quality deterioration in the Delta. Water conservation, water reuse, and water recycling all tend to concentrate pollutants. Water reuse and water recycling tend to increase the amounts

of pollutants in stormwater runoff in the areas where these practices are followed. While these measures may be useful in some applications for water conservation, it is inappropriate to state that those processes “*are all required*” to improve water quality in the Delta.

The blanket recommendation of “*stormwater infiltration*” is inappropriate since that practice can readily lead to groundwater pollution. We served as invited advisors to the US EPA on groundwater infiltration policy for Class V injection wells. From that work we developed several papers, including Lee et al. (1998) and Taylor and Lee (1998), that discuss issues that need to be considered in the development of appropriate stormwater infiltration BMPs. We have also discussed issues of the impacts of stormwater infiltration on groundwater quality in more recent publications including Lee and Jones-Lee (2000; 2007a, b).

The statement in the passage quoted above, “*The burden of dealing with pollutants must include treatment at the source.*” is another of the sweeping, simplistic statements prevalent in drafts 3 and 4 that reflect a lack of knowledge and experience in developing pollutant control programs. For many situations the most appropriate approach for controlling pollutants does not involve “treatment” but rather changes in the use of the products/chemicals of concern. This is especially important for control of pollutants in urban stormwater runoff because of the very high costs of trying to treat such runoff to remove pollutants.

In the middle of page 27 the following statement is made:

“Changes to Delta conveyance systems and the effects of climate change will have an impact on the reliability and water quality for those with intakes located within the Delta. Investing in additional alternative intakes for these users can provide further flexibility in helping change the pattern of diversions to when and where least harmful to the environment.”

The non-specific, gratuitous reference to “*effects of climate change*” in the middle of page 27 and previously on page 27 should be deleted. The “effects of climate change” on the quality and reliability of Delta water for water supply have not been identified and isolated; the invocation of “climate change” is not necessary for the identification and management of water quality problems of the Delta. Further, even if “climate change” were demonstrated to be causally related to Delta water quality problems that could not be corrected by proper management of other known conditions and sources of contaminants, it is not a readily controllable factor in the near-term.

In addition to discussing the impact of altered conveyance on water quality at a water supply intake, mention should also be made that altered conveyance has the potential to significantly adversely impact in-Delta water quality.

Beginning in the middle of page 27 is a listing of actions that the staff recommends in order to achieve sufficient water quality improvements to meet drinking water, agriculture, and ecosystem long term goals. Several of the recommendations are essentially the same as those presented in the third staff draft and suffer from the same deficiencies. Overall, the recommendations set forth reflect a lack of understanding • of the technical issues, • of current CVRWQCB programs to manage water quality problems in the Delta and its tributaries, • of realities of water quality evaluation and management, and • of what can be achieved within the

specific timeframes mentioned. Further, as discussed in our comments on the third staff draft, it is important that any recommendations made be accompanied by a clear statement of the funding required to accomplish them and recommendations that the legislature adequately fund the CVRWQCB to begin to adequately address these issues.

Recommendation “*b. Require the CVRWQCB to adopt a long-term program to regulate discharges from irrigated agricultural lands by 2010.*” This recommendation does not properly reflect the present CVRWQCB agricultural waiver program that is beginning to control runoff/discharges of pollutants from irrigated agriculture. Contrary to the implications of the recommended “2010” date specified, the CVRWQCB ag waiver program is already well-defined and proceeding at a pace that will ultimately lead to necessary control of agricultural runoff/discharges.

Recommendation “*c. Require the CVRWQCB to review the impacts of urban runoff on Delta water quality and adopt a plan to reduce or eliminate those impacts by 2012.*” Contrary to the implication of that recommendation, the CVRWQCB already has a program in place to define and control the pollution of the state’s waters associated with urban stormwater runoff. That program complies with both the federal and state regulatory requirements.

Recommendation “*e. Develop and implement Total Maximum Daily Load (TMDL) programs by 2012 for areas upstream of the Delta to reduce the loads of organic and inorganic mercury entering the Delta from tributary watersheds. The mercury TMDL program for the Delta itself should continue and other TMDLs developed as necessary to meet known and future needs.*” The CVRWQCB has developed TMDLs for controlling mercury pollution of the Delta. The 2012 date has no special significance relative to the current program.

Recommendation “*f. Comprehensively monitor fish and wildlife health at suspected toxic sites, beginning in 2009. As part of its governance authority, the CDEW Council should build on the recent work of the U.S. Environmental Protection Agency (USEPA), the CALFED Science Program and the State and Regional Water Boards to develop a comprehensive monitoring program for fish and wildlife health at suspected toxic sites. In particular, these programs should make a concerted effort to study the overall health effects of the mixture of contaminants that cumulatively impact Delta species, as opposed to examining contaminant-species relationships one at a time.*” As discussed in Lee and Jones-Lee (2002, 2004, 2005) the key to developing a comprehensive monitoring program for edible tissue of fish and other aquatic organisms is adequate funding. The CVRWQCB has been trying for many years to obtain such this funding.

A listing of Performance Measures for Strategy 3.5 was provided on page 26. These are:

- “Percentage of time that contaminants or their precursors meet, or are better than, water quality targets (+)
- Pathogen concentrations at Delta drinking water intakes (-)
- Net levels of salinity in major groundwater aquifers (-)
- Number of nuisance growths of algae or aquatic plants in the Delta or water project facilities (-)

- *Concentrations of contaminants in urban runoff and agricultural drainage flowing into the Delta (-)*
- *Salinity variability between fresh to brackish conditions during periods necessary to meet life history requirements of broad range of desirable aquatic species (+)*
- *Number of days per year water temperature exceeds life history requirements for broad range of desirable aquatic species (-)*
- *Number, duration, and areal extent of incidences during which dissolved oxygen levels drop below regulatory standards (-)*
- *Extent of areas listed as low dissolved oxygen impaired water bodies on RWQCB Section 303(d) list (-)*
- *Number, duration, and areal extent of incidences during which pH falls outside regulatory standards (-)*
- *Concentration of methyl mercury in Delta water and sentinel species compared to 2008 baseline and Water Quality Control Plan standards (-)*
- *Concentration of selenium in San Joaquin River, Delta waters and sentinel species compared to 2008 baseline and Water Quality Control Plan standards (-)*
- *Concentration of ammonia in Delta waters compared to 2008 baseline and Water Quality Control Plan standards (-)*
- *Number of new contaminants added to RWQCB Section 303(d) list (-)*

Many of those Performance Measures are appropriate for assessing the effectiveness of a Delta water quality management program. However to even begin to develop the information to achieve these performance measures will require a massive influx of funding from the legislature. As discussed in our Delta Water Quality Issues report (Lee and Jones-Lee, 2004) a far-more modest Delta water quality monitoring program was proposed by a panel of experts as,

CMARP, “Comprehensive Monitoring, Assessment and Research Program (CMARP),” CALFED Bay-Delta Program (1999).

<http://calwater.ca.gov/programs/science/cmarp/contents.html>

CMARP was never executed because of a lack of funding. The listing of Performance Measures without providing an estimate of the level of funding needed or the time that would be required to develop this type of program is a serious flaw in the fourth staff draft of the Delta Vision Strategic Plan.

Overall, the water quality aspects of the fourth staff draft of the Delta Vision Strategic Plan are deficient with respect to providing an implementation plan to adequately define and begin to effectively address Delta water quality problems.

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