



Philip Isenberg, Chair
Delta Stewardship Council
980 Ninth Street, Suite 1500
Sacramento, CA 95814

February 2, 2012

Via Email to: eircomments@deltacouncil.ca.gov

Re: Comments on the Delta Plan DEIR

On behalf of the Natural Resources Defense Council, The Bay Institute and Defenders of Wildlife, we are pleased to offer the following comments and recommendations regarding the Council's draft EIR for the Delta Plan. These comments track closely our many previous comments on the Delta Plan, which we include by reference, particularly the comments submitted by some of our organizations on September 30, 2011, which we have attached for your convenience.

We found it difficult to evaluate the adequacy of the DEIR. In general, as our Sept. 20 comments indicate, we believe that the fifth draft plan does not contain sufficient detail to represent the comprehensive and visionary plan we look forward to supporting. For example, we believe that the plan and the Proposed Project requires more detail in the following areas:

- Vision. The plan needs a unified vision for the future of the Delta, a compelling call to action, and an integrated approach to what is now a fragmented plan.
- Adaptive Management and S.M.A.R.T objectives. In a system as complex as the Bay-Delta, and given a planning horizon as long as that of the Delta Plan, a detailed approach to adaptive management and the use of goals and objectives is critical. Our previous comments provide specific suggestions to improve these sections.

- Defining Water Supply Reliability. As our previous comments have indicated, this is a critical issue on which there has been a great deal of confusion. DSC staff have addressed this issue effectively, particularly the meaning of “reducing” reliance on the Delta. The plan and the DEIR, however, do not adequately address this issue. Without a careful definition of this concept, it is not possible for the document to adequately evaluate the effectiveness of the plan in advancing this half of the co-equal goals. We have previously provided recommendations in this area.
- Conveyance and Levees: The Delta Plan relies largely on the BDCP process to develop a long-term conveyance strategy. (We urge the DSC to continue providing recommendations to the BDCP process. We recognize, however, that some of that input, such as the recent ISB review, falls outside of the formal Delta Plan.) However, the plan contains little detail regarding a strategic approach to conveyance and levee investments in the near-term. Given that the near-term could encompass a quarter century, this is an oversight that must be addressed.
- Storage: The document highlights the role that storage could play in achieving the co-equal goals. We do not disagree. However, it important to note that future investments in storage have a long-term trend to overcome. Historically, incremental increases in storage have largely resulted in further damage to the Bay-Delta ecosystem. For example, the development of the Kern Water Bank and the East Side Reservoir did not facilitate improved ecosystem health. To the contrary, they led to increased diversions and additional ecosystem damage. The Delta Plan and the DEIR do not currently include an approach to storage issues that demonstrates convincingly how additional storage will be designed and constrained to ensure that it contributes to ecosystem restoration. We would be happy to collaborate with you regarding how such constraints could be designed.
- Governance: The DSC was created, in significant part, to provide a unified approach to Delta governance. That does not mean the creation of an omnipotent DSC. However, the current plan does little to integrate the existing governance structure into a more coherent and coordinated approach to the management of this complex and critical ecosystem.
- Finance: The lack of a credible finance plan was one of the reasons for the failure of the CALFED program. We believe that the Delta Plan should include a compelling call for a different, detailed, beneficiary-pays approach to financing. Such an approach is not yet included in the fifth draft or the DEIR.

We urge the Council to address the above concerns in finalizing the EIR and the Delta Plan. We offer the following specific additional comments on the DEIR.

Water Resources - Section 3

Water Supply Reliability: We agree with the conclusion that the Proposed Project would “likely result in a more natural flow regime in the Delta and Delta tributaries and reduced export of water from the Delta.” (S 3.4.3.2) This conclusion is supported by

the State Board's flow criteria, the SFEP's State of the Bay Report and many other scientific efforts. We also agree that, with anticipated investments in other proven water supply tools "the total water supply available would remain the same or increase as compared to existing conditions"(S 3.4.3.2.3). However, we believe that the document does not adequately capture the availability and effectiveness of these alternative water sources.

