2 Master Responses

2.1 Introduction

This chapter presents responses to environmental issues raised in multiple comments. These have been termed "master responses." They are organized by topic so that reviewers can readily locate all relevant information pertaining to an issue of concern.

When issues are addressed in the broader context provided by master responses, the interrelationships between some of the individual issues raised can be better clarified; it is also possible to provide a single explanation of an issue that is more thorough and comprehensive than separate, narrowly focused responses without any context.

The following issues are discussed in the master responses:

- Delta Water Quality Analysis;
- Delta Water Level Analysis;
- Rock Slough Water Quality Standards and Compliance;
- Los Vaqueros Reservoir Expansion Project Analysis;
- Cumulative Analysis;
- Project Relationship to CALFED Goals, Delta Improvements Package, and Future Delta Water Quality; and
- Agricultural Analysis.

2.2 Master Response 1: Delta Water Quality Analysis

Several comments focused on the project's potential water quality impacts and did not agree with the Draft EIR/EIS conclusion that these impacts would be less than significant. The results of the analysis conducted for the Draft EIR/EIS indicate that the very small changes in Delta water quality resulting from the Alternative Intake Project would not result in significant impacts to the environment, to other Delta water users, or to any beneficial uses of the water. The changes would not result in violations of any water quality standards or cause any other water users to modify their operations. CCWD and Reclamation examined the potential water quality effects of the Alternative Intake Project using the best available modeling tools, multiple specialists in the California water modeling community, and an internal project team that has been involved in all aspects of Delta water over the past two decades. Furthermore, CCWD and Reclamation

involved Delta stakeholders in the development of the Draft EIR/EIS modeling framework to help ensure the modeling assumptions and analysis were reasonable and representative. Potential changes caused by the Alternative Intake Project are of a magnitude that would be undetectable in the field and imperceptible to Delta users. These results are not surprising because the changes in CCWD pumping associated with the Alternative Intake Project would be small when compared to typical diversions and flows in the Delta.

Additional discussion and response to comments is provided below.

2.2.1 Modeling Analysis and Results

Water quality monitoring data and computer modeling were used to aid in the evaluation of potential effects of the Alternative Intake Project on Delta water resources and quantify potential salinity impacts. The modeling was based on reasonable and conservative assumptions regarding Delta operations and potential CCWD operations. The operations under each of the project alternatives were simulated and the water quality effects were analyzed using the best modeling tools available. These are the standard tools used in this type of analysis. The models have limitations, but provide useful information, particularly on projects like this that involve relatively small changes to the system. CCWD and Reclamation did not rely entirely on the modeling, but thoroughly evaluated results using expertise and professional judgment. CCWD compared the analysis to the project significance criteria and drew conclusions about potential impacts.

Changes caused by the project alternatives at different Delta locations were evaluated by comparing results for the "base case" (without project) to the results for the project alternatives. Some of the differences that can be calculated with the modeling are to a level of precision that would not be observable or reproducible in actual measurements in the field. The changes are nonetheless disclosed in the Draft EIR/EIS and considered in the project analysis.

The analysis shows that with implementation of the Alternative Intake Project, CCWD would shift its pumping location during summer and fall from the Old River Intake to the proposed new intake on Victoria Canal to take advantage of better water quality. The existing Old River Intake would continue to be used primarily in winter and spring. By pumping higher quality water at the proposed new intake on Victoria Canal, CCWD would use Los Vaqueros Reservoir less to blend source water to provide high-quality water to CCWD's customers. CCWD's delivered water quality objective is 65 milligrams/liter (mg/L) chloride; during summer and fall, Old River salinity can be as high as 220 mg/L, while salinity in Victoria Canal is generally below 100 mg/L. Less pumping would be required in many years during winter and spring to refill the reservoir. The net result is a slight shift in the timing of CCWD diversions from spring to fall (on the order of about 10 thousand acre-feet [TAF] on average). The average annual quantity of water diverted by CCWD from the Delta would not change as a result of this project.

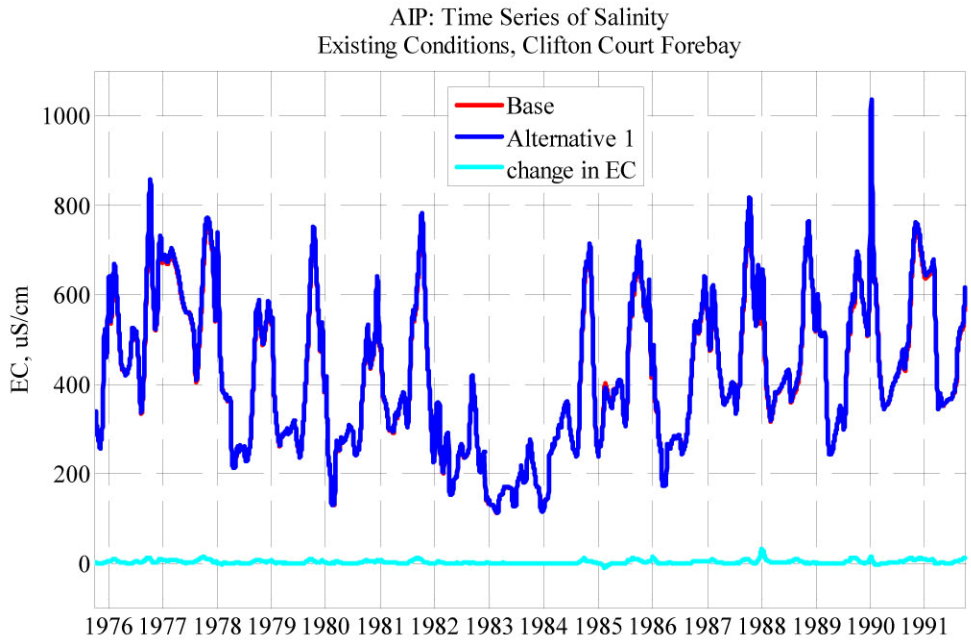
The analysis shows these changes in the location and timing of CCWD's diversions associated with the Alternative Intake Project could result in very small changes in Delta

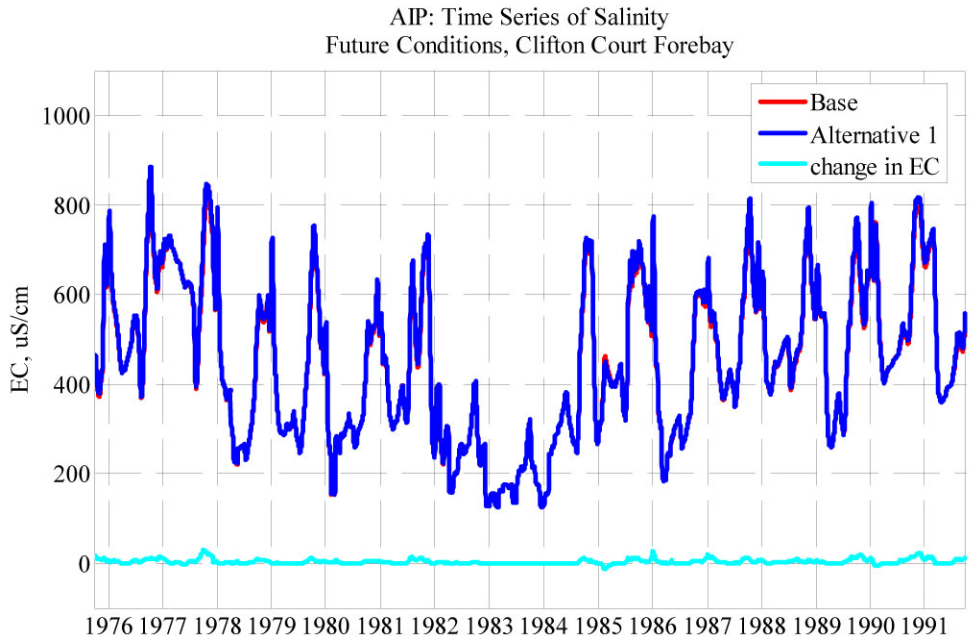
salinity in some locations and that these changes would not be significant. These results are consistent with what would be expected given the proposed new intake's capacity and location. The Alternative Intake Project would relocate at most 250 cubic feet/second (cfs) of CCWD diversions during portions of the year. On average, its diversions would be 160 cfs when in use. By comparison, net Delta outflow ranges from 3,000 to 600,000 cfs with an average of about 30,000 cfs.

2.2.2 Presentation of Results

Several comments concerned the presentation and use of modeling results within the Alternative Intake Project Draft EIR/EIS. The Draft EIR/EIS presented annual and monthly water quality changes as summary information, with details on the results presented in Appendix C of the Draft EIR/EIS. All modeling data were provided to those who requested further information. Analysis for the Draft EIR/EIS involved evaluating model simulations of the project for the 16-year simulation period including maximum, minimum, and average changes to daily, monthly, and annual salinity. This information is provided in Appendix C-4, "DSM2 Delta Modeling," to the Draft EIR/EIS. The presentation of averages in the main text is not misleading because in the case of the Alternative Intake Project, the averages do not mask a bigger effect. The Alternative Intake Project's effect on water quality would be small at all times. This can be seen in the time series plots of daily salinity at different Delta locations over the 16-year modeling period (for example, Exhibit 4.2-9 from the Alternative Intake Project Draft EIR/EIS Volume I presented here shows daily data plotted over the entire 16-year period, and the salinity changes are barely discernable).

In addition to the detailed information provided in Appendix C-4, "DSM2 Delta Modeling," to the Draft EIR/EIS, complete modeling results were made available to several commenters in digital format, as they requested. In addition, CCWD and Reclamation worked closely with stakeholders to solicit their input and make materials available to them prior to and during the review period for the Draft EIR/EIS. Specifically, CCWD met with and briefed the Metropolitan Water District of Southern California (MWD) (October 2005 and January 2006), the State Water Contractors (SWC) (January 2006), Kern County Water Agency (KCWA) (April 2006), and the California Department of Water Resources (DWR) (April and June 2006) and made modeling results available in digital format so that they could be examined in detail. During the review period, several commenters requested electronic copies of the modeling results and were provided with a CD containing input and output for the operations (CALSIM and CCWD solver model) and hydrodynamic (DSM2) modeling used in the Draft EIR/EIS analyses. CCWD and Reclamation have provided all requested information. Full modeling data are included in CD format as Appendix B to this document so that all readers will have access to them.





Note: AIP=Alternative Intake Project

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Source: CCWD DSM2 Delta Modeling Data (see Appendix C-4)

Time Series of Salinity – Clifton Court Forebay (Existing and Future Conditions)

EXHIBIT 4.2-9

2.2.3 Water Quality Changes at Clifton Court Forebay

In its comments on the Draft EIR/EIS, DWR confirmed that the Alternative Intake Project would not result in a significant adverse effect on water quality. Other commenters (MWD, KCWA, Santa Clara Valley Water District [SCVWD] and Zone 7 Water Agency [Zone 7], and SWC), however, expressed concern that the modeling results for the Alternative Intake Project show salinity increases at Clifton Court and the Tracy Pumping Plant. The critical measure is whether or not these increases would result in significant effects. The analysis in the Draft EIR/EIS demonstrates that these increases would be negligible and would not result in significant adverse effects on any beneficial use, the physical environment, or any other Delta water user.

