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March 16, 2008

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via email to: comments-on-2007drr@water.ca.gov

Re: Comments on the *Draft State Water Project Delivery Reliability Report 2007*

Ms. Kelly:

The Planning and Conservation League (PCL) submits the following comments on DWR's Draft State Water Project Delivery Reliability Report 2007 (2007 DRR). As an organization that advocates for wise investment in and sustainable use of the state's water resources, as well as a party to the settlement agreement that calls for preparation of these biennial reliability reports, PCL urges DWR to substantively address the comments below so that the final report fully meets the rigorous reporting requirements specified in that agreement, and that local planning decisions can be made based on a clear and complete analysis of water delivery reliability.

1. The 2007 DRR must be sufficiently clear and accurate for use in the 2010 Urban Water Management Plans (UWMPS).

As recognized in the 2007 DRR, the Delivery Reliability Report is an important planning document used by many of the SWP contractors, and in turn local water districts as the basis for Urban Water Management Plans (UWMPS), water supply assessment and verifications.

Despite the importance of the DRR, DWR has tended to release the Delivery Reliability Report past the deadlines outlined in the settlement agreement. Per the settlement agreement the DRR is due to be updated biennially, beginning in 2003. The previous DRR was due in 2005; however the final was not issued until June 2006. As a result, all water agencies depending on the DRR were forced to rely on a May 2005 draft document for preparation of their 2005 UWMP.

The 2007 Draft DRR was not released to the public until December of 2007, and the final



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will not be issued until sometime in 2008. The late release of the report is a disservice to the many water agencies which receive water from the State Water Project, as well as the many cities and counties that need the information contained in the report to assess the adequacy of water supply assessments and verifications. Indeed, by releasing these reports in such a manner, local water agencies and local planning entities are forced to rely on draft materials or significantly dated materials as the basis for legally challengeable decisions. Such situations expose these entities to significant risk.

Should DWR continue the trend of late releases of the DRR, the next report, the 2009 DRR, will be issued too late to be useful to urban water agencies for the preparation of the 2010 urban water management plans. Therefore, the accuracy and clarity of the 2007 DRR is even more crucial to water managers and planner entities. PCL respectfully recommends that DWR revise the 2007 DRR to ensure it provides the level of reliable information necessary for the purposes in which it will be used. PCL further respectfully requests that DWR commit to releasing the Draft 2009 DRR in June 2008, and the Final 2009 DRR by February 2009 in order to ensure local water agencies will have sufficient time to incorporate DWR's information into the 2010 UWMPs.

2. The 2007 DRR should provide additional explanation and clarification of data and results to ensure information is presented in a readily understandable manner.

In referring to the Delivery Reliability Report, the settlement agreement specifically states that "The information presented in each report shall be presented in a manner readily understandable by the public." While we recognize that information about the reliability of the SWP is complex, clearer explanations and specific guidance from DWR on particular points are necessary to meet the intent of the settlement agreement and assist readers in deciphering this complex information. PCL proposes the following specific recommendations to develop a more readily understandable document.

A. The DRR must fully disclose the reliability associated with water supplied from the SWP and disclose the implications associated with various levels of reliability.

While the Draft DRR includes the results of many model runs, it fails to provide a significant discussion regarding the implications of the level of *reliability* associated with SWP deliveries. In particular, the Draft DRR fails to articulate how reliability should be factored into water planning, and the DRR fails to disclose the implications of reliance on water that cannot be reliably delivered.

For instance, the DRR includes a very cursory explanation of Article 21. Through out Chapter 7 of the Draft DRR, DWR has listed an "Article 21" category within the water supply source table examples. The Draft DRR does include a footnote stating that, "Annual Article 21 amounts vary significantly from year to year. Without the ability to store Article 21 supply, it is not likely to contribute to local water supply." This statement is woefully inadequate and dangerously misleading. Indeed, a study of the actual model outputs reveals that in one case, for example in table B-20 no Article 21 could be delivered for a period of

over 20 consecutive years. Article 21 is reported to be available in only 3 years between 1922 and 1966 in Table B-20. Even when Article 21 is available, in this case 22 thousand acre-feet in a year like 1925, it is not in a quantity that would result in a significant additional local supply even if storage were available.

Even in outputs for more recent conditions, such as in Table B-16, there are long periods of 8 and 10 years when no Article 21 water would be available. Most storage facilities in the state are not designed or operated to store water for a period of 8 to 20 years.

Yet, readers would have to study the many tables in the appendices of the DRR in order to find this information. Readers would then have to interpret those tables further to understand the significance of the listed numbers.

Because Article 21 cannot be delivered in quantities sufficient enough to enhance storage or annual water supply on a consistent basis, it is not reliable and is not an appropriate water supply for those that uses that require a high degree of reliability. In fact, relying on Article 21 for permanent supply is part of the “paper water” problem that was at the heart of the original Monterey Amendments litigation. By masking the dismal reliability of Article 21 with an understated and misleading footnote, DWR facilitates use inappropriate use of Article 21 for purposes that require a higher degree of reliability.

Beyond Article 21, the DRR fails to clearly disclose the reliability of all deliveries from SWP in a substantive manner. While the DRR does include modeling runs reporting the estimated delivery of water to SWP contractors, those runs omit important information, including risk factors in the Delta, and the need to respond to environmental, water quality and area of origin legal requirements. The DRR fails to inform readers that the model runs very likely overestimate the reliability of the SWP. Further, the DRR fails to provide guidance to SWP contractors on how local and overall water supply reliability could be improved.

To remedy this, PCL recommends that DWR include a full discussion regarding the reliability of all types of water delivered from the SWP. That discussion should include a full discussion of the implications of mismatching various levels of water supply reliability with the various intended uses (i.e. urban and agricultural use, or permanent and annual crops). In addition, the Final DRR should omit Article 21 from the list of Water Supply Sources in all tables. The final DRR may include Article 21 in a separate table of “interruptible and unreliable water sources.” Such tables should include a footnote that reads, “Article 21 should not be used to support a permanent economy.”

B. The DRR should include Water Supply Source tables for each SWP contractor.

DWR should include a clear and understandable forecast of how much water (both Table A and Article 21) the SWP can deliver under current and future conditions for each SWP contractor. Although some of this information is in the draft DRR, it is split up and scattered in many tables, figures, and graphs, and in some cases must be derived from information in

the DRR by means of additional calculations. Inclusion of separate tables for each contractor would allow readers to clearly find information affecting the specific area of interest.

C. The DRR should provide estimates of SWP delivery reliability for the period required by the next UWMP.

As noted in the 2007 Draft DRR, the primary use of the DRR is by SWP contractors and their customers for use within the regional and local UWMPs. California law requires the UWMPs, and also water supply assessments and verifications to assess water supplies for 20 years into the future. In order to be useful to those water planners, DWR should extend the analysis included in the DRR to the period required by the following UWMPs, which in this case would be 2030. While this seems to be a technical detail, failing to extend the range of the DRR could result in significant legal vulnerability for water and land use planners who rely on the DRR to make legally challengeable decisions.

3. The 2007 DRR should clearly disclose the limitations of modeling outputs and the implications of the modeling assumptions in CALSIM II, and provide recommendations to water agencies for appropriate use of modeling outputs.

CALSIM II is the primary analytic tool used in estimating current and future water delivery reliability, yet it has known weaknesses that are not disclosed or discussed in the 2007 DRR. Of particular concern to PCL is the fact that, although local agencies will be using this document as a basis for developing local UWMPs there is no acknowledgement of the potential for CALSIM II to *overestimate* delivery reliability. This is a critical flaw in the document that must be addressed.

As participants in the Monterey Plus EIR Committee process, PCL has previously submitted comments to DWR expressing our concerns regarding the adequacy of CALSIM II for use in water management planning and deliveries assessment. Rather than resubmit those comments, we incorporate them by reference here, and highlight some particular issues below.

The Draft DRR reports water availability to the SWP and SWP deliveries through 2027 based on CALSIM II runs. While CALSIM II may be a sophisticated and useful modeling tool for certain purposes, it is inappropriate for determining absolute numbers for export and deliveries. It has been criticized by a panel of expert reviewers for several weaknesses, including its lack of amenability to proper calibration. (See A. Close, *et al.*, *A Strategic Review of CALSIM II and its Use for Water Planning, Management and Operations in Central California* submitted to California Bay Delta Authority Science Program, December 4, 2003.

One flaw with CALSIM II is that it fails to reflect the bimodal distribution of water years in California. Currently, the DRR reports CALSIM II runs for average years, a critical dry year, a period of dry years and wet years. Given the presentation in the DRR, it would be reasonable for a reader to assume that average years are the most likely occurrences, and therefore average deliveries are the most reliable. However, based on California's fluctuating hydrology, average years are the least likely to occur, and periods of dry years and wet years are much for likely.

CALSIM II is ill-suited to address bimodal distribution of water years because the model produces an exceedence chart that hides this reality. Arve Sjøvold has commented extensively on this point. Mr. Sjøvold's most recent comments are incorporated by reference and attached to this letter.

Throughout the 2007 Draft DRR, modeled predictions are presented as though certain, and discussion of possible error or of ranges of possible outcomes is almost entirely absent. The models used cannot possibly produce such certainty. CALSIM II includes hundreds of assumptions. There is a reasonable likelihood that one or more of the assumptions incorporated into CALSIM II will be incorrect. However, DWR does not disclose these limitations in a clear and understandable manner, and the Draft DRR fails to provide a reasonable strategy for addressing this issue.

Rather than the near certain results presented in the DRR, at best, the model runs can predict, given a certain set of data and assumptions, a range of possible outcomes, with some outcomes potentially more probable than others, and with all predictions limited by both known and unknown sources of error. An accurate discussion of the DRR's modeling results therefore cannot provide certain predictions, and instead should show the range of possible outcomes. By omitting both possible sources of error and potential outcome ranges, the DRR projects a false certainty that reported deliveries are likely.

Because CALSIM II is an optimization model that does not necessarily reflect options available to water operators, or options that water managers *would* choose, it may overestimate SWP deliveries. Despite the optimistic CALSIM II outputs, federal and state water quality and endangered species laws and regulations probably prohibit such high export levels due to endangered species requirements, water quality requirements and other regulatory requirements. Indeed, at a recent Bay Delta Conservation Plan meeting on Delta conveyance options, DWR Deputy Director Jerry Johns, noted that CALSIM II and CALSIM Lite tend to deliver "optimistic" outputs, indicating that CALSIM II may maximize potential deliveries when such deliveries would be difficult or impossible to produce in the real world.

Based on CALSIM II outputs, the DRR assumes that future water exports from the Delta will be much higher than the historic average. This DRR prediction fails to recognize that DWR has chronically failed to meet water quality standards in the Delta under historic operations, and significant environmental degradation has taken place under such operations, resulting in new regulatory actions.

In light of the recent pelagic organism declines in the Bay Delta Estuary, and resulting rulings invalidating the biological opinion for Delta smelt, it is prudent to ensure that the Final 2007 DRR modeling assumptions and predictions are conservative, rather than "optimizing." Such revisions would provide a much more realistic and reliable estimate of deliveries that are more consistent with requirements of the Federal Clean Water Act, the Federal or California Endangered Species Acts, or any other environmental permit condition, regulation, standard, or law.

The DRR should also provide reasonable recommendations to water agencies for addressing these modeling faults. In order to increase the likelihood that the estimates used in planning documents will be reasonably accurate and reliable, the DRR could recommend that water agencies consider reducing the amount of deliveries predicted by CALSIM II by certain reasonable percentage, such as 10 to 20 percent, when planning for water management.

4. The 2007 DRR should include a more comprehensive analysis of the impacts of climate change on water delivery reliability.

While the DRR recognizes that climate change will have very widespread impacts on the SWP. Yet, the DRR analyzes only one aspect associated with climate change, hydrology, for impact on the SWP deliveries. Climate change is anticipated to affect water quality in the Delta, consumptive use of water in both SWP watershed and the area of use, availability of hydropower and flood safety needs. None of these factors is analyzed for potential impact on SWP delivery reliability in the 2007 Draft DRR.

The Draft DRR proposes that some tools that may be necessary for broader analyses of climate change impacts are not yet available. For instance, the DRR states that current modeling cannot account for the impact on SWP deliveries that may result due to increasing salinity in Delta due to sea level rise. However, at a recent Bay Delta Conservation Plan meeting, DWR provided a summary of CALSIM Lite. During the presentation, it was indicated that the model is capable of assessing and responding to various salinity levels in the Delta. This implies that, at the very least, anticipated salinity increases should be taken into account along with hydrology impacts for all model runs and outputs included in the DRR. Beyond that, the DRR should clearly articulate the full range of impacts anticipated to occur under climate change. The DRR should further disclose which impacts are omitted from estimates of deliveries under climate change scenarios. Finally, the DRR should provide guidance to water agencies on how these omitted impacts are likely to affect deliveries (i.e. whether increased consumption is likely to increase or decrease the amount of water available to the SWP).

5. The 2007 DRR should evaluate variable levels of demand and in particular the 20% reduction in per capita consumption called for in Governor Schwarzenegger's recent letter.

The 2007 DRR assumes 2027 demand for supplies to be the very similar to those used in demand modeled in the 2005 DRR, an approach which neglects (a) the potential for changes in demand (for Article 21 supplies, in particular) due to changes to the SWP contracts that may result from DWR's upcoming decision on the Monterey Plus EIR (see also Section C-1 (p. 7) of the attached comments by PCL to DWR on the Draft Monterey Plus EIR), and (b) the potential for shifts in the amount and pattern of demand based on the ongoing Delta Vision and Bay Delta Conservation Plan processes.

In commenting on the 2006 DRR, PCL recommended that DWR incorporate various levels of demand into model runs. PCL repeats that comment for the 2007 DRR. Indeed, the 2007 Draft DRR, like the 2005 DRR identifies water demand in the delivery service area as one of three

primary components that determine SWP reliability. However, like the 2005 DRR, the 2007 Draft DRR does not examine a significantly varied range of possible demand. That omission is important, for such analysis would likely show that reliability is inversely proportional to the level of demand.

Rather, the 2007 Draft DRR provides no clear disclosure of the demand assumptions included in the CALSIM II outputs. The 2007 Draft DRR, instead, states that demand assumptions are based solely on information provided by contractors. PCL requests that in addition to analysis based on information provided by SWP contractors, DWR provide analysis of SWP reliability under the three demand scenarios included in DWR's 2005 California Water Plan. In addition, the DRR should include analysis that anticipates full implementation of the Governor's recent call for a 20% reduction in per capita water use.

6. The 2007 DRR should consider operations not only under the Wanger decision, but also under operations consistent with the operational recommendations of the state and federal fishery agencies for protection of species listed as threatened or endangered under the federal or state Endangered Species Acts.

The 2007 DRR assumes that 2027 operations will be subject to the current limitations proscribed by the Wanger Interim Remedy Order and SWRCB water quality requirements. However, the re-consultation on the 2004 OCAP, the continued decline of currently listed species (such as Delta Smelt and Winter-run Chinook Salmon), as well as the potential listing of additional species (such as the Longfin Smelt) are just some of the factors that may require significant changes in operations with effects on delivery reliability well before 2027.

The 2007 DRR notes that assumptions regarding 2027 operations are not a prediction of the future, but rather an assessment of the future with consideration only of hydrological effects of climate change and projections of future land and water use. This caveat must be carried clearly throughout the report, making it clear that modeled reliability is likely to be an *overestimate* based on incomplete knowledge of future operational constraints. Furthermore, the DRR should include a discussion of how water agencies may increase water supply reliability within their own service area in order to reduce the risks associated with uncertainty of future SWP supplies.

7. The DRR must recognize that DWR has not yet issued a final decision and EIR for the Monterey Plus project.

DWR is in the process of responding to comments in the Draft Monterey Plus EIR. In response to those comments and upon further analyses, it is foreseeable that DWR may choose to make changes to the Monterey Plus project. The DRR must acknowledge this fact and recognize that the outcome of DWR's Monterey Amendments decision-making may well cause further impacts to SWP delivery reliability.

PCL appreciates the opportunity to comment on the DRR, and we look forward to working with DWR to improve future drafts of the 2007 report as well as future Delivery Reliability reports.

Sincerely,

Mindy McIntyre
Water Program Manager
Planning and Conservation League

Attachments

Cc:

Lester Snow, Director , Department of Water Resources
Antonio Rossmann, Rossmann & Moore, LLP
Roger Moore, Rossmann & Moore, LLP
Senator Perata
Senator Steinberg
Senator Kuehl,
Senator Machado
Senator Kehoe
Senator Ducheny
Assemblymember Wolk
Assemblymember Eng
Susan Kennedy, Chief of Staff
SWP Contractors

Attachment 1

Delores Brown
California Department of Water Resources
Chief, Office of Environmental compliance
901 P Street
Sacramento, CA 95814

January 1, 2008

Re: Draft Environmental Impact Report, Monterey Amendment, SCH#: 200301118

Dear Ms. Brown:

Please accept the attached comments in behalf of the Citizens Planning Association of Santa Barbara County, one of the original plaintiffs in the matter of **PCL et al v. DWR**. The comments have been prepared by Mr. Arve R. Sjovold, our representative to the plaintiffs' committee and a participant in the EIR process. Although Mr. Sjovold participated in many of the EIR committee meetings, he is distressed that virtually none of the comments and suggestions made in the long tenure of this committee were recognized or adopted in the preparation of the document. Accordingly, he regrets that his name is listed as one of the committee responsible for preparing this document. Nonetheless, he will honor his pledge to be of service to the committee and to DWR in this matter.

The comments are divided up into several distinct sections. The first deals with what Mr. Sjovold shows are critical flaws in the CALSIM II model, which was used as the primary analytic tool for the impact analyses. Based on his review of the model CPA finds this Draft EIR is seriously deficient. The CALSIM II review presents several analytic findings that are seminal with regard to this model's flaws; they should be addressed by DWR before this process continues. The CALSIM II review also points to critical failures in the application of the CALSIM II results in the analysis.

The second section addresses other areas of the impact analyses while the third section is an attachment of comments and criticisms of the DWR paper on incorporating climate change in to CALSIM II. Since DWR made this report central to their analyses of climate change impacts in the EIR, it is entirely appropriate to include such comments.

Finally, there are two appendices which support the CALSIM II analysis presented by Mr. Sjovold. They point to constructive changes that should be included in CALSIM II before it is used again.

These comments do not reach all the analyses presented in the Draft; there was not sufficient time to do so. However, because of the central importance of CALSIM II to the Draft's analyses, the flaws that have been shown by Mr. Sjovold are sufficient to render the entire Draft as inadequate.

AN ANALYSIS OF CALSIM II AS USED IN THE DRAFT EIR

By: Arve R. Sjovold

Introduction

The draft EIR uses CALSIM II as its primary methodology in analyzing the impacts of the Monterey Amendments (with Settlement additions) and therefore deserves detailed scrutiny as to its accuracy and appropriateness as a tool for environmental impact analysis. The accuracy problem is paramount given that the Appellate Court found that the original Monterey EIR had not considered the ramifications of the SWP's inability to deliver anywhere near the full entitlement values prescribed in the SWP contracts. A consequence of this finding is the acknowledgement that any entity relying on full entitlements as actual deliveries that cannot be fulfilled is dealing with "paper water". To quantify how much water the project can deliver reliably requires a model with a high degree of absolute accuracy. And the degree to which the project falls short of delivering reliably against expected full entitlements is the measure of "paper water". DWR's analyses of reliability of delivery rely totally on the use of its CALSIM II model; thus the accuracy of CALSIM II is essential.

DWR has not properly calibrated CALSIM II so its accuracy is still in question. The EIR does not reference any calibration exercise of CALSIM II and assumes that it delivers accurate estimates of delivery given the assumptions that are made in its development and use.

CALSIM II is referred to as a "simulation model" though in fact it is an optimization model, which is designed to determine the maximum amount of water that can be exported given the constraints of hydrology and SWRCB rules that govern the project's operations. There are troubling features of CALSIM II, which in all likelihood render the model as unsuitable as an estimator of project deliveries. The troubling features include:

- Its water year indices
- The lack of statistical rigor in characterizing the hydrology
- The inability to use environmental parameters as inputs to study impacts
- The lack of calibrations

Model Suitability for Environmental Impact Analyses

The fact that the model is an optimization model and not a simulation as purported, misleads the analysis of environmental impact. This is particularly true considering that **the optimization objective is maximizing export of water from the Delta and not the maximizing of environmental qualities.** Admittedly, quantifying environmental qualities for a mathematical model is an extremely difficult task. However, the model should at least allow ready testing of various proposals to improve

the environmental health of the Delta. Instead, the model treats the existing set of water rights rules and regulations as hard-coded constraints within the model code such that it is very cumbersome to change them for use in environmental studies. **Furthermore, the constraints coded in the model are only those that the SWRCB has promulgated as regulations on the project that reflect the past history of the project and its observed impacts on the Delta. It is a tenuous proposition to pretend that those constraints are adequate to protect the environment as we move forward with this project.** For example, DWR admits that the model does not include within its code any sense of Endangered Species Act requirements, which given the current state of the Delta should be its primary focus. Furthermore, the last 12 months have seen several court rulings that acknowledge the inadequacy of the current operations and regulations to protect endangered species. As a result of these rulings, Delta exports have been dramatically reduced. As currently configured, CALSIM II is not well suited to help solve these problems.

The SWRCB constraints that are most limiting on exports are the salinity constraints in the Delta and these operate to control salinity mostly in the western Delta. **In fact, it is fair to say that the model assumes that as long as it meets the salinity constraints in the Delta it has met its requirement for environmental protection in the Delta.**

For example, there are no routines in the model to deal with reverse flows in the San Joaquin River and the consequent mortality of Delta Smelt in the project pumps. Yet there is sufficient data to provide a competent predictor based on flow and pumping conditions to predict when reverse flows are likely to occur. It could be used as a constraint on Delta pumping in order to protect the fish. (See Appendix A)

Even in the case of modeling the salinity, the model uses a predictive equation that relies on one position in the western Delta, is dependent only on Delta outflow, and is independent of project pumping. Yet the historical sense on this issue is the knowledge that heavy pumping in the South Delta can affect the position and variability of the salinity gradient in the Delta. With the relationship that presently exists in the model, the prediction of the salinity appears to be unaffected by export operations.

Furthermore, it is a tenuous scientific proposition that a single point for measuring the affects of the project on salinity in the Delta is sufficient given the magnitude and complexity of the Delta. For example, the Delta Smelt is a species that lives entirely within the brackish water of the Delta and its movements to and fro in the Delta are largely dependent on the salinity variations. DWR should use its modeling talents to predict salinity gradients throughout the Delta and how they vary under different hydrologic and pumping scenarios. The EIR is largely silent on this matter and yet it would seem, given the present dire state of the Delta, that analyses of this sort would be a primary focus of the EIR.

The presently used systems of modeling the Delta by DWR rely on CALSIM II in concert with DSM2, a more detailed model that is intended to calculate the flows throughout the myriad Delta channels. It depends on CALSIM II to provide the input and export flows to and from Delta using the CALSIM II calculations for the Sacramento and San Joaquin valleys; in effect CALSIM II provides the boundary conditions for the operation of DSM2. Thus, DSM2 is limited in the scope of its calculations by the CALSIM II constrained inputs. The limitations of CALSIM II as an export optimization

model are visited upon the DSM2 calculations independent of the capability of DSM2 to investigate salinity variations more broadly.

It would be extremely useful to the analysis of the environmental impacts of the project if first model calculations could be obtained for a scenario without regulation of input flows and no exports to establish the conditions in the Delta for which the Delta Smelt are adapted. From this baseline it may be possible to determine the degree to which project operations affect Delta habitat and hence the species that rely on it.

The Problem With Water Year Indices in CALSIM II

CALSIM II uses as a primary input to its calculations a designation called “Water Year Type”, which can take on one of five discreet values corresponding to whether the year in question is “wet”, “above normal”, “below normal”, “dry”, or “critical”. These designations are used as input data to govern project operations in the model (and in practice), particularly in setting environmental constraints and are developed from the historical record spanning 73 years, 1922-1994, the basic hydrologic record used to drive CALSIM II.

Water year type is derived from a “Water Year Index” which is in turn developed from a runoff index. There are two sets of runoff indices, one for the Sacramento Basin runoff and one for the San Joaquin basin runoff. The basin runoff indices are calculated from the measured runoffs from the four major rivers in the Sacramento Basin and the four major rivers in the San Joaquin. These major rivers capture about 80% of the total runoff in the respective basins and are believed to be reliable surrogates for runoff. This runoff data is available on a monthly basis.

For each water year (October through September) a water year index is calculated as the weighted sum of 40% of the current forecast for the upcoming April to July runoff, plus 30% of the current October through March runoff, plus 30% of the previous year’s water index. Thus the weighted formulation necessarily spans parts of two water years although it purports to represent the current water year. Depending on the value of the index for a given water year an assignment into one of the water year types is made. For project operations, the index is set by the first of the month forecast beginning in February and continues until the final determination based on the May forecast of runoff.

For use in CALSIM II a water-year type and a water year index are provided as fixed assignments for a given year in a “look-up table” for use in the calculations. **Because of the way in which these two attributes are derived they in effect provide the simulation with “perfect” information as to the upcoming runoff season (December through May) for a given water year, a circumstance that is not possible for making decisions for real time operations.** Also there is the fundamental question posed by the derivation of the water year index in that it combines the runoff from two successive water years. **There is no scientific merit to the notion that the previous year’s runoff should affect the subsequent year’s runoff, which is precisely what the 40-30-30 weighting does.** A simple serial correlation of the annual runoff record shows that there is no significant correlation, meaning that the current water year’s runoff is independent of the previous water year. The water index is without any scientific merit and it should not be used, as is the case for the dependent parameter, water year type.

How the use of these indices biases the CALSIM II calculations and the actual project operations is difficult to deduce, but it is sufficiently clear to state that none of the calculations can be considered useful in the analyses of the EIR.

The additional fact that the indices as they are used are provided to the calculations in a fashion that gives the calculations “perfect information” ahead of the unfolding water year run-off is also sufficient to discredit any claim that this model is a simulation of system hydrology. In a simulation, one tries to replicate the decision structure that faces the system in real time. Knowing how the water year is going to end well before it is experienced allows CALSIM II to begin pumping early in the water year when at times little runoff has materialized. In effect, the early pumping borrows water from the Delta in the knowledge that it will be made up during the spring runoff. However, in real time the system operators do not know that spring runoff will be ample and therefore must restrict early pumping until events on the ground dictate that it is safe to pump.