Specifically, the Water Recycling and Water Conservation discussion (p.3-73) contains an inadequate discussion of the effectiveness of water conservation efforts in the past several decades. For example, the City of Los Angeles has grown by more than one million residents in the past quarter century, with nearly unchanged total water use, as a result of investments in efficiency and other tools. In addition, NRDC's review of 11 Urban Water Management Plans prepared by Southern California water agencies has revealed that nearly all of these agencies are significantly diversifying their water portfolios. Many agencies are planning reductions in total purchases of water imported from the Bay-Delta, including the Los Angeles Department of Water and Power, West Basin and Long Beach. The San Diego County Water Authority has made similar plans to reduce the total use of water from MWD by 2020. Santa Monica has gone even further. Santa Monica has recently reduced their reliance on water from MWD from 85 percent to 33 percent of their water use. The city is planning to completely eliminate their use of imported water by 2020. The document should be revised to reflect the strong commitment to reducing use of Bay-Delta water among many Southern California water agencies. Similarly, the document should be revised to reflect the many successful investments in water use efficiency in the San Joaquin Valley.

Biological Resources – Section 4

Factors Affecting the Delta Ecosystem. Section 4.3.2.1.4 contains a discussion of altered flow regimes and their effect on the Delta ecosystem. That discussion correctly describes the impact of altered flow patterns in the Delta, including cross Delta flows and reverse flows on the lower San Joaquin River. This discussion also states that existing conditions often favor non-native species. However, this discussion does not adequately describe the importance of Delta inflow and Delta outflow as major drivers of the Delta ecosystem. There is an abundance of evidence demonstrating the importance of Delta inflow and outflow, including the State Water Resources Control Board's flow criteria, presentations made to the Board in the development of these criteria, the 2011 State of the Bay Report, the existing Biological Opinions and more. We recommend that the document be revised to include a discussion of the impacts of the changed pattern and overall reduction of Delta inflow and outflow. We further recommend that the document be revised to more clearly indicate the anticipated impacts of alternative approaches to outflow in alternatives considered in the document.

Major Sources of Information: We recommend that section 4.3.1 revised to list documents related to the State Board's flow criteria as a major source of information. We believe that this is required by SB 7X7. The legislature directed the State Board to adopt these flow criteria, in significant part to inform the preparation of the Delta Plan.

We also recommend that the San Francisco Estuary Project's 2011 State of the Bay Report be listed as a major source of information, particularly regarding the importance of flows in maintaining adequate estuarine habitat.

Entrainment: The document (Sec. 4.3.2.1.7) correctly summarizes the entrainment issue, including the statement that, over a 15 year period, more than 110 million fish were "salvaged" at the Skinner Fish Facility. The document also correctly states that this number "greatly underestimates" pumping related impacts, including losses related to the loss of nutrients and increased predation. However, the document should be revised to more clearly contrast the performance of alternative approaches to conveyance with regarding to entrainment impacts. These impacts are not currently adequately addressed. In particular, these impacts are not adequately addressed in the discussion of alternatives 1A and 1B.

Suisun Bay: The document discusses the critical environmental importance of Suisun Bay numerous times (e.g. the discussion of special status fish species beginning on page 4-16.) However, Suisun Bay is not adequately described either in the discussion of the Delta and Suisun Marsh (Section 4.3.2) or in the subsequent discussion of San Pablo and San Francisco Bays. Maps in the document clearly include Suisun Bay in the area described as the Delta and Suisun Marsh (e.g. figure 4.2). We recommend that the document be revised to include a detailed discussion of the ecological importance of Suisun Bay. This section should include a detailed discussion of the importance of the Bay in providing estuarine habitat, as described by the 2011 SFEP State of the Bay Report, and the degradation of that habitat as a result of reduced seasonal and total outflow.

Outflow and Biological Resources: The document correctly concludes that improved State Board flow requirements for the Delta could benefit special status species and reduce water available for export (Section 4.4.3.2.2). The document discusses potential terrestrial impacts if such protections lead to land retirement. However, this portion of the document fails to refer to the extensive discussion of alternative water supply options in Section 3 which can provide ample water supplies to meet the needs of water users. This section of the document should be revised to discuss the wide range of options available to avoid water supply and related impacts from stronger Bay-Delta protections.