2.2.4 Salt Load to Metropolitan Water District

Comments from both MWD and SWC indicate that the Alternative Intake Project will increase salt load to MWD. Salt load is an estimate of the amount of dissolved salt in water that is exported from the Delta and is calculated by multiplying the concentration of salt in the water by the amount of water pumped. Typically, MWD takes about 1.6 million acre-feet of water per year from the Delta containing about 410,000 metric tons (900 billion pounds) of salt. In reviewing the comment letters, CCWD discovered an discrepancy in the commenter's analysis in estimating the salt load from the Alternative Intake Project. Correcting the discrepancies in the analysis shows that the salt load would not change by more than 0.6%, an amount that is not significant as shown below.

MWD used a different hydrodynamic model (the Fischer Delta Model) to conduct its analysis of the Alternative Intake Project. Their modeling results are inconsistent with expected Delta hydrodynamic behavior. Specifically, the salinity predicted in MWD's modeling does not correlate with Delta outflow. A direct inverse correlation between Delta outflow and salinity is well documented by field measurements and is always seen in Delta models that are operated correctly. When Delta outflow increases, Delta salinities decrease, and vice versa. Simulation results for the Alternative Intake Project Draft EIR/EIS follow this pattern; the results prepared by MWD do not. Based on CCWD's review of MWD's results, and discussions with MWD, the most likely cause of the discrepancy is related to how the agricultural barriers in the south Delta were operated in the model simulations relative to San Joaquin River flow. Because of this problem in the modeling conducted by MWD, meaningful estimates of salt load cannot be derived from MWD's analysis.

CCWD reviewed the information provided by MWD and the analysis conducted for the Draft EIR/EIS. Based on the Alternative Intake Project's Draft EIR/EIS modeling of current conditions, the Alternative Intake Project's contribution to MWD's salt load would be about 2,500 metric tons per year, or one third of what the commenters estimated. This is less than 0.6% of the average total salt load exported to MWD from the Delta (approximately 410,000 metric tons per year) based on the estimate that an average of 50% of the State Water Project (SWP) exports are delivered to MWD.

MWD and SWC further commented that the increase in salinity would affect MWD's costs. The "cost" of salt load largely reflects consumer costs such as laundry detergents working less effectively, plumbing fixtures and home appliances having a reduced life,

and industrial users incurring increased treatment costs for cooling towers, boilers, and manufacturing processes.

MWD estimated increased costs for its ratepayers related to the Alternative Intake Project of about $3.3 million per year. However, this estimate is based on the projected salinity increases now shown to be inaccurate and on a misapplication of unit factors from MWD's Salinity Management Study (MWD and Reclamation 1999). This Salinity Management Study, which was used as the basis for calculation, states that the cost to MWD's customers would be about $1 million per year for each milligram per liter increase in total dissolved solids[1] in *both* their Delta and Colorado River water supplies concurrently. However, the Alternative Intake Project would have no effect on MWD's Colorado River water supply.

When correct factors are used (an average increase in total dissolved solids in the Delta water supply of 1.4 mg/L based on the Alternative Intake Project Draft EIR/EIS analysis, rather than the 3.3 mg/L calculated by MWD and a factor of $250,000 per 1 mg/L increase based on the Salinity Management Study), the total cost to MWD's ratepayers would thus be about $350,000 per year, an order of magnitude smaller than estimated by the commenters. Note that CCWD and Reclamation have not attempted to verify the costs estimated in the Study, but have used them for the purposes of responding to comments. The cost would be borne directly by MWD's ratepayers rather than by MWD because the costs are largely consumer costs. According to its web site (MWD 2006), MWD serves 18 million people, which amounts to an annual cost of less than two cents per person.

2.2.5 Comparison Between CCWD's and State Water Project Water Quality

Some comments suggest that CCWD is improving its water quality at the expense of those with worse water quality, specifically the SWP contractors. As explained above, the Alternative Intake Project would not significantly adversely affect salinity at Clifton Court Forebay and therefore would not significantly adversely affect the SWC. Furthermore, the SWP contractors' water quality is not worse than CCWD's. The relative quality of CCWD and SWP water supplies is not an environmental issue and therefore is not relevant in evaluating the significance of the Alternative Intake Project's potential impacts. However, a response on this issue is provided.

SWP's Delta water supply has less salinity than CCWD's, as shown in Table 2.2-1. This can also be confirmed by examining delivered water quality for SWP contractors such as SCVWD. SCVWD's average delivered chloride concentrations were 51 mg/L in 2004 and 41 mg/L in 2005, according to the annual reports on its web site (SCVWD 2006). CCWD's treated water customers received 56 and 55 mg/L chloride water in the same years. CCWD used its $450 million investment in the Los Vaqueros Project to reduce salinity to those levels. Otherwise, CCWD's average delivered salinity would have been 77 mg/L and 63 mg/L, respectively. The fact that CCWD has built water quality projects

[1] Total dissolved solids is a measure of salinity. The Alternative Intake Project analysis used chlorides and electrical conductivity as measures of salinity, but these can be converted to a total dissolved solids equivalent.

in the past is not a reason to refrain from undertaking projects such as the Alternative Intake Project that will make further water quality improvements. The Alternative Intake Project would help to protect CCWD's investment in Los Vaqueros Reservoir from future trends that can result in degraded water quality.

Table 2.2-1
Salinity Concentration Comparison Between CCWD and SWP Supplies

	Average Measured Chloride Concentration (mg/L)	Maximum Measured Chloride Concentration (mg/L)
SWP supply at Banks Pumping Plant	72	185
CCWD supply at the Old River Intake	78	211
CCWD supply at the Rock Slough Intake	93	239

Source: From MWQI measurements, October 1990 to July 2006 with 1995-1996 data excluded for all three sites because of gaps in availability.

2.2.6 Conclusion

CCWD and Reclamation rigorously examined Delta water quality in the context of the Alternative Intake Project using the best available modeling tools, multiple specialists in the California water modeling community, and an internal project team that has been heavily involved in all aspects of Delta water over the past two decades. Furthermore, CCWD and Reclamation involved Delta stakeholders in the development of the Draft EIR/EIS modeling work to obtain their input. The results of this work, outlined in Section 4.2, "Delta Water Resources," of the Draft EIR/EIS Volume I, and the corresponding appendices in Volumes II and III, indicate that the negligible changes in Delta water quality due to the Alternative Intake Project would not result in significant impacts to the environment, to other Delta water users, or to any beneficial uses of the water. These changes would not result in violations of any water quality standards or cause any other water users to modify their operations. They are of a magnitude that would be undetectable in the field and imperceptible to Delta users.

The assumptions built into the modeling analyses in the Draft EIR/EIS were conservative (see Master Response 5, "Cumulative Analysis," for additional discussion on conservative modeling assumptions). Consequently, the changes in salinity resulting from the Alternative Intake Project would be even smaller than the modeling results indicate, if any change occurs at all.

Because the impacts to Delta water quality resulting from the Alternative Intake Project would be less than significant, no monitoring or mitigation measures are needed or required.

2.3 Master Response 2: Delta Water Level Analysis

Some commenters expressed concern that operation of the Alternative Intake Project would draw down water levels in the vicinity of the proposed new intake on Victoria Canal, affecting the ability of central and south Delta agricultural diverters to use their

siphons. Water levels are a concern for Delta farmers because many rely on siphons (and in some cases, pumps) at fixed elevations to draw irrigation water over Delta levees and on to their fields. Victoria Island Farms, for example, uses several siphons along Victoria Canal to divert irrigation water.

The Draft EIR/EIS examined water levels and found that the Alternative Intake Project would not have a significant impact on any water levels that would affect Delta diversions because the diversion rate for the proposed new intake on Victoria Canal is small. The water level changes from the proposed new intake would not be discernable and would average less than 0.002 foot, with a maximum change in Victoria Canal of 0.03 foot occurring in one instance in the model simulation of 5,600 tidal cycles (16 years). This magnitude of change, if realized, would not adversely affect any Delta diversions.

Water levels in the south and central Delta are influenced to a varying degree by a number of factors including, natural tide fluctuation, San Joaquin River flow, the Central Valley Project (CVP) and SWP pumping, local pumps and siphons, local agricultural drainage return flows, channel capacities, siltation and dredging, and regulatory constraints. When CVP and SWP are exporting water, water levels in local channels can be drawn down, particularly during low tides. DWR has been addressing these issues by installing temporary seasonal barriers at several Delta locations. Permanent operable barriers are being evaluated as part of the South Delta Improvements Project (SDIP).

The Alternative Intake Project's impacts on Delta water levels would be negligible and the Alternative Intake Project would not considerably contribute to any significant cumulative water level impact. Water level analyses conducted for the Alternative Intake Project Draft EIR/EIS used the DSM2 model, which has been extensively calibrated and validated and is the industry standard for this type of analysis. Maximum changes in water level at the proposed new intake location, at the ends of Victoria Canal, and at the water level standards compliance points in the south Delta are given in Tables 4.2-19 and 4.2-20 of the Draft EIR/EIS Volume I. As seen in the tables, the analysis shows that the maximum change in lower low tide stage at any location under any conditions would be 0.03 foot at the proposed new intake location, under future conditions. A change of this magnitude would occur in only one tidal cycle in the 16-year analysis period (i.e., 5,600 tidal cycles); all other changes at this and all other locations would be smaller than 0.03 foot. Experience with CCWD's existing Old River Intake, also 250 cfs, shows no measurable change in water level associated with the pumping.

The average change in lower low tide water levels at the proposed new intake location would be 0.002 foot, or one fortieth of an inch. The average changes at other locations, away from the proposed new intake location, would be smaller still. Such changes would be too small to be measured in practice, and far too small to require new pumps or cause siphons to become inoperable. Thus, compared to existing and future conditions, including CVP and SWP operations, the Alternative Intake Project would not have a significant impact and would not make a considerable contribution to any existing or future significant impacts on water levels.

The Draft EIR/EIS also addresses cumulative conditions pertaining to water levels. As described in Volume I of the Draft EIR/EIS, the cumulative impact of future Delta projects is difficult to predict because of uncertainties in future operations of the operable gates included in the SDIP and uncertainties regarding the effects of global warming and sea level rise. If the permanent operable gates are operated to maintain and improve water levels for central and south Delta farmers, there would be a cumulative benefit to water levels for central and south Delta farmers. In any event, the Alternative Intake Project would not make a considerable cumulative contribution to any cumulative effect on Delta water levels.

2.4 Master Response 3: Rock Slough Water Quality Standards and Compliance

Several comments focused on issues related to water quality standards at CCWD's Rock Slough Intake. Some commenters questioned whether the Alternative Intake Project would result in a greater potential for violations of water quality standards at the Rock Slough Intake compliance location or whether the Alternative Intake Project would make it more difficult to meet those water quality objectives. CCWD and Reclamation have carefully analyzed these possibilities. As explained below, the Draft EIR/EIS analysis shows that the Alternative Intake Project would not result in significant changes in water quality at the Rock Slough Intake, nor would the project make a significant difference in meeting the water quality objectives. The analysis shows that water quality standards would be met with no changes in Delta operations with or without the Alternative Intake Project.

This is in part because several major causes of water quality degradation in Rock Slough affecting the compliance point have been eliminated and the water quality is now much less sensitive to changes in CCWD pumping rates. CCWD is proceeding with projects to eliminate the remaining causes of degradation. Both modeling analysis and monitoring data confirm that changes in the Rock Slough Intake's operation caused by the Alternative Intake Project would not affect the CVP's and SWP's ability to comply with the water quality standards at CCWD's Rock Slough Intake nor will these changes require any modifications in CVP and SWP operations to meet the standards at the Rock Slough Intake.