Environmental Inputs

The object of environmental impact analyses is to evaluate the degree to which project operations and requirements affect what is broadly referred to as the environment. Because environmental attributes are difficult to quantify a good approach is to develop quantitative methods that at least allow ready evaluation of various alternatives intended to both achieve environmental protection and project operations. The present form of CALSIM II focuses only on project operations. It limits its treatment of the environment to what can be hard coded into the model as purported environmental constraints. Even in this regard no attempt has been made to have the model address important environmental questions such as that posed by the dangerous declines in Delta fish species.

A peer review panel of nationally recognized experts was convened to review the CALSIM II model as a tool to support water planning (See Appendix G of the EIR). However, that panel “did not specifically address the manner in which CALSIM II represents the environmental regulations and objectives established for the Central Valley water system”, as stated in a study⁽¹⁾ by the National Heritage Foundation. That study builds on the peer review study to examine just how CALSIM II treats environmental constraints and objectives in the model.

The NHI study found that CALSIM II and actual operations are not faithful to the constraints and requirements that have been levied on the projects to protect the environment and the Delta. The study also attempts to examine what would be required in terms of additional changes and requirements that might be necessary to restore Delta health. The EIR does not address the current lack of compliance nor what additional measures might be necessary to begin to restore the Delta. Given the current state of the Delta this deficiency is deplorable and the EIR is again deficient.

- (1) Jeffrey T. Payne et al, “**An Environmental Review of CalSim-II** : Defining “Full Environmental Compliance” and “Environmentally Preferred” Formulations of the CalSim-II Model, Natural Heritage Institute, November 2005

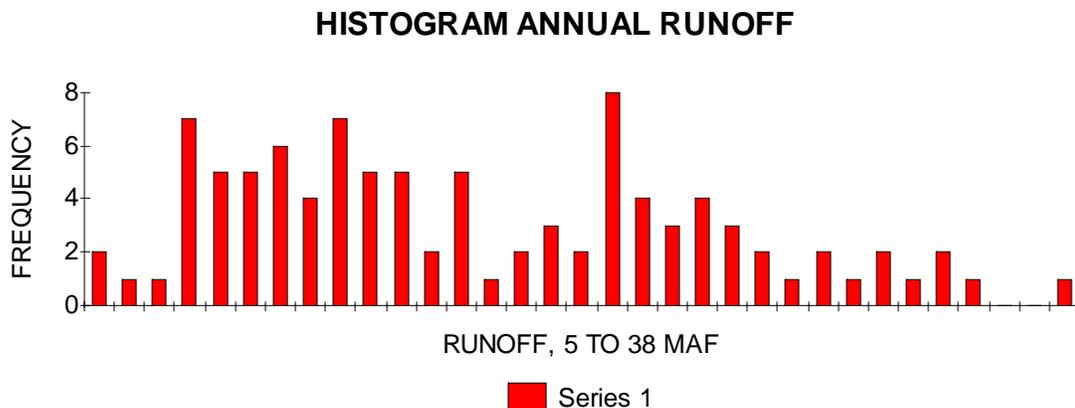
Lack of Statistical Rigor in Characterizing the Hydrology

CALSIM II uses a 73-year historical record of runoff as the primary input to the model. The variation evident in this record is assumed to be an accurate representation of the variation to be expected in the future and this assumption is relied on in characterizing the likelihood of the various output results. For the estimate of reliability of delivery, the model arranges the outputs in ascending order and ranks them in terms of the percentage of outputs exceeding a particular level of delivery. This percentage is used as an indicator of how well the project can meet its delivery requirements. Used in this way the frequency of occurrence takes on the quality of probability. But before any notion of probability can be assigned, the underlying stochastic character of the input variable, runoff, must be ascertained. In fact this information must be available to adequately design the model in the first place. This seems not to have taken place in the development of CALSIM II.

A careful examination of the statistical character of Central Valley runoff (using the 8-river runoff index--the combination of Sacramento and San Joaquin runoff) shows that runoff comprises two distinct groupings, a group that can be described as dry years and the other as wet years. Figure 1 presents a crude histogram of the 98-year runoff record for the 8-river index and it is quite clear that there are two distinct modes (central tendencies). These two tendencies

Figure 1

**Runoff Distribution in the Central Valley
8-River Index**
(Frequency of occurrence of annual flows-98 year record)



comprise two independent probability distributions and must be treated as such. The overall average runoff for the record (the 8-river index) is 18.04 million acre-feet, which is located in the minimum between the two central tendencies. Accordingly, the average is a relatively unlikely event, certainly not representative of what is normally referred to as “normal.” Thus to characterize individual water years as “normal”, “above normal”, or “below normal” conveys no real meaning. Another characteristic of the dry side

distribution is that the only sense of a threshold that could be described as “critical” are the lowest four years in the distribution, which are all 7 MAF or less.

There are 55 years (56% of the record) that comprise the dry year distribution and 43 years (44%) that are in the wet year distribution. These characterizations are based on total annual runoff. Since project operations cannot know at the beginning of the water year in September what the eventual runoff for the year will be, and the previous year is no indicator for what may happen in the current water year, it is of interest to examine the monthly runoff variations to establish when, in a given water year, a reliable conclusion can be drawn as to the likely amount of total runoff. This is where the look-up table of water year index and water year type bias the calculations by in effect telling CALSIM II what the water year will be before it is fully experienced. (Typically, runoff in the first few months of the water year is not very high and appreciable runoff does not occur until significant rain occurs.) **This is very important to the environmental management of the Delta because it could be extremely detrimental to the fisheries if massive pumping was initiated before a reasonable forecast could be made of the amount of water to be made available.** Since in general significant runoff seldom occurs before December, prudence would dictate reduced pumping rates in the fall until runoff is sufficient to provide exports and assure a healthy Delta habitat. Of necessity the project has to be operated this way because it cannot pump water that is not really available. **However, that level of early year pumping that can both protect the Delta environment and provide for exports has not been ascertained, either for operations or for CALSIM II calculations and the EIR fails to show as much.**

Significant runoff can occur in December and generally runoff increases going into winter and peaks in the spring when snowmelt becomes the major source of runoff. However, the record shows that December and even January and February have widespread variations in runoff. Figures 2, 3, and 4 present the histograms of runoff for those months respectively based on the 98-year runoff record. What is remarkable about these histograms is that they are highly skewed to dry months, so much so that the most likely (mode) runoff is approximately 1/3 of the average runoff for either December or January. More than half the data points in December are in the first three bars of the histogram, which means that for most of the years it is very unlikely that even modest export levels should be entertained. The same is true for January and even February. Again it must be observed that the average values of monthly runoff are not very representative of anything and can be very misleading. The likelihood of an average runoff is about 1/3 that of the most likely runoff. If pumping operational decisions were to be dictated by the average level of runoff, in most years there would be insufficient water for Delta health. This may in fact be the central reason in explaining the current declines in several of the threatened and endangered species in the Delta.

Given the above characteristics for monthly runoff, it is of great interest to establish when at the earliest the overall character of the year can be discerned. To this end some illuminating regression analyses have been performed to see how well earlier monthly runoff can predict total annual runoff (See Appendix B). A fairly good predictor is obtained by taking the sum of December and January runoff as an independent variable and regressing total runoff against that variable. Figure 5 is a scatter-plot of this data and shows distinctly that the Dec-Jan variable divides the data set into wet and dry domains. (There is a gap in the scatter-plot that demarks the two domains.) All the dry year totals

except one are delimited when the Dec-Jan sum is 3.9 MAF or less. That threshold also captures approximately 5 years that belong to the wet year group. The mean of the sum of December and January is 4.46 MAF so a sum of 3.9 or less signifies a dry winter as well. The average annual runoff (8-river index) is 18.04 MAF and the scatter-plot shows few data points surrounding this total, further confirmation that the average does not confer any sense of “normal.”

CALSIM II needs to be revised to correctly account for the bi-modal statistical distribution of runoff. The analysis presented in Appendix B shows one possible direction. That direction would lead to a decision framework that would restrict pumping significantly in the fall and early winter until the amount of runoff that has materialized in combination with whatever snow-pack measurements indicate that more pumping can resume. And if that decision framework were put in place it would most likely eliminate the notion that there is any surplus water in January, February, and possibly March, to be used to implement Article 21, Carryover, or Turnback pool provisions in the Monterey Amendments.

Figure 2
Histogram of Dec Flow
Frequency vs. MAF

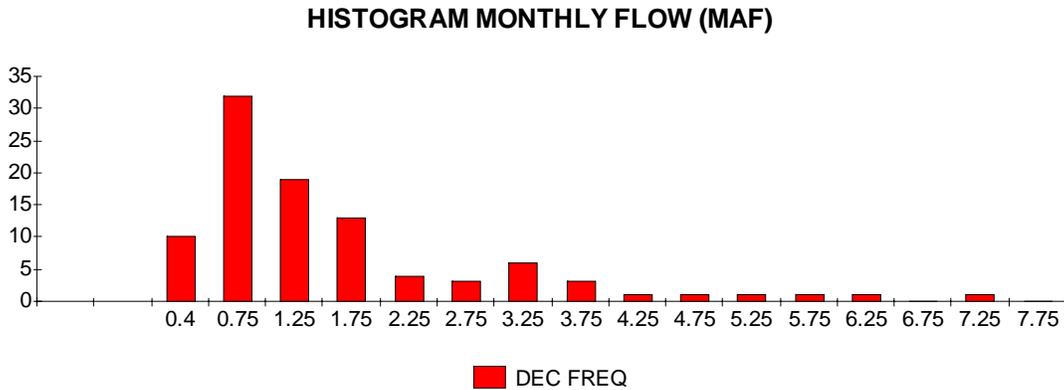


Figure 3
Histogram of Jan Flow
Frequency vs. MAF

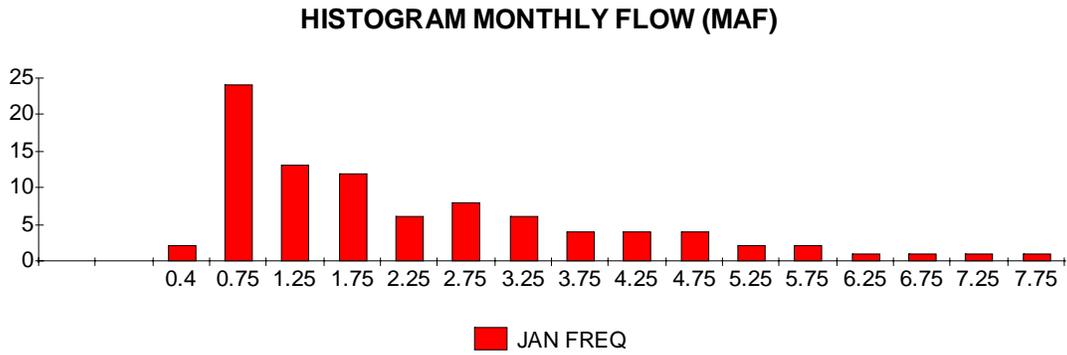


Figure 4
Histogram of Feb Flow
Frequency vs. MAF

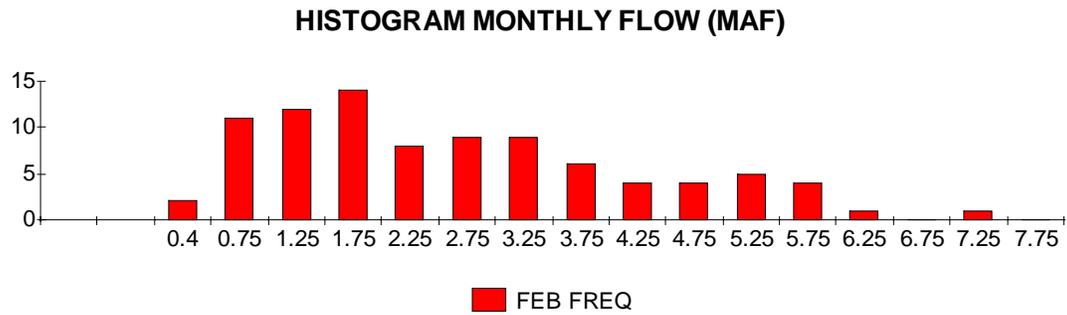
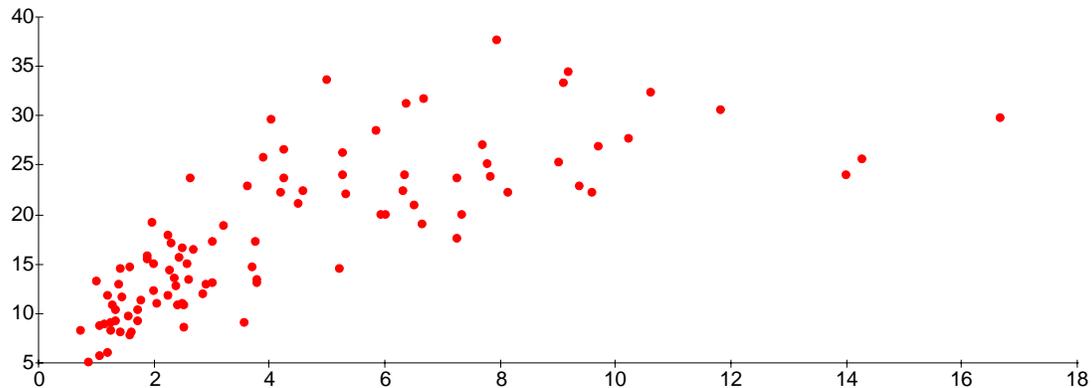


Figure 5

Total 8-River Flow vs. Dec+Jan, (MAF)

SCATTER PLOT--TOTAL VS. DEC+JAN



The Lack of Calibration of CALSIM II

It was stated above that it is necessary that CALSIM II be calibrated if it is to serve any useful function in environmental assessment or in assessing delivery reliability. DWR claims that its model gives reasonable answers and that it can be relied on for relative accuracy. A peer review of the model strongly recommended that the model be calibrated, especially if it is to be used where absolute accuracy is required and even if it is used for relative accuracy, as in comparisons of cases, given that it is an optimization model. **Calibrating an optimization model is essential in order to establish that whatever optima are calculated are real or possible solutions. This has not been done for CALSIM II and there can be no assurance of how well its calculated values represent reality.**

On the other hand, from the data at hand and with an understanding of how CALSIM II works it is possible to develop some estimates of its accuracy. What is required are CALSIM II estimates for a sequence of years for which there is also actual delivery data and which can be reasonably asserted are for the same conditions assumed for the CALSIM II estimates.

The EIR and the Reliability Report (Final 2005 Report) use CALSIM II estimates for a record that spans 1922-1994 and studies cases for levels of development corresponding to the years 2001, 2003, and 2021. The EIR reports in Table 6-7 the requests and subsequent actual Table A deliveries for the years 1996-2005, a period that spans the assumed level of development for year 2001 but there are no CALSIM II results for those years. The EIR also identifies the water year types associated with the actual deliveries.

Because the CALSIM II runs noted above do not include in its record the years 1996-2005 it is not possible to perform a direct comparison of estimates with deliveries. However, an examination of the CALSIM II results reported in the Reliability Report for the 73-year record shows two sequences of 10 years that are very similar to the 1996-2005 period, as judged by water year type. Those sequences are 1940-1949 and 1978-1987.

Table 1 presents the actual deliveries for the 1996-2005 period, along with the water year type and the contractor requests as reported in the EIR. Also shown are the reported actual deliveries as reported in the DWR reliability report, which show some disagreement from the EIR. Table 2 presents the water year type, assumed level of demand, and the CALSIM II deliveries for the selected 10-year sequences judged equivalent to the 1996-2005 period. The estimated deliveries are from Table B-3 of the reliability report as is the level of assumed demand, year 2001, or roughly the midpoint of the 10-year span. Water year types for these two sequences were taken from the input data file assembled for CALSIM II.

Table 1
SWP Actual Deliveries
Table A as reported (TAF)

YEAR	YR TYPE	(From EIR)		(2005 Rel Rep)
		REQ	DEL	DEL
1996	W	2676	2515	2206
1997	W	2976	2326	2308
1998	W	3335	1726	1595
1999	W	3147	2738	2521
2000	AN	3617	3201	2703
2001	D	4124	1547	1374
2002	D	3914	2573	2511
2003	AN	4126	2901	2964
2004	BN	4128	2600	2312
2005	AN	4127	2828	
	AVG	3617	2495.5	2277.1

It is assumed that “Requests” as reported in Table 6-7 of the EIR is a reasonable representation of the “demand” as used in the CALSIM II runs. Table 1 shows quite clearly that deliveries fall far short of requests. There is also the troubling observation that the EIR and Reliability Report do not agree; there is a little more than a 200 TAF difference in the averages. The EIR and the Reliability Report both profess to provide a detailed tabulation of actual deliveries. Since actual deliveries should be a matter of record there should be no discrepancy.

Table 2

Estimated CALSIM II Deliveries
Table A (TAF)
(From 2005 Reliability Report)

YEAR	TYPE	DEMAND	DEL	YEAR	TYPE	DEMAND	DEL
1940	AN	3713	3544	1978	AN	3126	3036
1941	W	3013	3036	1979	BN	3527	3509
1942	W	3583	3599	1980	AN	3197	3208
1943	W	3632	3545	1981	D	3834	3532
1944	D	3563	3449	1982	W	3451	3471
1945	BN	3612	3479	1983	W	3007	3036
1946	BN	3710	3724	1984	W	3692	3706
1947	D	3954	2652	1985	D	3753	3540
1948	BN	3959	2681	1986	W	3345	3023
1949	BN	3864	2568	1987	D	3905	2894
AVG		3660	3227			3483.7	3295

For both of the sequences presented in Table 2, looking at just the averages, CALSIM II estimates deliveries that are nearly equal to the assumed level of demand. For either sequence the level of demand is very nearly the same as the level of requests shown in Table 1 above. However, the level of estimated deliveries for each of these sequences is substantially higher than was shown as actual deliveries for the period 1996-2005. The estimated averages are roughly 700 TAF or 950 TAF above the actual average deliveries as reported by the EIR and the Reliability Report respectively for the period 1996-2005.

The two sequences are not perfect reproductions of the hydrologic sequence shown in Table 1 for the period 1996-2005. However, the balance of wetter than normal and drier than normal years is comparable. In fact, there are fewer drier years in the actual delivery sequence than in the two CALSIM II sequences. If there were to be any bias due to this difference it should reduce the estimated delivery level, which is already too high in comparison to the actual.

Based on these comparisons, one must conclude that either the level of demand assumed for the CALSIM II estimates is without foundation or that the model is seriously biased. In fact, until the source of this difference can be discovered and corrected the model is too inaccurate to be used for either absolute or relative accuracy in any study. It should be noted here that the list of contractor requests, which are used to drive

CALSIM II, does include some unrealistic requests. For example, a full Table A request of 25,000 acre-feet is shown for San Luis Obispo County which would be impossible to fulfill since the pipeline to San Luis Obispo County is sized to pass only 4800 acre-feet. What the model does with this excess water is a mystery.

One may conjecture that the bias is due to the difference between the operations implicit in an optimization model and the operations in actual practice. The model is given perfect information concerning the hydrology and only considers constraints that are promulgated by the SWRCB while actual operations must always be governed by the uncertainties of the hydrology ahead and environmental conditions as they materialize, of which the ESA actions are the most important. The optimization model is not really a good simulator of actual operations.

Other Comments on the Utility of CALSIM II in the EIR

Use of Averages in Reporting

Because the EIR relies so strongly on CALSIM II wherever it makes quantitative findings, it is questionable if such findings are of any merit given the deficiencies in the model. Even the methodology for reporting the model's calculations is misleading. First, because the model construction has ignored the underlying stochastic character of the input hydrology, the use of averages everywhere in the report give little insight as to the effects of project operations. For example, many lengthy tables are presented showing average flows throughout the system as calculated by CALSIM II. Table 7.1-2 of chapter 7 of the EIR presents tables that show average monthly flows for a number of stations over a fairly lengthy record. It is not certain what this table is intended to demonstrate since the record spans the period with CVP-only operations up to and including the period when both the SWP and the CVP are operating. What would be more interesting is to show the typical changes in these flows as the projects mature to maximum entitlements. **Furthermore, given the highly skewed character of the monthly flow distributions as shown above, it is more important to show what the flows are for the dry as well as wet domains. We have already shown that the average monthly flow is an uninteresting statistic and lends no meaning to the analysis.**

OTHER COMMENTS ON THE DRAFT MONTEREY + EIR

Use of Partial Hydrologic Records in Some Impact Analyses

In several instances the analysis relies on restricted hydrologic records in quantifying a particular point. The analysis of the effects of “borrowing” from lakes Castaic and Perris is a particular egregious example of distorting the impact by use of a restricted record. The analysis tries to show that the borrowing has little or no impact by comparing operations at these lakes before and after the Monterey amendments. Central to this analysis are the recorded data of operations from 1974 through 1994 for the before and the recorded data of operations from 1995 through 2003. The problem with this comparison is that the before record has an embedded 6-year drought and the after is an acknowledged wet period. Thus borrowing under Monterey occurred during a wet period while the basis for comparison has a mixed hydrologic record. Given the variations in lake parameters over ordinary operations those records are also too short to give confidence to the conclusions drawn.

If CALSIM II did not have so many flaws, this would have been a good example for its use to establish over the variation of a 98-year record the relative changes in lake levels due to borrowing. This would be standard practice for a study of this kind for which a large simulation had been developed. Unfortunately, CALSIM II is not a simulation and is not an appropriate tool. This leaves the analysis of the impact of borrowing resting on comparisons of a very restricted record.

In section 7.1, which characterizes the environmental setting in the major rivers and the Delta, data is presented which comprises significant variations in record lengths. Some data records span the period of SWP start-up but stop before full maturation of project contract entitlements. Only averages over these periods are reported so it is puzzling to discern just what the EIR is attempting to portray. Clearly, what would be much more informative would be to show the trends in stream flows as the project matures. Also, because the data represent several different sources, there are inconsistencies in the data. Inflows do not necessarily add up to Delta outflow (Table 7.1-2), as one would expect from the ensemble of rivers represented. The same can be said of the presentation of pre-project water quality data. If the environmental setting is to serve as a basis for comparison in impact analysis, the presentations leave much to be desired, especially when more informative presentations could have been prepared.

Use of frequency charts

Another reporting method is the use of the “frequency of return” charts that appear throughout the EIR. They purport to give the sense of probability of occurrence. However, because there are really two underlying probability distributions for the hydrology (“dry period” and “wet period” as we show above) the frequency charts are misleading and give an optimistic picture of the project’s capabilities. They should not be used in the EIR

Article 21, Carryover, and Turn-back Pool Deliveries

These three categories of contractual water deliveries raise serious questions regarding pumping and Delta health. All are deliveries to be made in January, February, or March when certain conditions prevail. Article 21-water is termed surplus water but the only definition for it comes from the SWP contracts. There is certainly no test of whether it is surplus to the Delta. **DWR must develop a definition of surplus water that is properly constrained by considerations of Delta ecological health. This constraint must supersede the definition of surplus water in the master contract. The EIR must be considered deficient until such a requirement has been met.**

The Monterey Amendments eliminates all the conditions and constraints on delivery of surplus water that were in the original contract and substituted a new Article 21. One of the original provisions was the responsibility to determine that surplus water not be used in any manner that would constitute the development of a permanent-like economy due to its use. The new definition would seem to allow much more latitude to the use of surplus water for M&I uses that might not be allowed under the original contract. The EIR should analyze the impact of this provision in creating still more paper water.

Carryover and Turn-back Pool water are also contractual definitions and, together with Article 21 water, all three definitions have been modified by the Monterey Amendments. Carryover water is strictly a consequence of the difference between the definitions of contract year and water year. “Carryover” as used in the contract does not deal at all with reserving water in one water year to make it available in a subsequent water year, which is the normally intended meaning of the word. Instead, at the end of December when a new contract year starts, whatever Table A amounts that were scheduled but not delivered in the old year may be delivered in the new contract year even though it is in the same water year. The demand for this delivery occurs in the same months as for Article 21 water when, as we have shown, there is great uncertainty as to how the water year will turnout. The same is basically true for Turn-back Pool water. It too is a creation of the difference between contract and water years. Both “Carryover” and “Turn-back Pool” create opportunities for the contractors to “game” the system to get more Table A deliveries, all under the guise of strict adherence to the contracts. Because these categories are basically contractual creations of Monterey, invocation of them to cause deliveries in the first three months of the contract year should be carefully scrutinized in the EIR for impacts on Delta health. In fact, it would be extremely useful to examine project operations without these provisions. Furthermore, an alternative scenario for full EIR examination should be generated which requires the contract year to be coincident with the water year.

EWA operations

The EIR’s discussions of the Environmental Water Account (EWA) do not help the reader understand how the EWA is supposed to work. On one hand it sounds like it is intended to reserve water to be made available for fish in the Delta when circumstances indicate that more flow into the Delta is necessary. On the other hand the EIR talks about

storing EWA water in the San Luis Reservoir. If it is in the San Luis Reservoir how is it made available to the fish when needed? The obvious question is could the water be kept above the Delta so that its release for fish is direct and to the point? Why must the water be delivered to San Luis Reservoir if it is anticipated that it will be needed for the EWA? Are those who are selling their water south of the Delta making a profit on it? And if it is a project obligation to adhere to the ESA why doesn't DWR act cautiously to make sure that it keeps enough water above the Delta to assure their ESA obligations? All of these questions should be addressed in the EIR.

Energy Impacts

Since the SWP is a very large net consumer of power, and given the present urgency about energy use and global warming, the analysis of the project's energy impacts is very important. Probably the most important direct energy effect of the Monterey Amendments per se is the transfer of 130 TAF of water from agriculture in the San Joaquin to urban users, most of which are outside the San Joaquin Valley. For those transfers to Southern California the transferred water must be pumped over the Tehachapi Mountains, which constitutes a net increase of pumping energy over and above that which would have been required if the water was used in the Southern San Joaquin as originally called for in the contracts. However, there are many more facets to the impacts of energy requirements associated with this project.

First and foremost, because the project has rarely delivered close to full Table A allotments, there is the question of how the energy required for pumping will be supplied when the project deliveries approach the full allotments. Since the SWP is at present a net energy consumer, any additional deliveries must be presumed to require more pumping energy, which must necessarily come from commercial power from the grid. Given the difficulties that California has in meeting peak demands in the most recent years, it is not at all certain that additional pumping energy can be had without significant impacts on the competing demands of California residents. It may be argued that this particular problem would attend the SWP without Monterey, but we should point out that all of DWR's calculations with CALSIM II predict increased deliveries, so much so that they have made those calculations the basis of their reliability analyses. The same CALSIM II calculations also are used to claim that the amended SWP now has much less "paper water". In any event, to make their calculations consistent they should assess the net increase in pumping energy demands associated with their claim that they can deliver more water than in the past.