Alternative Approaches to Operations: The document states that "Under Alternative 1A, the construction and operation of surface water projects (water intakes, treatment and conveyance facilities, and reservoirs) would be the same as the Proposed Project" (Sec. 4.4.5). However, the document elsewhere states that Alternative 1A "delays and makes less certain the establishment of Delta water flow criteria (for more natural flows) and Delta flow and water quality objectives to protect Delta ecosystem resources." (P. ES-4). Thus, it appears that the operations proposed by Alternative 1A are not identical to the proposed project, as delayed or weakened State Board requirements would result in more aggressive project operations and greater environmental impacts. This discussion should be revised to reflect this difference

between the alternatives and the Proposed Project. Nevertheless, we agree with the document's conclusion that

Alternatives 1A and 1B are inferior mostly because they would fail to arrest the increasing environmental deterioration to the Delta ecosystem. They fail to do so because they would result in fewer ecosystem restoration projects in the Delta and would be less aggressive in moving toward minimum standards for water flow in the Delta necessary for a healthy fishery and ecosystem. (p. ES-8).

Finally, the document states that the environmental benefits of Alternative 2 "would not be enough to outweigh the extensive loss of agricultural land." (p. ES-9). This language suggests that the environmental benefits of Alternative 2 are less than the impacts of the reduction in agricultural land in this alternative. We do not believe that this statement is scientifically justifiable and recommend that the document be revised.

BDCP- Section 23

The document states that the "Proposed Project address (sic) concepts similar to BDCP's" (S. 23-4-1). This section also contains a detailed discussion of many recent proposals for the BDCP. However, this discussion fails to note that the current project operations under consideration in the draft BDCP Effects Analysis would significantly increase water diversions, moving in the opposite direction from the State Board's flow criteria. Thus, like Alternatives 1A and 1B, the BDCP would, as currently drafted, fail to arrest the decline of the Delta ecosystem and its fisheries. In this way, the draft BDCP appears to be different from and inconsistent with the Proposed Project. We recommend that the document be revised to reflect this conclusion. It is, of course, important to note that the BDCP is still far from complete. Therefore, this inconsistency could be addressed by the BDCP prior to its completion.

We look forward to continuing to work with the Council in revising the fifth draft and in revising the DEIR. Thank you for considering our comments.

Sincerely,



Barry Nelson
Natural Resources Defense Council



Gary Bobker
The Bay Institute



Kim Delfino
Defenders of Wildlife



Leo Winternitz
The Nature Conservancy



John Cain
American Rivers



Jonas Minton
Planning and Conservation League

Att.
Comments on the Fifth Draft Delta Plan, September 30, 2012



Philip Isenberg, Chair
Delta Stewardship Council
980 Ninth Street, Suite 1500
Sacramento, CA 95814

September 30, 2011

Re: Comments on the Fifth Draft Delta Plan

On behalf of the Natural Resources Defense Council, The Bay Institute and Defenders of Wildlife, we are pleased to offer the following comments and recommendations on the fifth draft Delta Plan. Our organizations have submitted extensive written and verbal comments to the Council since its creation. We greatly appreciate the Council's efforts to incorporate many of our recommendations into the fifth draft. In other places, however, the Council has not adopted our recommendations. Rather than repeat some of those recommendations here, this letter presents a few of our recommendations in a broader context and, in some cases, offers alternative approaches.

A Phased Approach to Strengthening Delta Plan Recommendations

As an initial general matter, we recommend that the Council develop a process for strengthening the plan in future drafts and to continue to update the plan after its finalization. The current draft plan contains a very modest set of recommendations.

First, many recommendations in the fifth draft are required by current law and policy. We believe that more ambitious recommendations will be required to achieve the Council's mandate and recommend that future drafts include stronger recommendations, particularly for the coming decade. This and previous letters include many such recommendations. For example, we have recommended below a process to develop S.M.A.R.T. objectives for the Delta Plan prior to its finalization.

Second, the recommendations in the fifth draft plan are also modest in that most of the current recommendations are focused primarily on actions in the next few years. Very few recommendations currently extend into the second half of the Council's planning horizon. Currently, the draft includes few long-term recommendations in areas such as improving water supply reliability and ecosystem restoration. For example, the draft contains little discussion of water conservation goals beyond 2020.

We recognize the challenge inherent in drafting long-term recommendations today at the same level of detail as recommendations for the coming five years. However, we urge the Council to include a process in the final Delta Plan to continue the development of more detailed long-term recommendations over time. One of NRDC's first recommendations to the Council was that it establish a phased approach to the Delta Plan. We recommend that the Council create framework and a process for such a phased approach to developing stronger near-term recommendations prior to the finalization of the Delta Plan and continuing the development of additional, detailed long-term recommendations after its finalization.