The State Water Resources Control Board (SWRCB) sets the water quality standards in the Delta. The current standards establish a maximum chloride concentration of 250 mg/L all year at the CCWD Rock Slough Intake, and a maximum chloride concentration of 150 mg/L for part of the year (155–240 days per year, depending on water year type). The latter standard may be met at either the Rock Slough Intake or at the City of Antioch's Delta Intake (SWRCB Water Rights Decision 1641). Sources of chlorides in Rock Slough include seawater (which intrudes into the Delta when freshwater outflow from the Delta is low), local drainage and seepage from adjacent lands, the San Joaquin River, and the Sacramento River. Of primary concern are seawater and local drainage. The CVP and SWP are required by SWRCB to control salinity in the Delta to meet these standards. These standards are met by releasing water from upstream reservoirs, adjusting Delta exports, and operating salinity control gates in the Delta.

Some comments expressed concern that CCWD's reduced use of its Rock Slough Intake will signal a reduced need for the Rock Slough water quality standard. CCWD will continue to use its Rock Slough Intake in the future because the capacity of the Old River Intake, with or without the proposed new intake, is now and will continue to be insufficient to meet CCWD's water demands; the Alternative Intake Project would not increase CCWD's water delivery capacity, and CCWD would still rely on diversions from the Rock Slough Intake to meet its delivery needs. Furthermore, the Rock Slough water quality standard protects the water quality at other Delta locations; in particular, it protects water quality at CCWD's Old River Intake and water quality in Victoria Canal. Consequently, CCWD will continue its historical and strong interest in protecting Delta water quality at all of its intakes, including Rock Slough.

Other comments express concern that if CCWD implements the Alternative Intake Project, the resulting reduction in use of the Rock Slough Intake would make it more difficult for the CVP and SWP to meet water quality standards set at the Rock Slough Intake by reducing water circulation at that location. As explained further below, the Proposed Action would not affect the CVP's and SWP's ability to meet water quality standards at CCWD's Rock Slough Intake or require the CVP and SWP to re-operate to avoid exceedances.

In the past, agricultural drainage discharges into Rock Slough from Veale Tract increased chloride concentrations at the Rock Slough Intake. The most noticeable increases occurred after large winter storm events when large quantities of water from Veale Tract were discharged directly into Rock Slough. If pumping at CCWD's Rock Slough Intake was low during these large storm events, the drainage from Veale Tract would accumulate in Rock Slough, and the chloride levels in Rock Slough would rise. During large storm events, however, Delta salinities are relatively low, and the drainage discharges rarely caused chlorides at the Rock Slough Intake to exceed 150 mg/L.

Water quality at the Rock Slough Intake can also be degraded by higher saline seepage into the western end of the unlined portion of the Contra Costa Canal near the Rock Slough Intake. This seepage comes from lands adjacent to the Contra Costa Canal near the Rock Slough Intake and from lands owned by DWR that were purchased for an ecosystem habitat restoration project under the CALFED program. The effect of this seepage is in general only noticeable when pumping rates at Rock Slough Intake are below about 20 cfs. CCWD maintains at least 20 cfs maintenance pumping at the Rock Slough Intake to minimize salinity increases from this local seepage and provide improved water quality for its customers. This also helps the CVP and SWP to meet SWRCB's water quality standards.

On two occasions in the past 5 years (November 26, 2001 and November 4, 2002), local drainage and seepage during low Rock Slough Intake pumping periods caused salinity levels at the Rock Slough Intake to rise to levels that approached or exceeded SWRCB's water quality standards for a short period. At both these times, CCWD joined with the CVP and SWP in reporting those incidents as caused by factors other than CVP and SWP operations, which would have otherwise been adequate to meet the standards (i.e. additional flows or reduced exports would not have achieved the standards and would not

have been an efficient use of resources). SWRCB accepted those reports and did not pursue further action.

2.4.1 Projects to Address Local Sources of Degradation

A comment from DWR requests a discussion of current and future water quality effects of CCWD's local water quality projects. In January 2006, CCWD, with support and funding from DWR and SWC, completed the Rock Slough Water Quality Improvement Project, which relocated the Veale Tract discharge point from Rock Slough to the southeastern side of Veale Tract into Indian Slough. With this project completed and operational, the Veale Tract discharge no longer enters Rock Slough. Water quality monitoring data collected during the past 6 months confirm that the Rock Slough Water Quality Improvement Project is preventing the salinity increases previously seen in Rock Slough. For example, at no time since the Rock Slough Water Quality Improvement Project became operational has the salinity level approached the standard and, despite heavy rainfall in April with very low pumping at CCWD's Rock Slough Intake (between zero and 9 cfs), the chloride level remained below 65 mg/L.

Modeling studies conducted by CCWD estimate improvements in Rock Slough Intake water quality due to the Rock Slough Water Quality Improvement Project as follows:

- 2.9 mg/L chlorides average reduction at Rock Slough Intake,
- 47 mg/L chlorides maximum daily average reduction at Rock Slough Intake,
- 1.5 mg/L chlorides average critical year reduction at Rock Slough Intake, and
- 10.5 mg/L chlorides maximum daily average critical year reduction at Rock Slough Intake.

CCWD also recently completed another project, the Old River Water Quality Improvement Project, to reduce agricultural drainage reaching its Old River Intake. This project involved building a diffuser for agricultural discharge from Byron Tract into Old River to prevent the plume of agricultural drainage from Byron Tract from hugging Old River's banks and reaching CCWD's Old River Intake. Studies conducted by CCWD estimate the benefits that the Old River Water Quality Improvement Project provides at the Old River Intake to be of a similar, but slightly smaller, magnitude than the benefits the Rock Slough Water Quality Improvement Project provides at the Rock Slough Intake.

The Rock Slough and Old River water quality improvement projects were included in the water quality analysis for the Alternative Intake Project Draft EIR/EIS as part of the future baseline against which the impacts of the Alternative Intake Project were measured. The Rock Slough and Old River water quality projects had not yet been completed when the Notice of Preparation for the Alternative Intake Project was issued, and so they are not part of the existing conditions baseline.

CCWD, with support and funding from DWR, is also currently implementing a project to replace 2000 feet of the unlined section of the Contra Costa Canal intake with a pipeline to eliminate any seepage that might affect water quality at the compliance point. This

project is scheduled to be completed by summer 2008, 2 to 3 years in advance of the proposed completion date for the Alternative Intake Project. This is further evidence of CCWD's efforts to improve Rock Slough water quality.

2.4.2 Movement of Water through Rock Slough

Comments correctly note that local degradation is only one factor affecting water quality at Rock Slough and that another important factor is water movement through Rock Slough. A concern raised by the commenters is that reduced pumping from the Rock Slough Intake due to the Alternative Intake Project could increase the time it takes for water to move through Rock Slough. These comments suggest that this could increase the time it takes for water quality at the Rock Slough Intake to respond to changes in Delta operations and make it more difficult for CVP and SWP to comply with Rock Slough water quality standards. Analysis shows that the Alternative Intake Project's effects on CVP and SWP compliance with the Rock Slough water quality standards would be negligible.

The current standards at Rock Slough establish a maximum chloride concentration of 250 mg/L all year at CCWD's Rock Slough Intake and a maximum chloride concentration of 150 mg/L for part of the year (155-240 days per year depending on water year type with compliance measured at either Rock Slough or Antioch). CCWD does not use the Rock Slough Intake when salinity is very high (i.e., when the 250 mg/L standard would govern Delta operations) in the base case or with the Alternative Intake Project, so changes in CCWD pumping at the Rock Slough Intake due to operation of the Alternative Intake Project would not affect CVP and SWP compliance with the 250 mg/L standard.

CCWD and Reclamation also examined changes in pumping due to the Alternative Intake Project and compliance with the 150 mg/L standard. The modeling results show that for all alternatives and in all cases, compliance with the 150 mg/L standard is maintained without changes to CVP and SWP project operations. In fact, in all cases the minimum required number of days at 150 mg/L can be met at Rock Slough alone, although the standard may be met at Rock Slough or Antioch. With the Proposed Action there are on average an "extra" 113 days beyond the minimum requirement. Table 2.4-1 shows this analysis for existing conditions. This result is consistent with operational experience as well. There have consistently been excess days of compliance at Rock Slough since the Los Vaqueros Project came online in 1997 and CCWD's use of the Rock Slough Intake decreased significantly.

2.4.3 Summary

The Alternative Intake Project would not result in significant changes in water quality at Rock Slough because several major causes of water quality degradation in Rock Slough affecting the compliance point have been or would be eliminated in the next few years, and the water quality is now much less sensitive to changes in CCWD pumping rates. Modeling analysis and real world data confirm that changes in operation of the Rock Slough Intake will not affect CVP and SWP compliance with the 150 mg/L standard. Consequently, the Alternative Intake Project would not affect the ability of the CVP and SWP to meet water quality standards at CCWD's Rock Slough Intake or require any modifications in CVP and SWP operations to meet the standards at the Rock Slough Intake.

Table 2.4-1
Analysis of the Alternative Intake Project's Compliance with 150 mg/L Rock Slough Standard

Water Year	Minimum Days Required for Compliance with Standard	Base Case Number of Days Rock Slough Intake is below 150 mg/L	Proposed Action Number of Days Rock Slough Intake is below 150 mg/L	Difference	Base Case "Extra" Days of Compliance	Proposed Action "Extra" Days of Compliance
1976	155	297	295	-2	142	140
1977	155	225	228	3	70	73
1978	190	275	271	-4	85	81
1979	175	327	322	-5	152	147
1980	190	336	336	0	146	146
1981	165	295	293	-2	130	128
1982	240	346	346	0	106	106
1983	240	365	365	0	125	125
1984	240	349	348	-1	109	108
1985	165	259	257	-2	94	92
1986	240	334	334	0	94	94
1987	165	294	288	-6	129	123
1988	155	299	297	-2	144	142
1989	165	249	249	0	84	84
1990	155	265	267	2	110	112
1991	155	256	254	-2	101	99
			Average:	**-1**	**114**	**113**

Source: Alternative Intake Project Draft EIR/EIS DSM2 results

2.5 Master Response 4: Los Vaqueros Reservoir Expansion Project Analysis

Comments from DWR, SCVWD/Zone 7, SWC, and MWD expressed concern regarding the cumulative analysis relative to the Los Vaqueros Reservoir Expansion Project. Comments from MWD asserted that the Alternative Intake Project and the Los Vaqueros Reservoir Expansion Project should be treated as one project for purposes of CEQA and NEPA analysis.

The Alternative Intake Project and the Los Vaqueros Reservoir Expansion Project are separate projects, with distinct project purposes, planning efforts, funding, schedules, and participants. Most importantly, the Alternative Intake Project and the Los Vaqueros Reservoir Expansion Project have independent utility. They are not "connected actions" or phases of the same project and need not be, nor should be, evaluated as a single project. Neither project is a commitment to the other project. Constructing the Alternative Intake Project neither commits CCWD to move forward with the future expansion of Los Vaqueros Reservoir nor precludes the future expansion of Los Vaqueros Reservoir.