A correct reckoning and portrayal of the energy impacts should use the actual record of deliveries as a basis for comparison instead of the CALSIM II generated numbers for year 2020. (There is particular concern in the period 2000 to 2005 when increased Delta pumping during December, January, and February occurred and a tabulation and comparison to prior years would be very informative.) The energy problem is how the additional energy to get to 2020 conditions is to be generated.

Another aspect of the Monterey Amendments that impacts energy demands is the transfer of the Kern Water Bank to the Kern Water Bank Authority (KWBA) combined with the Monterey created delivery categories of Article 21, Carryover, and Turn-back Pool. The combined effect allows the KWBA to request water from these various

accounts to put in the Kern Water Bank for the benefit of the KWBA, which incidentally comprises water entities that are not direct contract recipients of SWP. Thus a demand is placed on the SWP to pump water that would not have necessarily been pumped if KWBA had not been given the Kern Water Bank. The analysis must show how operations of the Kern Water Bank would have been expected to occur if it had remained as an SWP project facility. Also there is the question as to whether non-project participants, such as those comprising the KWBA, should benefit from project contractual provisions regarding the prices they pay for pumping energy. Given that additional energy increments above the previous baseline must come from commercial power, it seems that non-project participants should pay that marginal cost for pumping to fill the Kern water Bank. In other words all other legitimate SWP contractors must pay slightly more for their pumping energy needs because of costs imposed by operations of the KWBA.

In summary, the impact analyses must trace all the different flows that follow from the Monterey Amendments and accurately calculate the pumping energy differences and compare those differences to the previous actual baseline, and not to the year 2020 level of demand.

Land Use and Planning

In California one of the most important elements in land use planning is the availability of a reliable water supply. Because the first Monterey Agreement EIR failed to deal with the well-recognized inability of the SWP to deliver even close to full entitlements the EIR was held to be deficient. The Appellate Court made note that this lack of candid treatment in that EIR placed local planners in a difficult decision as to how much firm water they could count on in approving or rejecting development projects. Because the pre-Monterey contracts had provisions in them to allow DWR to bring entitlements into consonance with real capabilities to deliver and the Monterey Agreement made it a specific objective to eliminate those provisions, the Court stated that a new EIR must be drafted that analyses the consequences of utilizing the eliminated provisions to bring promises of delivery in accord with the project's capability to deliver. The current EIR has attempted to do this, relying on calculations with CALSIM II, but because of the total inadequacy of CALSIM II as presently configured those analyses are flawed. **This brings us to the point in the EIR impact analysis where a fundamental requirement promulgated by the Court of Appeals has not been fulfilled.** The present section of Land Use and Planning is therefore of little use. Nonetheless, there are some observations that can be made that may be useful in correcting the analysis in a future document.

The analysis of impacts on Land Use and Planning avoids the most obvious consequences of the project. Table 7.10-1 attempts to guide the reader to the most important impacts but ignores what must be considered the first order impacts. The table indicates that the only concern with the permanent transfers of water from agriculture to others is with the changes in land uses and agricultural practices of the land from which the water is transferred. However, it should be clear that any transfers to urban uses raises profound issues with changes in developed land use whenever additional water supplies

are made available. A prime example of this is the development now being pursued in the Castaic region solely because the Castaic Lake Water Agency claims to have reliable additional water supplies made available from transfers from Kern County Water Agency, all under the auspices of the Monterey Amendments. How the EIR can be silent on this matter is beyond comprehension.

Furthermore, the amounts of additional, reliable water claimed in the transfers is solely based on DWR's CALSIM II calculations as they are presented in the settlement-mandated provision requiring a reliability report. Because CALSIM II has already been shown to be a grossly inaccurate calculator of reliable water, its use in assessing how much water can be relied upon just continues the problem of "paper water", which the Appellate Court and the Settlement Agreement state must be eliminated from land use planning.

The table also misses the point on the Kern Water Bank transfer. By changing the water bank from a SWP facility to one owned and operated for the benefit of a limited set of water users, the SWP plans for delivery have been necessarily impacted and as a direct consequence the plans regarding the use of whatever water the water bank could have made available for all the SWP contractors are impacted.

Also the Reliability Report fails to account for the presence or absence of local water sources and its guidance to SWP contractors is too simple to be of any practical planning use. For example, many SWP contractors, taking their cue from the Reliability Report, assume a number around 75% reliability, which they apply to their Table A amount in reckoning their reliable supply. In truth, the way that the 75% is calculated depends on the project being able to deliver substantial amounts of Table A to Kern County Water Agency and the Metropolitan Water District because they have large reservoirs and can accept these large amounts in off-demand periods. By contrast, most other SWP contractors do not have such storage means and must take their Table A amounts during seasonal demands and the average amounts that can be relied on under those conditions is much less than 75%. Accordingly, a planner depending on water from one of these other SWP contractors would be misled. It is also an interesting observation that any development which is permitted solely on the basis of a SWP supply can really only depend on approximately 15% of whatever Table A allotment it may have because that is the lowest delivery level in the record. This has proven to be a realistic possibility in Santa Barbara County where transfers of SWP allotments among SWP subcontractors are being made to support developments outside existing water district boundaries. DWR needs to instruct its SWP contractors on how to use the information developed by them respecting each individual contractor's ability to receive SWP water in concert with whatever other water sources it has available.

In summary, the analysis in the EIR of impacts on Land Use and Planning is too superficial and limited to be of any use in prospective project decisions.

APPENDIX A

An Analysis of Reverse Flows at the South Delta Pumps

Recently, additional information on several factors was obtained that could explain the observed Pelagic Organism Decline (POD) in the Delta. It had been posited earlier that unusually high pumping by the SWP in the months of December, January, February, and March could be the cause. The additional information now focuses on the fact that high reverse flows in the Old San Joaquin River brought on by SWP/CVP pumping may explain the loss of the Delta Smelt. The investigations that brought this information to light also were concerned with the same four months (D,J,F,M). This information has been analyzed to relate the Old River flows to export pumping, river flows at Vernalis on the San Joaquin, and the Sacramento at Freeport. To date one quantitative relationship has been developed that explains the reverse flows quite well. The method used was multiple regression analysis and the best relationship so far is given below:

$$\text{OLDSJ} = 243 - 0.942 * \text{EXP} + .533 * \text{SJVER}$$

Where SJVER = San Joaquin flow at Vernalis, cfs
 EXP = export pumping, cfs

Since export pumping is generally much greater than flows at Vernalis, this relationship yields negative flows for Old River in most instances.

The data set covered the years 1981 to 2006. Two data points appear as clear outliers, 1983 and 1997, which were very high run-off years. The standard error for this equation is 430 cfs while the corresponding percentage error of the fit is 18.5%. All coefficients are very significant ("t" values are respectively, 15.11 and 20.23).

What seems clear is that export pumping is a very strong variable; reverse (i.e. negative) Old River flows could be reduced by directly reducing exports. It seems also clear from perusing the input data that San Joaquin flows at Vernalis are not substantial enough to overcome the export reverse draw. This is probably due to the fact that in most years almost all of the San Joaquin is diverted for irrigation.

Another factor not yet analyzed is the magnitude of the exports compared to the volumes of water in the sloughs and Clifton Court forebay. When exports typically average 10,000 cfs for days at a time, the transit time through the sloughs may be quite short. (For example, 10,000 cfs equates to 20,000 acre-feet per day, which could be on the order of the volumetric capacity of Clifton Court forebay.) It seems that the biologists should look at what happens at all the levels of the aquatic food chain when that happens. Perhaps the reduction in smelt numbers and the observation of smaller smelt later in the spring are related to the reduction in biologically available food.

It might also be profitable to take a restricted look at the months of just December and January. Using all four months tends to obscure the fact that quite often river flows in the first two months of the four month period can be quite low, so much so that

exports would be even more devastating. The biologists should be asked to investigate the relationship of POD to just the pumping and flows in the first two months.

The sheer magnitude of the export flows is also interesting. There was a levy failure in one of the Jones tracts during a period when most observers would not have expected any stress on the levies. However, the maps show that the tracts in question are along the channels that lead directly to the pumps. Is it possible that the magnitude of the flows to the pumps was an important factor in the levy failure?

COMMENTS ON DWR'S TECHNICAL MEMORANDUM

“Progress on Incorporating Climate Change into Management of California’s Water Resources”, July 2006

By Arve R. Sjovold
September 2, 2006

In DWR’S year 2002 report on the “The State Water Project Delivery Reliability Report” it was explicitly acknowledged that climate change would affect the timing and amounts of snowfall and possibly precipitation and that sea level rise was likely. At that time the timing of these impacts was speculative. That report promised that more definitive studies of the impact on climate change would be provided, possibly as soon as the update of the California Water Plan Update 2003. Thus, it was with some anticipation that I looked forward to a comprehensive study of the affects of climate change on the SWP. The subject report fails to provide that comprehensive study. Although DWR did engage in some rather elaborate computerized calculations, the subject of those calculations studiously avoided the impacts, now more widely recognized, but clearly acknowledged in the 2002 Reliability Report. Any keenly interested observer of the debate on climate change would have expected a cogent and objective analysis of the effects of sea level rise and changed Sierra run-off patterns as first order effects.

The report devotes considerable of its quantitative analyses to the calculations of the effects of a very modest sea level rise of 15 inches on the ability of the Delta to deliver water to the pumps without severe violations of salinity thresholds. It does so based on assumptions that upstream reservoir operations are not changed and that sea level rise does not change the hydraulic network in the Delta. Another assumption for this analysis is that the salinity gradient in the western Delta does not change with this sea level rise. No supporting evidence or analysis is given as to why these assumptions are reasonable. In other words, a primary assumption is that the current system of Delta levies remains in tact with a 15 inch sea level rise. I won’t argue that that level of sea level rise may indeed leave the levies operationally in tact, but it misses the first order question of what level of sea level rise will compromise the system of levies. There are good maps (produced by DWR, if I am not mistaken) of what the Delta may look like with 1, 2, 4, and 10-foot sea level rises. From these maps it is clear that somewhere between 2 and 4 feet of rise there is little assurance that the Delta can perform as a delivery network of fresh water to the South Delta pumps. Since the subject report acknowledges that 2.9 feet of sea level rise is likely under one of the scenarios studied by the International Panel on Climate Change (IPCC) by the end of the century, clearly the most important question to be addressed by DWR is to calculate at what level the Delta’s levies cannot be relied upon. **The subject report does not do this and does not offer a qualitative discussion.**

The other major assumption underlying their quantitative calculations is that reservoir operations (that is, Oroville and Shasta) are not changed by climate change impacts. That this is an untenable assumption is apparent from the report’s side study that shows, under 3 different scenarios, that peak discharge from the Feather River may be

substantially altered. In fact, the most severe scenario carefully quantifies that peak discharge for a “15 year event” may be 2 ½ times the current estimate of a 15-year peak discharge. Clearly, any inquiring mind would wonder how reservoir operations might be affected by such a finding. Curiously, the report does not inquire further. But that may be the most intriguing finding of the report. If as a matter of hydrology peak discharges at any return level are 2 ½ times higher, such a finding would call into question the ability of the dams to function as designed. First, 2 1/2 times peak discharge would probably tax the design limits of dam spillways. Second, flood pools in reservoirs would have to be enlarged compromising water conservation objectives. Third, passage of discharges 2 1/2 times as large would undoubtedly cause havoc below the dams. None of this is addressed in the report even though that is where it should logically lead.

In conclusion, the report shows no scientific curiosity concerning the very likely first order impacts of climate change. The detailed quantitative analyses that are performed are totally irrelevant to what are the major questions that are posed by climate change. The report should candidly state that the most reasonable forecasts of what climate change might produce would seriously compromise the project, to the extent that the SWP may be obsolete in its current configuration within the current century. This is certainly a different tone than that conveyed by this report.

Specific Criticisms

- 1) The report still relies on CALSIM II as a reliable model to study the impacts of climate change. First, as we have so many times stated in the past CALSIM II is a fatally flawed model. It has not been calibrated and is not a true simulation model, as it is commonly referred to. Second, the indices that are used to drive the model in certain of its calculations are without scientific or practical merit. They provide the so-called simulation with perfect information of stream flows in advance of simulated operational decisions and the indices are highly distorted representations of the true stochastic nature of the operational problem, simulating operations in the face of uncertain future stream flows. It is particularly noteworthy that the CALSIM II run labeled “Base” in the report does not resemble the CALSIM II 2021-runs performed for the Reliability Report for ostensibly the very same assumptions. In fact, the variance between these two case studies, the “2021” study in the reliability report and the “Base” in the climate change study, is roughly the same as the differences reported between the “Base” case in the climate change study and the alternative scenarios. (See Table 1 below.) In stark terms, we are using a measuring instrument that is too imprecise to reliably distinguish differences among the scenarios. Scientifically, the model is inappropriate just on that finding and DWR staff should be required to establish why there are such differences between these two reports.
- 2) Throughout a significant portion of the report detailing previous hydrologic history of the Central Valley, there are many regression analyses results that are portrayed to establish certain trends that may have some significance. The report does not state why they may be relevant. I find it difficult to see any

such relevance except if it is to acknowledge that some climate change may have already occurred. Even then, I fail to see the relevance absent any analysis that shows why it should be. Beyond that observation of relevance, there is the more important issue of deciding when a calculated trend is significant. It appears from the data presented in the report that many of the trends are statistically insignificant at normally accepted thresholds. Why such trends are reported as maybe “real” is puzzling.

- 3) The preoccupation with the affects of climate change on stream flow temperatures is probably misplaced. Given that current project operations are decimating species in the Delta, the concern seems an attempt to show that the species are doomed anyway and we shouldn't worry about what the projects are doing now. That is a very shortsighted view and seems to be extremely self-serving with respect to current operations. My view would show more emphasis on characterizing future overall stream flow amounts and timing rather than on speculations on stream-flow temperatures as if the basic stream flows are relatively unperturbed.
- 4) The report does provide a fairly decent summary of the extant scientific theories supporting global warming and the effects on climate. The report depends most strongly on the work reported by the IPCC and the scenarios they cast. However, other more recent work out of the Goddard Space Science Institute (GSSI) strongly suggests that ice sheet breakup of the Greenland and/or Antarctic ice sheets may accelerate sea level rise significantly, an event that is not a major factor in the IPCC scenarios. If the GSSI theory is more correct the integrity of the Delta in the nearer future may be in doubt. Neither the IPCC nor the GSSI can offer precise timelines as to when significant sea level rise may occur. Nonetheless, it is vitally important that DWR include a candid appraisal of the likelihood of sea level impacts on the Delta beyond the mere 15-inch rise assumed in their studies. Calculations can easily show that the generally accepted existing level of climate forcing, .85 watts/m², is sufficient to melt sufficient ice to raise sea level by 0.4 feet per year. What is not certain is how future climate forcing will divide between melting ice and warming the biosphere. It is very clear right now that the rate of sea level rise cannot be estimated precisely but the potential for rapid sea level rise is the most important feature of global warming. The report should candidly state so.
- 5) The report summarizes the past history that has been developed for global warming over the past 650,000 years which shows that within our recorded history the Earth is near a peak warm temperature for this interval. (See; James Hansen, “A Slippery Slope”, Climatic Change, 68, 269-279, 2005). If the report had included the corresponding data on the coincidence of greenhouse gas concentrations and sea levels with temperature it would be quite clear that greenhouse gases are the most significant driver of temperature change and consequent sea level rise. The DWR report does

include a table of the existing concentrations of CO₂ and methane, corroborated in the attachment, which are higher than ever measured by the ice cores within the past 650,000 years. This remarkable finding should require the widest possible range of possible changes rather than the restricted ranges chosen by the report. In short, the authors of the report did not delve deeply enough into the current research being performed on climate change and the report cannot claim to have met its objective of “incorporating climate change into the SWP.”

- 6) The analysis to incorporate climate change into CALSIM II involves an intricate attempt to translate IPCC climate change scenarios into specific quantitative changes in major Northern California river run-off as the basis of the computer calculations that form the major effort of the report. It is noted in the analysis that the climate change scenarios are based on global models that incorporate only six grid points to characterize expected rainfall for all of California. The analysis then proceeds to use the information developed for these six grid points to generate estimated changes for 10 of the major rivers. Another model, the Variable Infiltration Capacity (VIC) model, is used to calculate these estimated changes of rainfall into run-off. An important assumption in this exercise is the use of the VIC model to develop perturbation ratios due to climate change that can then be used to modify the characteristic run-off measurements for these rivers. The clear flaw in this methodology is the measured run-off used to characterize the rivers. The analysts chose the year 1976, a readily acknowledged drought year to characterize the average or “normal” run-off. Since 1976 was well below average for any river system in California, this choice necessarily biases the estimated changes low. 1976 run-off was probably less than half the average. Therefore, on translating changed rainfall into estimated run-off for the major rivers feeding the CVP and SWP, the use of 1976 as a basis to scale from as described in the report necessarily underestimates the run-offs under climate change by a significant amount. Accordingly, the entire exercise with the Delta model, DSM, is not even a reasonable estimate. Since this computer exercise seems to comprise the most substantive portion of the report, it calls into question any and all of its findings. DWR should be required to justify the choice of 1976 (although on its face it seems that this can’t be done). A standard analysis of this type would have done so as a matter of course.

Table 1
Comparison of “Base” and 2021 CALSIM II Runs

(Million acre-feet per year)

Water Year	Climate Change Report SWP Exports	2002 Reliability Report SWP Exports Fixed Demand	Deviation
76	2.97	2.78	.19
77	1.00	0.83	.17
78	3.61	3.91	.30
79	3.70	3.49	.21
80	4.10	3.46	.64
81	3.33	3.40	.07
82	4.71	4.13	.58
83	3.68	4.13	.45
84	3.42	4.10	.68
85	3.52	3.32	.20
86	4.20	3.01	1.19
87	2.57	2.84	.27
88	1.54	0.99	.55
89	2.72	2.90	.18
90	1.60	1.15	.45
91	1.10	1.00	.10
Average Deviation			0.39

APPENDIX B

Development of a Preliminary Algorithm To Guide Pumping from the Delta In the Months of December and January

A look at monthly flows for the runoff record reveals that significant runoff begins in December and increases on through May. The highest runoff measurements generally occur in the spring. However, from time-to-time there are some early winter runoffs that are quite high. When looking at just the dry year portion of the record it is quite clear that the drier years are almost always characterized by runoff in both December and January that are much below average. Thus if the water year is going to produce reasonable runoff it must come from above average spring runoff. But the operators of the projects cannot safely assume that spring will be above average and must then adopt prudent operations when beginning export in the fall and winter. Therefore, an operational procedure must be developed that begins with the assumption that the water year will be dry until conditions show that it is likely to be wet. (We dismiss the notion that the previous water year has any useful information contained in its runoff record as is intimated by the “40-30-30” index.) The question is then, how can we establish with some certainty how much runoff is likely for the year?

To answer this question, we analyzed the relationship between total runoff recorded by the end of the water year to the measurements of monthly runoff as they occur. A perusal of the record shows that trying to rely on December runoff alone does not provide a reliable indicator. Next we examined the potential of the combined runoff of December and January to indicate the character of the impending water year.

We started by defining simple indicator variables. Since we desire to provide indicators that are most useful in the early part of the water year we concentrated on the months of December and January to see how much they could tell us. The indicators that seem to work reasonable well are as follows:

DRYWINTER, which takes on the value of either one or zero. If it is one, then it signifies a combined December-January runoff that is quite dry for that period. We first tried a combined runoff of less than 2.5 million acre-feet (MAF), which is just over half the average for this period. Later we tried a value of less than 2.25 MAF which is just about half.

WETWIN, which takes on the value of either one or zero. If it is one then it signifies a combined December-January runoff of greater than 4.24 MAF, which is the average for this period.

WETSPR, which takes on the value of either one or zero. If it is one then it signifies a combined April-May runoff of greater than 7.4 MAF, which is the average for these two months. Later we tried a threshold value of 6.5 MAF, or slightly less than the average. We felt that more precision in the spring runoff is not necessary since one must wait until spring to measure the runoff. So the role of this indicator variable is to establish explanatory power for the desired relationship for predicted total runoff.

Besides operations can be modified once we have passed beyond the months of December and January and the water year record unfolds.

The best relationship that we could find is given below:

$$\text{TOTAL} = 12.81 - 2.99(\text{DRWWINTER}) + 7.22(\text{WETWIN}) + 5.17(\text{WETSPR})$$

Where:

TOTAL = total water year runoff in MAF

DRYWINTER = 1,0 where 1 is sum of Dec-Jan when less than 2.25 MAF

WETWIN = 1,0 where 1 is sum of Dec-Jan when more than 4.24 MAF

WETSPR = 1,0 where 1 is sum of April-May runoff when Greater than 6.5 MAF

These variables were then tried in a linear multiple regression relationship to examine their explanatory power. All of the indicator variables were highly significant and the standard deviation of the fit was 3.27 MAF. Nine of the 98 data points in the sample were deleted from the regression calculation as probably too extreme on a probability basis. 7 of those 9 were for extremely high runoff years. Since the problem of export pumping is much less dependent on very high runoff years these deletions are not of prime importance and their inclusion only tends to skew the results. It is also noteworthy that the deletion of these data points appears not to affect the coefficients materially but does improve the precision of the relationship.

Conclusions

With three independent, stratifying variables that take on either of two possible values there are 6 independent outcomes. They are:

DRYWINTER and a dry spring (1,0,0), which produces an estimate of TOTAL of 9.82 MAF.

A winter (December-January runoff) that is greater than 2.25 but less than 4.24 MAF and a dry spring (0,0,0), which produces an estimated total runoff of 12.8 MAF.

DRYWINTER and a WETSPR (1,0,1), which produces an estimated total runoff of 15.0 MAF

A winter that is greater than 2.25 but less than 4.24 MAF and a WETSPR (0,0,1), which produces an estimated total runoff of 18.0 MAF.

WETWIN and a dry spring (0,1,0), which produces an estimated total runoff of 20.5 MAF.

WETWIN and WETSPR (0,1,1), which produces an estimated total runoff of 25.7 MAF.

Of the 98 years of the runoff record, nearly half the points(47) are included in the three categories that have estimated runoff less than the average for the total record. Twenty four (24) of the 47 points are associated with the estimate of 9.82 MAF. 15 are associated with the estimate of 12.8 MAF and 8 are associated with the estimate of 15.0 MAF. All three of these categories are determined by the combined monthly runoff of December and January and make no assumption that the spring will be wet. Accordingly, one may conclude that all December and January operations should assume that the water year is part of the dry period until spring runoff dictates otherwise. It is particularly important to note that for fully one quarter of the record (24 years), only 9.82 MAF can be relied upon. This should be the starting point for developing operations criteria for export pumping that take due care to preserve the Delta environment.

At present it appears that December and January pumping are little modified by the hydrologic indications to that time. Since project demands are low at this time of the year, these months are used to fill south of the Delta reservoirs. Only the constraints on Delta outflow and salinity may limit the pumping; and the restrictions here are highly skewed because of the influence of the erroneous “water year index” discussed in the body of the text. Questions that should be asked include: Should there be much of any export pumping if December and January runoff is below 2.25 MAF? Can the health of the Delta fisheries and its broader ecology be assured under such low flow conditions? Of those 24 years that comprise this condition three are for years that are extremely dry, averaging just under 6 MAF. What would be prudent operations under those conditions? The same questions must be answered for the other two dry year categories. The biologists should be asked to weigh in on what would be desirable under these drier conditions to assure Delta health.

It is possible that integration of snow-pack measurements might improve the ability to forecast more accurately or at least earlier with the same accuracy. However, reliable snow-pack measurements are usually not available until the end of March. Accordingly, early runoff is the most readily available and reliable indicator that can be useful.

Attachment 2

HOW CALSIM II DISTORTS ESTIMATES OF AVAILABLE SWP DELIVERIES

**By: Arve R. Sjovold
March 2, 2008**

In my comments on the Draft Monterey++ EIR I provided a rather thorough examination of significant flaws in the CALSIM II model. The comments were couched in statistical terms whose significance may not be readily discerned. In this essay I try to provide more commonplace analyses to show what the consequences of the flaws really are.

There are two structural flaws in CALSIM II, the methodology by which the water indices are constructed and the use of these indices in the model. In addition, there is the matter of how CALSIM II results as measures of probability are reported in the Reliability Report and how the results are reported in the EIR. Then there is the matter of how the hydrology is represented in the model. Here I will attempt to show how each of these factors operate to produce faulty estimates.

Problem 1: Faulty Indices

Indices are sometimes useful in models to categorize certain information to facilitate calculations. In CALSIM II the indices that are used in this fashion are the water year indices. These are constructed from measures of runoff from the major rivers feeding the Central Valley and are used to characterize whether a year is “wet,” “above normal,” “below normal,” “dry,” or “critical.” One of the problems in using this type of characterization is that there are two definitions of “year.” There is the “contract year,” which is identical to the calendar year, and the “water year,” which is a characterization developed on the basis of hydrology and is particularly pertinent in a climate that has summer drought. The “water year” is the period from October 1 through the following September 30. This definition follows from the recognition that because of summer drought little runoff is generated in the summer as the streams become increasingly lower until fall and winter rains generate significant runoff, which is later followed by the more important spring snowmelt. Actual project operations must respect both the “contract year” and the “water year.”

The water indices that are used in CALSIM II try to span these two definitions by constructing an index that is a weighted average between the runoff from the preceding water year and runoff from the present water year. In so doing the index is made to represent a runoff from two water years that may have nothing to do with each other. It then becomes a flawed guide to operations and calculations.

I performed a correlation analysis on the series of annual measured runoffs (water year) in the Central Valley to find out whether a given water year is more likely to be wet (or dry) if the previous water year was wet (or dry). The result was that there is virtually no correlation, which means that each water year has to stand on its own. Thus the project should not base operational decisions on an index that is a composite of two water years in attempting to characterize the runoff. This is an important finding that has profound consequences on how much and when water can be delivered from the Delta.

First, there are several examples in both operations and in CALSIM II calculations where an erroneous index has led to a serious error in pumping. This circumstance occurs primarily every time a quite dry water year is preceded by a fairly wet water year. When this circumstance occurs, the flawed index indicates that the ensuing water year will be wetter than the actual case. If the quite dry year is followed by another quite dry year (the 1976 and 1977 years are a good example), more water will be pumped in the first of the two dry years with the result that the second dry year will be very short. The record shows that 531 kaf of surplus water was delivered in 1976, a year that delivered only about 30% of Table A entitlements. The following dry year, 1977, 323 kaf of surplus water was delivered while the project could only deliver about 15% of the Table A entitlements. Both of these years were well below average for runoff while the preceding year, 1975 was above normal. Clearly the project could have evened out the deliveries for the two years much better if it hadn't been misled by the erroneous index.