Adaptive Management and Developing S.M.A.R.T. Objectives (Chapter 2)

This chapter contains a well developed discussion of adaptive management. Given the complexity of the Bay-Delta system and the number of drivers of change, adaptive management will be essential to the long-term success of the Delta Plan. We offer the following recommendations to continue to improve this chapter.

Proposal: Insert the following text, at line 20, on page 39.

Objectives should be specific, measureable, attainable, relevant to the goal, and time-bound (S.M.A.R.T.). These goals should be developed through the involvement and review of independent scientists with related expertise.

Rationale: The fifth draft plan continues to lack some critical foundational components, particularly the adoption of S.M.A.R.T. (specific, measureable, attainable, relevant to the goal, and time-bound) objectives, rather than the mostly unclear and unmeasurable performance metrics in the current draft. Goals and objectives serve as the foundation of adaptive management. To be effective, these goals and objectives must be science-driven, not the result of political pressure or "lowest common denominator" stakeholder negotiations. As a part of the BDCP process, the environmental and scientific communities have devoted a significant effort to developing a detailed approach to adaptive management known as the "logic chain". That process includes the development of goals and S.M.A.R.T. objectives. The logic chain approach shows how those goals and objectives can be used to drive subsequent steps in the adaptive management process, including monitoring, evaluation of progress, and adaptive decision-making.

We recommend that staff review the logic chain approach and strive to ensure that this approach is fully integrated into Chapter 2. In particular, given the central role of goals and objectives, we recommend that the next draft include a description of the logic chain/"S.M.A.R.T. objectives" approach, a commitment to develop a comprehensive set of S.M.A.R.T. objectives using the logic chain approach, and a few key examples of such objectives specific to the Delta Plan. The Council should immediately take steps to identify and initiate a process to expeditiously develop S.M.A.R.T. objectives using the Delta Science Program and incorporate them into the plan as amendments as soon as

possible. TBI's letter of July 1 provides detailed guidance on objectives and objective development.

Proposal: In adaptive management steps 1-9 (beginning on page 39), include a discussion of appropriate steps to ensure the incorporation of the best available science.

Rationale: The discussion of adaptive management emphasizes that this should be a "science-based" approach (page 37). In addition, Chapter 2 includes a discussion of the best available science (beginning on page 44). We recommend that the discussion include more detail regarding the process by which the best available science should be incorporated into the nine steps of adaptive management. For example, above, we have recommended that the development of goals and objectives should include the involvement of independent experts with related expertise.

Proposal: Insert the following language at the end of line 4 on page 49

Effective governance for adaptive management should include structures designed to include the input of scientific experts and impartial outside scientific review, a central role for state and federal agencies with relevant expertise and responsibility (e.g. state and federal fisheries agencies on issues related to ecosystem health) and a balanced approach to the involvement of interested stakeholders. In order to achieve the co-equal goals, no stakeholder group should be afforded a privileged role in the governance of the adaptive management process.

Rationale: In a system as complex as the Bay-Delta, the governance of adaptive management will be essential to its long-term success. Given the polarized nature of Delta issues, it is also essential that adaptive management governance include clear roles for the scientific and agency communities, as well as for stakeholders. We note here with great concern the proposed approach to governance in the recently released BDCP "First Amended MOA." That MOA proposes to provide state and federal water contractors a role very similar to that of state and federal agencies in the governance of the BDCP, including adaptive management. The MOA fails to appropriately reflect the responsibilities of state and federal agencies, and the legitimate interests of a broad range of stakeholders, including the environmental, Delta, fisheries and other water user communities. We believe that this approach would undermine the incorporation of the best available science in adaptive management and that this approach is inconsistent with the Council's co-equal goals requirement. We do not recommend that the Council directly address this MOA in the Delta Plan. Rather, we recommend that the Plan include a more detailed discussion in subsequent drafts regarding the effective governance of adaptive management programs.

A More Reliable Water Supply for California (Chapter 4)

Proposal: Include, in the plan, a meaningful definition of water supply reliability and reflect that definition in the plan's policies, recommendations and metrics. For example, we recommend that the discussion of storage and conveyance be amended to

clarify that the goals of conveyance and storage improvements are not to increase average diversions, but rather to facilitate ecosystem restoration and to improve the vulnerability and predictability of Delta supplies. NRDC's June 22 letter and TBI's July 1 letter contained several specific recommendations for the discussion of storage, conveyance and performance measures in this chapter.