The Alternative Intake Project is a water quality project intended to protect and improve the quality of water delivered to CCWD customers. The Alternative Intake Project and its

associated proposed facilities (e.g., pipeline, pump station) are being designed and sized for a 250 cfs capacity—the capacity needed to protect water quality for CCWD customers. The Los Vaqueros Reservoir Expansion Project is needed primarily to provide replacement water for a Statewide fisheries protection program and to improve regional water supply reliability. It would require more pumping capacity than the combined capacity of the Old River Intake and the proposed new intake on Victoria Canal and would operate differently to meet different objectives.

The Alternative Intake Project Draft EIR/EIS fully discloses all potential environmental impacts related to the construction and operation of the Alternative Intake Project, including potential cumulative impacts. Preparing one EIR/EIS for these two independent projects would not yield any information or evidence of impacts not presented in the individual documents, would not disclose any additional environmental issues with respect to the Alternative Intake Project that were not evaluated in the Alternative Intake Project's Draft EIR/EIS, and would not better meet the intent or requirements of CEQA or NEPA.

2.5.1 Los Vaqueros Reservoir Expansion Project Background

The Los Vaqueros Reservoir Expansion Project is a potential future Delta project being evaluated jointly by CCWD and Reclamation that would expand the existing Los Vaqueros Reservoir and potentially require additional intake capacity in the Delta. The Los Vaqueros Reservoir Expansion Project has two primary objectives and one secondary objective. The primary objectives are to develop replacement water supplies for a fisheries protection program such as the Environmental Water Account and to increase water supply reliability for San Francisco Bay Area water providers. The secondary objective is to improve the quality of water deliveries to San Francisco Bay Area water providers.

The Los Vaqueros Reservoir Expansion Project is currently in the planning phase. A Notice of Preparation for an EIR and a Notice of Intent for an EIS were issued in January 2006 and public scoping meetings were held in January 2006. A joint EIS/EIR is now in preparation.

2.5.2 Piecemealing or Segmenting

A project under CEQA is defined as "the whole of an action, which has a potential for resulting in a physical change in the environment, directly or ultimately." This definition ensures agencies cannot divide a larger project into smaller components or subprojects to avoid responsibility for environmental consequences of the whole project. Under CEQA Guidelines Section 15165, a single EIR is to be prepared when: 1) multiple projects or phases of a project are to be undertaken, and the total undertaking comprises a project with significant environmental effect; or 2) an individual project is a necessary precedent for a larger project or commits the lead agency to a larger project with significant effect.

NEPA regulations state that proposals or parts of proposals that are related to each other closely enough to be, in effect, a single course of action, shall be evaluated in a single environmental document. An important criterion used to judge this relationship is whether or not the proposals are "connected actions" such that one action automatically

triggers another, one action cannot or will not proceed without the other action occurring, or the actions are interdependent and thus do not have independent utility.

The Alternative Intake Project and the Los Vaqueros Reservoir Expansion Project do not meet the CEQA and NEPA criteria stated above and therefore do not need to be evaluated in a single environmental document.

2.5.3 Cumulative Impacts Analysis Approach

The Alternative Intake Project Draft EIR/EIS considered the Los Vaqueros Reservoir Expansion Project in its cumulative impacts analysis. The cumulative analysis for the Alternative Intake Project included both quantitative and qualitative analysis, as appropriate, based on the information available for the projects being evaluated. Reasonably foreseeable projects with defined operations such as SDIP and the Environmental Water Account were included quantitatively in the modeling analysis conducted for the Alternative Intake Project. Projects or future changes whose operations were not as well defined or whose effects were speculative (e.g., the Los Vaqueros Reservoir Expansion Project and climate change) were not included in the modeling studies, but were evaluated using the best available information.

The cumulative analysis for the Alternative Intake Project Draft EIR/EIS relied upon the most current and best information available concerning Los Vaqueros Reservoir Expansion Project. Specifically, this includes the *CALFED Bay-Delta Program Surface Storage Investigations Progress Report* (CALFED 2005a) and the *Los Vaqueros Reservoir Expansion Studies Final Draft Planning Report* (CCWD 2004), which contain modeling studies evaluating potential Los Vaqueros Reservoir Expansion Project scenarios, including the maximum feasible reservoir and intake capacities. These reports were made available to the commenters and have been used in the Draft EIR/EIS analysis.

These studies include analyses that demonstrate the environmental effects of a range of reservoir expansion and operational alternatives. The simulations performed for these studies include reservoir expansion alternatives of up to 500 TAF, with combined intake capacities of up to 1,750 cfs, the largest capacities to be considered in an expansion, and consequently include the largest potential impacts. The reservoir expansion alternatives presented in these two planning reports also include additional Delta intakes similar to the proposed new intake in Victoria Canal, so the modeled effects of reservoir expansion include the influence of diversions from an intake location like that proposed for the Alternative Intake Project. These studies show no significant impacts to Delta water quality, water supplies of legal water users, or water levels from the reservoir expansion as discussed in detail in the above mentioned reports, and show net environmental benefits for fisheries. Details of the analyses are in the reports mentioned above and were summarized on page 4.2-52 of the Draft EIR/EIS Volume I.

CCWD and Reclamation agree with comments from SWC and DWR that only after the operations of the Los Vaqueros Reservoir Expansion Project are fully defined (for example, in terms of size of reservoir and location and size of intakes) will it be possible to evaluate the Los Vaqueros Reservoir Expansion Project's potential impacts without a

high level of speculation. These impacts will be fully evaluated as part of the Los Vaqueros Reservoir Expansion Project EIS/EIR (now in preparation).

Comments from SCVWD/Zone 7 suggest that modeling tools exist to evaluate the Los Vaqueros Reservoir Expansion Project in conjunction with the Alternative Intake Project and, thus, that analysis should have been completed for the Alternative Intake Project Draft EIR/EIS. Although modeling tools exist, a reasonably defined reservoir expansion project does not and it is the lack of a reasonably defined project, not tools, that prevents a more detailed analysis. Thus, rather than speculate on reservoir sizes, intake locations, and operational assumptions, CCWD and Reclamation utilized the best existing information available which included existing modeling studies, to conduct the cumulative analysis for the Alternative Intake Project. Based on the available information in the *Los Vaqueros Reservoir Expansion Project Planning Report* and the studies completed to date, the Alternative Intake Project would not substantially contribute to a significant cumulative effect on Delta water supplies, water quality, or water levels.

Evaluation of the potential environmental effects of the Los Vaqueros Reservoir Expansion Project will be made publicly available in the Los Vaqueros Reservoir Expansion Project Draft EIS/EIR, which is scheduled to be released for public review and comment in 2007. The Notice of Preparation for the Los Vaqueros Reservoir Expansion Project EIS/EIR and other documents describing the study and planning of the reservoir expansion are available through the Los Vaqueros Reservoir Expansion Studies web site: http://www. lvstudies.com/. The EIS/EIR to be prepared for the Los Vaqueros Reservoir Expansion Project will present modeled environmental effects of operating CCWD's Delta intakes (including the Alternative Intake Project, if approved) in conjunction with the expanded Los Vaqueros Reservoir, as a part of the review of environmental effects of the Los Vaqueros Reservoir Expansion Project.

2.6 Master Response 5: Cumulative Analysis

Several comments suggest that future cumulative changes in Delta water quality will be significant due to other reasonably foreseeable future projects and that the Alternative Intake Project will result in a significant cumulative impact because of its contribution to cumulative changes in Delta water quality.

A number of future projects and situations might result in Delta water quality degradation, including climate change, population growth, and increased water use and wastewater discharges, as well as specific projects in the Delta. Regardless of whether future cumulative increases in salinity are considered to be a significant adverse degradation in water quality, the water quality changes due to the Alternative Intake Project would remain small, and they would not be cumulatively considerable in the context of combined past, present, and probable future projects. As shown below, the Alternative Intake Project would not make any considerable contribution to predicted cumulative increases in salinity.

To evaluate cumulative impacts on water resources, reasonably foreseeable projects with defined operations were incorporated into the Alternative Intake Project analysis. By combining simulations of CCWD's operations with larger system-wide models (e.g., CALSIM II), future cumulative conditions with and without the Alternative Intake Project were estimated, quantified, and evaluated. Projects whose operations were undefined or could not be modeled directly were considered and discussed in the Alternative Intake Project Draft EIR/EIS cumulative analysis based on the best information available. A cumulative impact was defined as the Alternative Intake Project's possible environmental effects which are individually limited but cumulatively considerable. "Cumulatively considerable" means that the incremental effects of the Alternative Intake Project are considerable when viewed in connection with the effects of past, present, and probable future projects.

Table 2.6-1 shows modeled changes to salinity levels at six Delta locations under future cumulative conditions. Both with and without the Alternative Intake Project, average cumulative changes in salinity from all foreseeable causes are predicted to range from an 11% increase in salinity at Jersey Point to a 2% increase in salinity at Middle River. In other words, the Alternative Intake Project would not make a considerable cumulative contribution to the increase.

Table 2.6-1 identifies the cumulative changes in Delta water quality with and without the incremental change due to the Alternative Intake Project based on a detailed analysis. Under cumulative conditions, the increase in salinity added by the Alternative Intake Project was found to be on the order of 1 to 4 μS/cm[2] in terms of a long-term average change, or less than 1%. This level of effect is not considered to be a considerable contribution. The analysis shows that with all the probable future projects combined, including the Alternative Intake Project, all Delta water quality standards can be met.

Table 2.6-1
Long-Term (16-year) Daily Average Cumulative Change in Salinity (and Percent Change from Existing Base Case)

Delta Location	Cumulative Change in Salinity without Alternative Intake Project (μS/cm EC)	Cumulative Change in Salinity with Alternative Intake Project (μS/cm EC)	Incremental Change in Salinity due to Alternative Intake Project (μS/cm EC)
Jersey Point	52 (11%)	55 (11%)	3 (0%)
Old River at Rock Slough	30 (8%)	32 (9%)	2 (0%)
Tracy Pumping Plant	31 (8%)	34 (8%)	3 (0%)
Clifton Court Forebay	26 (7%)	29 (8%)	4 (1%)
Proposed Stockton intake	15 (6%)	15 (6%)	1 (0%)
Middle River at Victoria Canal	7 (2%)	7 (2%)	1 (0%)

Source: From Table 4.2-21 in the Alternative Intake Project Draft EIR/EIS Volume I

2 For reference, ocean water salinity is approximately 55,000 μS/cm and tap water can range from approximately 200 up to over 1,000 μS/cm.

This potential increase from the Alternative Intake Project is based on conservative assumptions about Delta and CCWD operations. For example, during the first Los Vaqueros Reservoir fill period of each season, CCWD typically waits a few weeks for Delta salinities to lower and stabilize before beginning to fill Los Vaqueros Reservoir. However, the standard models used are based on a monthly, not daily, operation. The monthly operational model on which the Draft EIR/EIS analysis was based would begin filling Los Vaqueros Reservoir immediately when salinity was lowered to an acceptable level. In the January 1988 simulation period, this type of simulated operation produced a 4.1% change in electrical conductivity (EC) at Clifton Court Forebay, by far the largest change in the 16-year modeling period. In practice, CCWD would have waited 1–2 weeks before commencing fill operations and this potential impact would not have occurred.

Thus, the analysis used conservative operations and actual water quality changes are likely to be less than shown in the Draft EIR/EIS analysis. The Alternative Intake Project is a water quality project, not a water supply project, and would protect and improve water quality for CCWD customers without significant adverse impacts to other Delta users or Delta water quality.