In my comments on the Draft EIR, I also analyzed how the projects should be prudently when each water year is treated independently. There I showed that until there was sufficient fall-winter runoff to indicate that the year would likely be average or better, that pumping should be curtailed. My analysis showed that that point wouldn't be reached until the end of January in most cases and could extend into February in a few cases. Because surplus water is declared available in the first three months of the calendar year, a reduction in pumping for any of these months would impact surplus water deliveries. The water index that is used by the project provides no such restriction.

The reverse case of a wet year following a dry year does not present an equivalent problem simply because project operations always respect the real time unfolding of the water year. Therefore, if the project operations begin in the fall with an index that is biased low, it soon becomes apparent in the actual runoff that conditions will be better than promised by the index. There is little risk that too little pumping will occur.

Problem 2: Perfect information in CALSIM II vs. Operations in the Face of Uncertainty

The next important flaw is with the use of the indices in the CALSIM II calculations. In CALSIM II a look-up table is created to store the water year type for use in the optimization calculations. The entries in this look-up table are single values for an entire year, including the unfolding water year. The indices are not modified in the course of the calculations. CALSIM II is structured to make water routing decisions based on the monthly runoff without knowing how the water year is unfolding except in the case of the indices which are used to set many important parameters in the calculation scheme. But the way the indices are used with respect to the parameters that depend on them is that they provide the advantage of knowing ahead of time the circumstances of the eventual water year. Thus, CALSIM II is armed with information that allows a calculation of the maximum amount of water that can be delivered from the Delta with near perfect knowledge, which must be contrasted with the operational decisions that actually unfold as the water year is experienced and is likely to result in decisions not to pump to avoid the risk that there will be insufficient water in the subsequent months. The difference is the amount that CALSIM II is in error, which can only be determined with a calibration.

Problem 3: Mischaracterization of the Central Valley Hydrology

Perhaps the worst flaw in the Draft EIR and the Reliability Report is the use of averages to describe impacts or outcomes. Most often in ordinary use the term “average” or “normal” connotes what is a most likely value, that which is expected more than any other value. These two terms are used extensively in both documents to depict impacts and outcomes. The problem is that if the “average” or “normal” is an unlikely event, is there any merit in presenting such values. An example will suffice to demonstrate the difficulty.

Say that the series of recorded annual runoff aggregates into two distinct sets, one set of years that we call “dry” which for argumentative purposes range between 5 and 15 MAF per year. The other set we shall call “wet” and they range between 20 and 38 MAF per year. Both sets have about the same number of years but of course they are randomly interspersed except for occasional drought sequences. The average of the entire record is about 18 MAF per year. Now from the way I constructed the two sets 18 MAF per year is an improbable event (actually it is more precisely an impossible event if my record is a precise recording of all the possibilities.) Recognizing this feature of the record we may ask is there any information disseminated by using the term “average,” or as often is done “normal.” The correct way to address the runoff record is to portray the data as two independent sets, a “dry” one with an average around 10 MAF per year and a “wet” one with an average around, say 25 MAF per year. It is entirely a different picture when one realizes that in any given year the runoff is either going to be 10 MAF +or – 5 MAF per year rather than 18 MAF or 25 MAF +13, -5 MAF.

The constructed runoff record above is fairly idealized but it is not far from the actual data for the Central Valley. According to the 8-river index the runoff indeed aggregates into two distinct sets, one with an average around 12 MAF and the other with an average around 25 MAF. (Please note that the 8-river index only captures about 80% of the total runoff when all the minor streams are accounted.) In the actual record the grand average seldom occurs. In other words, the so-called “normal” is not very normal and is certainly not a most likely event. Why is this important?

Misleading Results

In the reliability report the CALSIM II results over the entire record (93 years) are reported in a frequency diagram, which depicts how often the calculated delivery from the Delta is greater than a prescribed value. Remember delivery is driven by runoff. According to the reliability report the SWP can deliver 75% of Table A entitlement 50% of the time. This is a direct reading from the frequency diagram. However, if one looks at the likelihood of actually getting 75% +or -, it only occurs about 2 or 3 of 93 years. Hardly a likely result and certainly not what we mean when we refer to “normal.”

The runoff record indicates that 56% of the time we can expect a runoff less than average and 44% of time it will be greater than average. The dry set (i.e. the 56% of runoff events) has an average runoff of about 12.5 MAF per year; the wet set about 25 MAF per year. The CALSIM II delivery record corresponding to the 93 runoff record used in driving CALSIM II mirrors the runoff record; slightly more than half the years

where delivery is constrained by the “dry” set runoff and slightly less than half the years where delivery is nearer the maximum due to above average runoff.

The problem occurs when the information calculated by CALSIM II is presented in the over simplified frequency diagram and read as probability of delivery. Even though almost half the years are calculated to deliver more than 75%, the actual likelihood of getting near 75% is very poor. When a local planner sees this information he is led to believe that he can rely on 75% most of the time. However, in reality more than half the time he will have to deal with deliveries much less than 75%. If he chooses the 75% level as the reliable delivery and allows new developments to hook up to water supplies on that basis there will be virtually no chance of avoiding a severe shortage in more than half the years. This is the epitome of “paper water.” The Reliability Report does report the calculated results for various drought sequences. For instance, it reports that for a six year drought, like the 1929-1934 and the 1987-1992 periods the average delivery will be somewhere around 37%. With this information the local planner can calculate his ability to compensate during a drought episode. If he has no other sources it will be difficult to promise any development a reliable supply greater than 75%. Even then he has to figure out how to balance the variations in delivery within the drought. For example, in the 1987-1992 drought only 15% was delivered in the worst year. The planner would have to have sufficient other sources to make up another 22% just to make the average for the drought. Because of the way the SWP is set up it is difficult for local planners to decide on a reliable level of delivery from the project. The overly simplified frequency diagram is almost totally useless for the type of analyses that a local planner should be doing.

Attachment 3



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January 14, 2008

Delores Brown, Chief
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RE: Planning and Conservation League comments on the Draft Environmental Impact Report, *Monterey Amendment to the State Water Project Contracts (Including the Kern Water Bank Transfer) and Associated Actions as Part of a Settlement Agreement (Monterey Plus)*, SCH# 2003011118 (“Draft Monterey Plus EIR”)

Dear Ms. Brown:

This letter is to provide comments on the Department of Water Resources’ Draft Monterey Plus EIR (DEIR), a document whose preparation PCL has actively sought and anticipated for more than a decade. When finalized, this EIR will be used as the decision-making document framing a decision by DWR on the so-called Monterey Amendments. If such amendments to the contracts governing the operations of the State Water Project were adopted and implemented, they would result in a drastic contractual restructuring of the State Water Project, now 47 years old. Our comments here do not speak extensively to the legality (or not) of this proposed decision to modify provisions of the contracts governing operations of the State Water Project, which are based on and carry out directions specifically adopted by the voters of California. This letter focuses on the environmental review document, and its adequacy.

In the litigation that compelled DWR’s preparation of this EIR, PCL sought to ensure that DWR—the only entity with the statewide duty to manage and administer the State Water Project¹—would correct the profound errors of process and substance that fatally infected the

¹ DWR’s State Water Project duties, as envisioned by Governor Pat Brown and approved by the voters of California, are codified in the Burns-Porter Act, Wat. Code, §§12930, *et seq.* They also formed the basis for the prototype State Water Project validated by the California Supreme Court in *Metropolitan Water District v. Marquardt* (1963) 59 Cal. 2d 159. No Court has yet addressed the validity of the Monterey Amendments, whose final status necessarily awaits DWR’s decision-making.

Central Coast Water Authority’s review and approval of the 1995 EIR supporting the Monterey Amendments. In *Planning and Conservation League v. Department of Water Resources* (2000) 83 Cal.App.4th 892 (“*PCL v. DWR*”), the Third District Court of Appeal unanimously vindicated PCL and its co-plaintiffs² on both grounds. Pointing to “the...contractors and the members of the public who were not invited to the table” in the negotiations that led to the Monterey Agreement, the Court held that “CEQA compels process...a meticulous process designed to ensure that the environment is protected.” (83 Cal.App.4th at 905, 911.) Recognizing the “aura of unreality” surrounding discussions of the State Water Project, which has historically been unable to deliver even half the amounts referenced in Table A of the State Water Project contracts³, the court found that CCWA’s EIR “failed to meet the most important purpose of CEQA, to fully inform decision makers and the public of the environmental impacts of the choices before them.” (*Id.* at pp. 913, 920.)

PCL entered into a 2003 Settlement Agreement⁴ with the expectation that DWR would counteract these historic errors and find “an effective way to cooperate” with the plaintiffs and other stakeholders in the preparation of an EIR fully complying with CEQA. DEIR, ex. D, and Exh. 3-A. Section III of the Settlement Agreement therefore confirmed, and elaborated on, DWR’s EIR duties as previously recognized by the Court of Appeal. *Id.* at pp. 9-15.

The Settlement Agreement also made clear that the final outcome of the Monterey Amendments remains unwritten, so that DWR’s new environmental review is not directed, even in part, at a *fait accompli*. While the Monterey Amendments are presently effective, they are effective only under an *interim* court order, made under Public Resources Code section 21168.9. The interim effectiveness of the Monterey Amendments will expire once DWR makes its new decision on all project components, recorded in new Notice of Determination, and files its return to the superior court’s writ of mandate.⁵ Once DWR completes an adequate environmental review, it is DWR’s prerogative, and its duty as State Water Project manager, to render an entirely new final decision, and to choose which path to follow: the “Monterey Plus” project, the “no project” alternative, or one of the project alternatives reviewed in the EIR.

Since the Settlement Agreement went into effect (more than four years ago), PCL has participated in more than two dozen meetings of a Monterey Amendments EIR Committee, seeking to ensure that the EIR would produce a thorough and genuine CEQA analysis of the Monterey Plus actions. The EIR is the “heart and soul”⁶ of both CEQA and the Settlement

² The co-plaintiffs were Plumas County Flood Control and Water Conservation District, one of the 29 state water contractors, and the Citizens Planning Association of Santa Barbara County.

³ See, e.g., DEIR, Appendix C (Long Term Water Supply Contract between DWR and Kern County Water Agency), § 6 and Table A.

⁴ DEIR, Appendix D.

⁵ DEIR, Appendix D, §§ II, V.F, VII.C; ex. 3-A.

⁶ *PCL v. DWR*, 83 Cal. App. 4th at p. 911.

Agreement. Regrettably, DWR’s Draft EIR falls far short of what CEQA requires from DWR. In short, the EIR is simply not adequate under CEQA. First, the DEIR does not adequately address specific concerns raised by the court in *PCL v. DWR*, including DWR’s clear duty to analyze and disclose the consequences of implementing pre-Monterey article 18(b). That provision of the contract (which the Monterey Amendments would eliminate) requires DWR to reconcile contract amounts with the “humbler, leaner reality”⁷ of deliverable supplies—prior to its elimination.

Second, the DEIR threatens a litany of potential new CEQA violations. To mention just several key problems:

- It improperly inserts key components of the Monterey Amendments into the project baseline, distorting the ability of the EIR to compare the project with the “no project” and project alternatives.
- It improperly uses an optimization model, CALSIM II, in a manner that effectively excludes the possibility of operating the project in a manner that would reduce rather than increase exports from the imperiled Bay-Delta Estuary, and fails to disclose project impacts to that estuary.
- It summarily rejects feasible alternatives and mitigation measures that would meaningfully address project objectives without requiring damaging and unlawful levels of new pumping.
- It fails to disclose the institutional and environmental consequences of transferring to local interests the ownership of a key part of the State Water Project—the Kern Water Bank, the world’s largest underground storage facility—without any effective statewide accountability, and fails to study alternatives aimed at restoring that accountability.
- It evades, rather than engages, the “common-sense notion that land use decisions are appropriately predicated in some large part on the available water supply,”⁸ thereby avoiding an analysis of the project’s contributions to sprawl and environmentally destructive new growth.
- It avoids a required discussion of the project’s creation of new “paper water” arising from a variety of sources, including the redefinition of article 21 “interruptible” water, administrative changes to the State Water Project, and overstatement of feasible deliveries in DWR’s biennial Reliability Reports.⁹
- It fails to address the environmental consequences of the Monterey Amendments’ financial restructuring of the State Water Project.

⁷ *Id.* at p. 914, n. 7.

⁸ *PCL v. DWR*, 83 Cal. App. 4th at p. 915.

⁹ PCL and its co-plaintiffs provided many of these comments to DWR in connection with its work on the Monterey EIR committee. Attachment A to these comments compiles some of these comments, which were not adequately addressed in the DEIR, or were simply ignored. These comment letters are therefore incorporated by reference in these comments, with the request that DWR specifically respond to them. We also incorporate comments made on behalf of PCL at public hearings.

- It recognizes the major problems that climate changes poses for the State Water Project generally, only to evade full assessment of project-related climate changes and defer the task to the very local decision-makers who will need to rely on DWR’s programmatic assessment.

Finally, DWR must address these deficiencies at a critical juncture in California's water history, and make its final decision based on conditions as they exist in 2008, not 1995. The depth of the environmental crisis the State Water Project now faces deserves special emphasis. For the first time ever in 2007, the State Water Project’s pumps were turned off temporarily to avoid an environmental catastrophe. Separate lawsuits have undercut DWR's ability to operate as in the past, without state permits and without federal biological opinions to justify continued pumping. Climate change, by the current estimations of DWR, could substantially cut project availability by mid-century. Moreover, California now faces the worst drought conditions it has experienced since the early 1990s.

These conditions underscore the crucial importance of delivering a Final EIR that fulfills, rather than avoids, the mandates of *PCL v. DWR* and the Settlement Agreement. In other settings, including Delta Vision, the California Water Plan, and recent reports and actions on climate change, California has commenced the difficult and necessary task of bringing to water policy a new era of realism that transcends the “build it and the water will follow” dictum of a previous generation.¹⁰ Yet the DEIR seems conspicuously disconnected from the state’s direction in other settings, to the point that “the plaintiffs” are chided for even suggesting alternatives that are sustainable and would not cause additional injury to the Delta.¹¹ To meet the hydrological, ecological and legal demands of our time, the Final EIR must rise to the occasion, rather than resorting to evasion.

Specific Comments

I. The DEIR evades key concerns raised by the Court in *PCL v. DWR*.

A. *PCL v. DWR* must serve as the starting point for DWR’s EIR responsibilities.

As detailed below, the DEIR in key respects simply attempts to explain away, rather than directly address, the key holdings of the Court of Appeal in *PCL v. DWR*. The EIR must, as a starting point, analyze the substance of the court of appeal’s decision in *PCL v. DWR* and ensure that its new project assessment is consistent with the Third District’s analysis in that case. The key components of the ruling are as follows

- **Lead agency requirement**

¹⁰ R. Kanouse, “Water Supply Planning and Smart Growth,” in C. Davis, *et al.*, *Navigating Rough Waters* (American Water Works Association, 2001), p. 84. See also E. Rarick, *CALIFORNIA RISING* (2005), p. 213 (quoting Governor Pat Brown’s statement that “I wanted to build a water project, and worry about the philosophy of land use later on”).

¹¹ DEIR, pp. 11-6, 11-7.

Holding that CCWA erroneously acted as lead agency, the court ruled that CEQA required DWR, the only entity with the requisite “statewide perspective and expertise,” to assume its proper role as lead agency in preparing a new EIR. (83 Cal. App. 4th at p. 907.) The Court noted the interconnected nature of the statewide project that the Monterey Amendments would transform: “[T]he allocation of water to one part of the state has potential implications for distribution throughout the system. DWR is painfully familiar with the problems plaguing the Delta and the possible impacts of the Delta Accord, an agreement between the federal and state governments on the Kern Fan Element.” (*Id.*)¹².

- **“No project” alternative**

The court also held that the CCWA EIR was fatally defective under CEQA for failing to analyze implementation of pre-Monterey state water contract terms, and particularly the permanent shortage provisions of article 18(b), as part of the EIR’s no-project alternative. Under the contracts that the Monterey Amendments would change, a permanent shortage occurs when the state is unable to reliably to deliver the full 4.23 million annual acre-feet (MAF) of previously-labeled “entitlements” listed in Table A of the project contracts. In that case, article 18(b) requires the state to make a proportional reduction of each contractor’s amount listed in Table A, to match the available supply. The court held that an adequate EIR must analyze the impacts of eliminating these provisions.

- **“Paper water” problem**

The relationship between so-called “entitlements” and land-use planning was central to the court’s holding that the EIR failed to address the “no project” alternative. The court connected this error to the risk of statewide land-use decisions made on the basis of “paper” water entitlements not grounded in real, deliverable water. The court openly criticized the false expectation that the State Water Project will deliver on its full “entitlement” level of 4.23 million acre-feet when the project’s historic capability, evidenced in DWR’s own data, has only been roughly half this level. The ruling therefore noted the “huge gap between what is promised and what can be delivered.” (83 Cal.App.4th at 908.)¹³.

- **Validation procedure**

¹² As described in section V below, the Kern Fan Element is an approximately 20,000 acre-foot property on an alluvial fan, and the site of the Kern Water Bank, the world’s largest groundwater storage facility. Article 52 of the Monterey Amendments call for DWR to relinquish control of the bank to the Kern Country Water Agency, which held the bank for only one day before retransferring it to a privately controlled joint powers agency, the Kern Water Bank Authority. Whether any statewide accountability will accompany the bank’s operation is a key issue for DWR’s new project decision.

¹³ With respect to the “humbler, leaner reality” of project capability, the Court also noted the implicit assumption in the Monterey Amendments’ financial restructuring of the State Water Project (article 51) that key facilities originally envisioned for the SWP will not be built. (*Id.* at 914.)

In addition to ruling for the plaintiffs on these CEQA claims, the court of appeal found that the plaintiffs had properly initiated a proceeding to question the substantive validity of the Monterey Amendments, including DWR's transfer of a 20,000-acre conservation and storage facility—the Kern Water Bank. . The court rejected a procedural challenge based on the theory that nonparty state water contractors were indispensable to the validation challenge. (83 Cal. App. 4th at pp. 920-926.)

- **Scope of the new EIR**

DWR must prepare an entirely new EIR as lead agency addressing the project as a whole. In *PCL v. DWR*, the Court of Appeal opined that it “need not hypothesize on the remaining issues” presented by the plaintiffs—such as the presence of a faulty project definition and the inadequate study of the Kern Water Bank’s divestment—“because DWR, with its expertise on the statewide impacts of water transfers, may choose to address those issues in a *completely different and more comprehensive manner.*” (83 Cal. App. 4th at p. 920 (emphasis added).)

B. Fundamental flaws in the DEIR undermine DWR’s fulfillment of its lead agency duties recognized in *PCL v. DWR*.

As the court-directed lead agency with “principal responsibility “ to carry out and approve the project (Pub. Res. Code, § 21067), DWR has an inherent responsibility to render a cohesive EIR that serves as the requisite environmental “alarm bell” in accordance with CEQA. The court recognized this obligation in *PCL v. DWR*, observing:

The lead agency must independently participate, review, analyze and discuss the alternatives in good faith ... Moreover, the agency's opinion on matters within its expertise is of particular value ... As the process continues, "the lead agency may determine an environmentally superior alternative is more desirable or mitigation measures must be adopted ... In sum, the lead agency plays a pivotal role in defining the scope of environmental review, lending its expertise in areas within its particular domain, and in ultimately recommending the most environmentally sound alternative.

(*PCL v. DWR*, 83 Cal. App. 4th at p. 904 (citing *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal. App. 3d 692, 736-737).)

As elucidated further below, the current DEIR is not written in a way that will allow DWR to fulfill its lead agency obligations as required under CEQA. The DEIR consistently masks impacts and confuses readers. The DEIR obscures project impacts by presenting no project alternatives that include components of the proposed project. It fails, in other words, adequately to distinguish the proposed project from continued current conditions. The DEIR also limits options for decision makers by failing to provide alternatives distinguishable from the proposed action. These flaws prevent a sufficient analysis of the impacts and implications of moving forward with the proposed project. By limiting the outcomes of the alternatives included in the DEIR, and thus constraining the range of potential management decisions, the DEIR

attempts to absolve DWR of its decisional responsibilities as a lead agency. Therefore, the DEIR prevents DWR from fulfilling the lead agency role as defined and anticipated by the court in *PCL v. DWR*.

C. The DEIR fails to analyze the No Project Alternative as directed in *PCL v. DWR* and the Settlement Agreement

1. *PCL v. DWR* and the Settlement Agreement establish clear standards for the assessment and review of the no project alternative.

CEQA requires that the no project alternative address “existing conditions” as well as “what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services.” (14 Cal. Code Regs. §15126(e)(2).) That requirement compels DWR in its new EIR fully to study the consequences of enforcing the terms of pre-Monterey water supply contracts prior to eliminating them.

To overcome the prejudicial error noted in the appellate ruling, DWR must “fulfill its mandate” in the new EIR “to present a complete analysis of the environmental consequences” of enforcing the pre-Monterey permanent shortage provision, article 18(b). (*PCL v. DWR*, 83 Cal.App.4th at 915.) Article 18(b) is the single most controversial aspect of the Monterey Amendments; controversy over its enforcement was the “driving force” behind the Monterey negotiations. (*Id.* at p. 908.) While the original contracts for the State Water Project (SWP) estimated the delivery capacity of the fully constructed SWP to be 4.23 million acre-feet of water, the contracts also anticipated the likelihood that this estimate could be wrong or fail to eventuate. The original contracts prudently included a safety valve in article 18(b), which would allow contracts to be reconciled with the “humbler, leaner reality” of SWP capacity. (*Id.* at p. 914, n.7.) The court of appeal recognized the need for such a safety valve, observing the “huge gap” between SWP entitlements and existing supplies connecting that holding to the risk of planning decisions grounded in “paper” rather than real, deliverable water.¹⁴

Because the Monterey Amendments, if adopted, would eliminate article 18(b), it is incumbent on DWR to come to terms with its “paper water” problem before finalizing that change to the project contracts. (*Id.*)The EIR must directly evaluate reduced Table A allocations resulting from application of that article. As a useful starting point, DWR should carefully review and perform the analysis requested in public comments referenced in the Third District’s opinion. (*Id.* at 908, 915.)¹⁵

¹⁴ “Paper water,” the court observed, was “always an illusion,” steeped in the “unfulfilled dreams” of a water culture that had fostered an inflated expectation of what could be delivered. (*PCL v. DWR* (2000) 83 Cal. App. 4th 892, 914 fn. 7.)

¹⁵ As one comment accurately suggested, the EIR “must include a parametric analysis of alternative levels of a lowered project yield tested by use of DWR’s simulation model to establish which level of yield provides for the maximum reliability of deliveries given some tolerable threshold for failure to meet requests (i.e., with what frequency will Article 18(a) be

Section III.C.2 of the Settlement Agreement provides further guidance. It provides that the new EIR shall include “[a]s part of the CEQA-mandated ‘no-project’ alternative analysis, an analysis of the effect of pre-Monterey Amendment SWP contracts, including implementation of article 18 therein. This analysis shall address, at a minimum, (a) the impacts that might result from application of the provisions of article 18(b) of the SWP Contracts, as such provision existed prior to the Monterey Amendments, and (b) the related water delivery effects that might follow from any other provisions of the SWP Contracts.” As PCL informed DWR in its March 28, 2003 scoping comments, two of the “other” contract provisions inevitably related to this assessment are articles 18(a) and 21, which prior to Monterey required, respectively, that agricultural contractors endure the first cutbacks in water allocations in times of temporary shortage and receive the first allocations in times of surplus.

The environmental effects of proportional reductions in Table A amounts, as calculated in the no project assessment, must be directly compared to those of the proposed project. As the court of appeal made clear in *PCL v. DWR*, neither claims of “infeasibility” nor purported legal disagreements can serve as an excuse for avoiding comparison of the environmental consequences of the no project alternative and the project. (*PCL v. DWR*, 83 Cal.App.4th at 918.

2. A dispositive error undermines the integrity of the DEIR’s “no project” assessment.

The DEIR recognizes that if pre-Monterey article 18(b) were enforced, Table A amounts would be reduced to less than half their original levels—1.9 million acre-feet— to reflect the firm yield of the SWP. However, the DEIR assumes that this reduction in Table A would not tangibly reduce actual water deliveries, because water not delivered under Table A would be delivered as “surplus” water under article 21 of the pre-Monterey SWP contracts. In numerous passages, the DEIR offers variations on this same basic premise.¹⁶

This premise, the key to the DEIR’s refusal to take article 18(b) reductions seriously, is startlingly close to reasoning in CCWA’s decertified 1995 EIR that the Court of Appeal expressly rejected. CCWA’s EIR posited that “[i]f Table A entitlements were adjusted, less entitlement water would be delivered and *more surplus water would be delivered pursuant to*

invoked and with what consequences). All this can be accomplished without modification of the existing contracts.” (83 Cal. App. 4th at 908.)

¹⁶ See, e.g., DEIR, p. 2-16 (implementing article 18(b) “would not ... have altered the amount of water that the Department delivered to the contractors in the many years when more than the minimum SWP yield was available in the SWP system. Instead, such water would have been delivered to contractors under Article 21”); p. 4-5 (with the elimination of article 18(a)’s agriculture-first shortage provision, “it no longer mattered whether a shortage was a temporary one or a permanent one, since the allocation of available supply would be the same in either situation”); p. 6-54 (“the altered allocation procedures provided for by Articles 18 and 21 result primarily in a shift in deliveries from one contractor to another and do not affect total deliveries”).

Article 21. The total amount of water would be *essentially unchanged.*” (*PCL v. DWR*, 83 Cal. App. 4th at p. 929 (emphasis added).) The court specifically addressed this assumption, stating:

This response does little more than acknowledge the paper commitment to build SWP facilities and the obvious fact that the hopes and dreams upon which the entitlements are based do not create a greater annual supply of water. None of the commenters suggested that implementation of article 18, subdivision (b), altered the contractual and political commitment to complete the SWP. They did, however, suggest that the elimination of paper water would impact land planning decisions that might reduce the need for as many SWP facilities. Under that scenario, article 18, subdivision (d), might not be invoked nor would surplus water under article 21 be tapped and exhausted.

(*PCL v. DWR*, 83 Cal. App. 4 h at p. 919.)