Rationale: Since the finalization of the CALFED ROD, water stakeholders have offered two definitions of water supply reliability. The first is a mid-20th century definition focused on increasing average yield. The second approach reflects a contemporary understanding of the many challenges facing the Delta (e.g. climate change, sea level rise, levee stability and collapsing ecosystem health) and is focused on reducing the vulnerability and increasing the predictability of Delta supplies. The first definition is focused narrowly on increasing Delta exports, while the second is silent on average diversions. In theory, it could be achieved through increased, decreased or unchanged total diversions. We believe that the legislature put to rest the debate over the definition of water supply reliability in 2009, by adopting a policy of reducing reliance on Delta supplies. That provision cannot be read as a mandate to increase Delta exports. Indeed, Council staff has addressed this issue (Letter from Joe Grindstaff to Byron Buck, Nov. 15, 2010.) In short, it is critically important that the Council define reliability clearly, in order to clarify the purpose of improvements to conveyance and storage. Without such clarification, conveyance and storage improvements could undermine, rather than implement, the co-equal goals. In addition, without a clear definition of reliability, it will be impossible for the Council to measure progress in this arena and to manage adaptively over time.

Proposal: Delete the outcome performance measure beginning on line 30 on page 98 and replace it with water supply reliability metrics recommended in NRDC's June 22 letter.

Rationale: The performance measure referenced above in the fifth draft plan would measure reliability by measuring the "amount of water made available" from the Delta system. Thus, this measure would define increased reliability as synonymous with an increase in water diversions from the Delta system. Such an approach is incompatible with the Council's mandate to reduce reliance on Delta supplies. This approach is likely to be incompatible with the updated flow requirements recommended by the draft (page 84.) In addition, this metric could be satisfied through a program that did nothing to address the physical vulnerability of the Delta system. That vulnerability is one of the primary drivers of the passage of the Delta Reform Act and the creation of the Council. In short, this metric is not consistent with the Council's legislative mandate. NRDC's June 22 letter includes recommended metrics that focus on the key reliability metrics – physical vulnerability, resilience and predictability.

Proposal: Add "To the extent possible, these issues should also be addressed in the update of Bulletin 160 currently scheduled to be completed in 2013." at the end of WR R8 on page 93.

Rationale: We thank the Council for including this recommendation in the fifth draft. Bulletin 118 is an important state groundwater planning document that has not been updated since 2003, and that update was based on data that is now over thirty years old. Even before an update of Bulletin 118, it may be possible for the California State Water Plan update (Bulletin 160) process, which is already underway, to address some of the issues raised by this recommendation. We urge the Council to continue to support an update of Bulletin 118, and also to recommend that, to the extent possible, the update of Bulletin 160 address the same groundwater issues as well as how groundwater management can be integrated with other key management tools (e.g. water recycling.)

Proposal: Add “including potential impacts to water users and the environment” after “remain unchanged,” on line 30 on page 93.

Rationale: WR R8 currently recommends an analysis of groundwater resources in 20 years if current management trends continue. We support that analysis and recommend that such an analysis also include a discussion of the potential impacts to water users and the environment that could result from such a scenario.

Additional Proposals: We urge the Council to consider additional actions to improve water supply reliability. We have offered several such recommendations in previous letters. We will not repeat those recommendations here. Rather, we will refer to them briefly and describe the rationale for their inclusion.

- *Volumetric pricing of wastewater* (NRDC, June 22 letter, p. 8) Volumetric wastewater pricing offers the potential to provide cost-effective water savings in the very near-term.
- *Reliability recommendations for the State Water Board and DPH.* The draft includes a recommendation urging state facilities to assume a leadership role on water efficiency, stormwater capture and water recycling (WR R4). We support this recommendation and thank the council for including it. We also urge the Council to include additional recommendations for state agencies to take a leadership role in advancing specific water management tools. For example, NRDC recommended (NRDC, June 22 letter, p. 4), that state agencies take actions in the following areas:
 - The State Board should develop regulations to allow the non-potable indoor use of rainwater.
 - The State Board should define water “waste.”