The determination that the Alternative Intake Project's contribution to cumulative water quality impacts would not be cumulatively considerable takes into account the full combined impact of existing and future projects, including the Alternative Intake Project. The analysis is not based on the simple logic, as suggested by some comments, that because impacts of other projects are greater than those of the Alternative Intake Project, the impacts of the Alternative Intake Project would be less than significant. Rather, the analysis considers the severity of the cumulative condition as a whole and is based upon an assessment of whether or not, in light of the severity of the impact, the Alternative Intake Project's contribution would be cumulatively considerable. In this context, any additional increase in salinity, no matter how small, is not the proper threshold for determining whether the Alternative Intake Project would result in a cumulatively considerable contribution to a significant cumulative effect. Rather, based upon the severity of this particular cumulative impact, the Draft EIR/EIS explains that the Alternative Intake Project would not make a considerable contribution to cumulatively significant effects on Delta water quality.

Some commenters suggested that the Draft EIR/EIS should consider cumulative effects associated with additional specific projects, namely the Stockton Delta Water Supply Project, City of Tracy Wastewater Treatment Plant Expansion Project, Mountain House Community Services District Wastewater Treatment Facility Project, and the Delta Wetlands Project or other in-Delta storage projects.

Increased water demands in San Joaquin Valley communities were included as part of the CALSIM II California water operations modeling; this would include increased demands from the cities of Stockton, Tracy, and Mountain House. The proposed Stockton Delta Water Supply Project, the City of Tracy Wastewater Treatment Plant Expansion Project, and Mountain House Community Services District Wastewater Treatment Facility Project have not been included in the cumulative modeling analysis due to the uncertainty of their specific operations and their relative size/scale compared to the reasonably

foreseeable projects included in the analysis. Including these projects in CCWD's quantitative cumulative impact analysis would have required highly speculative assumptions regarding their operations or modeling results.

To provide the most detailed response possible, however, CCWD and Reclamation re-evaluated these potential future projects in the context of possible cumulative impacts with the Alternative Intake Project and have concluded that their inclusion would not change the cumulative impacts analysis that has been presented in the Alternative Intake Project Draft EIR/EIS. A more detailed discussion of these projects and the analysis of cumulative impacts are provided below in Section 2.6.1, "Additional Analysis of Other Possible Future Projects."

The Alternative Intake Project is, in part, a response to changes in Delta salinity at CCWD's intakes that have already occurred and to the additional increases in salinity that are expected in the future. The Alternative Intake Project would not be a substantial contributor to salinity increases at any location. Rather, the Alternative Intake Project is designed to ensure that water quality for CCWD's customer remains high without substantially adversely affecting water quality for others. Other projects, such as those discussed above, may contribute to the same overall Delta water quality trends that the Alternative Intake Project is intended to help CCWD address. These future projects will not change the overall impact of the Alternative Intake Project or the conclusion that the Alternative Intake Project's contribution to a significant cumulative effect on water quality would not be considerable.

2.6.1 Additional Analysis of Other Possible Future Projects

Commenters suggested that the Draft EIR/EIS should consider cumulative effects associated with the Stockton Delta Water Supply Project, the City of Tracy Wastewater Treatment Plant Expansion Project, the Mountain House Community Services District Wastewater Treatment Facility Project, and Delta Wetlands Project or other In-Delta Storage Project. These are discussed below.

Stockton Delta Water Supply Project

The Stockton Delta Water Supply Project will develop a new surface water supply for Stockton, which currently relies on surface water supplies from Stockton East Water District and groundwater. The Stockton project will divert Delta water from the San Joaquin River at the southwest tip of Empire Tract, adjacent to the Stockton Deep Water Ship Channel. The City of Stockton released a Final EIR in October 2005.

The City of Stockton's Draft EIR (City of Stockton 2005) includes some modeling analysis of its water quality effects. The future assumptions were not exactly the same as the Alternative Intake Project (the Alternative Intake Project used 2020 demands as the basis for future cumulative analysis, while Stockton used 2015 and 2050). The Stockton Delta Water Supply Project Draft EIR estimated long-term average changes from that project, and these estimates are shown in Table 2.6-2.

Table 2.6-2 Long-term Average Changes Resulting from the City of Stockton Delta Water Supply Project			
	CCWD Old River Intake	Clifton Court Forebay	Tracy Pumping Plant
Existing Conditions	1 µS/cm	0 µS/cm	1 µS/cm
2015 Future Conditions	0 µS/cm	0 µS/cm	0 µS/cm
2050 Future Conditions	1 µS/cm	1 µS/cm	1 µS/cm
Source: From Table 4-13 of the City of Stockton Delta Water Supply Project Draft EIR (City of Stockton 2005)			

City of Tracy Wastewater Treatment Plant Expansion Project

The City of Tracy Wastewater Treatment Plant Expansion Project will upgrade and expand Tracy's wastewater treatment facilities to accommodate projected growth. The existing wastewater treatment plant provides secondary treatment of up to 9 million gallons/day (MGD). The expansion project will upgrade the plant to provide tertiary treatment of up to 16 MGD at final build-out. The treatment plant outfall is in Old River near the junction of Paradise Cut, upstream of the Tracy and Banks Pumping Plants and CCWD's Old River Intake. The City of Tracy released a Final EIR in September 2002; however, the planned build-out population is described in the City of Tracy General Plan Final EIR, released in May 2006, subsequent to release of the Alternative Intake Project Draft EIR/EIS. RWQCB is still considering the City of Tracy's National Pollutant Discharge Elimination System (NPDES) permit. The City of Tracy does not have approval to expand to 16 MGD until the permitting process is completed.

The City of Tracy did not use DSM2 to model the Wastewater Treatment Plant Expansion Project and instead used a "link node hydrodynamic model of the San Joaquin River and Delta" that is not currently commonly used for Delta projects, and used an older Delta operations model called DWRSIM, which has since been replaced by CALSIM. Thus, results in the City of Tracy Draft EIR are not directly comparable with modeling results for the Alternative Intake Project. Also, the City of Tracy Draft EIR did not model future conditions. Salinity impacts were provided in terms of total dissolved solids (in mg/L) for wet season and dry season, as shown in Table 2.6-3.

Table 2.6-3 Salinity Impacts Resulting from the City of Tracy Wastewater Treatment Plant Expansion Project		
Water Purveyor	Wet Season	Dry Season
CVP	8.6-12.3 mg/L	7.6-10.9 mg/L
CCWD	2.4-3.7 mg/L	2.1-3.3 mg/L
Note that no modeling results were provided for Clifton Court Forebay, although text of the Draft EIR indicates that it was considered in the analysis. Source: From Table 4.6-21 of the City of Tracy Wastewater Treatment Plant Expansion Project Draft EIR (City of Tracy 2002)		

Mountain House Community Services District Wastewater Treatment Facility Project

The Mountain House Community Services District Wastewater Treatment Facility has an expansion in the planning process. Currently, the facility discharges to land with a capacity of 0.45 MGD. The proposed expansion would upgrade the facility to tertiary treatment and discharge to Old River up to 3 MGD in the intermediate phase and 5.4 MGD in the final phase. The discharge will be to Old River near the Delta Mendota Canal agricultural barrier. The NPDES permit for this planned discharge is currently under review by the Central Valley RWQCB.

For CEQA compliance, an Expanded Initial Study for the Mountain House Community Services District was prepared in 1999. This Initial Study used DSM2 to perform a tracer study to estimate the percentage contribution of Mountain House effluent at other south Delta locations in a steady-state scenario with high Mountain House discharges and relatively low CVP and SWP export pumping and low San Joaquin River inflow (Table 2.6-4). Note that these results are presented in terms of average contribution of Mountain House effluent as a percent of overall flow and are not directly comparable to the Alternative Intake Project modeling.

Table 2.6-4
Percentage Contribution of Mountain House Effluent at Other South Delta Locations

Location	Average Contribution of Mountain House Effluent as Percent of Overall Flow
DMC Export Pumping	0.889%
SWP Export Pumping	0.034%
Old River at Los Vaqueros Intake	< 0.001%

Source: From Table 2 of Appendix B of the Mountain House Community Services District Wastewater Treatment Facility Project Expanded Initial Study (Mountain House Community Services District 1999)

The subsequent environmental studies for portions of the planned Mountain House development (including the Mountain House Specific Plan III Initial Study [San Joaquin County 2003], Mountain House Business Park Initial Study [San Joaquin County 2005b], and College Park at Mountain House Specific Plan III Draft EIR [San Joaquin County 2005a]) do not address or quantify the potential water quality impacts of the increased wastewater discharge on Delta water users.

These three projects may contribute to the same overall water quality trends that the Alternative Intake Project is intended to help CCWD address. They do not change the overall impact of the Alternative Intake Project or the conclusion that the Alternative Intake Project's contribution to a cumulative effect on water quality would not be considerable.

Delta Wetlands Project or Other In-Delta Storage Project

One commenter suggested that the Delta Wetlands Project or other in-Delta storage project be included in the future cumulative analysis. The Delta Wetlands Project was not

included in the cumulative impacts analysis because it is clearly not a reasonably foreseeable project. SWRCB has, by judicial directive, been required to not issue a permit to the project unless users of the water supply are identified. No users have been identified to date and the impacts of the project cannot be determined.

The most recent report available, DWR's 2006 Supplemental Report to the 2004 Draft State Feasibility Study on the In-Delta Storage Project (DWR 2006a), analyzes several different operational scenarios for an In-Delta Storage Project. Water quality changes at CVP and SWP export facilities range from a long-term average change of 0.2 mg/L chloride to -0.4 mg/L chloride, depending on the scenario. However, all of the modeling scenarios used in DWR's report violate the terms of CCWD's protest dismissal agreement and therefore do not provide a realistic basis from which to draw quantitative conclusions about the impacts of such a project.

The Alternative Intake Project also is not expected to have an adverse effect on a potential Delta Wetlands Project or In-Delta Storage Project, if such a project is proposed and approved in the future. Modeled water quality near the consolidated inlet and outlet structures proposed for the In-Delta Storage Project on Webb Tract and Bacon Island are provided for all alternatives for both the base case and with-project case in Appendix B, "Full Modeling Results," of this document.

Changes in water quality at these locations for the Alternative Intake Project's Proposed Action are summarized in Table 2.6-5 and are all less than significant.

Table 2.6-5
Changes in Water Quality at Delta Locations Resulting from the Alternative Intake Project's Proposed Action

Location	Long-term Daily Average Change in Salinity (and percent change from base case)	Maximum Monthly Average Change in Salinity (and percent change from base)
San Joaquin River at Webb Tract		
Existing Conditions	0.6 μS/cm EC (0.1%)	16 μS/cm EC (3.3%)
Future Conditions	0.6 μS/cm EC (0.1%)	16 μS/cm EC (3.4%)
Middle River at Bacon Island		
Existing Conditions	0.7 μS/cm EC (0.2%)	12 μS/cm EC (2.9%)
Future Conditions	0.8 μS/cm EC (0.2%)	8 μS/cm EC (1.7%)

Source: From Appendix C-4, "DSM2 Delta Modeling," of the Alternative Intake Project Draft EIR/EIS

2.7 Master Response 6: Project Relationship to CALFED Goals, Delta Improvements Package, and Future Delta Water Quality

Several comments concern the timing of the Alternative Intake Project and its relationship to other ongoing Delta water resources projects and investigations. These

comments do not raise environmental issues or address physical effects to the environment; instead, they raise policy issues. However, a response is provided to address each comment.