For multiple reasons, this premise in the DEIR is as baseless now as it was when the failure of DWR to address this key issue resulted in the judicial decertification of the 1995 EIR. First, the DEIR simply assumes as a foregone conclusion something that was very much in doubt. In 1994, prior to the initial enactment of the Monterey Amendments, the California Research Bureau (CRB) prepared a paper analyzing twenty options for changing the State Water Project’s repayment system, one of which (Option 5) called for the implementation of pre-Monterey article 18(b) (CRB Report).¹⁷ The report found that “[t]here is no guarantee” that implementing article 18(b) “would ‘create’ any surplus water. If the DWR implemented Article 18(b), they might also change how it operates the SWP reservoirs. They might decide, for example, not to distribute ‘surplus’ water and instead decide to store the water for distribution as entitlement water in another year.”¹⁸

Second, the analysis incorrectly assumes that demand for SWP water in the Monterey and non-Monterey scenarios would be the same. That assumption is untenable, because The Monterey Amendments, if adopted, would fundamentally change the definition of Article 21 water. In particular, those amendments delete the pre-Monterey proviso in article 21(g)(1) that “the State shall refuse to deliver such surplus water to any contractor” to the extent that “the State determines that such delivery would tend to encourage the development of an economy within the area served by a contractor which would be dependent upon the sustained delivery which would be dependent upon the sustained delivery of water in excess of the contractor’s maximum entitlement.”¹⁹

¹⁷ Dennis O’Connor, FINANCING THE STATE WATER PROJECT: OPTIONS FOR CHANGE (CRB, August 1994). This CRB Report is included as Attachment B to these comments.

¹⁸ Attachment B (CRB Report), p. 21.

¹⁹ See DEIR, p. 2-17; DEIR, Appendix C (Amendment No. 1 to Kern Contract, p. 9). Metropolitan Water District’s pre-Monterey contract included this language in Article 21(g)(1). The Monterey Amendments delete this language. DEIR, Appendix C (Amendment No. 23 to Kern contract, p. 13).

Third, other Monterey Amendments-related managerial changes also could profoundly affect the demand for article 21 water. These include the removal of limitations on access to storage facilities, and the creation of a “turnback pool,” which allows the contractors to sell their unused Table A amounts, acting as though the water resources of the state, which belong to the public, are actually the private property of the contractors. In short, the Monterey Amendments clearly removed constraints that would have limited demand for SWP water and capacity to accept SWP water. Yet the DEIR, recycling reasoning that discredited the 1995 EIR, assumes that these contract provisions are meaningless and have no bearing on demand or capacity to receive water.

Fourth, the DEIR fails to recognize that perceived and explicit disclosure of water reliability can impact demand for SWP water and the use of that water. The shortage provisions (article 18 (a) and 18 (b)) of the pre-Monterey SWP contracts recognized that the reliability of water fluctuates. The contracts also reflected the reality that the level of reliability necessary for certain uses also fluctuates. The pre-Monterey contracts attempted to reconcile water reliability and water allocation with article 18 (a) and 18 (b). The pre-Monterey SWP contracts recognized that water availability would fluctuate according to hydrology, area of origin demand, and environmental needs. Therefore, only a limited amount of water could be reliably delivered during drought and other shortages. The original contract provision of article 18(a) reflected that municipal contractors require a higher reliability of water than agricultural contractors. Thus, article 18(a) provided that level of reliability by providing municipal contractors a preference for water in drought and short term shortage.

In short, the existing (pre-Monterey) contracts recognized that article 21 water, the least reliable category of water under the contract, is unsuitable for use as a prolonged source of supply. Municipal contractors could not depend on sources of unreliable water in the same manner that they depend and use reliable sources, because doing so would put people, businesses and the environment at significant risk. Indeed, the risk that municipal contractors may inappropriately approve permanent development based on unreliable water is the essence of “paper water.”²⁰ Like the invocation of article 18(b), article 21(g)(1)’s prohibition against founding permanent economies on vulnerable “surplus” water provided a powerful “safety valve” against paper water-based development. It provided decision-makers with a clear understanding that deliveries beyond the SWP’s minimum yield are unreliable. In such a case, municipal water agencies would be legally and contractually restricted from relying on water in excess of the estimated minimum yield of water for development, as well as for prolonged supplies. By contrast, the Monterey Amendments—provisionally under the present implementation, and permanently under the proposed project—would remove these safeguards.

Yet the DEIR fails to analyze the impacts of these realities. Instead, the DEIR assumes that all water provided by the SWP, either Table A, article 21 or otherwise would be used in the same manner and would procure equal demand regardless of the explicit disclosure of reliability

²⁰ “Paper water always was an illusion. “Entitlements” is a misnomer, for contractors surely cannot be entitled to water nature refuses to provide or the body politic refuses to harvest, store and deliver.” (*PCL v. DWR* (2000) 83 Cal. App. 4th at p. 914, n. 7.)

by the state. The DEIR is thereby assuming that SWP contractors are able to utilize very unreliable water.²¹ in the same way they demand very reliable water. This assumption is not supported by analysis and is not supported by law. In short, the current DEIR attempts to recycle the same skewed logic that led to the 1995 EIR's specious dismissal of the "paper water" problem.²²

II. The DEIR fails to provide an accurate, stable and finite definition of the proposed project.

A. CEQA demands an accurate, stable and finite project definition that addresses the "whole of the action" under review.

Leading CEQA decisions have long since recognized that "an accurate, stable and finite project definition is the *sine qua non* of an informative and legally sufficient EIR." (*County of Inyo v. City of Los Angeles (III)* (1977) 71 Cal.App.3d 185, 199.) The CEQA process cannot "freeze the ultimate proposal in the precise mold of the initial project; indeed, new and unforeseen insights might emerge during the investigation, evoking revision of the original proposal." (*Id.*)

Precision and consistency in a lead agency's characterization of the project under review also reinforces related principles of CEQA: that the project must embrace the "whole of the action" (14 Cal. Code Regs., § 15378(a)); and that assessments in an EIR may not be used to justify a decision already made. In sum, CEQA "compels an interactive process of assessment of environmental impacts and responsive modification which must be genuine." (*County of Inyo v. City of Los Angeles (VI)* (1984) 160 Cal.App.3d 1178, 1185.)

B. The DEIR substantially understates the scope of the Monterey Amendments' proposed restructuring of the State Water project, and does not explain the source of authority for that proposed restructuring.

The description of the proposed project provides a very abbreviated summary of the changes in the SWP that would accompany the permanent adoption and implementation of the Monterey Amendments – in other words, those changes that would become permanent if the project were approved. Adopting what might be termed a "greatest hits" format, the analysis is limited to five bullet points, a few clarifying paragraphs, and a title line for all the remaining parts of these complex amendments. DEIR, §§ 4.3-4.4, pp. 4-2 to 4.8. Similarly, the background paper on the SWP is limited to a brief description of several articles, divorced from their legal and institutional context. DEIR, Ch. 2, pp. 2-1 to 2-19.

²¹ See, e.g., DWR, 2005 RELIABILITY REPORT, p. 15 (article 21 water is "highly unpredictable and unreliable").

²² *PCL v. DWR*, 83 Cal. App. 4th at p. 914.

These cursory discussions fail to illuminate critical aspects of the SWP that relate to the project's essential mission and statewide environmental accountability, and how this system would be fundamentally changed if the Monterey Amendments become permanent. In the deliberations that framed the SWP, the Governor, DWR, and the Legislature created a water project to enable the state to more evenly to distribute scarce water supplies, which the state controlled as a common good. To develop that resource, DWR and the Governor's office developed--and the Legislature and people approved--a system unique in the country. Unlike the federal Central Valley Water Project, where the federal government paid all project costs, the SWP focused upon water as a public good that belonged to the people.²³

Authorization of the SWP therefore was premised on an understanding that the voters of California would therefore decide on whether they agreed to the distribution of water in the SWP. If they agreed to that redistribution, the voters would agree to back an issuance of bonds to construct the project with the provisos that (1) agencies contracting for the water would pay back the costs of constructing the project solely for the *right* to have water delivered to them through the project's facilities; and (2) although agencies would repay the costs of constructing the project, the facilities and the water would continue to belong to the State, as a *public* resource.²⁴

The project framers also anticipated that the state water project would operate based upon long-term water service contracts that would remain in effect until the retirement of all water resources development bonds no sooner than 2035. These contracts would be unique, in that they were based upon: (1) DWR's inherent responsibility to manage the state's water resources fairly and equitably; (2) the principle that all contractors were to be treated equally; (3) the provision that any agency or district in California could contract with the department for water service; and (4) a trusteeship requiring the project to be constructed and managed for the good of the people of California.²⁵

²³ See P.A. Towner, *Brief History of the Negotiation of Water Supply Contracts for the State Water Project*, presented to the California Water Commission (Dec. 3, 1976).

²⁴ *Ibid.*

²⁵ The objective of the state water project to operate for the good of the people of California became part of the Bond Act. Once the Act was passed, it was incorporated into the Water Code (Wat. Code, §12930, *et seq.*) Governor Brown signed the prototype long-term water service contract with Metropolitan Water District just before the 1960 election. (Rarick, *supra*, at p. 221.) To further ensure that the people of California would not be responsible for repaying the bonds used to construct the facilities, DWR required agencies with which it contracted to have taxing authority, so that if the agency could not meet its payments to DWR, it would be required to tax residents to make these payments. (Wat. Code, §12937.) Conversely, if the SWP were "sold" into private ownership, it would potentially threaten the tax-exempt status of the project's general obligation bonds. Attachment B (CRB Report), p. 51.

To develop and secure approval of the state water project, DWR and the Governor first prepared a “statement of principles” for the long-term water service contractors.²⁶ These principles are derived from the “utility theory,” which Governor Brown described to the Legislature as recognizing “our obligation to insure that water will be available to meet the proper demands of every part of the State.”²⁷ These principles were the ones used to promote the project to California voters, and those principles reflected project sponsors’ understanding that voters would not vote for project financing to support water facilities they did not own or control. Moreover, those principles specified that DWR would be acting as an agent and trustee of the people to manage water resources for the good of all Californians. After preparing these principles, the framers prepared and secured voter approval of the Burns-Porter Act.²⁸

The SWP thus was premised on a fundamental *quid pro quo*: its contractors would benefit from project operation, but the public always would control the project itself, and the project’s works truly were to be part of a “state” water project, which would be publicly owned and operated for public benefit. After securing passage of the Bond Act, DWR and the Governor determined the redistribution patterns of water throughout California based on estimated need and secured the water rights for those areas in the amount of estimated need until 2035, the end of the project repayment period. They also negotiated with agencies throughout California for water service contracts. The amount of water these agencies could expect to receive over the life of the project was subject to limitations, including limitations from water rights permits, climatological and environmental conditions. The contracts were to extend until 2035. The Department could not predict all conditions affecting water conditions until 2035. Consequently, state water service contracts were written so that DWR could not be held responsible for water it could not deliver provided that it made reasonable attempts to do so.²⁹

On their face, key features of the Monterey Amendments, if made permanent, would differ sharply from the central tenets of the SWP contracts as originally framed, approved, and validated by the voters, shifting a substantial degree of control from SWP to the contractors. To name several examples:

²⁶ Cal. State Senate Fact Finding Committee on Water Resources, Partial Report, *Contracts, Financing, Cost Allocations for State Water Development* (March 1960), pp. 51-52.

²⁷ E.G. Brown, Water Message to Legislature, Cal. Sen. J., Vol. 1 (1959) 222, 224-225. The Governor’s principles constituted a “contemporary administrative directive, which was known to the voters at the time of the election,” and were also accepted by the Legislature. (*Goodman v. County of Riverside*, (1983) 140 Cal. App. 3d 900, 907-908.)

²⁸ Wat. Code, § 12930, *et seq.*

²⁹ Under the state water project, contractors “are obligated to pay for their contractual entitlements of water” from the project, “*whether the water is delivered or not.*” (*PCL v. DWR*, 83 Cal. App. 4th at p. 899.)

- Major changes in article 18 would remove the temporary shortage provision requiring “agriculture first” cutbacks (article 18(a)) and the permanent shortage provision requiring Table A amounts to be reconciled with available supplies.
- Article 51 transforms the financial structure of the SWP, allowing the contractors “a rebate for the costs previously assessed for facilities that have never been built.”³⁰
- Article 52 facilitates the transfer of the Kern Water Bank property to local control, in exchange for the “retirement” of 45,000 acre-feet of Table A amount that two agricultural contractors-- Kern County Water Agency and Dudley Ridge Water District—had no assurance or reasonable expectation of ever receiving in deliverable water.
- Article 53 authorizes the transfer of 130,000 acre-feet in new agriculture-to-urban transfers, eases requirements for other transfers, and allows the transportation of water in state facilities to other contractors, or entities other than non-contractors.
- Article 54 provides for local control and management of the two terminal reservoirs.
- Article 55 allows contractors to transport non-project water in SWP facilities at the lower costs referenced in the SWP contracts.
- Article 56 allows contractors to sell water outside their service areas.

Collectively, these changes far exceed any other changes in the project’s history. At present, the Monterey Amendments are proceeding under the authority of the Sacramento Superior Court’s interim order under Public Resources Code section 21168.9.³¹ But the DEIR never identifies the source of authority to make the amendments permanent. DWR should address these changes in light of Water Code section 12397(b)(4), the source of DWR’s contracting authority, which provides that “[s]uch contracts shall not be impaired by subsequent acts of the Legislature during the time when any of the bonds authorized herein are outstanding and the state may be sued with respect to said contracts.” DWR should indicate the source authority, if any, for the project as proposed to become permanent without the approval of the Legislature, or of the voters of California.

This issue of authority cannot be marginalized as a mere “legal” issue divorced from the environmental consequences of the project. Rather, on a host of environmental issues discussed in these comments, a foundational question is for whose benefit the project exists, the people of California or the State Water Contractors. The answer to this question may have profound consequences for the environment, particularly in times of water scarcity. DWR’s clarification of its source of authority may therefore help illuminate whether its approach to managing the SWP can proceed consistently consistent with its duties as CEQA lead agency.³²

C. The DEIR does not adequately clarify the “uses of the EIR.”

³⁰ *PCL v. DWR*, 83 Cal. App. 4th at p. 914, n.7.

³¹ Settlement Agreement, Appendix 3-A.

³² *PCL v. DWR*, 83 cal. App. 4th at 903-907.

When finalized, the EIR will be used primarily by DWR, as lead agency, to decide whether to approve, modify, or disapprove the components of the proposed project: the Monterey Amendments and the further actions described in the Settlement Agreement. The DEIR summarizes the proposed project in Chapter 4, which also briefly describes the Monterey Amendments and the Settlement Agreement. As required by the writ of mandate issued by the Superior Court to implement the decision of the Court of Appeal in *PCL v. DWR*, “upon completion and certification of the new EIR, Respondent DWR shall make written findings and decisions and file a Notice of Determination identifying the components of the project analyzed in the EIR, all in the manner prescribed by sections 15091-15094 of the CEQA guidelines.”³³

Despite some helpful language, the DEIR’s section of the “intended uses of this EIR (DEIR, § 1.2) contains one phrase that is ambiguous. It indicates that DWR as lead agency, and the State Water Contractors as responsible agencies, will use the EIR to “decide whether to *continue* operating under the proposed project: the Monterey Amendment and the Settlement Agreement, as described in Chapter 4, or to decide to implement one of the alternatives to the proposed project.” (*Id.* at p. 1-1 (emphasis added).

The Monterey Amendments are presently proceeding only under an interim order that will expire following DWR’s new Notice of Determination and return to the writ. The use of the word “continue” should not suggest that the default condition will be to make that interim operation permanent, or that DWR’s approval decision on the “Monterey” part of the Monterey Plus project can be relegated to the past tense.

Instead, DWR must determine, based on its assessment of project impacts, alternatives, and mitigation measures, whether to (a) approve and execute the Monterey Amendments as initially proposed in 1994 and approved and executed in 1995; (b) approve and execute the Monterey Amendments and the further actions described in the Settlement Agreement; (c) approve and execute the Monterey Amendments as further modified in response in response to the analysis in and public comment on the present EIR; (d) approve and execute an alternative to the Monterey Amendments; or (e) approve no project at all. The EIR will also be used to determine whether or not to authorize the permanent transfer of the Kern Fan Element, and to proceed with the 41,000 acre-foot Kern/ Castaic transfer as part of the final project.

The Superior Court’s writ of mandate requires DWR’s *de novo* determinations and actions, because at present no project elements have been approved, except for the Superior Court’s interim order under Public Resources Code section 21168.9. The exercise of that discretionary power cannot vitiate the fundamental CEQA duties of lead and responsible agencies to precede their final project decisions by the completion and certification of a valid EIR. The EIR will thus be used to DWR to meet these requirements of law and proceed once the section 21168.9 order ceases to be in effect.

PCL requests that the EIR specifically address each of the following questions, which it raised more than a year ago in a letter to the DWR Director:

³³ Settlement Agreement, Appendix 3-A.

1. Once DWR has completed and certified its EIR, will DWR make a new decision on all components of the project, recorded in a new notice of determination?
2. If DWR makes a new project decision, will that decision determine whether or not DWR will approve and execute the Monterey Amendments?
3. If DWR makes a new project decision to approve a project that includes the Monterey Amendments:
 - a. Will the decision consider a no project alternative that includes no actions taken under the Monterey Amendments?
 - b. Will the decision determine whether or not to adopt alternatives to the Monterey Amendments?
 - c. Will the decision determine whether or not to adopt mitigation measures for any significant impacts of the Monterey Amendments?
 - d. Will the decision determine whether to authorize the permanent transfer of the Kern Fan Element?
 - e. Will the decision determine whether or not DWR approves of water deliveries under the 41,000 acre-foot Kern/Castaic transfer?³⁴

III. The DEIR’s “aura of unreality”³⁵ undermines its ability to meaningfully address the distinct environmental consequences of the project.

³⁴ The 1999 contracts framing this agriculture-to-urban transfer were not the subject of a validation challenge. However, those transfer contracts were expressly based upon the Monterey Amendments, whose final authorization remains unknown, and DWR has never approved the transfer outside of the Monterey Amendments, which would subject it to the pre-Monterey agricultural deficiency provisions of article 18(a) and undermine its reliability to support urban uses. (See Attachment C (2002 letter of Castaic’s counsel).) The Los Angeles Superior Court decertified Castaic’s stand-alone 2004 EIR in May 2007 (*Planning and Conservation League v. Department of Water Resources* (LASC No. BS 098724.)) While Los Angeles Superior Court Judge James Chalfant characterized the 1999 transfer contracts as “final,” he recognized that DWR could still take actions that could “undermine” the ability of the transfer to deliver water. *Id.* at p. 13. He also relied partially on representations of DWR’s counsel that DWR had the discretion to take steps that might curtail deliveries under the transfer. *Id.* at p.20 All parties except for DWR have appealed that decision, and it is pending in the Second District Court of Appeal. In addition to fully studying the Monterey-associated impacts of this sprawl-supportive transfer and appropriate mitigation, the EIR should fully consider PCL’s proposed alternative that would consider alternative dispositions of its water. In a time of statewide water shortage, the need for DWR’s careful evaluation is particularly acute.

³⁵ *PCL v. DWR*, 83 Cal. App. 4th at p. 912.

A. The DEIR analysis is predicated upon a defective environmental baseline.

Without the development of an adequate baseline condition, “analysis of impacts, mitigation measures and project alternatives becomes impossible.” (*County of Amador v. El Dorado County Water Agency* (1999) 76 Cal. App. 4th 931, 953.)³⁶ The baseline for these assessments must be based on an analysis of “real conditions on the ground,” rather than mere opinion or narrative. (*Save Our Peninsula Committee v. Monterey County Board of Supervisors* (2001) 87 Cal.App. 4th 99, 121.)

The DEIR accurately notes that that the baseline for assessment here is “complicated” by the implementation of the Monterey Amendments before 2003, when DWR issued its Notice of Preparation.³⁷ Nonetheless, a series of glaring errors undermine the baseline’s integrity to serve as the basis for assessing the project’s environmental impacts.

First, the DEIR states that the baseline has been “*adjusted to include events that are expected to occur over time*” that it assumes are “not related to the Monterey Amendment and the Settlement Agreement.”³⁸ That “adjustment” constitutes an error of law under CEQA. It is the “no project” alternative, rather than the baseline, that, in addition to existing conditions, must account for “what would be reasonably expected to occur in the foreseeable future if the project were not approved, based upon current plans and consistent with available infrastructure and community services.” CEQA Guidelines, § 15126.6(e)(2). But the “no project” alternative is “not the baseline for determining whether the project’s proposed impacts may be significant, unless it is identical to the existing environmental setting analysis which does establish that baseline.” *Id.* at 15126.6(e)(1). Here, where the “no project” analysis is much more complex, and by no means “identical” to the environmental setting, there is no basis for making these forecasting adjustments to the baseline, and the resulting mistake fatally infects the comparison between the baseline and impact assessment.

Second, the baseline does not accurately reflect pre-Monterey contract provisions that set limitations for contractors, and thus does not accurately reflect constrained demands or capacity

³⁶ See also CEQA Guidelines, § 15125(a) (the environmental setting will “normally constitute baseline physical conditions by which a lead agency determines whether an impact is significant”); DEIR, p. 5-1.

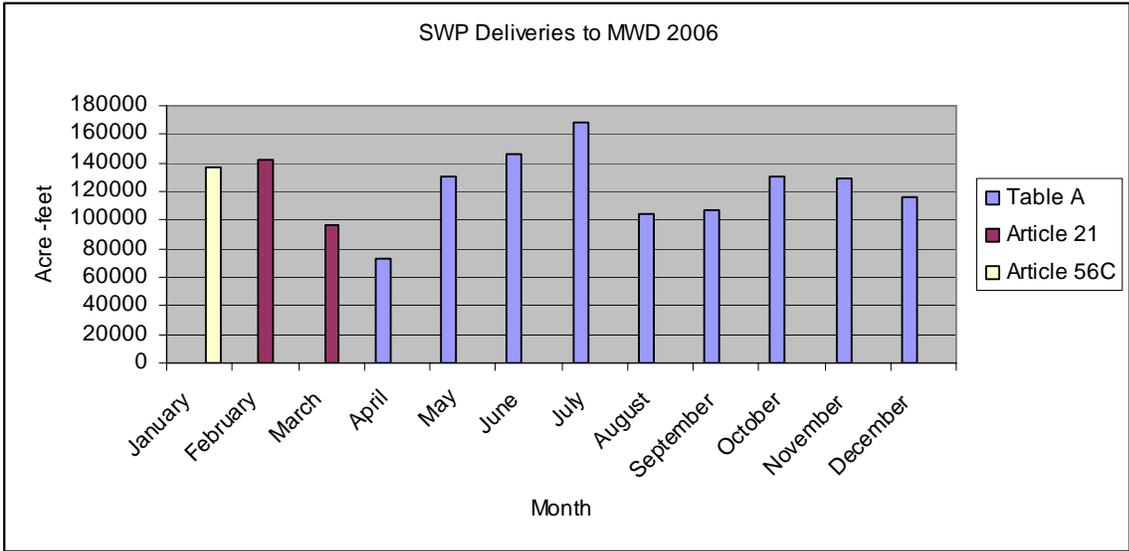
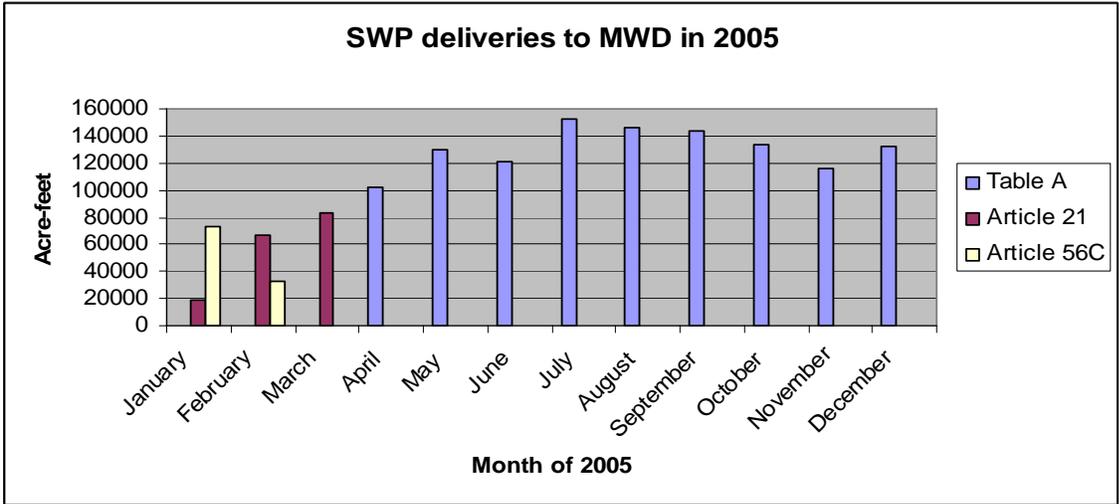
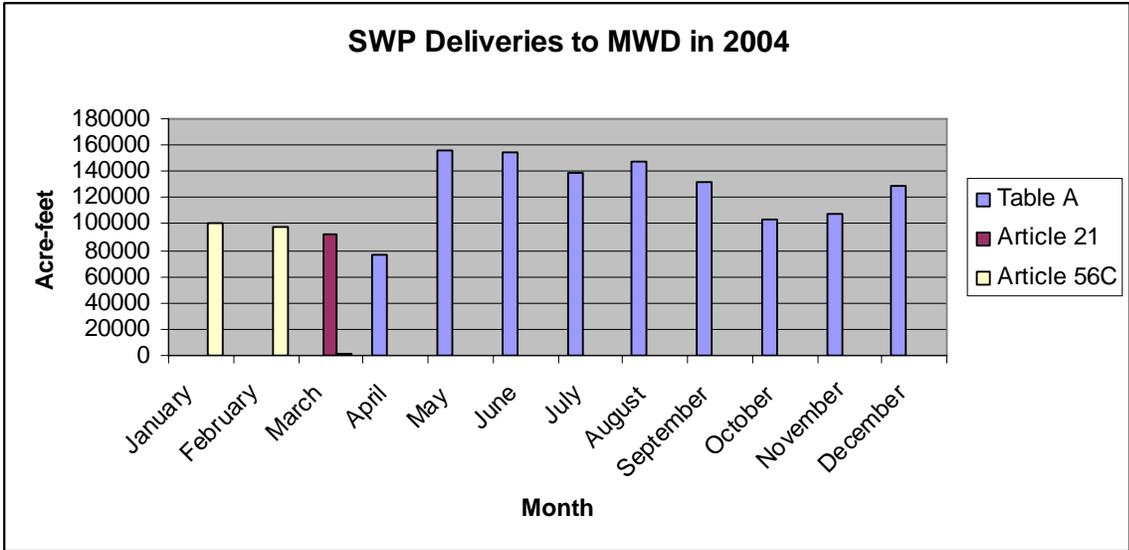
³⁷ The DEIR inaccurately lists the Monterey Amendments’ implementation date as 1995. DEIR, p. 5-2.