We believe that it is appropriate for the Council to offer recommendations for other state agencies to provide leadership in advancing a full range of water reliability tools.

- *Addressing the over-commitment of Bay-Delta supplies.* The fifth draft appropriately observes that the Bay-Delta is overcommitted and that “SWP and CVP contracts promise more water than can be consistently delivered.” (p. 77) However, the current draft does not include any recommendations to address this problem, reduce pressure on a damaged ecosystem, and reduce long-term conflicts. We have recommended that the SWP, the CVP and the State Board

address these issues directly through contract renewals and the State Board's water rights process. (environmental coalition letter, January 25, 2011, p. 6)

Finance (Chapter 9)

The fifth draft recommends the creation of a user fee program (FP R6) and a public goods charge for water (FP R12). We strongly support the creation of a system of user fees. However, neither of the recommendations referred to above provides needed detail regarding appropriate financing mechanisms. We offer the following recommendations:

Proposal: Clearly state in FP R6 that this system of user fees should be designed to support system-wide habitat restoration efforts.

Rationale: We believe, for example, that all water users should contribute to a system-wide ecosystem restoration fund analogous to the Central Valley Project Improvement Act Restoration Fund. We do not believe that the Council should attempt to define such a restoration fund in detail in the coming draft. Rather, we recommend that this be a specific goal of the system of user fees discussed in FP R6.

Proposal: Include a recommendation to create a financing mechanism to ensure reliable financing for investments in water management tools that would reduce reliance on the Delta. In general terms, this mechanism would be analogous to the efficiency and renewables investments financed by the public goods charge for energy utilities.

Rationale: Efforts to reduce reliance on Delta water supplies would be greatly advanced through a reliable financing mechanism for investment in regional supplies. The fifth draft discusses the creation of a public goods charge (PGC) for water (FP R12). However, the recommendation in the current draft does not include a financing mechanism for investments that would reduce reliance on the Delta. These investments are analogous to the efficiency and renewable investments included in the energy PGC. Indeed, these investments are a primary purpose of the PGC program. In short, we recommend that the Council include a mechanism to provide reliable funding for water investments that reduce reliance on the Delta.

NRDC's June 22 letter recommended the creation of a minimum investment requirement to achieve this goal. That mechanism is intended to finance local and regional investments, and to leave these funds in the control of water agencies. We continue to support this mechanism; however, we recognize that other mechanisms could achieve the goal of financing investments that can reduce reliance on the Delta. For example, depending on its design, a water-budget-based rate structure (WR P1) could provide funding for local and regional investments. It may also be possible to design the public goods charge for water discussed in FP R12 to provide this funding. However, we recommend that care be taken in using this approach, particularly because of the failure of the similar Resource Investment Fund in the legislature several years ago. We believe that there are several differences between the energy and water arenas that would require careful design of a PGC for water. These differences include the

following:

- The large number of water utilities in California, in comparison with the handful of investor owned energy utilities that contribute to the state-administered public goods charge.
- The significant differences between the agricultural and urban water communities.
- The wide range of possible investments to reduce reliance on the Delta.
- The differences between saving applied and consumed water.

We believe that a minimum investment requirement or water-budget-based rate structures could avoid some of these issues, making this approach particularly attractive. One key to using the energy PGC as a model for a water PGC would be to focus on the energy PGC structure for publicly owned utilities. Unlike the investor owned utilities, publicly owned utilities retain management authority over energy PGC funds and invest those funds on a specified range of activities. In this manner, the PGC for publicly owned utilities is quite similar to a minimum investment requirement. This approach could increase the acceptance for a PGC for water in the utility community. Indeed this approach is reflected in one of the water PGC recommendations developed by the U.C. Berkeley Goldman School on behalf of the California PUC and the Water Energy Team of the Climate Action Team (WetCat)¹. In short, there may be several ways for the Council to create an effective financing mechanism for water management investments that reduce reliance on the Delta. We look forward to working with you to find the right path forward.

Thank you for considering our views. We look forward to continuing to work with you as you continue the development of the Delta Plan.

Sincerely,



Barry Nelson
Natural Resources Defense Council



Gary Bobker
The Bay Institute



Kim Delfino
Defenders of Wildlife

¹ http://www.waterplan.water.ca.gov/docs/cwpu2009/0310final/v4c02a19_cwp2009.pdf