Commenters have requested information regarding the relationship of the Alternative Intake Project to the Delta Improvements Package, the Delta Risk Management Study, and the Delta Vision. It was suggested that the Alternative Intake Project should be delayed until all "reasonable" (but unspecified) efforts to improve water quality "have been exhausted or failed."

As shown below, there have been a host of Delta issues, plans, and studies over the past 25 years, many of which have never moved forward or have evolved considerably during that time. For example, the Water Quality Control Plan review was started in 1986, but not completed until 1995 after several Draft Plans were circulated. The CALFED Program to restore the Delta was initiated in 1995, and continues to evolve today. Waiting for completion of the most recent long-term planning process before proceeding on a project would prevent progress on any improvements needed in the near-term because these planning efforts have been on-going since the 1950s and are likely to continue indefinitely. The Alternative Intake Project is designed to provide additional flexibility for CCWD to meet its water quality goals and protect its current investments in water quality in the near-term and in future years. The Alternative Intake Project neither precludes nor replaces long-term studies, plans, or specific projects pertaining to the Delta, nor does it preclude any other agency from moving forward with any project that might be recommended as a result of these studies.

Delta source water quality standards are not presently in place to adequately protect drinking water quality (for example, they do not meet the CALFED goals of 3 mg/L organic carbon and 50 µg/L bromide). Meanwhile, State and Federal drinking water standards at the tap are becoming increasingly stringent. With the increasing demands on Delta supplies from growth within the Delta, in the upstream watersheds, and in the export areas, it will continue to be a difficult challenge to make Delta drinking water quality improvements. Furthermore, a recent report (*Progress on Incorporating Climate Change into Planning and Management of California's Water Resources* [DWR 2006b]) indicates that global warming, sea level rise, and trends in hydrological changes will result in even further challenges to water quality. Using the analysis conducted for the Draft EIR/EIS, CCWD has concluded that it is not appropriate to wait for other alternatives to fail or for other projects to be completed before commencing with water quality improvement efforts. The Alternative Intake Project is capable of providing substantial near-term water quality benefits, and would continue to provide benefits such as operational flexibility and system reliability in the future even if source water quality were to improve due to a separate future improvement project. The Alternative Intake Project provides near-term and future benefits with or without other future projects being implemented.

2.7.1 Relationship to Other Programs

CALFED Program

CALFED's fundamental goal is to achieve a balanced program to improve the Delta ecosystem, water quality, water supply reliability, and Delta levees. Most of the funding to date (82% according to the Department of Finance review) has been for water supply (largely conservation, recycling, and groundwater storage) and ecosystem projects. CALFED has determined that near-term investments in water quality improvement, among other projects, are needed to restore balance to the CALFED program and to improve Delta conditions. The Alternative Intake Project is one of those near-term water quality projects and is entirely consistent with CALFED solution principles that guide the CALFED program.

Delta Improvements Package

The Delta Improvements Package is a balanced package of independent water quality, supply, environmental restoration, and levee projects that, through CALFED, are scheduled to move forward in the next several years. These projects have also been included in the appendices to the Final Statement of Principles, Regulatory Commitments-User Contributions (agreed to by CALFED agencies and stakeholders as a framework for developing a Conservation Plan and long-term funding for the CALFED program) as projects supported by regulatory agencies and others for implementation over the next few years. The Alternative Intake Project is a project in the Delta Improvements Package and is listed in the appendix to the Final Statement of Principles, Regulatory Commitments-User Contributions as a supported near-term project.

Delta Risk Management Study

The Delta Risk Management Study is being prepared by the U.S. Army Corps of Engineers (USACE) and DWR. The objectives of this study are to evaluate ongoing and future risk of levee failure, identify the probable consequences, and identify levee maintenance and upgrades that are necessary and economically justified to reduce controllable risk. Data gained from this study will help establish priorities for near- and long-term actions that will reduce the risk associated with catastrophic levee failure in the Delta. The study is scheduled to be completed in 2007.

The Alternative Intake Project is being designed to survive a levee failure on Victoria Island, and to allow CCWD to better address water quality problems that may result from levee failures on other islands. The results of the study are unlikely to change any design or operational strategy pertaining to the proposed Alternative Intake Project, inasmuch as the Delta Risk Management Study focuses on reducing and managing future levee failure risks as opposed to diversions. The Alternative Intake Project neither precludes nor replaces these studies, nor does it preclude any agency from moving forward with any project that might be recommended by the study.

Delta Vision

The Delta Vision is a new strategic planning effort scheduled to begin this year that will focus on creating a sustainable Delta in the face of global-warming, hydrological changes, deteriorating levees, rising sea levels, and other stresses on the Delta ecosystem,

water supplies, and water quality. The planning horizon is long-term, covering 100 years. The Alternative Intake Project neither precludes nor replaces this planning effort, nor does it preclude any agency from moving forward with any project that might be recommended by the effort.

2.7.2 Timing of the Alternative Intake Project

Several comments suggest that CCWD should wait until other Delta water quality projects included in the CALFED program have been completed to see whether or not the Alternative Intake Project is still needed as proposed.

CCWD has carefully considered many factors in proposing the Alternative Intake Project at this time, including, most importantly, past, current, and future water quality trends in the Delta, the lack of fully protective standards for drinking water quality, the high degree of uncertainty regarding both the timing and efficacy of other proposed Delta improvement projects, and cost. Based on the analysis conducted for the Draft EIR/EIS, CCWD has concluded that it is not appropriate to wait for other alternatives to fail or for some other projects to be completed before commencing the Alternative Intake Project, as explained in the introduction to this Master Response.

2.8 Master Response 7: Agricultural Analysis

Several comments were received regarding impacts to agricultural lands in the project area from Victoria Island Farms (VIF), the Central Delta Water Agency (CDWA)/Reclamation District (RD) 2040, and the South Delta Water Agency (SDWA). Many of the comments are economic in nature; the land acquisition process provides the appropriate forum to address economic concerns. However, the following provides a response to all comments, including comments on economic effects.

CCWD has been meeting with both the Victoria Island landowner and RD 2040 regularly since project inception to discuss the project (at least seven times since fall 2004). In April 2005, CCWD and the landowner executed an access and reimbursement agreement permitting CCWD to conduct field investigations on Victoria Island and providing for reimbursement by CCWD of management and staff costs incurred by the landowner and RD 2040 during the project's planning phase.

Many of the concerns raised in the comment letters from VIF and RD 2040 were discussed in meetings between the landowner and CCWD and were taken into consideration in preparing the Draft EIR/EIS. CCWD developed a Proposed Action to meet project objectives for water quality protection and improvement while having a minimal effect on agriculture on Victoria Island. Examples of project components that were modified during preliminary planning in a way that incorporates agricultural considerations include a reduction in the footprint size of the proposed pump station relative to CCWD's existing Old River pump station and a buried pipeline rather than an open canal or above-ground pipeline so that agriculture could continue over the top of the new pipeline.

Since the release of the Draft EIR/EIS, CCWD has worked with experts in agronomy and soils[3] to continue gathering information on the land conditions and farming practices specific to Victoria Island. CCWD has used this information to further develop the analysis of the agricultural impacts and to expand on the mitigation measures provided in the Draft EIR/EIS. This added analysis does not change the conclusions of the Draft EIR/EIS, but the information is provided below to be responsive to the comment letters.

2.8.2 Farming Practices

Comments received in response to the Draft EIR/EIS question whether the project appropriately avoids, minimizes, and mitigates for impacts to agriculture. As outlined in Section 4.8, "Agriculture," of the Draft EIR/EIS Volume I, the Proposed Action was designed to minimize impacts to agricultural land during a thorough alternatives analysis process and facility siting. Experts in the fields of agronomy, soils, and engineering have been regularly consulted during project planning to ensure that the amount of land permanently removed from farming as a result of project implementation is minimized to the extent practicable. The proposed intake and pumping plant site itself would be designed to affect less land than CCWD's similar existing Old River pump station to reduce the acreage that would be permanently taken out of agriculture. The proposed pipeline and appurtenances would be designed to minimize disruptions to the landowners' farming practices.

Depth of Pipeline

Comments from VIF, CDWA, and SDWA state that the 5-foot minimum depth of cover over the pipeline is inadequate and may result in detrimental effects on agricultural practices. The crops grown on Victoria Island include long-term crops such as asparagus, blueberries, and alfalfa. Other Victoria Island crops include tomatoes, corn silage, and potatoes. Some of these crops are harvested by seasonal farm labor and packaged for retail distribution at on-site facilities. The agronomist reviewed the crops and soil types in this area of the Delta and determined that the required depths of cultivation are shallow (up to 32 inches).

The minimum depth of 5 feet over the pipeline was developed to allow for the typical maximum depth of cultivation of 32 inches, the required engineered compacted zone of 1 foot over the pipe, plus an additional buffer. The pipeline depth given is a minimum depth; the pipe may be buried deeper at various locations along the route, depending on site conditions. The project design will include provisions for existing agricultural ditches to continue to operate and will also allow for necessary maintenance, such as providing additional cover over the pipe at ditch crossings or siphoning existing ditches under the pipeline.

CDWA/RD2040 commented that the pipeline depth should be increased to account for potential oxidation of peat soils. CCWD reviewed existing data and conducted geotechnical investigations on Victoria Island, including deep borings, hand augers, and

[3] CCWD consulted Nat Dellavalle of Dellavalle Laboratories and Ed Hultgren of Hultgren-Tillis Engineers. Nat Dellavalle is a certified professional agronomist and soil scientist with 39 years of experience in California. Ed Hultgren has over 30 years of experience as a consulting geotechnical engineer.

cone penetration tests within the southwest quarter of Victoria Island to characterize soil conditions. These geotechnical investigations found a minimal amount of organic peat or muck soils in the lower southwest quarter of Victoria Island, including several areas where no measurable amount of organic soil was found. Using these data, the project engineers and agronomic soil scientist concluded that the potential for soil oxidation over the pipeline would be minimal and that no additional oxidation allowance should be required. The potential for oxidation will continue to be evaluated as additional geotechnical data are collected and incorporated into the design as necessary.

The comments from CDWA/RD2040 and SDWA included a copy of an agreement related to a portion of the Sacramento Regional County Sanitation District's (SRCSD's) Lower Northwest Interceptor Project in the Delta as an example of a project that included a pipeline buried to a minimum depth of 7 feet. There are multiple examples of other pipelines in the Delta that are buried at shallower depths in agricultural areas, including CCWD's existing Los Vaqueros Pipeline[4] and other portions of the SRCSD project cited in the CDWA/RD2040 comment letter. Each individual pipeline project should consider local soil conditions as well as the typical agricultural practices in the project area in establishing an appropriate depth of cover. The appropriate minimum depth may vary from project to project. CCWD is committed to working with both the landowner and RD 2040 to implement the project in a manner that serves the interests of all parties. Based upon a full review of relevant soils and agricultural information for this location, the proposed 5-foot coverage for the pipeline will be sufficient to avoid adverse effects on crop production.

Soil Profile and Compaction

Comments from VIF identified concerns that potential changes in soil profile or density could result in detrimental effects on agricultural production.