³⁸ DEIR, p. 5-2 (emphasis added); see also DEIR, p. 3 (postulating that “other changes and transfers” alleged to be “unrelated” to the Monterey Amendment, have occurred or are anticipated to occur by 2020). Although DWR attempts to project baseline and project conditions through 2020, the project involves changes to SWP project contracts that will remain effective until 2035. DWR’s impact assessment does not demonstrate why it fails to make reasonable attempts to take account of the additional 15 years of project impacts.

to accept SWP water under pre-Monterey contracts. These provisions, changed under Monterey as noted above, include the following:

- The pre-Monterey contracts precluded SWP contractors from storing water outside of their own service areas. This provision limited contractors' capacity to accept SWP water to the real-time customer demands plus the amount of water that could be stored in facilities within the contractors' service areas. Eliminating this provision in the Monterey Amendments significantly expanded storage options available to contractors, and thereby enhanced contractors' capacity to take water. Yet the DEIR assumes that the baseline water demand is the same as demands when such limitations are not applied to contractors (as in the proposed project).
- The baseline also does not reflect how Article 21(g) (1) of the pre-Monterey contracts precluded the use and therefore demands for Article 21 water. As noted above, Article 21 (g) (1) prevents the state from delivering "surplus" water where it determines that it would contractor to the extent that the State determines that such delivery would tend to "encourage the development of an economy within the area served by sustained delivery of surplus water." This article established a specific limiting provision for delivery of Article 21 water, and the baseline should assume that DWR would implement it and withhold delivery of water where appropriate. By contrast, the Monterey Amendments have been in effect on an interim basis without that limitation. Several contractors now have economies that are dependent on continued delivery of Article 21 water. According to tables provided by DWR for water years 2004 and 2005, some urban contractors now take Article 21 and carry-over water in the winter months while taking little or no Table A supplies and take Table A supplies later in the year (see tables below). This indicates that some contractors are using Article 21 supplies to sustain the hard demands of their service area in winter months.³⁹

³⁹ In fact, review of the historic deliveries of article 21 water demonstrates that municipal demands for Article 21 water supplies have *increased* since implementation of the Monterey project. Such use would have been prohibited under the pre-Monterey contracts. This increased demand for article 21 water should not be included in the baseline. The EIR should further analyze whether proposed contract amendments have indeed resulted in hardened demand for article 21 water, and corresponding shifts in delivery, demand, and request patterns for Table A supplies.



Source data provided electronically to Mindy McIntyre by DWR staff in 2007

Third, the baseline inappropriately excludes an accurate analysis of allowable operations under the current regulatory setting. The baseline does not include operational constraints of the federal Endangered Species Act (FESA) and the California Endangered Species Act (CESA). As detailed further in section III.B, *infra*, recent state and federal court rulings have determined that SWP operations as modeled in the DEIR do not comply with either CESA or FESA, and are therefore illegal.⁴⁰

Fourth, the DEIR fails to recognize climate change in the baseline (and in the analysis of alternatives). The DEIR incorrectly states that too little is known about climate change to warrant incorporation of findings into the baseline and alternative. Rather, the DEIR provides a cursory discussion of climate change in a separate section of the EIR⁴¹. This assertion is contradicted by numerous studies and findings, including research published by DWR well before the release of the DEIR.

DWR has prepared and released significant information on climate change impacts to the SWP system and to California water resources. The Department's own "Progress on Incorporating Climate Change into Water Management," outlines several feasible scenarios for climate change. CEQA does not require definitive information prior to incorporation into analysis. Indeed, as noted by the Intergovernmental Panel on Climate Change, it is very unlikely that future California hydrology will be the same as past hydrology:

The IPCC (2001) ranked the confidence limits of major impacts to water resources due to observed and projected climate change as very high (0.95-1.00), high (0.67-0.95), medium (0.33-0.67), low (0.05-0.33), and very low (0.00-0.05). There is high confidence that the timing and amount of runoff is changing, and very high confidence that watersheds with substantial snowpack will experience major changes as temperature continues to rise. The impacts of this trend are a decrease in available water resources in California, primarily during the summer months, and a potential increase in wintertime floods. There is high confidence that California's Sierra Nevada will experience a continued trend of decreased snow accumulation

⁴⁰ See, e.g., *Natural Resources Defense Council v. Kempthorne* (E.D. Cal. 2007), 2007 U.S. Dist. LEXIS 42263 (existing and planned future operations in the Central Valley Project and State Water Project may jeopardize the Delta Smelt, creating ESA compliance problems. While the baseline excludes compliance with these state and federal endangered species laws, the DEIR simultaneously relies on the FESA process to mitigate for many of the significant impacts of the proposed project. However, the DEIR provides no analysis to demonstrate that the FESA process is capable of mitigating these impacts.

⁴¹ See DEIR, Ch. 12, addressed in section of these comments, *infra*.

and earlier snowmelt (e.g. Lettenmaier and Gan 1990; Jeton et al. 1996; Miller et al. 1999; Wilby and Dettinger 2000; Knowles and Cayan 2002; Miller et al. 2003).⁴²

In fact, and as discussed further below, widely available data demonstrate that climate change is already occurring in California, with trends of declining snowpack and earlier annual peak runoff.⁴³ Numerous studies, listed in attachment D to these comments, address climate change and its effects on water resources in California are available. Despite this overwhelming body of evidence of current and future climate change, the DEIR ignores climate change in the baseline and in all alternatives. Instead, the baseline and all alternatives are based on past hydrology.

In sum, the DEIR's baseline fails to provide an accurate basis for comparison of environmental impacts associated with the proposed project or other alternatives. The baseline must be adjusted to reflect the pre-Monterey SWP contracts, pre-Monterey SWP operations and the impacts of climate change. Without such adjustments, the baseline is an inadequate reference from which to determine the impacts of the proposed project and project alternatives.

B. The DEIR fails to reflect the current regulatory framework, and in particular the impact of the Delta Smelt/OCAP decision on the delivery reliability of the SWP.

DWR's final decision on the "Monterey Plus" must reflect and address SWP and environmental conditions as they exist now, rather than freezing them in 1995 or 2003. The recent ruling invalidating the biological opinion for the Delta Smelt is one of the most significant current environmental constraints for the SWP. Yet the DEIR fails to incorporate the impact of this decision in alternatives analysis or recognize this significant decision in Section 6.3 (Changes in SWP Operations Since 1995 Unrelated to the Proposed Project). The federal court's

⁴² *California Climate Change, Hydrologic Response, and Flood Forecasting*, Norman L. Miller Earth Sciences Division, Berkeley National Laboratory, Berkeley, California, USA. Presented at the International Expert Meeting on Urban Flood Management 20-21 November 2003, World Trade Center Rotterdam, The Netherlands April 30, 2004.
http://www.lbl.gov/Science-Articles/Archive/assets/images/2004/Apr-30/California_Flooding.pdf

⁴³ *Potential effects of global warming on the Sacramento/San Joaquin watershed and the San Francisco estuary*. Noah Knowles and Daniel R. Cayan, *Geophysical Research Letters*, VOL. 29, NO. 18, 1891, doi:10.1029/2001GL014339, 2002, <http://natypete.andradedowns.googlepages.com/knowles2002.pdf>; No. 119. Effects On Water Resources: Monitoring Snowmelt Runoff And Sea Level for Climate Change, Maurice Roos, California Department of Water Resources, presented at the U.S. Climate Change Science Program (CCSP) workshop on November 14-16, 2005, in Arlington, Virginia http://www.climatechange.gov/workshop2005/posters/P-WE2.8_Roos.pdf

summary judgment decision was issued on May 25, 2007, many months before the DEIR and the final ruling has now been issued.⁴⁴

DWR has publicly recognized the impact of the Delta Smelt ruling outside of the DEIR. DWR's Chief of Project Operations Planning Branch, John Leahigh, stated that under the interim remedy actions proposed by the United States Fish and Wildlife Service (USFWS), SWP 2008 deliveries would be reduced anywhere between 8% (91,000 AF) to 27% (305,000 AF) from a baseline delivery of 1.15 MAFY in a dry year; and from between 8% (252,000 AF) and 31% (305,000) from a baseline of 3 MAFY in an average year. (Attachment F, *NRDC v. Kempthorne*, Doc. 398, Declaration of J. Leahigh, dated July 9, 2007, at ¶¶ 6. 36-37.)

While the ruling initially imposed an interim remedy only, it is reasonable to expect that the next biological opinion will impose permanent restrictions that are similar or more stringent to the interim remedy. It is very unlikely that the USFWS will issue a biological opinion significantly similar to the pre-ruling opinion. Given this likelihood, the EIR should reflect the operations imposed by the court in the Delta Smelt ruling. Indeed, the ruling demonstrates that existing operations, as modeled in the DEIR, are not lawful. The Delta Smelt ruling will alter the way the proposed project can be implemented. The interim remedy imposed by the court restricts winter and spring SWP pumping in the Delta. Such restrictions will necessarily impact deliveries of Article 21 water, as well as Turnback Pool transfers. Any conclusions included in the DEIR regarding deliveries of Article 21, Turnback Pool water and other water deliveries in the winter and spring are now inaccurate. The EIR must recognize the Delta Smelt ruling, and fully incorporate it into the environmental analysis for the project.⁴⁵

C. The DEIR improperly uses CALSIM II as the principal tool to analyze baseline condition and environmental impacts.

The DEIR relies on CALSIM II to analyze the impacts of water allocation and deliveries under the baseline, the proposed project and the alternatives. CALSIM II results are relied upon to estimate SWP delivery and export impacts as well as to derive environmental impacts on the Delta and upstream tributaries. While CALSIM II may be a sophisticated and useful modeling tool for certain purposes, it is inappropriate for determining environmental impacts and for estimating impacts in export and deliveries. It has been criticized by a panel of expert reviewers for several weaknesses, including its lack of amenability to proper calibration. (See A. Close, *et al.*, *A Strategic Review of CALSIM II and its Use for Water Planning, Management and Operations in Central California* submitted to California Bay Delta Authority Science Program, December 4, 2003.

⁴⁴ Attachment E, *NRDC v. Kempthorne*, 1:05-cv-1207 (EDCA), Doc. 560, Interim Remedial Order Following Summary Judgment and Evidentiary Hearing, dated Dec. 14, 2007, Attachment F, *NRDC v. Kempthorne*, Doc. 323, Order Granting In Part and Denying In part Plaintiffs' Motion for Summary Judgment, dated May 25, 2007.

⁴⁵ The EIR also needs to discuss the *time of year* in which cutbacks of pumping will be necessary to achieve the restoration of the Delta Smelt. The timing of these cutbacks may well occur in spring and winter, ordinarily a heavy period for SWP pumping.

In addition, CALSIM II assumes foresight on the part of operators, and thus assumes that operators will not take actions that will result in later violations of environmental standards or other operating constraints. This assumption can lead to great underestimation of environmental impacts, for in the real world operators do not have such foresight and thus may make decisions without realizing the consequences ultimately resulting from those decisions.

Furthermore a recent analysis has revealed additional flaws in the statistical basis for CALSIM II. (“Analysis of CALSIM’s Statistical Basis,” by Arve Sjøvold, December 28, 2004, previously provided to DWR).

CALSIM II predictions are only as accurate as the data and assumptions that are plugged into the model. Here, those assumptions may be wrong; for example, the DEIR assumption that future water flow patterns will be similar to those that have occurred in the past is inconsistent with the ample literature on the substantial effects of global warming on California water flows. These input data errors and uncertainties further undermine the ability of the DEIR’s modeling analysis to make the kind of predictions necessary to support a genuine analysis of impacts.

Because CALSIM II is an optimization model that does not necessarily reflect options available to water operators, it may predict levels of exports. However, federal and state water quality and endangered species laws and regulations probably would prohibit such high export levels for water quality problem. The DEIR assumes that future water exports from the Delta will be nearly twice the historic average. Yet this prediction fails to recognize that DWR has chronically failed to meet water quality standards in the Delta under historic operations, and significant environmental degradation has taken place under such conditions, resulting in new regulatory actions. In light of the recent pelagic organism declines in the Bay Delta Estuary, and resulting rulings invalidating the biological opinion for Delta smelt, it is prudent to ensure the DEIR modeling assumptions predictions are conservative, rather than “optimizing” to ensure assumed deliveries would not violate conditions of the Federal Clean Water Act, the Federal or California Endangered Species Acts, or any other environmental permit condition, regulation, standard, or law.

Finally, the DEIR’s presentation of modeling results is flawed. Throughout the DEIR, modeled predictions—for example, statements that salmonid mortality will increase by a certain percentage—are presented as though certain, and discussion of possible error or of ranges of possible outcomes is almost entirely absent. The models used cannot possibly produce such certainty, however; at best, they can predict, given a certain set of data and assumptions, a range of possible outcomes, with some outcomes potentially more probable than others, and with all predictions limited by both known and unknown sources of error. An accurate discussion of the DEIR’s modeling results therefore cannot provide certain predictions, and instead should show the range of possible outcomes. By omitting both possible sources of error and potential outcome ranges, the DEIR projects a false certainty that the impacts of the project will be relatively small. Indeed, if the modeling results were properly presented, with ranges of outcomes fully described, the study might show that the models actually predict that significantly larger impacts are entirely capable of occurring.

PCL does not argue that models should never have been used to inform the analysis in the DEIR. But the CALSIM II used cannot possibly provide a near-certain conclusion that significant environmental effects will not occur, or will be fully mitigated especially when both common sense, existing knowledge of the Delta system, and the analyses of other agencies all indicate the extremely high likelihood of such impacts. Indeed, PCL believes that if modeling results were properly reported, they would indicate the reasonable likelihood of significant impacts.

As participants in the EIR Committee process, PCL has previously submitted comments expressing our concerns regarding the adequacy of CALSIM II for analyzing baseline conditions and assessing environmental impacts. The DEIR has not adequately addressed our previous comments, and we resubmit those comments on CALSIM II by reference to the DEIR.

If DWR includes CALSIM II model analyses in future EIR drafts, we request clear explanations and justification of all assumptions made in the CALSIM II model runs. In addition, we request that DWR explicitly state when findings are based on post processing and when findings are based on direct model results. When findings are based on post processing, the rationale behind these post-processing decisions should be clearly articulated.

V. The DEIR fails in its duty to analyze the transfer, development and operation of the Kern Water Bank, and alternatives that would restore its public accountability.

A. DWR must independently study, and exercise its own judgment on, the “transfer, development and operation” of the Kern Water Bank.

As provided in the settlement agreement, “the new EIR shall include an independent study by DWR, as the lead agency, and the exercise of its judgment regarding the impacts related to the transfer, development and operation of the Kern Water Bank” in light of existing environmental permits. (Section III.F.) That study “shall identify SWP and any non-SWP sources of deliveries to the Kern Water Bank.” (*Id.*) The EIR must provide this analysis to ensure compliance with the agreement and the requirements of CEQA.

The 2003 Settlement Agreement, which allows the Monterey Amendments to proceed on an interim basis, that “KWBA shall retain title to the KWBA lands. KWBA may continue to operate and administer the KWB lands including the water bank, subject to restrictions herein.”⁴⁶ The agreement also provides that “[t]he restrictions in this Section V shall become final only upon (1) filing of the Notice of Determination following the completion of New EIR, (2) discharge of the writ of mandate in the underlying litigation as provided below, and (3) conclusion of all litigation in a manner that does not invalidate any Monterey Amendment (or any portion thereof) or the Kern Fan Element Transaction.”⁴⁷

⁴⁶ Settlement Agreement, § 5.A.

⁴⁷ Settlement Agreement, § V.F.

B. The DEIR's study methods are too narrow to support DWR's independent judgment on the future of the Kern Water Bank.

DWR's final decision addressing ownership and operation of the world's largest groundwater storage facility, the one million acre-foot capacity Kern Water Bank located west of Bakersfield, raises critical issues involving public trust accountability and environmental responsibility. The various stakes involved in the bank's operation—financial, institutional and environmental—are of immense importance to California's future. Built to capacity, the groundwater bank is capable of delivering 240,000 acre-feet of water per year, enough to supply the needs of roughly 500,000 households.⁴⁸

The facility is also crucial because of its location, providing storage to the southern San Joaquin Valley.⁴⁹ When developed, the Kern Fan Element, in combination with the provisions of the proposed project allowing storage outside an SWP service area, significantly increase SWP contractors' capacity to accept water from the Delta.

But the DEIR's draft study on the Kern Water Bank (DEIR, Appendix E) says very little that would alert the reader to momentous environmental significance of DWR's forthcoming decision. The "methods" section of that study (DEIR, Appx. E, p. 5) suggests a possible reason for its benign assessment. Of the three sources of information noted in the study, the only information source that does not come directly from the Kern agencies, KCWA and KWBA, is that DWR contacted personnel from the California Department of Fish and Game and the United States Fish and Wildlife Service. That focus is far too narrow. The substantial environmental issues associated with the loss of statewide environmental accountability over the bank require a more probing analysis that could not be addressed simply by consulting wildlife and fisheries agencies, and it is DWR, as SWP manager, that must provide that analysis. As detailed below, even if the KWBA has been a responsible steward of the Kern Fan Element property that holds the bank, the concerns that arise from the decision for the bank to serve local rather than statewide interests would persist.

DWR's narrow study methods are surprising, because the broader issues surrounding the transfer, development and operation of the Kern Water Bank have been the subject of major public controversy, addressed in the media⁵⁰ and in reports that are referenced and discussed nowhere in the DEIR. One of those reports, prepared by Public Citizen, contends that while the

⁴⁸ In August 1996, one day following DWR's transfer of the bank to Kern County Water Agency in its interim implementation of the Monterey Amendments in 1996, KCWA retransferred the bank to the Kern Water Bank Authority (KWBA), which consists of five local public water agencies and a private mutual water company.

⁴⁹ Sandino, *California's Groundwater Management Since the Governor's Commission Review: The Consolidation of Local Control* (2005) 36 MCGEORGE L. REV. 471, 489 n. 171.

⁵⁰ M. Arax, *Massive Farm Owned by L.A. Man Uses Water Bank Conceived for State Needs*, Los Angeles Times (online), December 19, 2003.

KWBA is formally public entity, it is effectively majority-controlled by one of the world's largest farming companies, Paramount Farming, and largely serves the interests of two corporations with large landholdings in the service area.⁵¹ The Public Citizen report charges that the divestment of the bank from state authority has been environmentally destructive, raising issues that are nowhere addressed in the DEIR.⁵² While we believe that DWR is very much aware of this report, and should thus have included a reaction to the report as part of the DEIR environmental analysis of the proposed transfer of the Kern Fan Element, we will attach the Public Citizen Report to these comments, so that DWR will have no excuse not to analyze its findings in connection with producing the final EIR.

Whether or not DWR concurs with them, it would be irresponsible not to address these well-known allegations before taking its final action on the proposed Kern Water Bank transfer.⁵³ Indeed, broad concerns about the lack of institutional and environmental accountability among Kern County's local water agencies have drawn the attention, not simply of environmental groups, but also some of the most respected scholars of California's water history. For example, Norris Hundley's discussion observes that such local districts "are ordinarily managed by boards of directors made up of a homogeneous, single interest body of people representing the large water users and guided by a rigid set of goals: maximization of water use at minimum cost with little or no regard for the environment or for the welfare of the people of California."⁵⁴ In short, the EIR will disserve decision-makers and the public unless DWR is able to step outside the mindset of the local Kern agencies, and address the Kern Water

⁵¹ J. Gibler, WATER HEIST (Public Citizen, December 2003)("Public Citizen report"), included as Attachment G to these comments. The EIR should specifically address the Public Citizen report as if it were set forth directly in these comments.

⁵² See Public Citizen report, p. 2 (arguing that the bank should not "provide a handful of corporations with the keys to a virtual 'switchyard' for controlling water deals between agribusiness and real estate developers").

⁵³ To assist decision-makers and the public, PCL also requests that DWR include in the EIR a documentary appendix compiling key reference sources on the Kern Water Bank. The public should have an opportunity to directly review such key documents as (1) the 1987 DWR/ KCWA memorandum of understanding; (2) the purchase agreements framing the transfer of the Kern Fan Element from DWR to KCWA, and from KCWA to KWBA; (3) the 1995 KWBA Statement of Principles; (4) the 1995 KWBA Joint Powers Agreement; and (5) the 1995 KWBA Operations and Monitoring Memorandum of Understanding.

⁵⁴ N. Hundley, THE GREAT THIRST (2001), p. 536; see also R. Gottlieb and M. Fitzsimmons, THIRST FOR GROWTH (1991), pp. 96-97 ("With new purchases and related expansion of irrigated acreage becoming a speculative spiral, the Kern landowners raced to establish new water districts to contract for State Project water....The tendency toward concentration and overextension, already prevalent in the county from the days of *Lux v. Haggin*, was enormously magnified with the arrival of the aqueduct. A handful of landowners dominated the key water districts affiliated with the [Kern County Water Agency], and these districts, in turn, dominated the agency").

bank issues with the “statewide perspective and expertise” required in its stewardship of the State Water Project.⁵⁵

C. The EIR fails to fully disclose how the transfer of the Kern Fan Element out of DWR’s control alters the central purpose of the Kern Water Bank.

Although the DEIR briefly refers to the transfer of the Kern Fan Element out of state ownership, and its subsequent control by the KWBA (DEIR, p. 4-11), it never fully acknowledges how this transformation affected the fundamental purpose of the Kern Water Bank. The DEIR appendix on the transfer briefly references the 1987 Memorandum of Understanding (1987) between DWR and KCWA, which formed the basis for DWR’s acquisition of the Kern property from Tenneco West.⁵⁶ But it never mentions how two key statewide and public protections referenced in the 1987 MOU were later removed:

- **Shift of bank purpose to serve local rather than statewide interests.**

The 1987 MOU clarified that the “primary purpose” of the Kern Water Bank is to “augment the dependable water supply of the State Water Project”; and that “[i]ncidental” to its primary purpose the bank will produce “local benefits.” It defined the bank as a “SWP conservation facility” to be integrated with other SWP operations.

By contrast, the 1995 joint powers agreement for the KWBA reversed the priorities, ensuring that “the Authority will be operated and maintained *“for its benefit and the benefit of the Member Entities.”*⁵⁷

- **Failure to acknowledge statewide trust protection**

Although the MOU conferred upon the Agency a ten-year option to purchase the bank, it imposed conditions of that purchase that would have preserved DWR’s trust responsibilities under the Water Code. Under the MOU, the Agency’s purchase of the bank could only occur “[p]rovided that the *Department’s right to use the area for project purposes* will be preserved. Consistent with section 11464 of the Water Code, the Department shall not sell facilities acquired for the Kern Water Bank.”⁵⁸

⁵⁵ *PCL v. DWR*, 83 Cal. App. 4th at p. 907.

⁵⁶ DEIR, appx. E, p. 10.

⁵⁷ 1995 JPA for the KWBA, recitals at ¶ 5.

⁵⁸ The non-alienation provision in Water Code section 11464 provides that “no water right, reservoir, conduit, or facility for the generation, production, transmission, or distribution of electric power, acquired by the department shall ever be sold, granted, or conveyed by the department so that the department thereby is divested of the title to and ownership of it.”

By contrast, neither article 52 of the Monterey Amendments, nor the conveyance agreements with the Kern agencies for the Kern Fan Element transfer, ever referenced or incorporated DWR's continuing authority, even in the context of local ownership, to use the bank as needed for SWP purposes. Instead, the transfer agreements took the form of unrestricted fee simple transfers, without any discussion of the state's underlying trust duties.

In its EIR, DWR must fully analyze the circumstances surrounding the removal of safeguards for the public and the state, and the environmental consequences of bank operation without these protections. It must also study alternatives that would not eliminate these protections, even in the context of local ownership and administration of the bank.

D. The EIR must more fully describe DWR's experiences and purposes in attempting to develop the Kern Water Bank.

The DEIR barely discusses DWR's original plans for the KWB and attempts to develop it. In a 1979 article, then-DWR director Ronald Robie described a variety of environmental advantages to DWR developing an underground storage facility for the SWP. He concluded that "an SWP ground water program will add flexibility to SWP operations and can be a hedge against earthquake or other disablement of the California Aqueduct."⁵⁹ Following the release of technical studies, DWR focused on the possibilities of developing SWP groundwater recharge operations in Kern County.

In 1986, DWR prepared an EIR for a state-run water bank, contemplating purchase of approximately 20,000 acres of land from Tenneco West, located on the Kern River's alluvial fan (the area that ultimately became the bank's site is sometimes referred to as the Kern Fan Element).⁶⁰ The present DEIR does not disclose that in its own environmental reviews, DWR recognized that operation of the bank might have an impact on the Bay-Delta.⁶¹

DWR made substantial investments in studies and other activities with the expectation of implementing the state-owned bank. Some estimates have placed the total amount DWR paid to develop the bank, including the initial purchase, over \$70 million.⁶² The EIR should disclose the full amount of that investment, including any investment in environmental study and mitigation.

⁵⁹ *Id.* at 45.

⁶⁰ See also Kletzing, *Imported Groundwater Banking: The Kern Water Bank - A Case Study*, (1988). 19 PAC. L.J. 1225.

⁶¹ DWR, First Stage Kern Fan Element Draft Supplemental Environmental Impact Report (1990). pp. 38-42.

⁶² Public Citizen, p. 2.

E. The EIR does not fully disclose the circumstances that caused DWR to relinquish control of the KWB.

The EIR should more fully disclose the circumstances that caused DWR to stop developing the KWB. In this regard, several documents that PCL obtained from DWR, included as attachment H, are illuminating. During the early 1990s, KCWA, joined by other local water districts and the State Water Contractors organization, sought to have DWR cease all “planning, design and land acquisition” activities relating to the water bank, even requesting that it be “mothballed.”⁶³ They also argued that since DWR would not be developing the bank, it should be transferred to local control. In response, DWR director David Kennedy ultimately endorsed divestment of the water bank to the Agency, which then became a key principle in the 1994 Monterey Agreement.⁶⁴

Although DWR had earlier been trying to proceed with the state-run project, two factors--potential ESA impacts, and Kern non-cooperation—thwarted these efforts. The latter reflected both ESA impacts, which KCWA did not want to address, and partly KCWA’s reluctance to allow DWR to protect statewide interests in the bank. DWR had reached a HCP addressing on-site impacts, and that HCP was satisfactory to everyone but the Kern interests. However, DWR staff reported that Kern “wanted to recharge and extract at their will and not pay for ‘any stinking mitigation costs’”. When DWR objected, Kern’s Tom Clark responded, “if we think we must, we will buy it.”⁶⁵

F. The EIR inadequately addresses the details of DWR’s purchase agreement with Kern County Water Agency.

The EIR identifies the agricultural contractors’ retirement of 45,000 acre-feet of agricultural entitlement (almost all by KCWA) as the ostensible consideration (the price paid) for DWR’s transfer of the Kern Water Bank. But it does not adequately analyze the circumstances surrounding that exchange:

- DWR estimated the bank’s worth at just over \$33 million. That figure was just two million more than the state had paid in 1988, despite the state’s subsequent investment of approximately \$40 million in the bank’s development. The state apparently valued the element based upon its purchase piece of marginal agricultural land rather than its more important value—a capitalization of the land’s highest and best use as a water bank.

⁶³ Attachment H (February 18, 1993 draft letter from SWC to DWR).

⁶⁴ Attachment H (1992 SWC action report; February 18, 1993 draft letter from SWC to DWR; February 9, 1993 and April 19, 1993 letters from DWR to SWC).

⁶⁵ Attachment H (Memorandum of Jack Erickson, DWR to John Pacheco, dated February 13, 1996).

- KCWA’s retired agricultural “entitlements” existed only as an accounting tool, and Kern had no realistic expectation of receiving actual wet water under those entitlements. Nevertheless, KCWA was obligated—pursuant to the contracts it signed—to pay the state for that entitlement amount. By retiring those entitlements, KCWA therefore relieved itself of a substantial liability while losing little, if any, chance at wet water. The retired debit would appear to have a substantially higher value than the retired entitlements.
- DWR and KWBA have yet to provide a full accounting of the sources of water going into the Kern Water Bank, an issue that DWR is called upon to address in the Monterey settlement agreement within the Monterey Plus EIR. It seems likely that the other inexpensive sources of water made available to the Kern agencies through the Monterey Amendments—including “interruptible” (formerly surplus) water, carryover storage water, and turnback pool water—might have more than replaced the purported “loss” of KCWA’s 45,000 acre-feet of paper entitlements with less expensive sources.
- The state’s divestment also included some of its water. DWR conveyed title to half the water stored in the bank, as well as all the water stored during 1995. As the KWBA recognized in its financial statement, “the participants [in the KWBA] received Kern Water Bank land and facilities and 42,380 acre-feet of banked water. The 42,830 acre-feet of water subsequently was transferred to each of the participants in proportion to their ownership. This transaction was reflected as a contribution of capital in the amount of \$27,858,500 by the respective participants.”⁶⁶

G. The DEIR fails to analyze key environmental consequences of the Kern Water Bank’s operation without statewide trust accountability.

The DEIR fails to study the major environmental consequences of the Kern Water Bank, other than some smaller issues that centrally focus on KWBA’s administration of the Kern Fan Element lands. Notably, the analysis fails to answer important questions about foreseeable trends in water marketing and groundwater banking due to the project.⁶⁷ Instead, the DEIR abruptly concludes that impacts are less than significant because multiple factors increased groundwater banking, and because of a beneficial impact on groundwater levels.⁶⁸

The EIR must carefully study the following issues:

- **Pressures on the Delta**

⁶⁶ KWBA, *Financial Statements* (December 31, 2000 and 1999).

⁶⁷ Neither Chapter 8 on growth-inducing impacts, nor Chapter 9 addressing water supply reliability and “paper water,” address the transfer and operation of the Kern Water Bank. The effects of available storage and related transfers must be included in those analyses even if the bank is addressed separately in Appendix E.

⁶⁸ DEIR, appx. E, p. 49.

The transfer of the Kern Fan Element resulted in a shift in use of the facility. The state had intended to use the facility as a drought mitigation bank. In local control, it has become a new resource to maximize deliveries of SWP water and an economic resource. Local agencies now benefit from aggressively developing the Kern Fan Element. Under the Monterey Amendments, all contractors can use the Kern Water Bank to store SWP water. Therefore, the bank transfer has a significant potential to increase demand for and export of Delta water. The DEIR does not adequately analyze the impact on SWP demand and Delta export resulting from the transfer and development of the Kern Fan Element.

DWR's records, although not yet disclosed in the EIR, suggest a possible close connection between the Kern Water Bank, Delta pumping, and Delta environmental issues. The bank's relationship to Delta pumping and environmental conditions came up repeatedly in DWR's correspondence with other agencies,⁶⁹ as well as with the contractor constituencies represented in the Monterey negotiations.⁷⁰ In general, those records suggest DWR was well aware that operation of the Kern Bank could lead to increased Delta pumping, and that those increases could affect endangered species.

Additional research by PCL, previously brought to DWR's attention⁷¹, also shows the Kern Bank's role in increased deliveries to southern contractors.⁷² These documents highlight how filling the bank can impact the Delta. For example:

⁶⁹ See, Attachment H, including: Letter from Wayne White, Department of Interior to David Kennedy, dated September 30, 1991 ("we are concerned about potential adverse effects of the project in the Sacramento-San Joaquin River Estuary (Delta) area in central California. The reason for this concern is that water storage capacity within the Kern Water Bank would be filled through additional water exports from the Delta averaging approximately 90,000 acre-feet per year"); *id.* (potential adverse effects on Delta smelt and winter-run Chinook salmon); Letter from John Turner, Department of Fish and Game, to Dan Masnada of CCWA, dated July 20, 1995 (development of storage facilities, along with other Monterey operational changes, "combine to create substantial potential for program effects in the Delta and upstream"); *id.* (full study of Kern Water Bank's "potential impacts on the Delta has never been completed").

⁷⁰ See Attachment H: MWD letter to Tom Clark dated May 29, 1992 (identifying relevance of Chinook impacts); Memorandum of Jack. A. Erickson, DWR, dated April 20, 1993 (acknowledging Delta issues associated with Kern Fan Element); DWR, Kern Fan Element Re-evaluation Study, February 1996 (acknowledging Kern-Delta link).

⁷¹ See Appendix A.

⁷² Several other provisions in the Monterey Amendments also facilitate increased pumping of KWB-bound water. These provisions include liberalized requirements for "interruptible" water, allowance of "carryover" water, and creation of a "turnback pool."

--A KCWA brochure reported that in 2001, the banking program had boosted local supplies by “almost 200,000 acre-feet” and urban Southern California supplies by 81,000 acre-feet.

--Numerous reports from the manager of KCWA member Lost Hills Water District document, among other things, Paramount Farming’s use of water banking to obtain inexpensive sources of state water for future water transfers and sales.

--A Georgia State University paper on water sales from 1990-2001 recorded purchases from the Monterey Amendments turnback pool by KCWA, Dudley Ridge and other contractors at prices of \$5.90 to \$11.79 per acre.⁷³

--The Urban Water Management Plan of the McAllister Ranch Irrigation District, a former agricultural area near Bakersfield that is turning to residential development with the assistance of the Kern Water Bank.

--KCWA’s 1996 Water Supply report contradicts the assumption that Monterey provisions including the Kern Fan transfer have only had a minor effect on deliveries, reflecting an understanding that it expected the Kern water bank, along with Monterey managerial changes, to help increase its SWP yield.

- **Depleting the Environmental Water Account**

There appears to be significant evidence that effective possession of the Kern Water Bank enabled Paramount Farming subsidiary Westside Mutual and other interests within the KWBA to secure “surplus” water from the state, only to sell it back to the state’s Environmental Water Account at a profit.⁷⁴ If DWR itself operated the bank, such privately-profitable sales would not have resulted in a transfer of money out of the state system; DWR could pump its own surplus water to the bank (rather than selling it at bargain-basement prices) and then at times of environmental need could pump that water, without paying marked-up prices for it, to users in lieu of Delta deliveries. By paying less for water, DWR thus could slow the depletion of EWA assets, which in turn would allow the EWA to take more protective actions. That change could become crucially important during a drought, for in times of scarcity the KWBA member agencies could charge far higher prices for their water, and the financial difference between a DWR-managed bank and a privately managed bank, and thus the difference in depletion of EWA funds, could be enormous.

- **Increasing the agribusiness footprint**

⁷³ M. Czetwertynski, *The Sale and Lease of Water Rights in Western States: An Overview for the Period 1990-2001* (March 2002), pp. 16-17.

⁷⁴ The evidence is available at <http://www.ewg.org/reports/CAWaterTakings/part4.php>; http://www.watertransfers.water.ca.gov/water_trans/water_trans_index.cfm. Despite its prominent role in securing the divestment of the Kern Water Bank and benefiting from it, Paramount Farming—whose wholly owned subsidiary Westside Mutual Water Company owns more than 48 percent of the bank--is only cryptically referred to in the DEIR analysis of the Kern bank, and not by name. See DEIR, Appx. E, p. 17 (noting that Westside was formed by “a landowner”).

The profit stream to Paramount Farming and other Roll International affiliates deserves further attention. The bank, which was intended to help balance out the state's water supply to cities, farms and fish, has instead allowed Paramount Farming to double its acreage of nuts and fruits since 1994."⁷⁵ If the Kern Bank has indeed allowed a private company to put substantial additional acreage to agricultural use, that change could have multiple environmental consequences, including local habitat loss, increased pollutant loading, and, perhaps more importantly, increasing and hardening overall south-of-Delta water demand, which in turn could increase Delta impacts in the next drought.

- **Constrained public uses**

Private operation of the bank outside DWR control would hamper the state's ability to manage water resources for a variety of public purposes, including drought storage for emergency preparedness, urban uses, environmental protection, river restoration, and water quality.⁷⁶ The specialty crops and urban uses supported by the bank, due to their inflexibility in times of drought, may increase pressure for water exports from the overburdened Bay Delta during times of critical shortage.

- **Supporting growth and development**

In KCWA's March 1995 newsletter, its general manager describes "our local groundwater basin" as "a multi-billion dollar resource."⁷⁷ The Public Citizen report alleged that the privately controlled water bank serves as "switchyard" for transactions between agribusiness and real estate interests in Southern California.⁷⁸ The DEIR must investigate these allegations, as well as suggestions that the bank may promote sprawl development.⁷⁹

⁷⁵ Arax, *supra*.

⁷⁶ "Water banking could be used as drought protection to statewide benefit and to help improve water quality in the heavily depleted San Joaquin Valley groundwater basin. Operating banks for water marketing will have the opposite effect, fueling increased dependence upon distant water supplies for new growth...." Public Citizen, *Water for People and Place* (Nov. 2005), p. 28.

⁷⁷ KCWA General *Manager* Jim Beck, quoted in *Water Age*, March 2005, p. 3.

⁷⁸ Public Citizen report, p. 2.

⁷⁹ See, e.g., V. Pollard, *Los Angeles Eyeing Kern Water Source*, *Bakersfield Californian*, March 24, 2002 (online) ("DWP officials have had early talks with representatives of Paramount Farming Co. and other participants in the about possible purchase of an as-yet-unspecified amount of water...The chairman of the Kern Water Bank Authority Board, Bill Phillipmore, said sales from the water bank were contemplated from the time the bank was acquired by Kern County water agencies..."). The Public Citizen report asserts that Roll International affiliate WV Acquisitions has contracted with Lennar / LNR subsidiary Newhall Land and farming for

H. The DEIR fails to analyze alternatives that would restore state trust accountability to the Kern Water Bank’s operation.

In light of the history and risks described above, it is essential that DWR develop and analyze a meaningful project alternative that would restore some measure of statewide accountability over the manner in which the KWB is operated. That alternative may even be compelled by the need to comply with Water Code section 11464 and other applicable laws.

Throughout its participation in this EIR review, PCL proposed two alternatives that would have addressed the Kern issues. The first was a “Kern Fan retention” alternative, which assumes state ownership and operation to enhance dry-year reliability. The second was a “Kern Fan Transfer with trust conditions” alternative that would allow the Kern Water Bank to remain in local control, subject to operational and financial criteria designed to maximize environmental benefits. It would require the bank to store environmental water in time of surplus and make it available at no cost to the state in time of drought, in exchange for allowing the asset to operate the rest of the time for local purposes. In sum, a variety of operating and financial arrangements must be explored to maximize the bank’s contributions to the State’s environment. CEQA requires a full analysis of these feasible alternatives, as part of the DEIR prepared on the proposed action.

Unfortunately, the DEIR summarily rejected the “Kern transfer with trust conditions” alternative with a cursory, untenable explanation. DEIR, § 11.2.6, p. 11-16. The DEIR asserts that this alternative would fail to “meet the objectives” of the Monterey Amendment, but does not explain why. On the contrary, allowing local control of the bank to continue subject to the imposition of a state trust—which closely resembles the approach to local control of the bank already set forth in the 1987 DWR/ KCWA MOU—would be a balanced way to “[r]esolve legal and institutional issues related to storage of SWP water” in the county that would harmonize local and statewide interests.⁸⁰ In light of Water Code section 11464 and legal constraints

sales of water entitlement. See http://www.hoovers.com/the-newhall-land-and-farming-company/--ID_11074--/free-co-factsheet.xhtml (describing Newhall as the “landing strip for urban flight”). PCL has no independent knowledge of these accounts, but believes they deserve analysis.

⁸⁰ DEIR, p. 4-1 (listing project objectives). The “local control subject to DWR trust” approach does not appear incompatible with any of the other fundamental project objectives either. Moreover, the prospect that stakeholders might challenge the approach would provide no reason to summarily reject it as a project alternative. *PCL v. DWR*, 83 Cal. App. 4th at p. 915. Nor would the need for local agreement and funding be grounds to summarily dismiss this alternative from consideration (cf. DEIR, p. 11-6), particularly if DWR finds that it is the only lawful manner to proceed with local ownership of the bank.

related to conditions in the Delta, this alternative may well constitute the only lawful manner in which DWR can make a final decision that allows the bank to remain in local ownership.⁸¹

I. The EIR must answer additional questions about the Kern Water Bank's transfer, development and operation.

PCL requests that the EIR answer the following additional questions, each of which relates to potentially significant environmental impacts, as outlined in this comment letter, and each of which CEQA requires be addressed:

1. Does the KWBA actually acquire and sell water, or does it merely provide a facility that allows its member agencies to store and recover water that they acquire and sell?⁸²
2. If the KWBA does actually acquire and sell water, how much water does it acquire and sell on a yearly basis?
3. How much water have each of the KWBA members, including Westside, bought and sold during each year of the Kern Bank's operations, using the Kern Bank in connection with such purchases and sales?
4. To whom has water stored in the Kern Bank been sold?
5. At what price has Kern Bank water been sold? Does that represent a markup beyond costs?
6. How much has the KWBA charged for storage in the Kern Bank ?
7. Has DWR purchased Kern Bank water? For what purpose and place of use? How much has come from the KWBA, and how much from particular agencies? At what price?
8. What are the sources of water that go to the Kern Bank? Each year, how much has come from: (a) SWP Table A allocations; (b) SWP Article 21 water; (c) CVP water; (d) surface runoff; (e) Kern River water?
9. Is there any evidence that DWR delivered water to the Kern Bank knowing it would later need to repurchase that water? Or is there evidence that DWR

⁸¹ The DEIR's premise that alternatives cannot be used here simply to improve "the health of the environment" (DEIR, 11-6) could not be more at odds with the elementary requirements of CEQA, which may be used to *mandate* feasible alternatives or mitigation measures. Pub. Res. Code, § 21002.

⁸² Under the joint powers agreement, the KWBA is empowered to acquire and sell water, but it is less clear where it would get such water, or how it would access recharge or withdrawal facilities; the JPA appears to assign shares of facility use exclusively to the member agencies.

delivered water to the Kern Bank while simultaneously repurchasing earlier-delivered supplies?

10. Does the KWBA pay taxes on the land it owns?

11. Does the KWBA pay taxes on profits from water sales (if sales are above-cost)?

12. Does Westside profit from water sales, and if so does it pay taxes on those profits?

13. Have the KWBA member agencies obtained SWRCB approval for changing (either temporarily or long-term) the place or purpose of use of water stored in the Kern Bank and transferred to different users?

14. What are the KWBA member agencies doing with the profits from their sales, and what are the environmental consequences?

VI. The DEIR's assessment of alternatives is defective.

A. The DEIR presents multiple muddled versions of the No Project Alternative, blurring the distinction between “no project” and project alternatives.

CEQA defines the purpose of a No Project Alternative as, “to allow decision makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project” (CEQA Guidelines, § 15125).⁸³ Making up in quantity for what they lack in accuracy, the DEIR identifies multiple iterations of the No Project Alternative. As demonstrated here, each of these attempts is incoherent, and in some instances, they muddle the distinction between the No Project Alternative and project alternatives.

A brief synopsis of these attempts highlights their flaws:

- The No Project Alternative 1 (NPA1) assumes at the state would have developed the Kern Fan Element to a capacity of 350,000 acre-feet by 2003 and to 500,000 acre feet by 2020. The capacities used appear to be entirely arbitrary, and may well serve simply to narrow the distance between the no-project and the project without factual foundation. Moreover, the EIR appears to be internally inconsistent as the subject of how much state bank development was foreseeable.⁸⁴

⁸³ PCL has already explained above why the no project assessment has not met the requirements of *PCL v. DWR*. This section describes, in addition, how the DEIR develops no project alternatives that are muddled with project alternatives.

⁸⁴ Inclusion in the No Project Alternative suggests a belief that state development could be “reasonably expected to occur in the foreseeable future,” CEQA Guidelines, § 15126.6(c)(2); but

- The No Project Alternative 2 (NPA2) includes a number of the Table A transfers facilitated under the Monterey Agreements, conveyance of non-project water, and storage of contractor water outside of the contractors' service area—all key components and other provisions of the proposed project that were implemented as of 2003. The DEIR argues that these projects and policies would have been approved by the Department regardless of the Monterey project. However, that argument is entirely speculative, and in no way excuses the CEQA-mandated no project analysis. Each of these components was initiated as a direct result of the Monterey Amendments. As such, they are components of the very action under review and cannot be included in a no project alternative.⁸⁵
- Court-Ordered No Project Alternative 3 (CNPA3) and Court-Ordered No Project Alternative 4 both contain significant flaws. As discussed above, neither of these alternatives provided the rigorous review anticipated by the court in *PCL v. DWR* and by plaintiffs in the settlement agreement.
- CNPA3 is also based on water allocation methods that were not in place at prior to the Monterey agreement. CPNA3 does not reflect the agricultural and groundwater replenishment priority for article 21 that was a specific requirement of the pre-Monterey contracts. Without the Monterey Amendment, this contract provision would remain in place. Therefore the only appropriate no project alternative is one which includes all pre-Monterey contract provisions, including the “agriculture first” and groundwater replenishment provisions of Article 21.
- The no project alternative must reflect the actual ‘no project’ condition. Rather than speculate that DWR might alter contract provisions, approve water transfers and overcome significant challenges to aggressively develop the Kern Fan Element, the no project alternative should assume that DWR would have implemented the pre-Monterey SWP contracts as written, including enforcement of all limitations and conditions.

B. The DEIR summarily rejected feasible alternatives to the project.

The DEIR must examine a range of reasonable alternatives that would feasibly obtain most of the project objectives, but avoid or substantially lessen any significant adverse effects of the project. (14 Cal. Code Regs. §15126.6.) In its screening and review of alternatives, the EIR must provide more than “ cursory” analysis. (*PCL v. DWR*, 83 Cal. App. 4th at 919.) It should not construe project objectives so tautologically that only the proposed project could conceivably be capable of achieving them. Nor should the EIR allow the mere “threat of litigation” under a proposed alternative to prevent its environmental review. *Id.* at 914.

in DWR’s Kern study, it asserts that uncertainties made state bank development “infeasible.” DEIR, Appendix E, p. 10

⁸⁵ Rather than include these components in the NPA2, subsequent drafts of the EIR must include this analysis of a limited set of policies (as opposed to the entire suite of Monterey Amendments) in the alternatives section of the EIR.

DEIR summarily eliminated *nine alternatives* that were suggested by PCL and the two other plaintiffs within the EIR committee process, each without any satisfactory explanation.⁸⁶ These alternatives were offered in order to provide a reasonable range of alternatives within the EIR analysis consistent with the requirements of CEQA. But the DEIR provides unjustified conclusions for each alternative that derailed any further review of them. Although increasing exports south of the Delta is notably (and properly) absent from the list of project objectives (DEIR, p. 4-1), the DEIR's alternatives analysis implicitly appears to assume that unless the contractors' pumping objectives are met, an alternative is infeasible.

The DEIR also gratuitously, and incoherently, chides "the plaintiffs" for seeking in proposed alternatives to improve the *environment*. (DEIR, pp. 11-5 to 11-7.) That reasoning would have been faulty if DWR's EIR had been done in 1995, but it particularly suspect in 2008, in light of the pelagic organism decline in the Delta and recent court rulings, discussed above, that will require constraints on pumping south of the Delta. Moreover, the summary exclusion of alternatives that attempt to balance contractors' and environmental objectives is entirely inconsistent with efforts the state is engaged in elsewhere, including Delta Vision and updates to the California Water Plan. Indeed, the state has long been aware of a variety of approaches that would serve the SWP's financial, management and operational goals while *also* considering environmental protection.⁸⁷ This context underscores the practicality of PCL's proposed alternatives.

A review of the grounds for dismissing the "**Improved Reliability through Environmental Enhancement**" (IREE)⁸⁸ alternative illustrates how the DEIR avoided analyzing a reasonable range of alternatives. Similar grounds were also used to reject other alternatives. The EIR's reasoning suggests that DWR views the project objectives so tautologically that seemingly only the Monterey Amendments (or a negligible variation on them) could feasibly accomplish them:

- The DEIR claims that the IREE "alternative was not considered in detail in the EIR because it would not meet any of the objectives of the Monterey Amendments. Furthermore, it would be in conflict with the basic terms of the long-term water supply contracts." DEIR, p. 11-6. But in summarily dismissing this alternative, the DEIR provides no substantiating evidence or analysis to demonstrate that the alternative would not meet any of the project objectives.

⁸⁶ These alternatives, listed in PCL's December 18, 2006 comments on the last administrative draft EIR (Attachment A) pp. 12-15, are incorporated by reference. PCL proposes again that they be considered for full-fledged review rather than summary rejection.

⁸⁷ CRB report, attachment B to these comments.

⁸⁸ This alternative "would involve the Department reducing stress on fishery resources in the Delta by directly implementing water use efficiency measures, water recycling, storm water capture, and other local water system enhancements that stabilize water demand and improve SWP reliability." DEIR, p. 11-5.

- The assertion that IREE would not meet any of the project objectives is false. A key objective of the project provided in the DEIR is to increase the flexibility of the SWP. DEIR, p. 4-1. DWR specifically identifies environmental regulations as a primary limitation, in addition to hydrologic conditions, to delivery of water through the SWP. [Cite] ⁸⁹It is reasonable to expect that enhancements in the environment of the Delta would reduce the need for regulatory agencies to set new regulations or mandate actions to enforce existing regulations. Reduced regulatory actions would result in increased flexibility of the SWP. The DEIR does not provide any analysis which would indicate that such an assumption is unfounded or inaccurate.
- The DEIR's further claim that the IREE alternative is in conflict with the basic terms of the water supply contracts is also without merit. The proposed project is a set of contract amendments. It follows that alternatives to the proposed project would appropriately incorporate contract amendments. In fact, many of the provisions of the proposed project are in direct conflict with the basic terms of the pre-Monterey long-term water supply contracts.⁹⁰
- The DEIR's rejection of IREE rests heavily on the notion that DWR already operates in compliance with Delta water quality and flow objectives "as constrained by the need to protect threatened and endangered fish species listed pursuant to federal and state Endangered Species Acts." DEIR, p. 11-6. As discussed above, the pelagic species crash and the *Kempthorne* decisions on the Delta Smelt shatter the foundations of this assertion, which must now be revisited. There is now a compelling legal, as well as environmental, reason not to summarily reject an alternative that could feasibly accomplish most of the project objectives, while also reducing injury to the Delta.
- The DEIR also rejects IREE on the preposterous theory that "the Monterey Amendment is not an appropriate tool for mandating that SWP water be used to benefit the Delta environment. DEIR, p. 11-6. That is a remarkable assertion, considering that, as discussed elsewhere, the proposed project could result in increased pumping and thereby injure the Delta.
- Finally, the DEIR rejects IREE, as well as some other alternatives, based upon the legally erroneous theory that it would require action by local agencies; according to DWR, such agencies would have to propose water efficiency measures, which DWR recognizes it could

⁸⁹ In fact, environmental problems in the Delta were contributing factors which led to the reductions in SWP deliveries in the early 1990's, and the contractor disputes that precipitated the Monterey Amendments. *PCL v. DWR*, 83 Cal. App. 4th at p. 908.

⁹⁰ For instance, eliminating the "agriculture first" reduction in article 18(a) of the contract, as is proposed in the proposed project, is in direct conflict with the pre-Monterey contracts. If such conditions were applied to all alternatives, then the proposed project would also have to be eliminated. Alternatives should not be held to a standard that is not imposed on the proposed project.

fund. DEIR, 11-5,11- 6. That misstates CEQA, which does not foreclose an alternatives assessment simply because other agency action may be required⁹¹.

C. The DEIR fails to analyze a reasonable range of alternatives to the project.

While unreasonably rejecting all of the alternatives proposed by plaintiffs, the DEIR remarkably provides *only one* project alternative to the DEIR. Alternative 5 “would be the same as the proposed project except that the Monterey water management practices would not be implemented.” DEIR, p. 11-3. The DEIR’s very limited range of alternatives is misleading and incomplete. In order to provide for reasonable comparison, alternatives to the proposed project must be distinguishable from the proposed project. However, alternative 5 (and NPA2) inappropriately includes significant portions of the proposed project. As a result the DEIR inappropriately concludes that all available courses of action have roughly similar impacts and outcomes.

The DEIR rationalizes this approach by suggesting that many of the actions taken under Monterey could have occurred under the original contracts. Prior to Monterey, however, these policies were not widely adopted by the SWP and they were not commonly practiced under the previous contract. Had DWR decided to implement these actions under a different hypothetical approach, DWR would still have had to complete CEQA review prior to taking those actions. Therefore, it is not appropriate to include these actions in Alternative 5 or NPA2. Since DWR has proposed to take these actions as part of the Monterey Amendments, these actions must be properly treated as potential decisions rather than assumed components of the no project alternative.