Geotechnical data obtained on and near Victoria Island indicate that the soils consist of a mix of sands, silts, clays, and organic material, as would be expected for this region of the Delta. Within the existing agricultural fields on the southwest quarter of Victoria Island, the upper layers consist primarily of mineral soils underlain by clays and sands. The remaining peat materials are generally located under roads and levees, where they have been protected by overlying fill. The water table appears to be as shallow as 2 feet below the surface, although the depth to water may vary with time of year and agricultural practices.

The Draft EIR/EIS identifies compaction, groundwater hydrology, and soil profile as important considerations in minimizing effects on future farming atop the pipeline and addresses the measures to be taken to protect farming interests. Impact and Mitigation Measure 4.8-a (Alternative 1) describe the methods to be used to ensure that the buried pipeline will allow for continued farming over the top after construction is completed. The following elements have been added to Mitigation Measure 4.8-a (Alternative 1):

[4] CCWD's Los Vaqueros Pipeline is located in eastern Contra Costa County, connecting CCWD's Old River Pump Station, Transfer Station, Los Vaqueros Reservoir, and Contra Costa Canal. Portions of the Los Vaqueros Pipeline, originating from about 3 miles from the proposed new intake location in Victoria Canal, are located 5-6 feet under active agricultural fields.

- The soils over the new pipeline will be replaced in a manner that will minimize any negative impacts on crop productivity. The surface and subsurface soil layers will be stockpiled separately and returned in their appropriate locations in the soil profile.
- To avoid over-compaction of the top layers of soil, the project will include monitoring of pre-construction soil densities and returning the surface soil (approximately the top 3 feet) to within 5% of original density.
- Where necessary, the top soil layers will be ripped to achieve the appropriate soil density. Ripping may also be used in areas where vehicle and equipment traffic have compacted the top soil layers, such as the construction staging areas.
- CCWD will avoid working or traveling on wet soil to minimize compaction and loss of soil tilth. Moisture content, above which work should not occur, is to be determined in conjunction with geotechnical testing prior to construction. Where working or driving on wet soil cannot be avoided, roadways will be capped with spoils that will be removed at the end of construction and/or ripped and amended with organic material as needed.
- During dewatering, CCWD will monitor soil moisture in adjacent crop fields to assure adequate crop moisture and to assist with irrigation scheduling.
- CCWD will remove all construction-related debris from the soil surface. This will prevent rock, gravel and construction debris from interfering with agricultural activities.

See Chapter 4, "Revisions to the Draft EIR/EIS," for the specific changes.

Irrigation and Drainage

Comments from VIF indicate concern that a compacted zone over the pipeline would change natural drainage patterns in the fields. The commenters also noted the potential for temporary interruptions to irrigation and drainage facilities.

VIF utilizes siphons to divert irrigation water from Victoria Canal for use on the southwest portion of Victoria Island. Within the proposed project sites for Alternatives 1, 2, and 3, the water is distributed through a system of irrigation ditches. Surface irrigation practices are used in this location, and typically include border and furrow irrigation, methods in which water is conveyed across the field in the furrows or checks between borders. Excess drainage water in the southwest quarter of Victoria Island is conveyed to one of two pump stations through drainage ditches and discharged into Old River to the west.

The agronomist investigated Victoria Island farming practices and found that both permanent ditches and shallower, temporary ditches are used for irrigation and drainage water. In most cases, permanent ditches are located along roadways and surround the agricultural fields on all sides. Using available soils data, he concluded that temporary disruptions to the soil would not impede flow to one of the multiple available drainage ditches.

The measures to control compaction (described in the preceding section, "Soil Profile and Compaction") would also minimize negative effects on the draining of the fields. The upper soil layers would be returned to near the original density and profile, allowing water to move through the soil in a manner similar to the existing condition. As water moves through the soil and reaches the pipeline, water would flow around the pipeline and through the aggregate pipe bedding materials, which would provide hydraulic conductivity adequate for transmitting water below and past the pipe. The pipeline design includes provisions at the interfaces between the pipe and drainage ditches to prevent excess flow out of the fields.

The agricultural irrigation and drainage ditches would be modified and/or pumped as needed to maintain appropriate flow during construction. Any impacts to the drainage patterns from construction, including dewatering operations, would be limited to the immediate area of construction and would not affect remote fields outside the area affected by dewatering draw-down or draining to different, unaffected ditches. Excess water derived from dewatering operations would be properly disposed in a method permitted by RWQCB.

Pipe Appurtenances

Comments from VIF indicated that permanent new features would impair efficiency and increase farming costs. The pipeline would require some above-ground features, such as blow-off valves. The number of these facilities would be limited to the extent possible. With the exception of areas considered in the estimate of permanent impacts to agricultural lands, these pipeline appurtenances would be located near roads and drainages, where their effects on existing agricultural practices would be minimal.

Conclusion

Using the analysis provided by the agronomy and soils experts, CCWD and Reclamation conclude that the project would appropriately avoid, minimize, and mitigate impacts to agriculture to the extent feasible.

2.8.3 Area of Impact

Comments from CDWA/RD2040 (joined by SDWA) questioned the Proposed Action's location within the Delta Primary Zone and suggested that alternatives outside the Primary Zone should be considered. The Delta Primary Zone includes approximately 500,000 acres of waterways, levees, and farmed lands extending over portions of five counties. The Delta Protection Act of 1992 (SB 1866) directs the Delta Protection Commission to prepare a comprehensive resource management plan for land uses within the Primary Zone of the Delta (Plan). The Plan's goals include protecting the unique character and qualities of the Primary Zone by preserving the cultural heritage and strong agricultural base of the Primary Zone, supporting long-term viability of commercial agriculture, and discouraging inappropriate development of agricultural lands (Delta Protection Commission 1995).

The proposed location for the new intake in Victoria Canal was determined based on access to higher-quality water at key times of the year. A detailed discussion of other project siting considerations, including proximity to existing CCWD facilities, can be

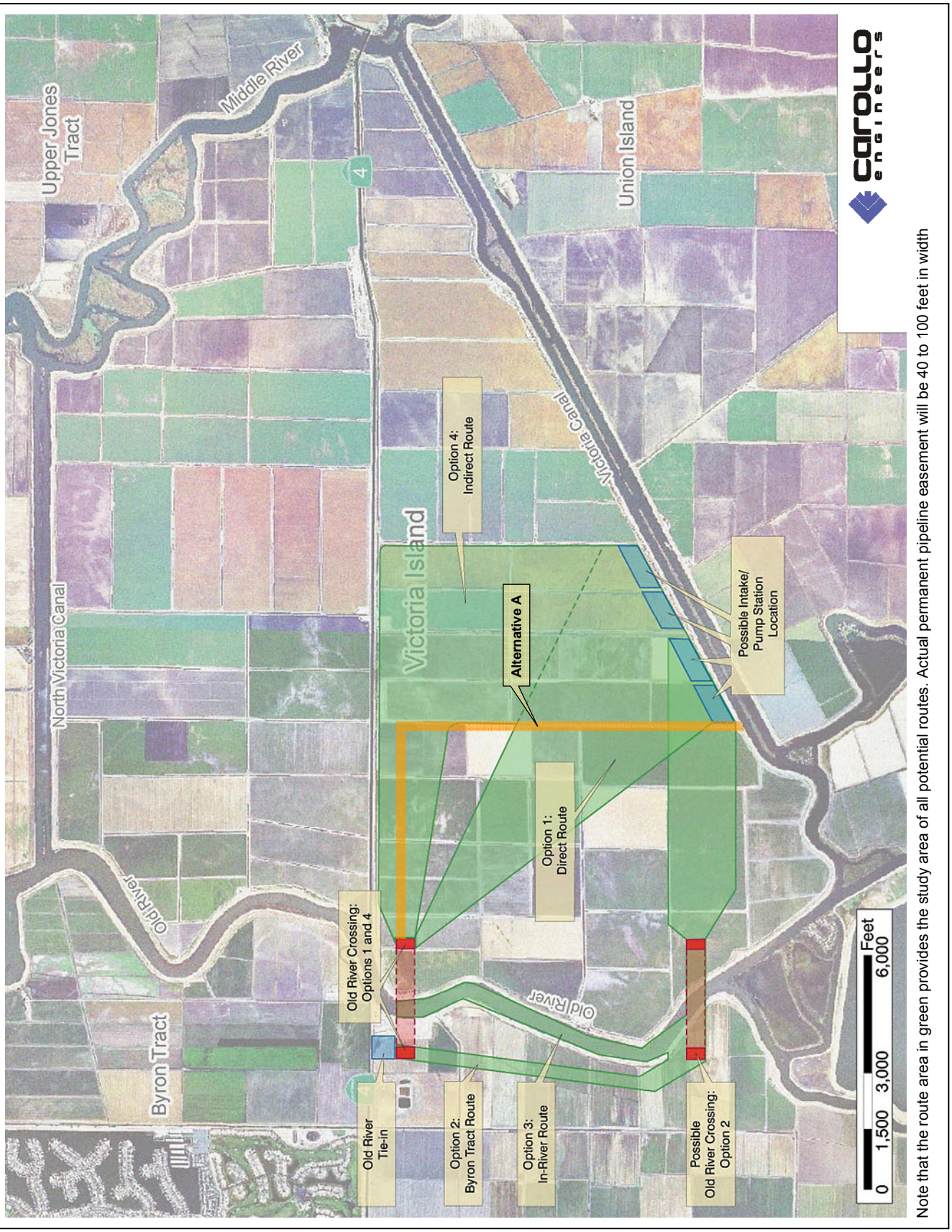
found in Appendix B. "Alternatives Screening," to the Draft EIR/EIS. As an in-Delta diverter, CCWD has limited options for new points of diversions, and all available higher-quality sources are within the Delta Primary Zone. As described in the Draft EIR/EIS and below, CCWD designed the Proposed Action to minimize impacts on agricultural uses. Implementation of the Proposed Action would not support or encourage non-agricultural development within the Delta Primary Zone.

Several comments discussed the differences in potential impacts of the different pipeline alignments. Comments from CDWA/RD2040 suggested that additional alternative pipeline routes on Victoria Island should be considered. Several alternative pipeline alignments were examined during the alternatives screening process for the project, as discussed in Appendix B, "Alternatives Screening," to the Draft EIR/EIS. Alternative 2, Indirect Pipeline Alternative, was developed in response to discussions with the landowner regarding the particular farming practices and preferences at this location. A number of different pipeline routes within the southwest quarter of Victoria Island were initially considered. The alternatives presented in the Draft EIR/EIS bracket the pipeline route options in terms of pipeline length, pipeline location, and potential environmental impacts. The impacts analysis conducted for the Draft EIR/EIS indicates that variations on these routes would not be materially different in terms of potential environmental impacts related to agriculture.

The letter from the CDWA/RD2040 suggests that two additional pipeline routes be examined. One falls within the corridor proposed for Alternative 2, Indirect Pipeline Alternative, and thus has already been analyzed in detail. The other, labeled "Alternative B" by the commenter, follows a westerly then northerly path across the island from the proposed new intake location. Both routes, as suggested by the commenter, are shown on Exhibits 2.8-1 and 2.8-2. They are superimposed on an exhibit that was included in Appendix B, "Alternatives Screening," of the Draft EIR/EIS as an illustration of the potential routes examined.