In sum, the EIR should include alternatives that are clearly distinguishable from the “no project” and proposed project. These alternatives should not include polices or actions that are being proposed for implementation as part of the proposed project.

VII. The DEIR contains faulty and legally unsupportable assessments of project impacts.

A. The DEIR uses inconsistent time periods for its analyses.

In the historical analysis provided in Chapter 6 the DEIR uses different time periods for analyses in various sections of the EIR. For instance, carryover in Dan Luis is analyzed from 1996 through 2004, while the flexible storage provisions are analyzed from 1996 through 2003 (see DEIR at 6-57 through 6-58). These variations make it impossible to determine the full impact of any of the proposed project and alternatives included in the DEIR. No explanation is provided as to why certain sections are analyzed under differing time periods. Subsequent draft EIR analyses must use a consistent time period throughout the EIR.

⁹¹. See, e.g., *Friends of the Eel River v. Sonoma County Water Agency* (2003) 108 Cal. App. 4th 859, 864-867. Similar grounds are improperly used to summarily reject other of PCL’s proposed alternatives, such as the “urban preference and dry year reliability” and “no urban preference and dry year reliability” alternatives. DEIR, pp. 11-4, 11-5.

B. The DEIR inadequately analyzes impacts resulting from eliminating and changing contract provisions.

- **Altered Article 21 rules for “surplus”**

As extensively discussed in connection with the baseline, the DEIR failed to analyze the impact of eliminating article 21(g)(1), the prohibition on using “surplus water” (or post-Monterey, “interruptible” water) to build permanent local economies. The EIR must fully analyze how eliminating this provision and simultaneous transfer of the Kern Water Bank and allowance of water storage outside of the SWP service area has altered or will alter SWP contractor demand and ability to receive article 21 water.

The EIR must analyze the degree to which eliminating use provisions for article 21 and providing urban users with increased access to article 21 water resulted in new uses of that water, including serving new growth-fostering water transfers. Analyses should also identify the degree to which altered article 21 provisions have shifted scheduling and delivery of Table A water and whether such shifts have resulted in changes to SWP operations (including changes in the timing or amount of water released from Lake Oroville and San Luis Reservoir).

The proposed project would eliminate pre-Monterey allocation rules for article 21. The priority for agricultural use and groundwater replenishment would be removed, and a new allocation method allowing access to article 21 based on Table A amount percentages would be adopted. Eliminating pre-Monterey contract allocations allows more contractors, including municipal contractors that had not historically received significant deliveries of article 21, to access this water and put it to use for purposes that are much different than per-Monterey uses of Article 21.

The DEIR fails to disclose the implications of this potential change in allocation. In particular, the DEIR fails to clearly account for the impact resulting from allocating Article 21 to municipal contractors that may use the water for hardened demand and development. Subsequent versions of the EIR must include analysis and clear disclosure of the implications of altering Article 21 allocations.

- **Turnback Pool**

With the Monterey Amendments in place, all SWP contractors have an incentive to request their full contract amounts. In addition, the Turnback Pool provisions of the Monterey Amendments provide a new incentive for SWP contractors to maximize their annual demand for their full contract amounts. The DEIR recognizes that pre-Monterey some contractors could not use their full Table A amounts, and in some cases that resulted in reduced water deliveries through the SWP. That water which was not captured or delivered by the SWP would have thus been left instream for environmental benefit.

However, the Turnback Pools allow the contractors to benefit financially by requesting their full Table A amounts, even if that contractor does not require such water within its own service area. Other contractors who can make use of the water are encouraged under the

Monterey Amendments to purchase Turnback Pool water. It follows that under the proposed project, all contractors would request full contract allocations, regardless of need for that water. As PCL has long since noted, that tendency is likely to harden, and increase, the demand for Delta pumping.⁹²

- **Storage Outside of Service Area**

In allowing SWP contractors to store SWP water outside of their service area, the proposed project significantly expands SWP contractors' ability to accept water, and increases the demand for water from the Delta. The DEIR obscures this fact by assuming that much of the water stored outside contractors' service areas under the provisional implementation of the Monterey Amendments *could* have been stored within the contractors' service area. This assumption is very speculative. It assumes that infrastructure including transport facilities was available; cost of delivery, water quality, access to the right to store water, and other factors impacting the availability of storage capacity within the service area would not have prevented storage of that water within the service area. None of these factors were analyzed when the lead agency determined that water delivered out of the service areas could have been received within the service areas. Rather, the DEIR explains that the assumption is based on, "a telephone survey of contractors conducted by DWR."⁹³

The DEIR further seeks to reduce the perceived impact of water delivered to out of service area storage by assuming that such water would have instead been stored in San Luis Reservoir and delivered to other contractors via article 21 or increased Table A. Again, this assumption is purely speculative. It assumes that other contractors could have received the water and placed it within service area storage. These assumptions clearly seek to minimize the appearance of impacts. Indeed, through this methodology, the DEIR determines that of the 1,092,647 acre-feet of water delivered to out of service area storage between 1996 and 2003, only 44,000 acre feet are actually attributable to the proposed project. This is due to the multiple assumptions inappropriately incorporated into the baseline. However, as explained above, these assumptions do not belong in the baseline, and must be removed from the EIR.

- **Altered allocation under Articles 18 (a) and 21**

The DEIR fails to disclose the impacts of altered allocations under article 18(a). Specifically, the DEIR fails to how altered allocations that expose municipal contractors to reduced reliability could tend to encourage municipal contractors to increase demand for water in normal and wet years in order to restore dry year and shortage reliability.

The pre-Monterey article 18(a) provision requiring an agriculture-first reduction in the event of water shortages provided municipal contractors with a higher degree of drought reliability. Under the proposed project's alteration of article 18(a) this protection is eliminated. The proposed project thus exposes municipal contractors to reduced water reliability during

⁹² See Attachment A (PCL comments on Draft Chapter 9, p. 6.)

⁹³ DEIR, p. 6-60 (No details of that survey are presented).

periods of shortage. Moreover, because the Monterey Amendments would, if finalized, permanently delete article 18(a)'s agriculture-first cutbacks, they would remove a major obstacle to agriculture-to-urban transfers that facilitate growth.⁹⁴

It is reasonable and foreseeable to expect that municipal contractors will seek to mitigate the impact on their water reliability. In fact, the proposed project provides water management tools that would assist contractors in such an effort. The proposed project allows these contractors to greatly expand storage options, it provides these contractors with greater access to article 21 water and eliminates restrictions on use of that water, and it establishes the Turnback Pool giving these contractors greater access to water that would not be used by other contractors.

It is reasonable to assume that given the changes proposed, municipal contractors would have a greater incentive to maximize use of the tools provided in the proposed contract (maximizing Table A requests, utilizing article 21, Turnback Pool and carryover provisions to maximize water in newly available storage) in order restore their dry year and shortage reliability.

It is important to note that both Turnback Pool and article 21 water are usually available in the winter and the spring. SWP exports during these periods have been identified as a primary contributor to the Pelagic Organism Decline in the Delta. Any action that would tend to encourage increased demand and increased export for these categories of water would therefore have a significant impact on the Delta.

The EIR must explicitly disclose the impact of eliminating the protections for municipal contractors under Article 18 (a), and the resulting impacts on the Delta. As elaborated below, the DEIR omits analysis of impacts or provides inadequate analysis of significant impacts associated with the proposed project.

- **Environmental consequences of financial restructuring under Article 51**

The DEIR briefly describes, but never analyzes the environmental consequences of article 51, one of the most important structural revisions in the SWP system that would be initiated by the Monterey Amendments, should they be adopted. DEIR, p. 4-8. Among other revisions, article 51 changes the way that DWR addresses revenues exceeding the cost of operating the SWP system.⁹⁵ As Environmental Defense documented years ago in legislative

⁹⁴ The record of such transfers during the interim enforcement of the Monterey Amendments deserves careful study. There is no evidence to support the speculative assertion that these Table A transfers would have occurred anyway in the absence of the Monterey Amendments. Rather, as the EIR correctly points out (DEIR 6-10), only one occurred previously (Devil's Den), and it was expressly subject to agriculture-first cutbacks even after transfer to urban use.

⁹⁵ In *PCL v. DWR*, the court of appeal recognized the interrelationship between revised articles 18 and 51 in the Monterey Amendments. The court "agree[d] with plaintiffs that inclusion of article 51 in the amended contracts implies that DWR and the contractors have forsaken their expectation that the SWP facilities will be built as planned and will deliver 4.23 MAF of water annually. Article 51 allows contractors a rebate for the costs previously assessed for facilities

testimony on the Monterey Amendments, appended as attachment I, the revenue stream returned to the contractors under article 51 is enormous over the life of the project contracts.

The new EIR must carefully analyze the environmental consequences of article 51 as an integral part of the Monterey Amendments, rather than summarily assuming that because this provision is “economic” in nature it would not contribute to such impacts. Although CEQA does not require analysis of purely economic or social changes, it requires analysis of environmental impacts that can be traced to such changes. (See, e.g., 14 Cal. Code Regs, § 15131; *San Franciscans Upholding the Downtown Plan v. City and County of San Francisco* (2002) 102 Cal.App.4th 656, 695-98.) Here, the EIR must analyze the relationship between articles 18 and 51, and must compare the project to the no-project scenario in which table A amounts are reduced *without* article 51 rebates. The EIR must also evaluate the environmental consequences of article 51’s effect on water rates, and consider the financial adjustments made in article 51 when making its assessment of project alternatives and mitigation.

- **Reduction of state oversight of water transfers under Article 53**

Prior to the Monterey Amendments, DWR had contractual responsibility to oversee and approve transfers of water through the SWP. Under the proposed project, DWR largely excuses itself from this responsibility for certain transfers. Contractors are now permitted to transfer project and no project water at their convenience. DWR has essentially given up effective ability to control where and how water is used within the SWP.

This provision is particularly important for its implications on growth in California. As stated above, the pre-Monterey contracts recognized the difference between municipal reliability and agricultural reliability. Agricultural Table A amounts were explicitly conditioned by their reliability. Thus, it would be inappropriate to use agricultural water transfers for certain purposes, including development. However, provisions of the proposed project including elimination of article 18(b) and changes in 18(a) now imply that all water in the SWP has equal reliability. This new dynamic risks creating, rather than eliminating, a paper water problem. Under the proposed project, DWR would abandon its role in clearly articulating the difference in reliability of water and hand that responsibility to local agencies.

The proposed project implies that all water under the SWP has equal reliability, yet very little water has been removed from the total Table A amount. Given that the original contracts explicitly stated that Table A amounts for agriculture were not as reliable as municipal contracts, it is illogical to assume that suddenly, the SWP can reliably deliver water to all contractors. Yet under the proposed project, agricultural to municipal transfers will be more common and there will be no requirement to address the issue of reliability. This scenario risks inducing growth based on unrealistic assumptions of water reliability.

- **The DEIR fails to disclose impacts to the Bay Delta Estuary.**

that have never been built. Indeed, fiscal and environmental pressures militate against completion of the project.” (83 Cal.App.4th at p. 914, n. 7.)

As discussed above, the Bay Delta Estuary is in critical decline. Fisheries populations have declined dramatically since 2000. Several fish species, including the Delta Smelt, are now at historic low population indices. State and Federal scientist have determined that increased Delta exports, and in particular, exports occurring in the winter and spring are a significant contributor to these declines.

Yet many of the provisions of the proposed project would *increase* the amount of water exported by the SWP during times of “excess” in the Delta. Excess conditions usually occur in the winter and spring, the very time that delta smelt have become vulnerable to project operations. For instance, the DEIR admits that the Turnback Pool and Article 21 are both provisions that seek to capture water earlier in the year. Yet the DEIR fails to incorporate that timing factor into the analysis of impacts in the DEIR.

C. The DEIR fails to adequately growth-inducing impacts, and impermissibly defers the responsibility to analyze them.

The DEIR attempts to absolve DWR of fully analyzing and mitigating the growth inducing impacts of the proposed project. That evasion has profound environmental consequences, due to the stakes involved: as the DEIR concedes, the combination of new table A and article 21 deliveries in the project could support new populations ranging from 405,103 in the “more resource-intensive” scenario, and 561,684 in a “less resource-intensive” scenario. DEIR, p. 8-9. Yet the DEIR asserts in that DWR is *not* required to extensively analyze the growth inducing impacts of water delivered by DWR because DWR is not responsible for land-use decision. *Id.* at pp. 8-13, 14. The DEIR further holds that DWR is not responsible for differentiating between the impacts of water deliveries that stimulate new growth and the impacts of water deliveries used to enhance dry year reliability. *Id.*, p. 13.

This indifference to a major environmental consequence of the project, if finalized, would constitute a major evasion of CEQA responsibility. CEQA requires a lead agency, such as DWR, to analyze the full environmental consequences of its decisions. That responsibility creates a duty to analyze the consequences of removing an obstacle to growth, or accommodating growth. In this context, the DEIR’s principal strategy—to defer the real analysis to post-decision *local* determination, is completely untenable.⁹⁶ None of these local decision-makers will have the opportunity to analyze the cumulative consequences of accommodating half a million Californians before the suite of growth-inducing changes in the Monterey Amendments become a *fait accompli*. Moreover, particularly given the decade-plus history with interim enforcement of the Monterey Amendments, there is no basis to support the EIR’s premise that the consequences are speculative. Remarkably, the EIR does not even attempt to address the growth-inducing or growth-accommodating impacts of known projects that have relied, in whole or in part, on the Monterey Amendments.⁹⁷ The EIR must disclose the impacts associated with

⁹⁶ See DEIR, p. 8-14.

⁹⁷ The EIR should start by analyzing the documentary history of such projects as Dougherty Valley in Contra Costa County, as well as numerous projects in Los Angeles County: among

the decision to remove the state oversight of SWP water that was embodied in the original pre-Monterey contracts.⁹⁸

While the DEIR argues that DWR does not have responsibility for how water is put to use, it is indisputable that DWR has specific and fundamental responsibilities for overseeing the use of SWP water. Under the Monterey Amendments, DWR has given local agencies increased flexibility, and therefore increased ability to use the water in a way that would potentially impact the environment. While DWR cannot be expected to predict with absolute certainty how contractors and land-use agencies will use the water in the future, DWR has a responsibility to disclose all *potential* significant impacts resulting from this decision and the proposed project. DWR simply cannot be excused from disclosing the impacts of eliminating previously held responsibilities.

The EIR must include adequate analysis of growth inducing impacts, including analysis of how, where and for what purpose water made available under the Monterey Amendments has been put to use, and will likely be used should DWR adopt the proposed project. This analysis must disclose the growth inducing implications of eliminating article 18(b) and article 21(g)(1) of the original contracts, facilitating transfers between agricultural and urban contractors, conveying non-project water, providing municipal contractors increased access to Article 21, permitting unlimited storage outside of the service area, and implementing the Turnback Pool. In addition, the EIR must fully disclose how these provisions may tend to increase the demand for such water and the resulting impacts on the Delta and upstream operations of delivery of such water.

The EIR must specifically state the percentage of water which contractors now have access to under the Monterey Amendments that is likely to be stored for dry year reliability and the percentage which will be used for new growth. Also, the EIR must disclose the degree to which water made available under the Monterey Amendments will be used for resource-intensive growth and urban sprawl. Impacts analysis should include a study of the impacts of the growth likely to be induced by the proposed project water deliveries (i.e. resource intensive sprawl or infill development). For instance, water made available to Castaic Lake Water Agency is likely to result in development of open space and agricultural lands (and require new annexations), whereas water made available to Los Angeles Department of Water and Power is likely to result in development in already developed areas.

them, West Creek, Gate-King, Riverpark, Northlake, Mission Village, Soledad, River Valley, and Newhall Ranch.

⁹⁸ Prior to the Monterey amendment, DWR had explicit oversight of storage of SWP water, water transfers through the SWP, Table A transfers, use of article 21 water, and allocation of water in times of shortage. article 18(b) also required DWR to provide explicit information on the reliability of SWP water through determining the minimum yield of the Delta. Furthermore, under article 18(b), DWR has the authority to reconcile Table A amounts with that minimum yield. Such authority provided the State will direct discretion over the amount of water that could be determined to be reliable.

In addition, as discussed extensively in section V above, the EIR must analyze how the transfer of the Kern Water Bank to local control has facilitated growth-inducing uses of the facility, as compared to operations that would prioritize dry year reliability.

D. The DEIR’s assessment of the reliability of water supplies and growth evades, rather than analyzes, the problem of “paper water.”

Regrettably, the DEIR’s chapter on the reliability of water supplies (Chapter 9) and growth virtually ignores everything that PCL submitted to DWR on the subject during years of EIR planning that preceded the public draft. PCL therefore references its previous submissions on this issue⁹⁹ and once again requests specific responses. In a case of “fighting the hypothetical,” the DEIR does not seriously engage the “common sense” connection between water availability and growth identified in *PCL v. DWR*, and instead, undertakes to dispute the premise. Essentially, DWR argues that growth based upon paper water never existed, that its extent has been exaggerated, and that new measures (biennial reliability reports, Urban Water Management Plans, and SB 221/ 610) will prevent it from happening in the future. DEIR, pp. 9-2 to 9-11.

This analysis is fatally flawed. First, it asks the wrong question about the historical role of paper water, focusing on whether inflated water reliability estimates have subjectively motivated land-use decision-makers to approve projects. The DEIR answers the question in the negative, not because paper water isn’t real, but because ignoring water reliability has been so pervasive that Table A amounts can’t be considered uniquely responsible. DEIR, p, 9-10. But a “but for” causation test is not what CEQA requires. What matters is the following:

- Historically and recently, land use decision-makers in California have frequently approved projects with little regard for the availability of adequate water supplies to support the development. Many of these projects have involved State Water Project water resources.¹⁰⁰ Moreover, a consistent body of CEQA case law, from *Kings County* through *Vineyard*, underscores the depth of the problem of decision-makers ignoring the reliability of water supplies,
- The pre-Monterey Amendments SWP contracts had mechanisms that could have been used to take “paper water” out of the calculus regardless of decision-makers’ subjective motivations where SWP water was involved: enforcement of article 18(b)’s permanent shortage provision, and article 21(g)(1)’s proscription on using “surplus” water to build permanent economies.
- If the Monterey Amendments become permanent, these safeguards will disappear from the SWP contracts, regardless of what local decision-makers may later do in review of specific projects.

⁹⁹ See Attachment A, particularly the comments addressing the chapter on paper water and growth.

¹⁰⁰ See Attachment J (Kanouse/ EBMUD study).

The problem of “paper water”—stated in its simplest terms, of development decisions grounded in expectations of water supplies exceeding what can actually be delivered—emerged as one of the central themes in the Third District’s ruling, and is perhaps the issue with which *PCL v. DWR* is most closely associated in both case law and in public discussion.¹⁰¹ Rather than providing the thorough and candid assessment of “paper water” and development anticipated in the appellate ruling, the DEIR provides little more than a cursory historical summary, a description of planning laws and practices, and a superficial discussion of Urban Water Management Plans. Indeed, the analysis presented here bears more resemblance to arguments about “paper water” unsuccessfully presented to the court of appeal than the probing and comprehensive assessment anticipated in the appellate ruling and settlement.

A puzzling duality pervades the DEIR’s discussion. The historical overview is dismissive of the notion that inflated expectations of SWP deliveries affected development decisions. But rather than debunking the notion that such inflated expectations were present in projects relying on SWP water, the chapter argues, if anything, that they were all too real; that decision-makers so pervasively failed to consider potential constraints on SWP water deliveries that they would have paid little attention to the amounts of “entitlement” referenced in the project contracts.

The core of this analysis posits that planners assume that *local water agencies* will obtain the supply necessary to meet the long-term water demand that results from planned growth. But far from “disproving” reliance on SWP paper water, this analysis points to planners and decision-makers trusting the water agencies; in other words, they are presumed to have relied upon the same pervasive “water culture” in which the court grounded its historical analysis of the “huge gap” between entitlements and available supplies. Instead of analyzing the historical paper water problem, the DEIR repackages it.

A similar circularity pervades the chapter’s extremely cursory analysis of SWP water supply and urban planning in the future. From the historical position that planners and decision-makers rarely even considered water supply, the draft swings to a somewhat exaggerated faith that they now “get it,” due in part to changes produced by the *PCL v. DWR* decision and settlement, and in part due to parallel legislative changes (notably, SB 610 and SB 221). But the DEIR does not even begin to show that the “modern” mechanisms, such as SB 610/ 221 and Urban Water Management Plans, have now made paper water disappear.¹⁰² Notably, the DEIR does not even analyze two new sources of paper water that are specifically associated with this project. The first, extensively discussed above, is the growing reliance on article 21 water to support permanent developments. The second is that DWR’s over-reliance on CALSIM in its reliability reports, which have induced local decision-makers to rely on estimates of SWP yield

¹⁰¹ See, e.g., *Santa Clarita Organization for Planning the Environment v. County of Los Angeles* (2003) 106 Cal. App. 4th 715, 721; Kibel and Epstein, *Sprawl and ‘Paper Water’: A Reality Check for the California Courts* 20 CALIFORNIA REAL PROPERTY JOURNAL 22, 23 (Winter/Spring 2002).

¹⁰² Indeed, the DEIR has not yet addressed PCL’s earlier criticisms of its analysis of Urban Water Management Plans, included in Attachment A,

that are vastly beyond historical deliveries. DWR still has yet to come to terms with this “cyber water” problem, which PCL identified in its scoping comments more than four years ago.¹⁰³

D. The DEIR avoids, and impermissibly delegates to subsequent local review, project-related climate change impacts.

Climate change has been extensively addressed above in connection with baseline issues. The separate chapter on climate change in the DEIR (Chapter 12) creates additional CEQA problems, by systematically avoiding full and responsible discussion of project-related climate impacts. First, the analysis relies heavily on the dubious premise that, because DWR had concluded that the project would not affect *statewide* population growth, it would not affect growth-related greenhouse gas emissions “within the SWP service area as a whole.” DEIR, p. 12-14. But DWR provides no support for the speculative premise that the location of development is inconsequential to greenhouse emissions. In fact, sprawling patterns of development cause considerably more greenhouse gas emissions than more compact forms of development that occur within existing urban areas. Turning “surplus” water into water that facilitates permanent new development in areas that are currently rural or agricultural will have a very significant impact on greenhouse gas emissions, and the DEIR needs to analyze how the proposed Monterey Amendments will affect that possibility.

Second, the DEIR does not study whether the elimination of pre-Monterey safeguards—including the permanent shortage provision in article 18(b) and the proscription on using “surplus” water to build permanent economies in article 21(g)(i)—may impact climate change by removing useful tools to reconcile supplies and deliveries in a climate-constrained project. The DEIR should study from a climate change perspective whether there is a difference between those pre-Monterey approaches and the post-Monterey approach (reliability reports and liberalized use of article 21).

Finally, the DEIR does not analyze whether would be a project-related difference in emissions due to the difference between serving urban and agricultural contractors. The elimination of the pre-Monterey “agriculture first” preference may make that distinction tangible.

E. The DEIR inadequately addresses cumulative impacts.

¹⁰³ As PCL observed in its March 2003 scoping comments (p. 8), a detailed analysis by Dennis O’Connor, then of the California Research Bureau, concluded that DWR’s reliability report had no credible explanation for exceeding historic deliveries by around 50 percent. He concluded that the results were inconsistent with previous estimates and models, and recent deliveries were lower than the modeled conditions. His assessment also observes that CALSIM II is not calibrated or otherwise verified, and that the reliability report did not use the CALSIM II model as designed. O’Connor’s analysis warns that DWR’s assessments of reliability should not replace the “paper water” problem with a new, simulation-based “cyber water” problem. While O’Connor was addressing the draft 2002 report, the problems have never been corrected.

Although the cumulative impacts discussion (Chapter 10) mentions the Central Valley Project, it does not analyze the important question of how the project will affect the environment via CVP use of Delta export capacity. The DEIR analyzes the impact on the availability of water (DEIR, pp. 7-55 to 7-57), but the environmental impacts due to increased pumping from the Delta were not.

VII. Recommended mitigation of impacts

PCL expects that with the additional analysis suggested above, the Final EIR will determine that the proposed project has significant impacts on the environment. Therefore, we provide the following recommendations that could be utilized to mitigate for some, although not all, of the significant impacts identified in these comments.

- To partially prevent growth inducing impacts, the EIR can require DWR to provide a clear statement that Article 21, transfers of Article 21 and reliance on Turnback Pool water are not reliable sources of water and that such sources are not suitable for support of permanent economy, including development. To avoid any confusion, the EIR should commit DWR to excluding these sources of water from the Report on the Delivery Reliability of the State Water Project.
- To partially mitigate impacts associated with eliminating Article 18(b), the EIR should commit DWR to provide explicit guidance on how to interpret reliability curves included in the SWP Delivery Reliability Report.
- To partially mitigate potential impacts to the Delta from increased pumping of Article 21 water, the EIR can prohibit declaration of Article 21 when fish agencies determine that there would be threat to fish species from export of such water.
- To partially mitigate for the loss of statewide oversight of the use of SWP water, the EIR should commit DWR to providing full disclosure of accounting, pumping and delivery of SWP water to the public in a timely (weekly) basis.
- To partially mitigate for the loss of the Kern Fan Element as a public trust resource, the EIR should impose conditions requiring that public trust agencies will have priority for the capacity of the Kern Fan Element for the storage of water to protect public trust resources including the health of the Delta.

These measures would not fully mitigate the impacts of proposed project. Impacts such as increased demand for SWP water to offset dry year by municipal contractors would not be addressed by the proposed mitigation measures above. However, the final EIR would need to address all impacts of the proposed project.

As an original plaintiff in the Monterey Amendments litigation, PCL has an interest in ensuring that the final EIR provide the public and decision-makers with an accurate and thorough

analysis of the proposed Monterey Plus actions and a thorough comparison of viable and feasible alternatives, consistent with the original *PCL v. DWR* court decision.

We are distressed that despite the direction provided by the Court of Appeal, and despite our participation in the EIR process, and despite the significant events that have occurred since 1995, including the collapse of the Delta, the Monterey Plus DEIR is largely based on the same unfounded assumptions included in the CCWA EIR, and EIR rejected by the Court of Appeal.

The current DEIR manifestly fails to provide the full review demanded by the Court – and by the California Environmental Quality Act – and that was anticipated by plaintiffs in the settlement agreement.

We urge DWR to remedy the significant flaws in the current DEIR by fully analyzing, disclosing and mitigating the impacts of the proposed project in future versions of the EIR, as CEQA most emphatically requires.

Thank you for taking our strongly felt comments into consideration.

Sincerely yours,



Gary A. Patton, Executive Director



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MWD Board

SWP contractors