The analysis for the Draft EIR/EIS distinguishes between two types of impacts to agriculture – temporary and permanent. Temporary effects are those that would temporarily affect farming during construction, both directly and indirectly. Permanent effects are those that would permanently remove agricultural land from production. Direct effects include areas where the land previously in agricultural production is used for construction, such as the proposed pipe trench and staging areas. Indirect effects include areas of fields that may be inaccessible or unproductive during construction.

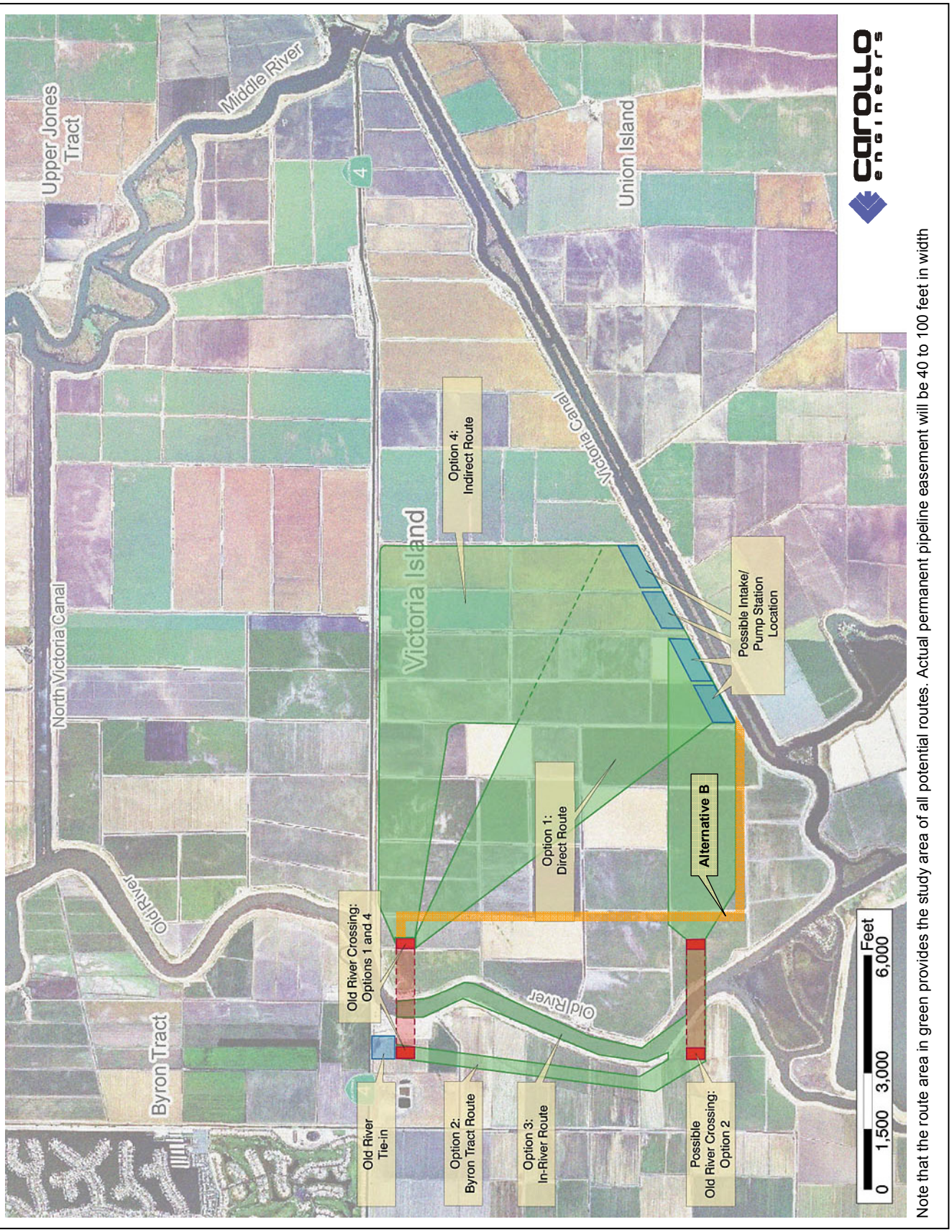
As described in the Draft EIR/EIS, the temporary impacts of Alternative 1, Direct Pipeline Alternative, were calculated to include potential indirect effects on adjacent land, and this resulted in Alternative 1 having a greater total temporary impact than Alternative 2. "Alternative B," as proposed by the commenter, would result in a pipeline approximately 18,250-22,800 feet long, depending on the actual location of the proposed new intake in Victoria Canal. It is estimated that temporary disruption related to pipeline construction along the Alternative B route would affect approximately 125-150 acres. This value is between the estimated temporary disruption during pipeline construction of 160-285 acres



Source: Carollo Engineers

Optional Conveyance Routing Corridors for an Alternative Intake: Commenters' Alternative A Shown

EXHIBIT 2.8-1



Source: Carollo Engineers

Optional Conveyance Routing Corridors for an Alternative Intake: Commenters' Alternative B Shown

EXHIBIT 2.8-2

and 120 acres for Alternatives 1 and 2, respectively. Permanent impacts resulting from the Alternative B route would be very similar to Alternatives 1 and 2 because these permanent impacts would occur primarily at the proposed pump station and tunnel site and would be independent of the actual pipeline route selected. The estimated agricultural impacts for Alternatives 1 and 2 and the "Alternative B" route are summarized in Table 2.8-1. No other environmental impacts would be lessened by the additional pipeline routes suggested by the commenter. Alternative B is a longer pipeline route compared to Alternative 1 and consequently would be more costly and would have slightly greater temporary environmental effects overall, such as air quality effects, based solely on a longer pipeline and construction period. The additional alternative routes suggested by the commenter are not new alternatives; rather, they are minor variations of the alternatives evaluated in detail in the Draft EIR/EIS. They will be considered by the lead agency decision-makers when they decide how and whether or not to take action on the project.

Table 2.8-1
Summary of Land Impacts

	Alternative 1, Direct Pipeline Alternative (Proposed Action)	Alternative 2, Indirect Pipeline Alternative	"Alternative B" Route Proposed by CDWA/RD2040
Permanent Impacts			
Intake/Pump Station Site & Setback Levee	6-8 acres	6-8 acres	6-8 acres
Total Permanent Impacts	**6-8 acres**	**6-8 acres**	**6-8 acres**
Temporary Impacts			
Pipeline	160–285 acres	120 acres	125–150 acres
Access Roads	25–40 acres	25–40 acres	25–40 acres
Borrow Area	0–135 acres	0–135 acres	0–135 acres
Staging Areas	11 acres	11 acres	11 acres
Total Temporary Impacts (approximate)	**200–470 acres**	**155–305 acres**	**160–335 acres**

Source: Estimates provided by Carollo Engineers in 2006

Other comments suggest that the areas of farmland that would be potentially affected during construction are underestimated. Specifically, the comments state that "an area of over 1,000 acres" and "approximately 2,000 acres" would be affected. Victoria Island encompasses an area of approximately 7,000 acres and the southwest quarter is approximately 2,500 acres. The comments suggest that much of the entire southwest quarter would be affected; however, the commenters do not provide additional information to support these assertions. The Draft EIR/EIS examined a range of potential temporary impacts due to pipeline construction, as shown in Table 2.8-1. These estimates allow for all construction activities, including the areas required for construction equipment and material laydown. The estimate further accounts for the potential need to leave fields fallow during construction due to their inefficient size or shape. There are large areas of agricultural fields in the southwest quarter of Victoria Island that would remain intact and accessible during construction, and in no way would these fields be

unusable during or after construction of the Proposed Action. The majority of these fields have drainage ditches on multiple sides that connect to major drainage arterials in a path that would not be disturbed during construction. Where needed, additional culverts can be installed to allow drainage water to flow via alternate routes. CCWD is also committed to working with the landowner to minimize disruptions to agricultural work resulting from construction traffic.

For the reasons described above in Section 2.8.2, "Farming Practices," the proposed pipeline would not preclude farming over the top of it after construction. Therefore, the proposed pipeline would not split fields or require farming of smaller, odd-shaped fields.

Based on the original analysis contained in the Draft EIR/EIS, further information collected by project agronomists and geotechnical engineers, and review of the Draft EIR/EIS comment letters, the Draft EIR/EIS estimates of acreages temporarily and permanently affected by the Alternative Intake Project, as well as impact conclusions, remain accurate.

2.8.4 Economic Concerns

Multiple comments focused on the potential economic impact of the project on the Victoria Island landowner. Potential economic issues cited include continuity of customer base, inefficiencies in operations, and costs of management time. The landowner would be compensated as required by law during the land acquisition process. CCWD would provide the landowner with an appraisal and offer prior to initiating proceedings to acquire property. If CCWD and the landowner are unable to reach agreement on compensation, then issues of fair market value and any claimed severance damages would be decided by a court of law. Assuming that CCWD moves forward with the project, CCWD would be required to pay the amount agreed upon outside of court, or if no agreement is reached, pay the amount found to be fair during the court proceeding. CCWD is interested in working with the landowner to determine the best options for minimizing impact to any long-term operational plans. This is also extended to examining the potential to arrange pipeline routing and construction schedule to minimize impacts to business operations. The environmental impacts of Alternatives 1, 2, and 3 have been appropriately examined in the Draft EIR/EIS. Economic concerns related to the Alternative Intake Project will be further discussed and addressed with affected parties during the land acquisition process.

2.8.5 Other Issues Related to Agriculture and Project Construction

Other comments related to effects on agriculture on Victoria Island include concerns about potential impacts from dust, coordination of pesticide applications, and farm worker safety at construction sites. The isolated location and limited number of farm workers lends itself to safe conditions at this particular location. However, construction in an agricultural area would require appropriate measures to ensure safe conditions.

CCWD would take steps necessary to reduce excessive dust as outlined in Section 4.10, "Air Quality," of the Draft EIR/EIS, including application of water to access and construction areas to reduce fugitive dust as required by the San Joaquin Valley Air

Pollution Control District (SJVAPD). These measures would help protect air quality and reduce the potential for negative effects of dust on plant growth.

As outlined in Draft EIR/EIS Impact 4.13-b (Alternative 1), "Potential Exposure of Construction Workers and CCWD Personnel to Hazardous Materials," and Mitigation Measure 4.13-b (Alternative 1), "Coordinate with the Applicable Landowners and Land Managers to Ensure That Temporary Construction Workers and CCWD Personnel Are Not Exposed to Harmful Levels of Pesticides from Adjacent Agricultural Practices," CCWD would work to ensure construction personnel would not work in locations where pesticides have recently been applied. CCWD also would work with the landowner to coordinate any pesticide applications necessary and minimize damages from lack of application.

Construction crews would be required to utilize appropriate signage and barriers as needed to ensure the safety of the farm workers during construction.

2.8.6 Conclusion

In response to comments received on the Draft EIR/EIS, CCWD and Reclamation gathered additional data and further examined the potential impacts of the project on agriculture, and have determined that the conclusions of the Draft EIR/EIS remain unchanged. A permanent conversion of 6 to 8 acres of Prime Farmland and Farmland of Statewide Importance would occur under Alternative 1, 2, or 3, and it would be a significant and unavoidable permanent impact. Other impacts, as described in the Draft EIR/EIS, would be temporary and would be minimized to the extent feasible. Other issues that are economic in nature would be addressed during the land acquisition process, and the landowner would be compensated appropriately as required by law.